



VERITAS NetBackup™ 5.0

Release Notes

for UNIX and Windows

30-001001-011



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Preface

The VERITAS NetBackup mission is to provide heterogeneous data protection solutions ranging from the workgroup or departmental level to the enterprise level.

The NetBackup Enterprise Server product provides powerful functionality, flexibility, mainframe-caliber robustness, and high performance in large enterprise environments. The NetBackup Server product is a high-performance solution offering ease of use and functionality that is appropriate to smaller work environments.

This release of NetBackup contains many significant enhancements in the area of scalability, application protection, clustering, advanced client and off-host backups, and integration with VERITAS Backup Exec. The release notes in this document are intended for system administrators and other users.

What Is In This Manual?

- ◆ Chapter 1 explains the important new features that are included with this release of NetBackup.
- ◆ Chapter 2 lists the platforms and peripherals supported by this release.
- ◆ Chapter 3 lists the product dependencies and updates required for this release.
- ◆ Chapter 4 contains product operational notes as they pertain to the new features listed in Chapter 1.
- ◆ Chapter 5 contains product limitations as they pertain to the new features listed in Chapter 1.

For additional information about known issues with this release, you can refer to Tech Note number 262182 on the VERITAS support web site. This Tech Note will contain the latest information relating to product issues for this release. Here is a link this document, <http://support.veritas.com/docs/262182>.

- ◆ Chapter 6 provides end-of-life information on NetBackup features that will no longer be supported in the next major release following NetBackup 5.0.
- ◆ Appendix A lists all NetBackup documents for this release.



How To Use This Manual

The NetBackup Release Notes for UNIX and Windows document contains valuable information about each new release for the NetBackup customer. Customers will find information that highlights new features that comprise the latest NetBackup release. In addition to new feature information, customers can use this document as a reference manual to find various product support and product dependency information. Finally, this document contains known product limitations associated with the release. As with many products, it is possible that a product is released knowing there are some minor limitations with some of the features. Customers can look in this document and see these known limitations. VERITAS has a policy to be open and truthful about VERITAS products to its customers so they can be assured of the product and its functionality when they receive it.

Getting Help

Use the VERITAS Technical support web set to get help for NetBackup if you have questions.

Accessing the VERITAS Technical Support Web Site

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

- ◆ obtain updated information about NetBackup, including system requirements, supported platforms, and supported peripherals
- ◆ contact the VERITAS Technical Support staff and post questions to them
- ◆ get the latest patches, upgrades, and utilities
- ◆ view the NetBackup Frequently Asked Questions (FAQ) page
- ◆ search the knowledge base for answers to technical support questions
- ◆ receive automatic notice of product updates
- ◆ find out about NetBackup training
- ◆ read current white papers related to NetBackup

The address for the VERITAS Technical Support Web site is as follows:

<http://support.veritas.com>



Using VERITAS Telephone and E-mail Support

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

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

1. Open `http://support.veritas.com` in your web browser.
2. Click the **Phone Support** icon. A page that contains VERITAS support numbers from around the world appears.

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

1. Open `http://support.veritas.com` in your web browser.
2. Click the **E-mail Support** icon. A brief electronic form will appear and prompt you to:
 - ◆ Select a language of your preference
 - ◆ Select a product and a platform
 - ◆ Associate your message to an existing technical support case
 - ◆ Provide additional contact and product information, and your message
3. Click **Send Message**.

Related Resources

Refer to Appendix A of this document for a complete list of related manuals associated with the content of this document.

Online Documentation

On Windows

The released software contains on-line PDF and ASCII versions of these release notes and a readme file for the client. If you choose to install the documentation during setup, NetBackup installs these documents in the following locations on your disk:



- ◆ `install_path\Help\`
Adobe Acrobat Portable Document Format (PDF) copies of all related documents, including these release notes.
- ◆ The readme files on `install_path\NetBackup\` are:
 - ◆ `Readme_Client.txt`
 - ◆ `Readme_Server.txt`

On UNIX

During NetBackup installation, a text copy of the *NetBackup Media Manager Device Configuration Guide* is installed in

`/usr/opensv/volmgr/MediaMgr_DeviceConfig_Guide.txt`

You can copy example code from the device configuration guide if you need to reconfigure the kernel to provide specific tape or optical peripheral support.

The product CD-ROM also contains PDF copies of these release notes and other documents.

Note You will need Adobe Acrobat Reader to view the PDF documents. The latest version of Acrobat Reader is available on the Adobe web site:
<http://www.adobe.com>.

VERITAS assumes no responsibility for the correct installation or use of the reader.

On the Support Web Site

Copies of NetBackup documentation are also available on the VERITAS support web site:

1. Log on to the VERITAS support web page,
<http://www.support.veritas.com/>
2. On the **Services: Support** web page, select **NetBackup Products**.
3. Choose a NetBackup product in the **Select Product** window.
4. With the Document tab selected, do the following:



- a. Select a product version, (5.0)
- b. Select a product platform, (All)
- c. Select the Document Type: (**Manuals and Documentation**). The page will likely refresh and list all of the documents for product that you selected. If the page does not refresh automatically, click **Go >>**.

Glossary

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

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

▼ To access the NetBackup online glossary

1. In the NetBackup Administration Console (or from the Backup, Archive, and Restore client interface), click **Help > Help Topics**.
2. Click the **Contents** tab.
3. Double-click **Glossary**.
4. Click **NetBackup Glossary of Terms**.

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

Accessibility Features

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

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



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

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

Conventions

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

Product-Specific Conventions

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

- ◆ Microsoft Windows, Windows

Terms used to describe a specific product or operating system developed by Microsoft, Inc. Some examples are, Windows 2000, Windows Server 2003, Windows servers, Windows clients, Windows platforms, or Windows GUI. For more information on the Windows operating systems that NetBackup supports, refer to the "Supported Platforms and Peripherals" on page 21, or go to the VERITAS support web site at <http://www.support.veritas.com>.

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

Typographical Conventions

Here are the typographical conventions used throughout the manuals:

Conventions

Convention	Description
GUI Font	Used to depict graphical user interface (GUI) objects, such as fields, list boxes, menu commands, and so on. For example: Enter your password in the Password field.



Conventions (continued)

Convention	Description
<i>Italics</i>	Used for placeholder text, book titles, new terms, or emphasis. Replace placeholder text with your specific text. For example: Replace <i>filename</i> with the name of your file. Do <i>not</i> use file names that contain spaces. This font is also used to highlight NetBackup server-specific or operating system-specific differences. For example: <i>This step is only applicable for NetBackup Enterprise Server.</i>
Code	Used to show what commands you need to type, to identify pathnames where files are located, and to distinguish system or application text that is displayed to you or that is part of a code example.
Key+Key	Used to show that you must hold down the first key while pressing the second key. For example: Ctrl+S means hold down the Ctrl key while you press S.

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

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

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

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

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

Command Usage

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

brackets []

The enclosed command line component is optional.

Vertical bar or pipe (|)

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



`command arg1|arg2`

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

Navigating Multiple Menu Levels

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

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

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

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

1. Click **Start** in the task bar.
2. Move your cursor to **Programs**.
3. Move your cursor to the right and highlight **VERITAS NetBackup**.
4. Move your cursor to the right. First highlight and then click **NetBackup Administration Console**.

Note In Japan, contact your authorized VERITAS NetBackup reseller for support.

NetBackup End of Life and Third Party Notice

"VERITAS Maintenance/Support" only applies to VERITAS Licensed Software, assuming you have a current VERITAS Maintenance/Support subscription for such software and such VERITAS Licensed Software is operating in configurations that VERITAS designates as supported. VERITAS Maintenance/Support does not cover (and we have no responsibility for) providing technical support, installation services or other services for any other software or hardware products. Also, VERITAS is not obliged to provide Maintenance/Support when your VERITAS Licensed Software is operating in configurations that VERITAS does not designate as supportable/supported. Please see the current VERITAS Technical Support Policy and your VERITAS license agreement for more information, terms and limitations.



Supported Configurations

For more information including technical notes regarding currently VERITAS-supported configurations (such as operating system/levels, firmware levels, databases, devices, device drivers, applications, etc.), please refer to our website at <http://support.veritas.com>. Please note that while VERITAS makes reasonable efforts to keep this information updated, we cannot assure that this information will be in all cases complete or the most current.

Third Party Products

Where your Problem may be related to product(s) from a third party vendor with whom we have a cooperative or collaborative relationship on such product(s), then VERITAS may work with that vendor towards resolving your reported Problem. Where VERITAS does not have such a support relationship in place with the third party vendor, or where the vendor ceases to support such product(s), then our ability to support VERITAS Licensed Software operating with such vendor's product(s) may be limited, affected, or prevented (and such third party product(s) may cease to be part of VERITAS-supported configuration(s)).

NetBackup Advanced Reporter Third Party Notices

JRE

This product includes code licensed from RSA Security, Inc. Some portions licensed from IBM are available at <http://oss.software.ibm.com/icu4j/>

foldersTree (ftiens4.js)

This product includes a script originated from www.treeview.net. End users have permission to use the script in VERITAS NetBackup Advanced Reporter, but do not have permission to extract the JavaScript and use it in another application.

Tomcat

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).





New Features in NetBackup 5.0 Release

VERITAS NetBackup™ 5.0 contains significant enhancements in the areas of supported platforms, administration capabilities, clustering, synthetic backups, enhanced database agent support, and a more robust and flexible version of VERITAS NetBackup Advanced Reporter (NBAR). In addition, NetBackup 5.0 contains an advanced client feature that consolidates different snapshot techniques into a single, licensed package. The following list identifies some key areas in which new features and enhancements have occurred in this release.

- ◆ New VERITAS Branding
- ◆ Various installation enhancements, such as adding pkgadd -R capabilities.
- ◆ Proliferation
 - ◆ Microsoft's Volume Shadowcopy Service (VSS) support for open file backups on Windows Server 2003
 - ◆ Linux support for file sizes greater than 2GB files
 - ◆ Linux client on zSeries
 - ◆ AIX 5.2 Server and Client Support
- ◆ New Backup Features that include:
 - ◆ Checkpoint Restart backup
 - ◆ Disk staging
 - ◆ NetBackup Access Control
 - ◆ NetBackup Advanced Client
 - ◆ NetBackup Backup Exec Tape Reader
 - ◆ Enhanced Open File Backups for Windows Client
 - ◆ Synthetic Backups
- ◆ Enhancements to the NetBackup Administration Console that include:
 - ◆ Multitasking support in NetBackup-Java Administration Console
 - ◆ Client GUI Consistency and Enhancements



- ◆ Enhanced look and feel for the NetBackup-Java Administration Console
- ◆ Enhanced support for database templates in the Policy Management interfaces
- ◆ NDMP Auto Discovery
- ◆ Shared Storage Option (SSO) Device Allocator Resiliency
- ◆ NetBackup Cluster Support for NetBackup add-on Products:
 - ◆ NetBackup Advanced Reporter (NBAR)
 - ◆ Global Data Manager (GDM)
 - ◆ Vault
 - ◆ Network Data Management Protocol (NDMP)
- ◆ Multiple Vault Features that include:
 - ◆ Inline Copy to Multiple Disks or Tape
 - ◆ ACS Multi-MAP Eject
 - ◆ Container Vaulting
 - ◆ A Deferred Eject capability using the NetBackup Administration Console
- ◆ Very Large File and File System support
- ◆ VERITAS File System 4.0 - Named Data Streams

The following subsections within this chapter briefly summarize each new feature offered in this release. For more complete descriptions of a particular feature or enhancement, refer to the appropriate NetBackup documentation included in your NetBackup product CD-ROM.

Note Customers who are upgrading from NetBackup 4.5 GA, or its associated MP releases, directly to this release may want to know what new features were added to NetBackup in the NetBackup 4.5 Feature Pack 3 (FP3) interim release. To see the new features that were added in the FP3 release, go to the VERITAS Support Web site (<http://support.veritas.com>) and enter the following text in the **Knowledge Base Search** field in the left column of the web page: VERITAS NetBackup BusinessServer & DataCenter v4.5 Feature Pack 3 Release Notes. The right side of the web page will update with a link to the *NetBackup 4.5 FP3 Release Notes for UNIX and Windows*.

New Publications

The following list shows the changes that have occurred with the VERITAS NetBackup documentation set in this release.



- ◆ Administrator's Guide for the Novell NetWare Client

This new document consolidates all of the previous Novell NetWare information into one document. In addition, it describes how to install, configure, and use NetBackup's Novell NetWare Client to back up and restore data that resides on a NetWare file server.

- ◆ NetBackup Advanced Client System Administrator's Guide

The *NetBackup ServerFree Agent System Administrator's Guide*, *NetBackup Persistent Frozen Image System Administrator's Guide*, and the *NetBackup FlashBackup System Administrator's Guide* have been replaced with a single manual: the *NetBackup Advanced Client System Administrator's Guide*.

- ◆ NetBackup for Oracle System Administrator's Guide for UNIX

The *NetBackup Database Archiver System Administrator's Guide for UNIX*, the *NetBackup for Oracle Advanced BLI Agent System Administrator's Guide for UNIX*, and the *NetBackup Oracle ServerFree Agent System Administrator's Guide for Solaris and HP* have been replaced with a single manual: the *NetBackup for Oracle System Administrator's Guide for UNIX*.

What is New in NetBackup 5.0

This release of NetBackup contains many new features and enhancements to existing capabilities. The following subsections describe some of the features that are new to the general functionality of the base NetBackup product.

- ◆ New VERITAS Branding and Packaging

The NetBackup product supports a new look and feel that is common among other VERITAS products. This new branding helps to achieve consistency across the corporation. In addition, the look and functionality of the NetBackup Administration Consoles for UNIX and Windows are becoming more and more similar.

- ◆ Repackaging of NetBackup - NetBackup 5.0 offers more appealing functionality. Instead of two distinct products lines called NetBackup BusinessServer and NetBackup DataCenter, VERITAS has created a single product line with two different licensed server types.

The Repackaging of the NetBackup BusinessServer:

- ◆ When you upgrade from NetBackup BusinessServer to NetBackup 5.0, you will notice that the name of your new product has changed to NetBackup Server.



- ◆ The restrictions are the same between the NetBackup Server and NetBackup Enterprise Server types on the number of robots, drives, clients, or slots a customer can have in their NetBackup Server environment. However, NetBackup Server is restricted to an environment that consists of a single master server and does not support remote media servers.
- ◆ Additional robot types are supported in NetBackup Server that were not supported in NetBackup BusinessServer: ODL, TSH, and robots that contain multiple drive types.
- ◆ RSM robots are now licensed and are included in the base NetBackup license.
- ◆ The following additional licensed options are supported in this release.
 - ◆ Vault
 - ◆ Advanced Reporting Option (NBAR)
- ◆ You can have multiple NDMP devices if you have the NDMP feature installed and licensed.

The Repackaging of the NetBackup DataCenter:

- ◆ Upgrading: When you upgrade from NetBackup DataCenter to NetBackup 5.0, the name will change to NetBackup Enterprise Server
- ◆ SAN media server licensing is now enforced in NetBackup 5.0
 - ◆ NetBackup 5.0 SAN media servers are able to only back up the local client. (Any attempt to back up clients other than the SAN media server itself to that SAN media server's storage unit(s) will fail with error code 159: `licensed use exceeded`.)
 - ◆ Storage units created on a SAN Media server must be set to **on-demand only**. If you do not select this option, the creation of the storage unit will fail. By selecting **on-demand only**, you ensure that the storage unit can only be used by policies that include only the SAN media server as a client. If any other clients (such as, non-local) are specified in the policy, backups will fail with error code 159: `licensed use exceeded`.

NetBackup Installation Changes for This Release

The following items identify changes that have occurred in the NetBackup installation guides for this release.

- ◆ NetBackup Supports Cluster Installations

New installation procedures have been developed to install and configure clusters as well as install NetBackup in a clustered environment.
- ◆ You Can Now Install NetBackup to Alternate Root Locations



Customers running on Solaris systems can now install NetBackup server software to an alternate root location using a new `pkgadd -R` command during UNIX installations. This new feature centralizes and automates the installation process of media servers and Solaris clients in a large enterprise.

NetBackup Proliferation Enhancements

This release contains many new product proliferation enhancements that are in addition to the new platforms that are supported with each new release of NetBackup. The following list describes some of the product proliferations that you can expect to see with this release.

- ◆ Microsoft's Volume Shadowcopy Service (VSS) support for open file backups on Windows Server 2003
Microsoft's VSS is now available to NetBackup to provide open file shadowcopy for normal file system backups.
- ◆ NetBackup Supports Files Greater than 2GB on Additional Operating Systems
NetBackup 5.0 provides support for individual file sizes greater than 2GB for Linux file systems that support files sizes greater than 2GB. NetBackup will handle the maximum file size supported by the operating system.
- ◆ NetBackup 5.0 Adds Client Support for IBM zSeries Machine
This release of NetBackup provides client software for the IBM zSeries machine running either Red Hat or SuSE Linux.

New Storage Enhancements

NetBackup 5.0 offers enhancements in the area of incremental backups, support for very large files, and new disk staging capabilities. The following subsections introduce these features and enhancements.

- ◆ NetBackup Supports the Microsoft Change Journal
NetBackup offers support for the Microsoft change journal in order to enhance performance of incremental backups on Windows 2000, Windows XP, and Windows Server 2003 systems. By enabling the Use Change Journal in Incrementals check box, NetBackup can provide potentially faster incremental backups for NTFS 5 (and later) volumes storing very large numbers—possibly millions—of files. The Change Journal option for incremental backups is available only when a valid NetBackup change journal monitoring database exists on the applicable volumes.
- ◆ NetBackup Supports Very Large File and File Systems



The maximum backup size (per backup stream) supported for NetBackup 4.5 was 1 terabyte. By extension, this was also the maximum supported file size and file system size. NetBackup 5.0 extends beyond this limit with the capability of taking very large backups, with very large defined as over 1 terabyte and up to 2 exabytes (2 million terabytes). This includes backup and restore when combined with other NetBackup features and attributes, such as TIR, raw partition, encryption, compression, etc. With this new very large backup support, NetBackup 5.0 supports file sizes up to 64 terabytes, and file system sizes up to 2 exabytes, for all file systems currently supported by NetBackup, on all operating systems currently supported by NetBackup

- ◆ NetBackup 5.0 Supports VERITAS File System 4.0 Named Data Streams

NetBackup can back up and restore the named data streams of the VERITAS File System 4.0 file system as part of normal file system backups.

- ◆ NetBackup 5.0 Offers Enhanced Disk Staging Capabilities

Disk staging provides a two-stage process for creating NetBackup images on disk, then moving the images to another media type at a later, configurable time. Disk Staging can facilitate faster backups and restores and a user can use it to facilitate streaming tape devices without the drawbacks of multiplexed images.

New Backup Capabilities With This Release

NetBackup 5.0 contains enhancements and new features that enable a user to restart a backup at the last check point in the middle of the backup, build a new synthetic image, and enhanced open file backups to name a few.

- ◆ NetBackup Supports Checkpoint Restart for Backup Jobs

Checkpoint Restart allows a failed backup job to be resumed from the last checkpoint. Checkpoints are taken periodically during a backup. Therefore, if a backup job fails, the issue causing the failure can be corrected and the job can be resumed from the last checkpoint rather than at the beginning, thus saving time. In addition, an active backup job may be suspended and then resumed from the last checkpoint at a later time. Also, jobs may be restarted from the beginning by selecting them from the Activity Monitor.

Checkpoint restart for backups is supported for:

- ◆ Backup jobs (support for restore jobs was introduced in 4.5 FP3).
- ◆ Resume on file boundaries. This means the backup is resumed from the next file after the last check-pointed file (for example, a resume cannot occur within a file).
- ◆ Backups of file-system backups (backups which use the Standard or Microsoft Windows policy types only).



- ◆ File system local and alternate client snapshot backups are supported. Other offhost backups (for example, Media Server Copy or Third Party Copy) are not supported.

- ◆ NetBackup Supports Synthetic Backups

Synthetic backups allow the creation of a backup synthesized from an initial full backup and the most recent differential and cumulative incremental backups. Synthetics are set up per policy and provide the advantage of allowing a new or changed file to be copied from the client to the media server only once. The synthesized backup can then be used to restore files and directories to the client.

- ◆ NetBackup Supports Enhanced Open File Backups for Windows Clients

Windows Open File Backup has been enhanced in this release and it can be selected for use on NetBackup 5.0 clients, using NetBackup Volume Snapshot Provider (VSP) or Microsoft's Volume Shadowcopy Service (VSS) as the snapshot provider.

- ◆ Initiate Backups Without Needing to Clear the Failure History

Operators can now initiate as many backup attempts as desired without the need to clear the failure history.

In previous versions of NetBackup, immediate backups would be blocked from running if the failure history indicated the number of errors had exceeded the specified threshold. This is a good check to block scheduled backups. However, the check does not need to be made if the operator is present and attempting to manually start a backup.

This enhancement enables an operator to perform as many immediate backup attempts as is desired, with no need to clear the failure history.

Note If an immediate backup fails, it still writes the failure history information and the operator (or administrator) is not troubled with clearing the failure history when they attempt an immediate backup.

- ◆ NetBackup Backup Exec Tape Reader

NetBackup supports importing and restoring MTF media written by Backup Exec 7.0 and above. NetBackup supports importing and restoring from Backup Exec NT/2000, UNIX, Exchange 5.5, Exchange 2000, SQL 7.0, SQL 2000 and Netware 4.x and above backups. The Backup Exec Tape Reader is now part of the standard NetBackup installation and no longer has to be installed from the Custom installation process.

NetBackup will natively read Backup Exec tapes and not make use of Backup Exec to import and restore Backup Exec tapes. VERITAS recommends that users read the *NetBackup System Administrators Guide, Volume I* and the *NetBackup User's Guides* and to understand the way Backup Exec images will be imported and restored in NetBackup 5.0 before attempting to import or restore Backup Exec images.



- ◆ **Creating Multiple Backup Images Concurrently**

In NetBackup, you can create up to four copies of a backup image concurrently during a backup job. (Previously, the Vault option was required to create multiple copies concurrently during a NetBackup backup job.) For more information, see the *NetBackup System Administrator's Guide, Volume I* and the *NetBackup Vault System Administrator's Guide for UNIX and Windows*.

General NetBackup Enhancements

The following list details some general NetBackup enhancements that have been added into NetBackup 5.0.

- ◆ NetBackup supports read/write resume logic on Linux systems, which enables certain recoverable errors to be retried.
- ◆ NetBackup supports SSO on Linux.
- ◆ NetBackup is more efficient during the media selection phase. It requests a media list that matches its requirements more closely. Media Manager also enables multiple `bptm` processes to run at the same time during the media selection process.
- ◆ NetBackup's new media selection algorithm now selects media that is based on a least-recently-used method, instead of a fewest-number-of-mounts method. This selection algorithm improves the performance of the system if a bad piece of media is selected for use.
- ◆ NetBackup will provide system administrators with Access Control Capabilities

The NetBackup Access Control feature is a documented feature that will not be available until the first maintenance update of NetBackup 5.0. It is not common policy for VERITAS to issue new documentation during a maintenance pack release. Because of this, VERITAS felt it was important to document this feature in the NetBackup 5.0 documentation set. This will enable our customers to gain knowledge of the feature before it is made available.

This feature requires the installation of the VxSS component that is packaged on separate media. This media is not included with the initial distribution of the NetBackup 5.0 media kit. VERITAS will make all appropriate media for this feature available to its customers at the first maintenance update. In addition, when this feature is released, you will be able to reference TechNote 263650 on the VERITAS Support Web site for documentation on any known issues with this feature.

When this feature becomes available, it will allow NetBackup administrators to protect their NetBackup configuration by enabling Access Control to define three factors that control or restrict access to NetBackup:

- ◆ Who may access NetBackup: Accomplished by defining users and user groups.

- ◆ What functions a user group can perform: Accomplished by assigning users to various user groups.
- ◆ What resources a user group may manage.

NetBackup Administration Console Enhancements

This release of NetBackup contains many new enhancements to the NetBackup Administration Consoles. The items below describe some of the changes that have been made to our GUIs:

- ◆ NetBackup Administration Console Host Properties Enhancements

The Host Properties interface in the NetBackup- Java Administration Console and the NetBackup Administration Console for Windows have been very dissimilar in past releases of NetBackup. In this release of NetBackup, the Host Properties interface in both GUIs have been aligned such that they use the same interaction method, all fields are located in the same place, and the terminology has been improved based on our research from multiple usability tests.

- ◆ NetBackup-Java Graphical User Interface Commands have been Enhanced

- ◆ The `jnbSA` and `jbpSA` commands have been enhanced with the `-lc` option that will print the command lines that the interfaces use to its log file.

Note The GUI does not always use the command lines to get data or update data. It has some protocols that instruct its application server to perform tasks using NetBackup and Media Manager APIs. As the interfaces evolve, fewer command lines will be used.

- ◆ The NetBackup-Java administration console allows multi-tasking

During initial load or refresh of data in the console, you can pursue other tasks, such as, updating a storage unit while policy data is being loaded. In addition, many dialogs now are only modal to their parent window. Also, multiple policies can now be selected for change, delete, or starting manual backups. A new message display panel below the table in the right side of the console is used to ensure that any error or informative messages appear in the correct context, that is, with the correct console component, such as, Policy Management.

- ◆ Storing of the User and Host Names Used for Past Logins

Combo boxes are now used for selecting the Host name and User name during login. Host and User names may either be selected from the drop-down list, or typed into the appropriate field. User and Host names that have been used to successfully login will be added to the list for subsequent logins. The default Host name and User name displayed are now the ones used for the last successful login.



NetBackup Cluster Support

While clustering is not a new feature with this release, enhancements have been made to support additional NetBackup products such as NBAR, and Vault. This release supports VERITAS Cluster Server (VCS), Microsoft Cluster (MSCS), SunCluster, and TruCluster. For complete details on what is supported, see the cluster compatibility list on the VERITAS Support web site.

Media Manager

The following list describes the new features and enhancements in the Media Manager area of NetBackup.

- ◆ Tape mounts that occur in the libraries are now handled entirely by the robotic daemon. This enables improved performance during simultaneous tape mounts.
- ◆ During startup of `avrd` on Solaris, each tape drive's configuration is added to the `syslog`. For example:

```
st.conf configuration for HPULtrium1-SCSI8 (device 0), name [HP
ULtrium-1], vid [HP Ultrium], type 0x36, block size 0, options
0x1b639 (see st(7D) man page)
```
- ◆ Volume database queries use a faster method to find specific media records. This technique greatly increases the speed of these operations. Another method to return only records changed since a certain time has also been introduced to improve the performance of the GUIs.
- ◆ The unsupported `-j` option to `vmquery` has changed its output format. The unsupported `-j32` option has been added to produce the same output as NetBackup 4.5.
- ◆ When an operator changes the drive status from DOWN to UP, the event will be logged in the `syslog` (just like when the status is changed from UP to DOWN).
- ◆ Support for the Sun StorEdge Network Foundation JNI HBA has been added.
- ◆ The `scsi_command` utility can now issue a Test Unit Ready (`-tur`), and dump several log pages (`-log_dump`). Use of `-log_dump` will clear any pending TapeAlert notifications, so manual drive cleaning may be required after its use.
- ◆ Reconfiguring the Media Manager Device Databases
Hardware replacement can change the serial number of a device. This can lead to a misconfiguration of the global and local device databases. To correct this condition, the new hardware must be configured on at least one system. Once the new hardware is available through the OS, the serial number can be updated by first running `"tpautoconf -report_disc"`, which will scan for the new hardware, and try to report it along with the hardware that was replaced.



Once the new hardware is detected, and the replacement hardware is identified, `tpautoconf` is again run, this time with either the `“-replace_drive drive_name”` or `“-replace_robot robot_number”` option, and the `“-path XXX”`. The path specifies the new hardware path, as specified in the `-report_disc` output. The serial number is read from the new hardware and the global device data base is updated. Next, all hosts sharing the new hardware are instructed to replace the serial number in their local device databases. This process requires all hosts that are sharing the new hardware to have the Media Manager volume daemon or the NetBackup Volume Manager service (`vmd`) running at the time the replace operation is executed.

Replacement is completed by configuring the device on all systems. First, the Operating System must be set up for the device and then the Device Configuration wizard must be run on all hosts sharing the device.

- ◆ Enhanced handling capabilities of cleaning media

The ability to detect cleaning media in a drive has been added to NetBackup Media Manager. If the Media Manager volume database is not up-to-date and/or the cleaning media type is not set properly and the user directly (using `tpreq`) or indirectly (while backups, restore, import, etc.) tries to mount a cleaning media, Media Manager detects the cleaning media in the drive and fails the mount request with Device Management Status Code 71 (See the *VERITAS NetBackup 5.0 Troubleshooting Guide* for more details). This is still not possible if the media is in a tape library controlled by RSM.

- ◆ New volume record format for Media Manager's volume database.

The volume record format has been changed in Media Manager's volume database. Some Vault-specific fields, `container id` and `vault flags`, have been added to the Media Manager volume record. When NetBackup is upgraded to this release, and the Media Manager's volume daemon (`vmd`) is started for the first time, the volume database is automatically upgraded. The upgrade process may take some time depending on the size of the volume database. The original volume database (`<install_path>/volmgr/database/volDB`) is preserved as `volDB.org` while upgrading from previous version of NetBackup. In addition, the upgrade process has been optimized for all types of UNIX.

- ◆ In NetBackup 5.0, the scan utility on UNIX resides in

`/usr/opensv/volmgr/bin/scan` and `/usr/opensv/volmgr/bin/goodies/scan`. For the next major release, the scan utility on UNIX will only reside in `/usr/opensv/volmgr/bin/scan`. For Windows, the scan utility will only reside in `<install_path>\volmgr\bin\scan.exe`.

- ◆ Media node enhancements to the NetBackup Administration Console



Customers can use the Media node of the NetBackup Administration Console to label and erase (long and quick erases are available) unassigned media. The media cannot be assigned to NetBackup and may have no valid NetBackup images present for the erase operation to succeed.

- ◆ SANPoint Control Integration

NetBackup 5.0 enables you to launch SANPoint Control from NetBackup to help locate the cause of problems that may be related to your SAN and not the NetBackup installation. Users can start SANPoint Control from the Device or the Device Monitor nodes of the NetBackup Administration Console, or from the Device Configuration wizard. In addition, on Windows servers, you can also launch SANPoint Control from the Activity Monitor.

For instructions on downloading an evaluation copy of VERITAS SANPoint Control, go to <http://van.veritas.com/van/products/sanpointcontrol.jsp> or refer to the SANPoint Control flyer included in the NetBackup 5.0 media kit.

- ◆ Drive cleaning functions are now available from the Device Monitor as well as the Devices node of the NetBackup Administration Console.
- ◆ In this release of NetBackup, Media Manager TL8 and TLD robot types now support barcode lengths of up to 16 characters.

NetBackup SAN Shared Storage Option (SSO)

SAN Shared Storage Option (SSO) has been improved for better resiliency and control over the assignment of scan host duties. Resiliency improvements include the use of retries on some failing messages, and the ability to reconstruct the reservation status of drives when the master server has had its services restarted. Hosts can be configured to never become a scan host, by setting their SSO_SCAN_ABILITY to zero.

Database Agents

The following subsections identify the enhancements and new features associated with each of the NetBackup database agents.

- ◆ NetBackup 5.0 integrates Advanced Client into the database agents, Oracle, SQL, and Exchange. (The Oracle database agent for UNIX, with the Advanced Client, is available at the general availability (GA) release of NetBackup 5.0, except on Windows. The other database agents, with the Advanced Client, should be available soon after the GA release.) An integration such as this enables database users to perform one or more of the following:
 - ◆ Faster restores or recovery
 - ◆ Faster backups



- ◆ Lower-impact backups

This feature offers one database agent that works with all of the Advanced Client features. In addition, this feature provides a common user interface to perform the backup and restore or recovery operation for a database regardless of what backup method you use. you will see no difference in the database GUIs for backups or restores.

DB2 Database Agent

- ◆ NetBackup for DB2 introduces database object browsing in the Backup, Archive, and Restore interface.

Users can expand instances, databases, partitions, and table spaces. The DB2 agent also simplifies backup and restores through the use of backup and recovery wizards. When a DB2 object is selected for backup or restore, the DB2 agent wizards create backup or restore templates. Backup templates can be used in place of scripts, or converted to scripts. After they are created on the NetBackup for DB2 client, templates are stored on the NetBackup master server, and can be used for backups on other NetBackup for DB2 clients.

Lotus Notes Agent

- ◆ Added Support for Lotus R6.

The NetBackup for Lotus Notes agent now supports Lotus R6.0.2 or later for Solaris, AIX, and Windows. For specific details on operating system versions, refer to the Database Agent Support matrix, found on the VERITAS support web site, <http://www.support.veritas.com>.

- ◆ A linear style of transaction logging can now be enabled for all logged databases.

Microsoft Exchange Server Agent

- ◆ The process for restoring public and private databases from Backup Exec images has changed. These databases can now be restored by selecting the appropriate check boxes (on the Exchange tab) after initiating a restore operation.

Microsoft SharePoint Portal Agent

- ◆ The SharePoint Portal agent has the capability to perform Workspace-level incremental and cumulative incremental backup and restore.



- ◆ The SharePoint Portal agent has the capability to perform Individual Document level backup/restore in SharePoint Portal Workspace folders Shadow, Documents, Portal Contents and Dashboard.

Microsoft SQL Server Agent

- ◆ Support for Microsoft SQL 6.5 backups has been removed. SQL 6.5 restores can still be performed with NetBackup 5.0.
- ◆ Microsoft SQL images backed up with Backup Exec can now be restored using the Backup, Archive, and Restore interface. The NetBackup for Microsoft SQL Server GUI can no longer be used to restore Backup Exec images.

Oracle Database Agent

- ◆ NetBackup for Oracle 5.0 integrates the archiving and recovery functionality of XML export and XML import that were previously available through the Database Archiver for UNIX. In addition to UNIX support, this functionality is now available on Windows platforms. The XML export archive format is self-identifying because it uses the XML Schema standard to describe the table data that is included in the archive. The Database Archiver for UNIX is no longer available as a separate agent.
- ◆ The Oracle agent has combined the advanced backup methods that were previously considered separate agents. When the Oracle agent is combined with the NetBackup Advanced Client Add-on product, users can choose to perform advanced backup methods such as block-level incremental (BLIB), snapshot backups, offhost backups, and instant recovery for backups. (This feature is available for Solaris, HP-UX, and AIX (BLIB only) clients at the GA release date.)

NetBackup Add-On Products

As previously mentioned, this release contains a new Advanced Client feature that is comprised of many previous Alternate Backup Methods. The following items describe the details of this feature.

- ◆ NetBackup 5.0 offers a new licensed product called Advanced Client
 - Advanced Client is a single, licensed, package that is comprised of a diverse set of Alternate Backup Methods that together provide a comprehensive approach to the use of snapshots in support of backup and recovery. These backup methods enable a customer to tailor the backup and restore performance to obtain one or more of the following benefits:
 - ◆ faster restores
 - ◆ faster backups



- ◆ lower-impact backups

This feature is designed to make it much easier for the customer to configure and use this product. The following backup methods have been combined into the new Advanced Client:

- ◆ ServerFree agent, comprised of:
 - ◆ Core Frozen Image Services
 - ◆ Extended Frozen Image Services/ Array Integration Option
 - ◆ Offhost and SAN Data Movement Services
- ◆ FlashBackup
- ◆ Instant Recovery Option
- ◆ Block Level Incremental (BLI)

Advanced Client Capabilities

- ◆ Support for Windows 2000 and Windows 2003 clients.
 - ◆ Advanced Client supports snapshot and alternate client backups of Windows 2000 and Windows 2003 clients.
 - ◆ For Windows 2000 and Windows 2003 clients, Advanced Client also supports FlashBackup for raw partition backups and individual file restores, and instant recovery (formerly Persistent Frozen Image).
- ◆ Advanced Client provides an automatic snapshot type selection.
NetBackup can automatically select an appropriate snapshot method for a policy.
- ◆ Advanced Client supports the VCS clustered environments for VERITAS File System file systems and VERITAS Volume Manager volumes.
- ◆ A new command (`bpSALinfo`) uses SANPoint Control to supply world-wide names and LUNs for automated third-party copy device configuration (UNIX only).
For instructions on downloading an evaluation copy of VERITAS SANPoint Control, go to <http://van.veritas.com/van/products/sanpointcontrol.jsp> or refer to the SANPoint Control flyer included in the NetBackup 5.0 media kit.
- ◆ NetBackup offers additional support for new features in VERITAS File System 4.0 and VERITAS Volume Manager 4.0, such as:
 - ◆ Support for the checkpoint rollback feature of the VERITAS File System, when restoring Instant Recovery backups.
 - ◆ Support for the multi-device feature of VERITAS File System, using VERITAS Volume Manager volume sets. This is only supported on Instant Recovery.



- ◆ Support for the instant snapshot feature of VERITAS Volume Manager, including full-sized and space-optimized snapshots.
- ◆ Support for VERITAS File System Storage Checkpoint quotas and signatures.
- ◆ Advanced Client contains an optional tape retention feature for NetBackup Instant Recovery snapshots to disk.

NDMP

- ◆ Auto configuration of NDMP devices
The NetBackup Device Configuration wizard and command line configuration can discover and configure storage devices that are attached to an NDMP host and significantly reduce the NDMP configuration complexity. This feature requires NDMP protocol versions V3 or V4. NAS vendor support of this feature is also required.
- ◆ Passwords for NDMP hosts can now exceed eight characters in length (up to 64 characters).
- ◆ NetBackup for NDMP is now supported in a clustered environment. Refer to the compatibility matrices on the support.veritas.com web site for details on what platforms and cluster solutions are supported for clustered environments.
- ◆ Performance improvements for operations with NDMP-attached drives
When using NDMP-attached drives, the following operations are now comparable in performance to using NetBackup-attached drives: image duplicate, verify, and import, and catalog backup and restore.

Global Data Manager (GDM)

Global Data Manager is now supported in a clustered environment. For information about which platforms and cluster solutions are supported, see the compatibility matrices on the VERITAS support web site (<http://support.veritas.com>).

For additional information about the new features of the GDM product, refer to the *Global Data Manager Release Notes for UNIX and Windows* book.

NetBackup Advanced Reporter (NBAR)

NetBackup Advanced Reporter 5.0 is a client/server application where the client component is a web GUI that runs in any supported web browser. The following new NBAR features and enhancements are available with the NetBackup 5.0 product release.



Clustering

NBAR supports NetBackup Enterprise Server systems in a clustered environment. NBAR does not cause failover. If NetBackup fails over, NBAR will fail over with NetBackup. If there is a problem with NBAR, however, a failover will not be triggered in NetBackup. NBAR does not support upgrading from a standalone NBAR configuration to a clustered configuration.

For information about which platforms and cluster solutions are supported, see the compatibility matrices on the VERITAS support web site (<http://support.veritas.com>).

Additional Job Types

NBAR reports on more job types than previous versions of NBAR. Prior to this release, NetBackup Advanced Reporter collected information on many job types, but did not report on them.

Other Enhancements

- ◆ In previous versions of NBAR, the `KNOWN_MASTER` and `MASTER_OF_MASTERS` entries were shared with GDM. In version 5.0, GDM tracks this information separately.
- ◆ It is no longer necessary to use the `cron` or `at` utility to schedule a time for collected information to be sent to the NBAR server. In 5.0, this occurs directly after the collection process (`arloader`) has run.
- ◆ On UNIX systems, NBAR will be automatically started by the NetBackup startup script.
- ◆ Better support for disk-based media; paths up to 255 characters supported. Catalog backups also support paths with up to 255 characters.
- ◆ NULL domain name support
A domain name is no longer required during NBAR installation. However, some UNIX systems require that you enter NULL for the domain name.
- ◆ In previous versions of NBAR, `--config true` disabled e-mail, and `--config false` enabled it. This has been reversed in this release.
- ◆ Improved support for very large files.
- ◆ Additional platform support:
 - ◆ Support for Windows 2003
 - ◆ Support for Netscape 7



New Features for NetBackup Vault

The following items describe the new features associated with NetBackup Vault for the NetBackup 5.0 release.

- ◆ Container Vaulting

Vault now supports vaulting media in containers. Vault tracks and reports on media, the containers in which they reside, and the return dates of those media and containers. For more information, see the *NetBackup Vault System Administrator's Guide for UNIX and Windows*.

- ◆ Deferred Eject by Using the NetBackup Administration Console

In Vault, you can use the NetBackup Administration Console to initiate and monitor a deferred or consolidated eject for media that was not ejected during a Vault session. For more information, see the *NetBackup Vault System Administrator's Guide for UNIX and Windows*.

- ◆ ACS Multi-MAP Intelligent Eject

For Automated Cartridge System (ACS) robots, media are ejected to the nearest media access port (MAP) based on the physical orientation of the Library Storage Modules (LSMs). For more information, see the *NetBackup Media Manager System Administrator's Guide*.

- ◆ NetBackup Vault is now supported in a clustered environment. For information about which platforms and cluster solutions are supported, see the compatibility matrices on the VERITAS support web site (<http://support.veritas.com>).

- ◆ New Suspend Option

Vault includes a new suspend option (Suspend this Session's Media) that lets you suspend the media immediately or when it is ejected.

In most circumstances, you should use this new suspend feature rather than the original suspend feature to suspend media that is going off-site.

The original suspend feature (now labelled "Suspend the Next Session's Media") is intended only for suspending original backup media created by a backup policy so that partial images are not written to that media. It uses extra CPU cycles because it queries all of the databases again and applies all of the Choose Backups filters again. Also, this option will not suspend media that is in use, such as media to which NetBackup is writing backup images.

Therefore, unless you intend to suspend media so that partial images are not written to it, you should reconfigure all of your policies so they use the new suspend feature rather than the original suspend feature. The new suspend feature suspends media already in the eject list, so it does not use extra CPU time choosing media to suspend.



Suspending media to be vaulted has several benefits. NetBackup and Vault will not write images to unexpired media that is recalled and injected back into the robot. And, suspending media before it is ejected helps to prevent errors from trying to eject media that is in use.

For more information about the suspend features, see “Avoid Vaulting Partial Images” and “Suspend Vaulted Media” in the “Best Practices” chapter of the *NetBackup Vault System Administrator’s Guide for UNIX and Windows*.

◆ Assigning Multiple Retentions Using One Profile

In Vault 5.0 and later, you can configure one Vault profile to create off-site copies with varying retentions. By using multiple retention mappings, a single Vault profile can do all of your duplication.

To maximize drive utilization, VERITAS recommends that you do your duplication with as few Vault jobs as possible. If you can do all of your duplication with one Vault profile, you can keep your drives spinning from the time of the first image duplication to the last, with no pause.

In Vault releases earlier than 5.0, each profile could assign only a single retention to each copy of all backup images it duplicated. For example, if creating multiple copies concurrently, copy 1 of all images would get one retention, copy 2 of all images would get another retention, and so on. So if the profile was creating the off-site copy, all images in the off-site copy would have the same retention. This would force you to configure one profile for every retention you needed for your off-site copies. Because you had to run multiple Vault jobs back-to-back, you could not keep your drives spinning the whole time Vault was doing duplication.

For more information about multiple retention mappings, see the following in the *NetBackup Vault System Administrator’s Guide for UNIX and Windows*:

- ◆ “Maximize Drive Utilization During Duplication” in the “Best Practices” chapter
 - ◆ “Assigning Multiple Retentions with One Profile” in the “Vaulting and Managing Media” chapter
- ◆ NetBackup Catalog Paths

You can now use the NetBackup catalog paths for the Vault catalog backup step so you do not have to add the catalog pathnames to each Vault profile that does catalog backup. If you use the NetBackup catalog paths, Vault uses the paths specified on the Files tab of the NetBackup Catalog Backup dialog.

To use the NetBackup catalog paths, select **Use Catalog File Locations from NetBackup Catalog Backup Configuration** on the profile **Catalog** tab.

◆ Enhancements to Commands for Vault Features

For more information about each of these command, see the *NetBackup Commands for UNIX* or *NetBackup Commands for Windows* manual.



- ◆ `vlteject`

The `vlteject` command includes a new option, `-preview`, that allows you to preview the media that are eligible for deferred eject.
- ◆ `vltffsitemedia`

The `vltffsitemedia` command includes two new options used for the container vaulting feature:

The `-vltcid` option allows users to change the container ID of a single media (or volume).
- ◆ `vmchange`

The `vmchange -map` option now also specifies the media access ports (MAPs) to use for eject operations for ACS robots.
- ◆ `vmquery`

The `vmquery` command includes a new option, `-W`, to include Vault container information as part of the media off-site parameters and to make the output format parsable.
- ◆ Notification When Eject Begins

A new notify script, `vlt_starteject_notify`, lets you send e-mail notification when the Vault eject process begins. For more information, see “Notifying a Tape Operator When Eject Begins” in the *NetBackup Vault System Administrator’s Guide*.



Supported Platforms and Peripherals

This chapter provides information on the platforms and peripherals that this release of NetBackup supports. The following table identifies the primary functionality of this release and the platforms that support these functions.

Platforms for the NetBackup 5.0 Release

Functionality	Platform Support
Core Product / Servers	Solaris, Windows, HP-UX, AIX, Linux ¹ , and Tru64
Core Product Limited Server Functionality	IRIX
Vault	Solaris, Windows, AIX, HP-UX, Linux ¹ , and Tru64
GDM	Solaris, Windows, AIX, HP-UX, Linux ¹ , and Tru64
NetBackup Advanced Reporter	Windows, Solaris, HP-UX, AIX

1. Core product and server support is on the Linux Red Hat platform.



Server and Client Platform Support

The supported platform information describing the hardware and operating system combinations that this release of NetBackup supports is now located on the VERITAS Support web site. The supported platform tables that you will find provide you with the following types of information:

- ◆ The Server OS Version - Provides the operating system level required to run on a NetBackup master or media server.
- ◆ The Client OS Version - Provides the operating system level required to support a NetBackup client. Predecessors and successors to the supported operating system levels may function without difficulty, as long as the release provides binary compatibility with the supported level.
- ◆ NetBackup support for a platform or OS version requires platform vendor support for that product. The following platform support lists are subject to change as vendors add and drop support for platforms or OS versions.

Note You will also find the most up-to-date information on peripherals, drives, and libraries on the VERITAS Support web site.

To locate the supported platform information on the VERITAS support web site, perform the following procedure.

1. Go to the VERITAS support web page: <http://www.support.veritas.com>.
2. From the Select Product Family list, choose **NetBackup Products**. The Select Product window refreshes showing a list of NetBackup products.
3. Select one of the NetBackup products. The page refreshes and displays a search window with four tabs:
 - ◆ Documents
 - ◆ Downloads
 - ◆ Software Alerts
 - ◆ Compatibility

To use this search tool, click on one of the tabs, choose a product version, platform, document type, and language, and then click the **Go>>**. To locate the NetBackup compatibility lists: select the **Compatibility** tab; select **5.0** for a product version, click **GO>>**.



A list of compatibility documents appear on the page. The titles of these documents are linked to the actual document. Click on a title to open it. The compatibility list document is in PDF format. You must have Adobe Acrobat Reader to view the document.

Platform Life Cycle Issues

NetBackup software supports an ever-changing set of platforms and must be flexible enough to handle platform life cycle issues, issues such as adding and removing a platform from NetBackup's support list.

Adding a Platform

Adding support of a platform to NetBackup introduces a situation where the platform has a future, but no history. In this situation, backward compatibility cannot be guaranteed without exhaustive testing. As a general rule, when a platform is added for a NetBackup release, the platform is supported in that version and subsequent versions (but not previous versions).

Removing a Platform

Removing support of a platform from NetBackup introduces a situation where the platform has a history, but no future. The following rules apply when removing a server platform or a database agent platform.

Removing a Server Platform

When NetBackup announces the removal of a server platform, the platform is still supported for one major release and backward compatible for one more release beyond that.

Removing an Agent Platform

The customer commitment for client platform version support is one version back with every effort made to support all versions. An exception is that the client version cannot be newer than the Master/Media Server version.

You can mix individual agents that are at different versions within a NetBackup domain, however it is possible that during an alternate restore, the restore is sent to an older version. Alternate restores should go to the same or newer versions.



Database agents are to be at the same version level as the client upon which they reside. As with the client agent, support is one version back with every effort made to support all versions. An exception is that the agent version cannot be newer than the Master/Media Server version.

NetBackup 5.0 Supported Platforms

The following table contains a list of platforms, the associated operating systems, and version levels, that NetBackup Enterprise Server and NetBackup Server supports at the time of this product release. It is possible for this information to change after the product is released. VERITAS documents these changes and posts them on the VERITAS support web site, <http://support.veritas.com>.

Platform Support Matrix for NetBackup Enterprise Server and NetBackup Server

Vendor/Platform	Operating System and Version	Server	Client	Notes
HP9000 - PA-RISC	HP-UX 11.0, 11.11 (11.i)	X	X	
HP Itanium	HP-UX 11.23		X	10
HP Tru64/Alpha	Open VMS Alpha 6.1 — 7.3-1		X	1,2, 6,7
HP Tru64/VAX	Open VMS VAX 5.5 — 7.3-1		X	1, 2, 6,7
HP Tru64/Alpha	Tru64 5.1, 5.1a, 5.1b	X	X	
IBM	AIX 4.3.3.10	X	X	1
IBM	AIX 5.1 RS/6000, SP, pSeries (32/64 bit)	X	X	
IBM	AIX 5.2 RS/6000, SP, pSeries (32/64 bit)	X	X	8
Intel 32-bit/Novell	Novell 5.1		X	6, 9
Intel 32-bit/Novell	Novell 6.0		X	6, 9
Intel 32-bit/Novell	Novell 6.5		X	6, 9
Intel 32-bit/Windows	Windows NT 4.0, SP6A	X	X	
Intel 32-bit/Windows	Windows 2000, SP4	X	X	
Intel 32-bit/Windows	Windows 2000 SAK	X	X	3, 5



Platform Support Matrix for NetBackup Enterprise Server and NetBackup Server (continued)

Vendor/Platform	Operating System and Version	Server	Client	Notes
Intel 32-bit/Windows	Windows XP, SP1		X	
Intel 32-bit/Windows	Windows 2000 Client - Citrix MetaFrame XPe		X	4
Intel 32-bit/Windows	Windows 2000 Client - Citrix MetaFrame 1.8		X	4
Intel 32-bit/Windows	Windows 2003	X	X	
Intel 32-bit/Windows	Windows Storage Server 2003	X	X	3, 5
Intel 64-bit/Windows	Windows XP SP1		X	
Intel 64-bit/Windows	Windows 2003		X	
Intel 32-bit/FreeBSD	FreeBSD 4.7 and 4.8		X	
Intel 32-bit/Linux	Linux Debian GNU/Linux 3.0		X	
Intel 32-bit/Linux	Linux Red Hat 8.0, 9.0		X	
IBM z800/900 (31-bit mode)	Linux Red Hat zSeries 7.2		X	
Intel 32-bit/Linux	Linux Red Hat AS/ES 2.1	X	X	
Intel 32-bit/Linux	Linux Red Hat WS 2.1		X	
Intel 32-bit/Linux	Linux SuSE 8.1, 8.2		X	
IBM z800/900 (31-bit mode)	Linux SuSE SLES 7		X	
Intel 32-bit/Linux	SuSE SLES 8		X	
Intel 32-bit/UNIX	Solaris 7, 8		X	
Apple Macintosh	MacOS X Server 10.2.2, 10.2.6		X	
SGI	IRIX 6.5.18 — 6.5.20	X	X	3
Sun	Solaris 7, 8, 9	X	X	



1. The NetBackup-Java Administration Console is not supported with this release of NetBackup.
2. Not packaged with NetBackup media. Requires order of separate media.
3. This release only supports media server and not master server.
4. See TechNote 247732.
5. See TechNote 248317.
6. Does not support encryption.
7. The NetBackup OpenVMS client is available as a downloadable patch at site:
ftp://ftp.emea.support.veritas.com/pub/support/Products/NetBackup_OpenVMS
8. See Technote 256755 for AIX 5.2 support of fibre connected drives.
9. The NetWare Media Server Option does not support drive sharing. Master Server not supported.
10. The NetBackup HP-UX PA-RISC client is supported on HP-UX 11.23 with Aries Translator.

Platforms Not Supported As Of This Release

Backward compatibility with NetBackup 5.0 client software is retained for at least one release level. NetBackup 5.0 no longer supports the following operating systems:

Platforms Not Supported as of This Release

Hardware Type	Operating System and Version	Server	Client	Notes
Data General (Intel)	DG-UX R4.20MU07 AviiON		X	
HP3000	MPE/iX C.6.0, C.6.5, and C.7.0		X	
HP Tru64/Alpha	Tru64 4.0F, 4.0G, and 5.0a	X	X	
Intel X86/Novell	Novell 4.2		X	
Intel X86,Windows	Windows 95, 98, and ME		X	
Intel X86/FreeBSD	FreeBSD 4.0, 4.2, 4.3, 4.4, and 4.6		X	
Intel X86/Linux	Linux Debian GNU/Linux 2.2r4		X	
Intel X86/Linux	Linux Red Hat 6.2, 7.0, 7.1, 7.2, and 7.3	X	X	
Intel X86/Linux	Linux Caldera Openlinux 3.1		X	
Intel X86/Linux	SuSE 7.0, 7.1, 7.2, and 7.3		X	



Platforms Not Supported as of This Release (continued)

Hardware Type	Operating System and Version	Server	Client	Notes
Intel X86/Linux	SuSE SLES7		X	
Intel X86/Linux	Linux TurboLinux 7.0		X	
Intel X86/Novell	SCO UnixWare 7.1.2		X	
Intel X86/UNIX	Solaris 6 (X86)		X	
Macintosh (680x0 or PPC)	MacOS 8.5, 8.6, 9.X, and MacOS 1.2		X	
Macintosh (680x0 or PPC)	MacOS X10.0, X10.1		X	
NCR	UNIX SVR4MP-RAS 3.02	X	X	
IBM/Sequent	DYNIX/ptx 4.4.2	X	X	
IBM/Sequent	DYNIX/ptx 4.4.4 — 4.4.8, and 4.4.10	X	X	
IBM/Sequent	DYNIX/ptx 4.5 — 4.5.2, and 4.5.3	X	X	
SGI	IRIX 6.5.10 — 6.5-17	X	X	
Sun	Solaris 6	X	X	

Note All operating system versions for these platforms are not supported with NetBackup 5.0.

Platforms Not Supported As Of the Next Major Release

The next major release of NetBackup no longer contains software to upgrade some operating system levels to include new product features and capabilities. Backward compatibility with NetBackup 5.0 client software is retained for at least one release level.

Platforms Not Supported as of the Next Major Release

Hardware Type	Operating System and Version	Server	Client	Notes
HP Tru64/Alpha	Tru64 5.1 and 5.1a	X	X	
IBM	AIX 4.3.3.10	X	X	



Platforms Not Supported as of the Next Major Release (continued)

Hardware Type	Operating System and Version	Server	Client	Notes
Intel 32-bit/Novell	Novell 5.1		X	
Intel 32-bit/Novell	Novell 6.0		X	
Intel 32-bit/Windows	Windows NT 4.0, SP6A	X	X	
Intel 32-bit/Novell	FreeBSD 4.7		X	1
Intel 32-bit/Novell	Linux Debian GNU/Linux 3.0		X	
Intel 32-bit/Novell	Linux Red Hat 8.0		X	
Intel 32-bit/Novell	Linux SuSE 8.1		X	1
Macintosh (680x0 or PPC)	MacOS X Server 10.2.2		X	1
SGI	IRIX 6.5.18-20	X		1
Sun	Solaris 7	X	X	

1. It is our intention to support a newer operating system version from this vendor at our next major release and to no longer support this version.

Database Agent Platform Support

The VERITAS support web site now contains the most current platform support information for NetBackup database agents. You can use the following procedure to locate this information.

To locate the latest Database Agent information on the VERITAS support web site, perform the following procedure.

1. Go to the VERITAS support web page: <http://www.support.veritas.com>.
2. From the Select Product Family list, choose **NetBackup Products**. The Select Product window refreshes showing a list of NetBackup products.
3. Select one of the NetBackup products. The page refreshes and displays a search window with four tabs:
 - ◆ Documents



- ◆ Downloads
 - ◆ Software Alerts
 - ◆ Compatibility
4. Select **5.0** in the **Product Version** drop-down field.
 5. Select a Product Platform.
 6. Click the **Compatibility** tab. The page will refresh showing documents that contain compatibility information.
 7. Click on the title of the document link for NetBackup Database Agent Compatibility List. A document appears that contains a downloadable file that enables you to view the supported database spreadsheet for this release.

Other Database Agent Support Information

The following sections define additional support information for various NetBackup database agents.

1. Script-based BLI backups for Oracle (without RMAN) are available with the NetBackup for Oracle on UNIX agent for Oracle RDBMS 7.1 and later.

Database Agent Platforms Not Supported As Of This Release

The following table contains a list of the platforms that are not supported for this release of NetBackup.

Platform	Operating System and Version
Data General	DG/UX R 4.x
Intel 32-bit/Linux	Red Hat 6.2, 7.0, and 7.1
IBM z800/900 (31-bit mode)	SuSE SLES 7
Intel 32-bit/Linux	SuSE 7.0
Sequent	DYNIX/ptx



Platform	Operating System and Version
HP Tru64/Alpha	Tru64 4.x, 5.0 and 5.0a

DB2 Agent

NetBackup for DB2 does not support IBM DB2 Datalinks Manager.

SQL Server Agent

NetBackup for SQL Server agent no longer supports the backup of SQL Server 6.5 database objects.

Sybase Agent

NetBackup for Sybase no longer supports the backup of SybaseIQ databases.

NetBackup Add-on Product Support

The following subsections identify NetBackup 5.0 product add-ons. Each section describes the various robots and operating system platforms that each add-on supports. The following add-ons are available with the NetBackup 5.0 release.

- ◆ NetBackup SAN Shared Storage Option (SSO)
- ◆ NetBackup Advanced Client
- ◆ NDMP (Windows Server and UNIX platforms)
- ◆ Database Agents (Refer to “Database Agent Platform Support” on page 28.)
- ◆ NetBackup Advanced Reporter (NBAR)
- ◆ NetBackup Vault

NetBackup Shared Storage Option (SSO)

Supported Server Platforms:

- ◆ Tru64 UNIX
- ◆ Windows
- ◆ IRIX
- ◆ HP-UX
- ◆ Red Hat Linux
- ◆ SPARC/Solaris



- ◆ AIX

Supported Robot Types

There is a distinction between standard Media Manager supported robot types and supported robot types for SSO.

SSO is supported *only* with the following Media Manager robot types:

- ◆ ACS, TLH, and TLM (these are API robot types)
- ◆ TL8 and TLD

Media Manager robot types LMF, ODL, RSM, TL4, TS8, TSD, and TSH are *not* supported for SSO.

SSO is also supported for standalone (non-robotic) drives.

Advanced Client

NetBackup Advanced Client provides data protection services for snapshot data, and supports offhost backup over Fibre Channel networks (in addition to conventional backups to locally attached devices). The following subsections:

- ◆ Explain how to obtain information about Advanced Client on the VERITAS support web site.
- ◆ Contain tables that list the platforms, operating systems, and snapshot methods that NetBackup Advanced Client supports for the following backup methods:
 - ◆ Local backups using a snapshot
 - ◆ offhost backup (via an alternate backup client, media server copy, or third party copy) using a snapshot
 - ◆ Instant recovery using persistent snapshots
 - ◆ Disk Array Snapshot methods
 - ◆ File system performance backup using Flashbackup

These backup methods are described in the *NetBackup Advanced Client System Administrator's Guide*.



Obtaining Advanced Client Information on the Web

The VERITAS support web site includes a compilation of notes on Advanced Client. These notes include up-to-date lists of supported operating systems and peripherals, and assistance for some of the configuration procedures found in the *NetBackup Advanced Client System Administrator's Guide*. To locate this information, do the following:

1. Go to `www.support.veritas.com`.
2. In the **Knowledge Base Search** field, enter the following:
AdvancedClient_ConfigNotes
3. Click **Search**.

The full title of the document is:

VERITAS NetBackup Advanced Client Configuration Notes

Local Backup with a Snapshot

For performing a local backup using a snapshot, Advanced Client supports the following platforms. Note that NetBackup client software must be installed on clients running Solaris 7, 8, or 9, HP-UX 11.11 (11i), Windows 2000, or Windows 2003. This table identifies which version of VxFS or VxVM is required for a particular operating system that has either VxFS or VxVm running.

VERITAS File System or VERITAS Volume Manager version levels for a Snapshot Backup

	OS and Version	VxFS Version	VxVM Version
If VxFS is present on:	Solaris 7 and 8	3.4 and above	
	Solaris 9 (client)	3.5 and above	
	HP-UX 11.11 (11i)	3.3 and above	
If VxFS_Checkpoint snapshot is used on:	HP-UX 11i (client)	3.5 and above	
If VxVM is present on:	Solaris 7 and 8		3.2 and above
	Solaris 9 (client)		3.5 and above
	HP-UX 11.11 (11i)		3.2 and above
	Windows 2000		3.3.1 SP1 HF3



Platforms Supported for Local Backup Using a Snapshot

Hardware Type	OS	Master Server	Media Server	Client
HP Alpha	Tru64 UNIX		X	
HP PA-RISC	HP-UX	X	X	X
IBM	AIX	X	X	
Intel x86	Linux	X	X	
Intel x86	Windows NT	X	X	
Intel x86	Windows 2000	X	X	X
Intel x86	Windows 2003	X	X	X
SGI	IRIX		X	
SPARC	Solaris	X	X	X

Note The Advanced Client must be installed and licensed.

Note The offhost backup using Alternate Backup Client must match the primary client and is only supported on Solaris 7, 8, or 9, HP-UX 11i, or Windows 2000.

Instant Recovery

Advanced Client supports the following platforms when creating an Instant Recovery (persistent snapshot) backup.

Note NetBackup client software must be installed on clients running Solaris 7, 8, 9, HP-UX 11i, or Windows 2000.

VxFS or VxVM version levels for Instant Recovery

	OS and Version	VxFS Version	VxVM Version
If VxFS is present on:	Solaris 7 and 8	3.4 and above	
	Solaris 9 (client)	3.5 and above	



VxFS or VxVM version levels for Instant Recovery

	OS and Version	VxFS Version	VxVM Version
	HP-UX 11.11 (11i)	3.5 and above	
If VxFS_Checkpoint snapshot is used on:	HP-UX 11i (client)	3.5 and above	
If VxVM is present on:	Solaris 7 and 8		3.2 and above
	Solaris 9 (client)		3.5 and above
	HP-UX 11.11 (11i)		3.2 and above
	Windows 2000		3.3.1 SP1 HF3

Platforms Supported for Instant Recovery

Hardware Type	OS	Master Server	Media Server	Client
HP PA-RISC	HP-UX	X		X
IBM	AIX	X		
SPARC	Solaris	X		X
Intel	Windows 2000	X		X
Intel	Windows 2003	X		

Offhost Backup Using a Data Mover

For performing an offhost backup using a data mover, Advanced Client supports the following platforms.



Note NetBackup client software must be installed on clients running Solaris 7, 8, or 9, or HP-UX 11i .

VxFS or VxVM version levels for an offhost Backup Using a Data Mover

	OS and Version	VxFS Version	VxVM Version
If VxFS is present on:	Solaris 7 and 8	3.4 and above	
	Solaris 9 (client)	3.5 and above	
	HP-UX 11.11 (11i)	3.3 and above	
If VxFS_Checkpoint snapshot is used on:	HP-UX 11i (client)	3.5 and above	
If VxVM is present on:	Solaris 7 and 8		3.2 and above
	Solaris 9 (client)		3.5 and above
	HP-UX 11.11 (11i)		3.2 and above

Platforms Supported for offhost Backup Using a Data Mover

Hardware Type	OS	Master Server	Media Server	Client
HP PA-RISC	HP-UX	X	X	X
IBM	AIX	X	X ¹	
SPARC	Solaris	X	X	X

1. TPC only - MSC is not supported.



Advanced Client Supported Peripherals

NetBackup Advanced Client supports the following peripherals.

Component	Device/Model
Host-bus adapter (HBA) Vendors	<p>For Solaris servers:</p> <ul style="list-style-type: none"> ◆ Emulex ◆ JNI ◆ QLogic <p>For AIX servers:</p> <ul style="list-style-type: none"> ◆ Cambex ◆ IBM ◆ JNI <p>For HP servers:</p> <ul style="list-style-type: none"> ◆ HP <p>Note Contact your hardware sales representative for the latest firmware level for these devices and for compatibility with SAN equipment.</p>
Robot and Tape drive	Any Robot and Tape drive that NetBackup supports on the appropriate OS platform
Disk and Disk Arrays	Any disk or disk array that supports serialization or SCSI Inquiry Page Code 83 is supported. This includes disk arrays such as SUN T3, EMC Symmetrix, Hitachi 77/92/99xx, and HP XP 256/48/512.
Switch Vendors	<ul style="list-style-type: none"> ◆ Brocade ◆ Inrange ◆ McData ◆ QLogic



Component	Device/Model (continued)
Third-party copy device Vendors	<ul style="list-style-type: none"> ◆ ATTO ◆ Chaparral ◆ Crossroads ◆ Hitachi/HP/Sun ◆ Pathlight/ADIC ◆ Spectra Logic <p>Note These devices are supported as stand-alone devices or as part of another system such as a tape library.</p> <p>Note Contact your hardware sales representative for the latest firmware level for these devices.</p>

Disk Array Snapshots

The following table lists the disk array snapshots supported when client data is configured over Volume Manager (VxVM) volumes.

Disk Array Snapshots Supported for VxVM

With VxVM on this platform:	Timefinder on EMC Symmetrix	Shadow Image on Hitachi 9200/9900/9900V	Shadow Image on Hitachi 7700	Business Copy on HP XP256	Business Copy on HP XP48/512
Solaris 7 and above	Yes	Yes	Yes	Yes	Yes
HP-UX 11i	Yes	Not officially supported by VxVM.	Not officially supported by VxVM.	Yes	Yes

If client data is not configured over the Volume Manager, all above disk array snapshots are supported (no restrictions)



NetBackup Advanced Client - FlashBackup

The following table lists the platforms and operating systems that NetBackup Advanced Client FlashBackup supports.

Supported Platforms for Advanced Client - FlashBackup

Hardware Type	OS	Master Server	Media Server	Client
HP Alpha	Tru64 UNIX		X	
HP PA-RISC	HP-UX	X	X	X
IBM	AIX	X	X	
Intel x86	Linux	X	X	
Intel x86	Windows 2000 ¹	X	X	X
Intel x86	Windows 2003 ¹	X	X	X
SGI	IRIX		X	
SPARC	Solaris	X	X	X

1. FlashBackup on Windows clients is only supported with Windows master and Windows media servers at the time of the NetBackup 5.0 GA release. Support for Windows clients with UNIX servers will be released soon after the GA release date.



NetBackup Advanced Reporter (NBAR) Supported Platforms

There are two parts to platform support: the host operating systems and versions of NetBackup that NBAR runs on, and the supported browsers used to view the web console.

Platform Requirements

- ◆ NBAR 5.0 supports NetBackup 5.0.
 - ◆ NBAR 5.0 supports VERITAS NetBackup Enterprise Server and VERITAS NetBackup Server.
 - ◆ NBAR 5.0 supports the following clustering applications: VERITAS Cluster Server (VCS) for Solaris 7, 8, and 9, Sun Cluster on Solaris, VERITAS Cluster Server for HP-UX and AIX, and Microsoft Cluster Server (MSCS) for Microsoft Windows NT, Windows 2000 and Windows 2003 on NetBackup Enterprise Server configurations.

Supported Server Platforms

NetBackup Advanced Reporter 5.0 supports the following operating systems:

Operating System	Supported Versions	Notes
AIX	AIX 5.1 (Power PC -- 32 and 64 bit) AIX 5.2 (Power PC -- 32 and 64 bit)	
HP-UX	HP-UX 11.0 HP-UX 11i	Note We strongly recommend you install HP-UX patches PHKL_22840 and PHNE_22397. These patches have dependencies on other patches. Refer to the HP support site at www.hp.com for more information.
Solaris	Solaris 7 Solaris 8 Solaris 9	Note These operating systems are supported on Sun/SPARC systems only.



Operating System	Supported Versions	Notes
Windows	Windows NT 4.0 Server with Service Pack 6A or later Windows 2000 Server with Service Pack 3 or later Windows 2003	

Supported Client Platforms

NetBackup Advanced Reporter 5.0 supports the following operating systems and browsers marked with an X. NBAR supports only English language browsers.

NBAR Supported Client Platforms and Browsers

Operating System	Netscape 4.7	Netscape 6.1x	Netscape 7	Microsoft Internet Explorer 5.5	Microsoft Internet Explorer 6
AIX 5.1 (Power PC -- 32 and 64 bit)	X	X			
AIX 5.2 (Power PC -- 32 and 64 bit)	X	X			
Solaris 7, 8, 9 on SPARC stations	X		X		
HP-UX 11.0, 11i	X	X	X		
AIX 5.1 (Power PC -- 32 and 64 bit)	X	X			
Windows NT 4.0 Workstation	X	X	X	X	X
Windows NT 4.0 Server	X	X	X	X	X
Windows 2000 Professional	X	X	X	X	X
Windows 2000 Server	X	X	X	X	X
Windows 2000 Advanced Server		X	X	X	X
Windows 2000 Data Center		X	X	X	X
Windows XP with SP2 or later		X	X	X	X
Windows 2003		X	X	X	X



NetBackup Vault

NetBackup Vault supports the same operating systems and versions as NetBackup with following exceptions:

- ◆ Inline Tape Copy does not support the following destination storage types:
 - ◆ NDMP
 - ◆ Third-party copies
 - ◆ Optical devices
- ◆ Inline Tape Copy does not support storage units that use a QIC (quarter-inch cartridge) drive type.
- ◆ A single Inline Tape Copy operation cannot use destination storage devices on multiple media servers.

Support for Files Greater than Two Gigabytes

The current version of NetBackup supports file sizes greater than two gigabytes on the following client systems.

- ◆ HP Tru64
- ◆ FreeBSD
- ◆ HP-UX
- ◆ IBM AIX
- ◆ Linux
- ◆ Mac OS X Server (as NetBackup client)
- ◆ Novell NetWare
- ◆ SGI IRIX
- ◆ Sun Solaris
- ◆ Windows NT, 2000, XP (32 and 64 bit), LE (64 bit), 2003

Buffer Size for Disk Backups

In this release of NetBackup, the default buffer size for disk backups has been increased to 256K. In addition, if you are performing multiple copies of disk and tape, the default buffer size should equal the tape buffer size.



Binary Sizes

The following table shows the approximate binary size of the NetBackup and Media Manager software for each platform and operating system supported by NetBackup.

Binary Sizes

Hardware Type	Operating System	NetBackup and Media Server	NetBackup Client
HP9000 PA-RISC	HP-UX 11.0, HP-UX 11.11	405 MB	30 MB (a)
HP Tru64/Alpha	Open VMS Alpha 6.1 - 7.3-1	--	15 MB (a)
HP Tru64/VAX	Open VMS VAX 5.5 - 7.3-1	--	15 MB (a)
HP Tru64/Alpha	Tru64 5.1, 5.1a, 5.1b	342 MB (a)	15 MB (a)
IBM	AIX 4.3.3.10	390 MB	44 MB
IBM	AIX 5.1 RS/6000, SP, pSeries (32/64 bit)	390 MB (a)	44 MB (a)
IBM	AIX 5.2 RS/6000, SP, pSeries (32/64 bit)	390 MB (a)	44 MB (a)
Intel 32-bit/Windows	Windows NT 4.0, SP6	220 MB	65 MB
Intel 32-bit/Windows	Windows 2000, SP4	220 MB	65 MB
Intel 32-bit/Windows	Windows XP, SP1	--	65 MB
Intel 32-bit/Windows	Windows 2000 Client - Citrix MetaFrame XPe	--	65 MB
Intel 32-bit/Windows	Windows 2000 Client - Citrix MetaFrame 1.8	--	65 MB
Intel 32-bit/Windows	Windows 2003	220 MB	65 MB
Intel 32-bit/Windows	Windows Storage Server 2003	220 MB	65 MB
Intel 64-bit/Windows	Windows XP SP1	--	65 MB
Intel 64-bit/Windows	Windows 2003	--	65 MB
Intel 32-bit/Novell	Novell 5.1, SP4 and SP5	--	3.12 MB (b)
Intel 32-bit/Novell	Novell 6.0, SP1 and SP2	--	3.12 MB (b)



Binary Sizes (continued)

Hardware Type	Operating System	NetBackup and Media Server	NetBackup Client
Intel 32-bit/Novell	Novell 6.5	21 MB	3.12 MB (b)
Intel 32-bit/Linux	Linux Debian GNU/Linux 3.0	--	17 MB
Intel 32-bit/Linux	Linux Red Hat 8.0, 9.0	--	17 MB
IBM z800/900 (31-bit mode)	Linux Red Hat zSeries 7.2	--	17 MB
Intel 32-bit/Linux	Linux Red Hat AS/ES 2.1	290 MB (a)	17 MB (a)
Intel 32-bit/Linux	Linux Red Hat WS 2.1	--	17 MB
Intel 32-bit/Linux	Linux SuSE 8.1, 8.2	--	17 MB
IBM z800/900 (31-bit mode)	Linux SuSE zSeries SLES 7	--	17 MB
Intel 32-bit/Linux	SuSE 8.0 SLES	--	17 MB
Intel 32-bit/UNIX	Solaris 7, 8	--	46 MB (a)
Apple Macintosh	MacOS X Server 10.2.2, 10.2.6	--	7 MB
SGI	IRIX 6.5.18 - 6.5.20	178 MB	20 MB
Sun	Solaris 7, 8, 9	295 MB	46 MB (a)

a. Add 75 MB if the NetBackup-Java Administration Console is installed on the client.

b. Add 1 MB of space for the Netware GUI on a Windows system.

Platforms Supporting the NetBackup Administration Consoles for UNIX

VERITAS supports only the window managers in the following table when using NetBackup Java. There are a number of user interface anomalies using the various window managers available on UNIX platforms. Many of these problems are documented



as Java bugs. Most of these problems are because of unusual or non-standard window manager configurations and occur randomly and infrequently. In the most common cases of misplaced or shifted components within a dialog, simply resizing the dialog repaints the display and causes the interface to display correctly. Although CDE, MWM and OLWM have the most reported bugs, this is largely due to their popularity; do not use fvwm or twm instead.

VERITAS has seen the best overall performance with the CDE window manager and recommends this window manager on the non-Linux UNIX platforms. For additional information on how to improve performance of your NetBackup-Java GUI environment, refer to the *NetBackup System Administrator's Guide*.

The following table identifies the platforms that support the NetBackup Administration Console for UNIX and the NetBackup-Java Client GUI in this release.

Platforms that Support NetBackup-Java Administration Console and NetBackup-Java Administration Client GUI

Platform	NetBackup-Java Administrative Console	NetBackup-Java Client GUI	Supported Window Managers (UNIX)
Windows NT 4.0 (SP 6A)	Yes	Yes	NA
Windows 2000 (SP 2), XP, 2003	Yes	Yes	NA
Solaris 7, 8, 9	Yes	Yes	CDE, Motif
Solaris 7, 8 (x86)	Yes	Yes	CDE, Motif
HP-UX 11.00, 11i (11.11)	Yes	Yes	CDE, Motif
Red Hat Linux 8.0, 9.0	Yes	Yes	GNOME/Enlightenment KDE/KWM
Red Hat Linux zSeries 7.2	Yes	Yes	GNOME/Enlightenment KDE/KWM
Red Hat Linux AS/ES, WS 2.1	Yes	Yes	GNOME/Enlightenment KDE/KWM
AIX 5.1, 5.2	Yes	Yes	CDE
HP Tru64 5.1, 5.1a, 5.1b	Yes	Yes	CDE

Additional NetBackup-Java Administration Console - Supported Platform Information

NetBackup-Java Administration Console for AIX only supported on CHRP platform



The Java runtime environment (JRE) for the AIX platform is only supported on IBM's Common Hardware Reference Platform (CHRP) machines. On an AIX host, the NetBackup installation will check to ensure the host is a CHRP machine. If not, the NetBackup-Java Administration Console code will not be installed.

Platforms Supporting xbp

The following clients have the xbp interface capability.

Platforms that Support xbp

Client Type	Operating System
HP-UX Tru64/ Alpha	Open VMS (5.5 - 7.2.1)
HP-UX PA-RISC	HP 11.00
Intel x86	Linux
SGI	IRIX(6.5)
Sun	Solaris 7, 8, 9
X86/UNIX	Solaris 7, 8

- ◆ Support of the Motif client interface

At the next major release after NetBackup 5.0, NetBackup will no longer include the Motif version of the client interface (xbp).

- ◆ The command line interface (bp) will continue to be supported. It is available on all UNIX client platforms.
- ◆ The Java client GUI interface (jbpSA) will continue to be supported. Refer to the "Platforms Supporting the NetBackup Administration Consoles for UNIX" on page 43 for a list of supported platforms.

Supported Peripherals

This section contains a table that identifies the supported robot types at the release of NetBackup 5.0. As with many products, soon after a given release, changes can occur and new robots can become supported; therefore, users can find the most current information



on the supported peripherals and robot types that are applicable to the NetBackup 5.0 product on the VERITAS support web page. To locate the supported platform information on the VERITAS support web site, perform the following procedure.

1. Go to the VERITAS support web page: <http://www.support.veritas.com>.
2. From the Select Product Family list, choose **NetBackup Products**. The Select Product window refreshes showing a list of NetBackup products.
3. Select one of the NetBackup products. The page refreshes and displays a search window with four tabs:
 - ◆ Documents
 - ◆ Downloads
 - ◆ Software Alerts
 - ◆ Compatibility
4. Choose **5.0** in the **Product Version** drop-down field.
5. Select a Product Platform.
6. Click the **Compatibility** tab. The page will refresh showing documents that contain compatibility information.
7. Click on the following document link,
Device and Library Compatibility Information - All Versions and Platforms.
8. A new web page will appear that contains a list of product options to choose from. Select a product from the list that relates to NetBackup 5.0. A list of vendors appears.
9. At the bottom of the list of vendors there are links that explain what drives, libraries, and robot types are currently supported. The links are shown in the following list. Click on one of these links to view the type of information you would like to see.
 - ◆ View All Supported Drives
 - ◆ View All Supported Libraries
 - ◆ View All Supported Robot Types.

Robot Type and TapeAlert Support By Platform

The following tables show the robot types that NetBackup and Media Manager support on each platform. The robot type classifies the devices and peripherals either by their physical characteristics, by their media type, or by the communication methods used by their underlying robotics. (See the *NetBackup Media Manager System Administrator's Guide* for more information about the robot types.)

ACS ... Automated Cartridge System	TLD ... Tape Library DLT
LMF ... Library Management Facility	TLH ... Tape Library Half-inch
ODL ... Optical Disk Library	TLM ... Tape Library Multimedia
RSM ... Removable Storage Manager	TS8 ... Tape Stacker 8MM
TL4 ... Tape Library 4MM	TSD ... Tape Stacker DLT
TL8 ... Tape Library 8MM	TSH ... Tape Stacker Half-inch

Table 1. NetBackup Enterprise Server- Robot Support by Platform

Platforms	Robot Types												Tape-Alert ¹
	ACS	LMF	ODL	RSM	TL4	TL8	TLD	TLH	TLM	TS8	TSD	TSH	
HP-UX Tru64 UNIX	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes
HP 9000 HP-UX	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Linux Red Hat	Yes	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	Yes
Microsoft Windows	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
IBM RS6000 AIX	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
SGI IRIX	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sun Solaris	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1. TapeAlert support is a tape drive feature. This column only indicates whether the host platform will poll the drive for this information.

The following lists define current notes that apply specifically to each Robot identified in the previous table.

- ◆ ACS
 - ◆ Contact your drive and operating system vendors to ensure that the standard tape driver support is available.



- ◆ NetBackup Vault 4.5 and higher supported.
- ◆ ODL
 - ◆ Corsair and FX drives are supported, but not mixed in same library.
 - ◆ HP9000 requires SCSI pass-through driver from HP.
- ◆ TL4
 - ◆ HP9000 requires SCSI pass-through driver from HP.
- ◆ TL8
 - ◆ HP9000 requires SCSI pass-through driver from HP.
 - ◆ NetBackup Vault 4.5 and higher supported.
- ◆ TLD
 - ◆ HP9000 requires SCSI pass-through driver from HP.
 - ◆ NetBackup Vault 4.5 and higher supported.
- ◆ TLH
 - ◆ Tru64 offers no robotic control (tlhd supported).
 - ◆ RS6000 - IBM ATL tested on AIX (5.2.2.0).
 - ◆ HP-UX, Windows, Solaris - IBM Impcd package tested on Solaris (5.2.2.0).
 - ◆ SGI - IBM Impcd package tested on Solaris (5.0.7.0)
 - ◆ NetBackup Vault 4.5 and higher supported.
- ◆ TLM
 - ◆ DAS media types supported: 3480, 3590, DECDLT, 8mm, 4mm, LTO, and DTF. On HP9000, OD_THICK also supported. Any DAS media types not listed are not supported.
 - ◆ NetBackup Vault 4.5 and higher supported.
- ◆ TS8
 - ◆ HP9000 requires SCSI pass-through driver from HP.

Table 2. NetBackup Server - Robot Support by Platform

Robot Type ¹	Hewlett Packard HP-UX	Linux Red Hat	Sun Solaris	Microsoft Windows	HP Tru64	IBM AIX
RSM	No	No	No	Yes ⁴	No	No
TL4 ²	Yes ³	Yes	Yes	Yes	Yes	Yes
TL8	Yes ³	Yes	Yes	Yes	Yes	Yes
TLD	Yes ³	Yes ⁵	Yes	Yes	Yes	Yes
TS8	Yes ³	Yes	Yes	Yes	Yes	Yes
TSD	Yes ³	Yes	Yes	Yes	Yes	Yes
TSH	No	No	Yes	No	No	Yes
ODL	Yes	Yes	Yes	No	No	Yes

1. Use the acronym in this column when you define the robot to NetBackup and Media Manager.

2. Supported only with Hewlett-Packard and Sony.

3. Support for this robot requires SCSI pass-through driver from HP.

4. Supported only on Windows 2000.

General Notes for Supported Peripherals

The TSD and TS8 robotic daemons may be decommissioned in the next major release of NetBackup. Any devices configured as these two types will then be supported by the TLD and TL8 daemons. The upgrade install will automatically change existing device configurations. Any new device configuration done via the Device Discovery Wizard will not use TSD or TS8.



NetBackup Backward Compatibility

Starting with NetBackup DataCenter 4.5, mixed patch-level versions of 4.5 were supported. These same rules have been carried forward to NetBackup 5.0. This type of support enables NetBackup servers to run a mixture of NetBackup major releases and patches in the same environment. In past versions, such as NetBackup 3.4, all master and media servers were expected to be at the same patch level. However, because of large backup environments and rigid customer change control procedures, there was great demand for incrementally upgrading production backup environments. For example, with this release of NetBackup a customer can have the following in their environment and have all managed by one master server:

- ◆ A master server running NetBackup 4.5 FP3
- ◆ Another server running NetBackup 4.5GA
- ◆ Another server running NetBackup 4.5 MPx
- ◆ Another server running NetBackup 4.5 FPx

The basic rules for a mixed-server environment are as follows:

- ◆ In a mixed environment such as this, and to avoid version conflict and resulting problems, it is imperative to have the master server at the highest revision in your configuration.
- ◆ A master server can inter-operate with a media server that is running a level of NetBackup that is one major release lower. In addition, installing NetBackup 5.0 on a master server, then allows a media server to be upgraded to NetBackup 5.0.

For example, a master server running a 5.0 level of NetBackup can inter-operate with a media server running any 4.5 level of NetBackup.

- ◆ No media server may have a numerically higher version than the master server. The media servers must be running equal or lower levels of NetBackup.

For example, a master server running NetBackup 4.5 FP6 in an environment can inter-operate with media servers running 4.5, 4.5 MP2, and 4.5 MP5.

- ◆ VERITAS has typically supported NetBackup clients running at different patch/pack levels or at a previous release (for instance NetBackup 4.5 client can be supported using a NetBackup 5.0 server).
- ◆ The volume database host, the global device database host, the vmd/DA host, and the master server must all be running the same level of NetBackup. The volume database host and the global device database host must be at the same or greater level of NetBackup as the media servers that they service.

NetBackup Product Dependencies

This chapter provides information on the product dependencies of NetBackup 5.0. It is important that users verify that their operating system is up-to-date with all of the latest patches and upgrades before they install NetBackup. This section is a guide used to inform users of known operating systems that require a patch or upgrade. For your convenience and whenever possible, a link is provided for each patch that will direct users to the proper web site where they can find the patches and upgrades that they need to install.

The following table contains a list of platforms, the associated operating systems, and version levels, that NetBackup supports. If your operating system version is older than those shown in this chapter, then you should refer to previous versions of the NetBackup Release Notes documents to determine if a known dependency exists for your OS version. (Refer to the VERITAS Support web site (<http://www.support.veritas.com>) to download a previous revision of the NetBackup Release Notes.)

Operating System Patches and Updates

The following table provides the known operating system (OS) patches and updates

OS Patches and Updates

Hardware Type	OS – Version	Patch	Description
SPARC/ UltraSPARC	Solaris – 7	107473-07 (or later)	If using Advanced Client with VxVM 3.2 Release, then users need to install this patch. Users should install this patch before they install VxVM.
		110722-01 (or later)	If using Advanced Client with VxVM 3.2 Release, then users need to install this patch. If users have Sun’s Alternate Pathing (AP), they must install Solaris patch 110722-01 for VxVM 3.2 to co-exist with the AP driver version 2.3.1. However, users must also upgrade AP. Please see DMP Coexistence with Alternate Pathing before installing VxVM.



OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
		106541-16 (or later)	If using Advanced Client with VxVM 3.2 Release, then users need to install this patch. If users are running Solaris 7, they must install patch ID 106541.
		110881-01	The 4354397 <code>semop ()</code> hangs because of a signal that is received. A conflict exists between GUID code that SMUX and SIG FCL uses. SMUX GUID code is based on SIG FCL so both were creating semaphore with the same ID.
		JRE 1.4 ² (required OS patches)	These fixes to the Operating System are required to ensure proper operation of the VERITAS NetBackup-Java Administration Console.
SPARC/ UltraSPARC	Solaris – 8	109041-04 ¹	This patch resolves a problem where NetBackup Java Administration Console hangs before entering the Scheduling Service.
		SUNWsan package (see your vendor to obtain) 109529-06 (or later) 111413-02 (or later)	If using Advanced Client with VxVM 3.2 Release, then users need to install this patch. Users must install the SUNWsan package and patch 109529 before installing patch 111413. Users can then install VxVM. The order of these steps is important.
		110722-01 (or later)	If using Advanced Client with VxVM 3.2 Release, then users need to install this patch. If users have Sun’s Alternate Pathing (AP), they must install Solaris patch 110722-01 for VxVM 3.2 to co-exist with the AP driver version 2.3.1. However, users must also upgrade AP. Please see DMP Coexistence with Alternate Pathing before installing VxVM.
		108528-08	The 4354397 <code>semop ()</code> hangs because of a signal that is received. A conflict exists between GUID code that SMUX and SIG FCL uses. SMUX GUID code is based on SIG FCL so both were creating semaphore with the same ID.



OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
		110383-01	The 4354397 <code>semop()</code> hangs because of a signal that is received. A conflict exists between GUID code that SMUX and SIG FCL uses. SMUX GUID code is based on SIG FCL so both were creating semaphore with the same ID.
		JRE 1.4 ² (required OS patches)	These fixes to the Operating System are required to ensure proper operation of the VERITAS NetBackup-Java Administration Console.
Intel x86	Solaris – 7	106328-08 ¹	Sun problem ID number 4199857. Missing symbols from libCrun.so.1.
		110882-01	The 4354397 <code>semop()</code> hangs because of a signal that is received. A conflict exists between GUID code that SMUX and SIG FCL uses. SMUX GUID code is based on SIG FCL so both were creating semaphore with the same ID.
		JRE 1.4 ² (required OS patches)	These fixes to the Operating System are required to ensure proper operation of the VERITAS NetBackup-Java Administration Console.
Intel x86	Solaris – 8	109042-04 ¹	This patch resolves a problem where NetBackup-Java Administration Console hangs before entering the Scheduling Service.
		108529-08	The 4354397 <code>semop()</code> hangs because of a signal that is received. A conflict exists between GUID code that SMUX and SIG FCL uses. SMUX GUID code is based on SIG FCL so both were creating semaphore with the same ID.
		110397-01	The 4354397 <code>semop()</code> hangs because of a signal that is received. A conflict exists between GUID code that SMUX and SIG FCL uses. SMUX GUID code is based on SIG FCL so both were creating semaphore with the same ID.
		JRE 1.4 ² (required OS patches)	These fixes to the Operating System are required to ensure proper operation of the VERITAS NetBackup-Java Administration Console.



OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
HP	HP-UX 11.00	PH_KL22840 (or later)	Required to run NetBackup Advanced Reporter on HP-UX 11.00
	HP-UX 11.00	PH_NE_22397 (or later)	On HP/UX 11.0, if a connection is initiated re-using the port number used by a previously closed connection that is in TIME_WAIT, the new connection times out. The above fix has been added to eliminate the conditions that lead to the connection time-out problem experienced via the NetBackup-Java Administration Console. In addition, this patch is also required to run NetBackup Advanced Reporter on HP-UX 11.00.
	HP-UX 11.00	PHSS_26559 (or later)	s700_800 11.00 ld(1) and linker tools cumulative patch. Updates /usr/lib/dld.sl to a version capable of loading the visd shared libraries at runtime. This is needed for the GDM information server.
	HP-UX 11.00/11.10	PHSS_24627 ³ (replaced by 24627)	These patches are necessary to enable any C++ runtime code to work properly.
	HP-UX 11.00/11.10	PHSS_24627 ³ (replaced by 24627)	These patches are necessary to enable any C++ runtime code to work properly. Check for existence by doing a <code>swlist -l product PHSS_24627</code> .
	HP-UX 11.10	PHKL_25525 ³	This patch will allow HP-UX 11.00 mmap() to use large files from 2GB to 4GB.
	HP-UX 11.11	PHSS_22898 ³ (replaced by 24638)	These patches are necessary to enable any C++ runtime code to work properly.
	HP-UX 11.11	PHKL_25227 ³	Patch which allow HP-UX 11.11 mmap() to use large files from 2GB to 4GB.
	(All versions)	JRE 1.4 ⁴ (required OS patches)	These fixes to the Operating System are required to ensure proper operation of the VERITAS NetBackup-Java Administration Console.



OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
	HP-UX 11.00 with IPR0103 and IPR0106 ⁵	PHSS_24044	Allow <code>POLL_INTERVAL</code> to be set to zero in <code>/var/stm/config/tools/monitor/dm_stape.cfg</code> . This disables the <code>dm_stape</code> monitor within the Event Monitoring System.
	HP-UX 11.11 with IPR0103 and IPR0106 ⁵	PHSS_24045	Allow <code>POLL_INTERVAL</code> to be set to zero in <code>/var/stm/config/tools/monitor/dm_stape.cfg</code> . This disables the <code>dm_stape</code> monitor within the Event Monitoring System.
HP Alpha	Tru64 5.1. 5.1a, 5.1b	Fixed libc.so in Patches 00691.00, 01830.00	<p>Shared libraries that call <code>atexit()</code> or <code>pthread_atfork()</code> to register <code>atexit</code> or <code>prefork</code> handlers do not unregister the handlers if the libraries are unmapped by a call to <code>dlclose</code>.</p> <p>Check for this patch by performing the following: <code>nm /shlib/libc.so grep atdlclose</code></p> <p>If you see no output from the above <code>nm</code> command, then you do not have the required patch.</p> <p>For information on HP Alpha patches, refer to: http://ftp.support.compaq.com/patches/.new/unix.shtml</p>
Intel x86	Red Hat Linux 7	glibc (RHBA-2000:079-04)	The NetBackup-Java Administration Console segfaults on Red Hat Linux 7 when it is started. This is a known Red Hat Linux 7 bug. You must install at least the <code>glibc</code> (RHBA-2000:079-04) bug fix from Red Hat (http://www.redhat.com).
		ncurses.5.2-12	<p>If you do not have this installed, you will see the following error when trying to start the NetBackup menu interface on the client:</p> <pre>error while loading shared libraries: libncurses.so.5: cannot open shared object file: No such file or directory.</pre> <p>The error appears to be more serious on a server, because license keys will appear invalid, when the real problem is that <code>ncurses</code> is not installed.</p>



OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
AIX	(All versions)	4330-02 (or later)	For AIX 5.1, the NetBackup-Java Administration Console requires the AIX 5100-03 Recommended Maintenance Level. This maintenance package is intended for customers who already have AIX 5.1 installed. The AIX 5100-03 maintenance package can be downloaded from, http://techsupport.services.ibm.com/server/nav?fetch=ffa5e , using APAR number IY32749 (PTF U484854). If you are a licensee of AIX 5.1, you can obtain an update CD dated 10/2002 by contacting your point of sale. In addition, you also need APAR IY35108 (for AIX 5.1) or APAR IY35844 (for AIX 5.2) to fix a thread safety problem with the AIX dup2 system call.
AIX	AIX 4.3.3	5.0.2.0 of x1C.rtc (or later)	This file set is necessary to enable any C++ runtime code to work properly.
AIX	AIX 5.1 (64-bit)	APAR IY27467 (Emergency Fix)	Users can find this patch at: ftp://service.software.ibm.com/aix/efixes/iy27467/ and will be available for download until the official fix is released. <hr/> Caution You must install this IBM patch prior to installing NetBackup. Installing and running NetBackup Media Server on an AIX 5.1 64-bit operating system can result in core dumps and system crashes if this patch is not installed. <hr/>
X86/ Windows	NT 4.0 SP 6A	Obtain from Microsoft	Required on all NT 4.0 machines in order to install. Install will notify user if not at required level
X86/ Windows	2000 SP 2	Obtain from Microsoft	Required on all 2000 machines in order to install. Install will notify user if not at required level

Note: The following list contains URLs to other vendor's web sites. Changes to these sites can occur without notification. If a URL is no longer valid, please contact the vendor directly for assistance.

1. For information about the Sun patch bundles, refer to: <http://sunsolve.sun.com>.
2. For information about the operating system patches for Java 1.4 that are associated with Sun Solaris, refer



to: <http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/J2SE>.

3. For information about the HP 9000 patches, refer to:
<http://us-support.external.hp.com/common/bin/doc.pl>
4. For information about the java patches associated with HP 9000, refer to:
<http://www.hp.com/products1/unix/java/patches/index.html>.
5. Using the patch IPR0106 works fine, however, VERITAS recommends you upgrade to IPR0109.

Other Patch Information

If you have a system running HP-UX 11.00 and install the PHKL_26239 or PHKL_27800 patches, you will experience problems with Block-level Incremental Backups. This problem does not occur with these patches on systems running HP-UX 11.11.

Product Dependencies

The following tables define the product-related dependencies associated with this release.

Product Related Dependencies

Dependency	Vendor	Description
Internet Explorer 5.0 or higher (GDM requires 5.5 or higher)	Microsoft	Required for Explorer Extension in the Windows NetBackup GUI. If this is not available, the install will fail.
VxVM 3.2 or higher for Solaris 7, 8, and HP-UX 11i	VERITAS	Required for Advanced Client - VxVM being used on client.
VxVM 3.5 or higher for Solaris 9	VERITAS	Required for Advanced Client - VxVM being used on client.
VxVM 3.3.1 SP1 HF3 or higher for Windows 2000	VERITAS	Required for Advanced Client - VxVM being used on client.
VxFS 3.4 or higher for Solaris 7 and 8	VERITAS	This is required for Advanced Client - VxFS file system being used on client.
VxFS 3.5 or higher for Solaris 9	VERITAS	This is required for Advanced Client - VxFS file system being used on client.



Product Related Dependencies

VxFS 3.3 or higher for HP-UX 11i	VERITAS	This is required for Advanced Client - VxFS file system being used on client.
Online JFS 3.3 or higher for HP-UX	HP website	This is required for Advanced Client - Online JFS file system being used on HP-UX 11i client.
VxFS 3.5 or higher or Online JFS 3.3 or higher for HP-UX 11i	HP website	This is required for VxFS_Checkpoint snapshots in Advanced Client - VxFS file system being used on HP-UX 11i client.
Oracle 8i or above with RMAN proxy copy capability	Oracle	This is required to use Oracle DB Agent with Advanced Client.
TimeFinder release for Solaris or HP-UX; SYMAPI Library release 4.2-154 or higher for Solaris or HP-UX	EMC	This is required for Advanced Client - TimeFinder snapshots. Note The SYMAPI Library is installed on the host but the TimeFinder firmware gets installed on the EMC Symmetrix disk array - NOT on the host where NetBackup is installed.
RAID Manager Library version 01-03-03/01 or higher for Solaris or HP-UX; ShadowImage release for Solaris or HP-UX	Hitachi Data Systems	This is required for Advanced Client - ShadowImage snapshots. Note The RAID Manager Library is installed on the host but the ShadowImage firmware gets installed on the HDS 7700/9900 array - NOT on the host where NetBackup is installed.
RAID Manager Library version 01-03-03/01 or higher for Solaris or HP-UX; BusinessCopy release for Solaris or HP-UX	HP	This is required for Advanced Client - BusinessCopy snapshots. Note The RAID Manager Library is installed on the host but the BusinessCopy firmware gets installed on the HP XP256 and 512 series disk arrays - NOT on the host where NetBackup is installed.
LibAttach version 1.1 for Windows NT and Windows 2000	StorageTek	Required to control ACSLS robotics on Windows NT and Windows 2000 platforms.



Supported versions of VxFS and VxVM

The following table shows the different versions of VxFS and VxVM that VERITAS NetBackup supports, and the corresponding operating systems for each.

Versions VxFS and VxVM Currently Supported by VERITAS NetBackup

Operating System	Version of VxFS	Version of VxVM
AIX 5.1	VxFS 3.4	VxVM 3.2
HP-UX 11.00	VxFS 3.3	VxVM 3.1
HP-UX 11.11 (11i)	VxFS 3.3 and 3.5	VxVM 3.1, 3.2, and 3.5
Linux Red Hat z-Series	VxFS 3.4	VxVM 3.2
Linux Red Hat AS/ES 2.1	VxFS 3.4 update 1 or higher	VxVM 3.2 update 1 or higher
Linux Red Hat WS 2.1	VxFS 3.4 update 1 or higher	VxVM 3.2 update 1 or higher
Solaris 7 and 8	VxFS 3.4, 3.5, and 4.0	VxVM 3.1, 3.2, 3.5, and 4.0
Solaris 9	VxFS 3.5, and 4.0	VxVM 3.5 and 4.0
Windows NT	--	VxVM 2.7
Windows 2000	--	VxVM 3.0 and 3.1

Note NetBackup has improved its integration with the VERITAS File System (VxFS) product to ensure interoperability on all supported VxFS versions. If running a VxFS version prior to VxFS 4.0 then new VxFS libraries need to be installed on the client in order to backup systems running VxFS.

You must download the appropriate VxFS libraries to your system using the VERITAS support web site. Use the procedure described in TechNote number 262225 to guide you through this process.

Improved Integration with VERITAS File System (VxFS)

Platform(s)	VxFS 3.5	VxFS 3.4	VxFS 3.3
Solaris 7	X	X	NA



Improved Integration with VERITAS File System (VxFS) (continued)

Platform(s)	VxFS 3.5	VxFS 3.4	VxFS 3.3
Solaris 8	X	X	NA
Solaris 9	X	NA	NA
HP-UX 11.11 (11.i)	X	NA	X
HP-UX 11.0	NA	NA	X



Operational Notes

The following notes explain important aspects of NetBackup operations that may not be documented elsewhere.

Note References to UNIX also apply to Linux, unless otherwise stated.

Installation

The following items offer additional information that may help you use NetBackup after you have installed the product.

1. Advanced Client Products

The following products have been combined into one package called NetBackup Advanced Client:

- ◆ ServerFree Agent, comprised of:
 - ◆ Core Frozen Image Services
 - ◆ Extended Frozen Image Services/Array Integration Option
 - ◆ offhost and SAN Data Movement Services
- ◆ FlashBackup
- ◆ Instant Recovery Option
- ◆ Block Level Incremental (BLI)

The new package is installed with an Advanced Client key. If you are upgrading from a previous NetBackup release, an Array Integration Option, Extended Frozen Image Services, FlashBackup, offhost and SAN Data Movement Services, or Persistent Frozen Image key will allow you to install the new package.

Note BLI and ServerFree Agent features that used to be associated with Oracle are now part of the Advanced Client product/license. Therefore, to enable BLI or ServerFree Agent functionality for Oracle, the Oracle and Advanced Client packages must be installed. If upgrading from a previous NetBackup release, an



Oracle on UNIX Advanced BLI Agent or Oracle ServerFree Agent key will allow you to install the Advanced Client package in addition to the Oracle package.

2. Additional Help Installing NetBackup When Using Intelligent Disaster Recovery

When installing NetBackup on a Windows XP or Windows 2003 machine, please do either of the following if Intelligent Disaster Recovery is planned on being used for that machine.

- a. Go to the `NetBackup\Bin` folder and execute `DRFILE.EXE` before performing any backups on the machine. This will cause some files to be created in the `%SYSTEMROOT%\repair` folder that are critical for the restore and need to appear in the backup images.
- b. Before creating the bootable media for the machine, make sure that at least two backups have been performed on the machine. Collecting the Disaster Recovery Information after the first backup will cause some files to be created in the `%SYSTEMROOT%\repair` folder. These files need to appear in the backup images and the second backup should contain these files.

Note This is done assuming that the policy has been configured to *Collect Disaster Recovery Information* and the Backup Selections have been specified to fully protect the machine.

3. Oracle Products and Database Archiver

The Database Archiver package has been combined with the Oracle package and the new package is installed via an Oracle extension key. If upgrading from a previous NetBackup release, an Oracle extension, Oracle on UNIX Advanced BLI Agent, Oracle ServerFree Agent or a Database Archiver key will allow you to install the new package.

- 4.** To support numerous levels of VxFS when upgrading from NetBackup 4.5, a new client platform configuration has been created for HP 11.11 systems. HP 11.11 clients that are currently configured in NetBackup policies as HP9000-800/HP-UX11.00 or HP9000-700/HP-UX11.00 should be changed to HP9000-800/HP-UX11.11 or HP9000-700/HP-UX11.11.

During an upgrade of a UNIX NetBackup server, you will be asked the following question:

Do you want to update the NetBackup software on the clients?



If you have HP clients that need to be reconfigured, answer no. The installation of the server will complete. You may then reconfigure your HP clients and run `update_clients` as documented in the "Upgrading Clients After the Installation" section of the *NetBackup Installation Guide for UNIX*.

5. Oracle, Informix, DB2 and Sybase

The installation process of these database agents has been changed to only install the agent's files, not execute the configuration script. This change is reflected in each agent's System Administrator's Guide.

The need for the Oracle configuration script (which used to ask for a UNIX database administrators' group on HP, Solaris and AIX) has been eliminated. The `oracle_link` script still exists.

6. Man pages are not installed on UNIX clients.

NetBackup man pages are installed only on the UNIX NetBackup server. If you want to provide man pages for the commands on UNIX client workstations, you can find troff source for them in the directory, `/usr/opensv/netbackup/bin/goodies/man`.

7. Installing using terminal services or a remote desktop connection.

When installing via a remote desktop connection, the source media must either be on a device local to the machine (either the machine's CD-ROM drive or copied to its hard drive), or a UNC network path. Installs are not supported in situations where the source media location is on a mapped network drive from within a terminal services session.

8. The operating system may open a GUI window (for example, File Manager on a Solaris system,) when the CD-ROM is inserted into the drive. VERITAS recommends that you do not use this window to install NetBackup products because unpredictable results may occur. Follow the installation instructions provided in the NetBackup 5.0 documentation set.

General

1. VERITAS supports only those commands, man pages, options, and parameters that are documented. If a command is not documented, then VERITAS does not support it.
2. It is possible for backups that span midnight can be missed.



Customer sites frequently configure backup windows that span midnight. This configuration enables backups to take place during off peak hours. If the frequency of these backups is set for "interval mode", then the backup times can slowly slide over the midnight boundary and into the following day. That is to say, backups begin to occur after midnight.

Note The sliding of backup times is usually related to lack of resources availability.

Once backups have slid into the second day of a window that spans midnight, then the backups tend to continue to be taken after midnight. For normal customer sites this is not a problem. However, some customer sites set up backup windows that span multiple days. In these cases it's possible for the backup times to slowly slide deeper into the window.

If the backup time slides too deep into the window, there is a possibility that a backup can be missed.

Customers can force the backups to be taken at the beginning of the window by creating the following touch file:

```
/usr/opencv/netbackup/db/config/MULTI_DAY_BACKUP_WINDOW
```

Forcing the backup to the beginning of the window requires the following:

- a. Interval mode backup.
- b. Above touch file is created.
- c. Backup window spans multiple days.
- d. Previous backup was taken prior to window opening.
- e. Next backup scheduled after window opens.

Database Agents

Exchange Database Agent

Individual mailbox backups should be performed in addition to your normal online Exchange database backups. A backup of the databases is still required for a disaster recovery of the Exchange server



Lotus Notes Agent

NetBackup 5.0 will provide support for Lotus R6.0.2 and later on:

- ◆ Solaris 8 and 9
- ◆ AIX 4.3.3, 5.1, and 5.2
- ◆ Windows NT and Windows 2000

Requirements for Lotus R6.0.3 on Solaris

Support for Lotus R6.0.3 on Solaris requires customers to manually create a link to address a change introduced by Lotus for R6.0.3. To create the required link, do the following:

```
ln -s /opt/lotus/notes/latest/sunspa/libndgts.so
/usr/lib/libndgts.so
```

If the link is not created, backups of Lotus will fail with a status 9 error and bpbkar will log debug messages similar to the following:

```
06:14:56.578 [25498] <16> lotus_init: ERR - Load of NetBackup for
Lotus Notes extension failed: libvnbln.so: ld.so.1:
/bp/bin/bpbkar: fatal: libndgts.so: open failed: No such file or
directory
```

```
06:14:56.579 [25498] <16> bpbkar Exit: ERR - bpbkar FATAL exit
status = 9: an extension package is needed, but was not installed
06:14:56.580 [25498] <4> bpbkar Exit: INF - EXIT STATUS 9: an
extension package is needed, but was not installed
```

This issue does not occur for Lotus R6.0.3 on AIX or Windows.

Requirements for Lotus R6.0.3 on Windows

Support for Lotus R6.0.3 on Windows requires a Lotus patch for SPR# THUR5LPPW9 to resolve an enumeration problem in the Lotus Notes API. Customers should contact Lotus Support and provide the SPR# to obtain the Lotus for Windows hotfix. Without the hotfix, backups of Lotus will fail and bpbkar will log debug messages similar to this:

```
1:38:22.392 PM: [3444.1200] <3444> nbex_DebugLog: ERR -
NBLNtoFINDDATA()
NSFDbOpenExtended('D:\Lotus\Domino\Data\Partition1\domino\domino\c
ache') Failed: 0x103:File does not exist
```

If the hotfix has been installed, the Lotus Domino Server console will display this version information:



Lotus Domino (r) Server (603HF80 for Windows/32)

Support for Lotus R6.0.3 on Solaris and AIX does not require a Lotus hotfix.

Microsoft SharePoint Portal Server Agent

1. Remove temporary files located in the temp directory for the NetBackup Client Service account.

When restoring SharePoint Portal Workspace files, temporary files of zero kilobytes size are created in the temp directory for the NetBackup Client service account (for example, `c:\documents and settings\Administrator.domainname\LocalSettings\temp`). These files are not removed automatically. Once the naming convention of these temporary files reaches `99FFFF.tmp`, further restores of workspace files will end in failure until these temporary files are removed.

2. SharePoint Portal Workspace

Workspace backups should be performed in addition to your normal online SharePoint database backups. A backup of the database is still required for a disaster recovery of the SharePoint Portal Server.

Media Manager

1. The Media Manager volume daemon (vmd) and NetBackup Volume Manager service acting as the Shared Storage Option Device Allocator (DA), now enforces a limit of 255 registering hosts. This limit applies as a total limit in case of multiple independent groups of servers (domains) using the same device allocation host.
2. For TLH, the media server that is the library-controlled daemon should be upgraded before all other media servers.
3. The following are implementation strategies and considerations for RSM robots.
 - The **Perform full inventory on mount failure property** on the General Properties tab of the RSM applet could be turned off as it slows down robotic operations.
 - NetBackup Media Manager *never* deletes, frees, or de-allocates media in the RSM NTMS database. This must be done manually in the RSM applet by the user since it may result in the loss of data.



- NetBackup Media Manager does not support cleaning functions for any RSM robots. These functions must be done using the RSM interface in the Computer Management application.
- NetBackup Media Manager does not support RSM-enabled standalone drives. Standalone drives to be used with NetBackup must be disabled in RSM.
- When media is removed from RSM and recreated, or moved among devices, it is a good practice to update the volume's unique identifier in NetBackup Media Manager by running the command:

```
vmquery -vuguid Media_Id
```

Caution If the network card in an RSM server is replaced, RSM creates all new unique identifiers for ALL RSM objects including robots, drives and volumes. This means that all of your devices must be configured again in NetBackup and all volumes must have their unique identifiers updated with the above command.

NetBackup Java Interfaces

General Notes

1. NetBackup-Java Administration Console install on Windows

Because of the new feature that preserves a list of hostnames and usernames to pick from in a drop-down list on the console's login dialog, it is no longer necessary to specify more than one hostname in the install dialog that asks for a list of names. Ultimately, all of the desktop shortcuts will default to the hostname and username that you used on the last successful login. One desktop shortcut can be used to launch multiple copies of the console.

2. Improving NetBackup-Java GUI Performance

The user has the choice of running the NetBackup-Java console either locally on your desktop or remotely and displaying back to your desktop host. Which platform you are running the GUI from is a big factor when you are faced with performance issues. For information and helpful tips on how to improve the performance of your NetBackup-Java GUI Environment, refer to the *NetBackup Systems Administrator's Guide, Volume I*.

3. Long waits for application response, incomplete data, reduced functionality and/or unexpected error messages may be returned in the applications as a result of invalid NetBackup configurations or inadequate file system space in



`/usr/opensv/netbackup/logs` on the host specified in the login dialog or in `/usr/opensv/java/logs` on the host that the NetBackup-Java Administration Console was started. Following are some example results when these things occur.

- ◆ No response during login
- ◆ Cannot connect socket errors during login to the NetBackup Java application server (`bpjava`)
- ◆ Reduced functionality in the NetBackup Java Administration Console, for example, only Backup, Archive and Restore and Files System Analyzer nodes in the tree
- ◆ Error dialog with `Unable to login, status: 35 cannot make required directory message`
- ◆ Error dialog with `/bin/sh: null: not found (1) message`
- ◆ Empty warning dialogs
- ◆ Error dialog with `An exception occurred: vrts.nbu.admin.bpmgmt.CommandOutputException: Invalid or unexpected class configuration data: <rest of the message varies>`

4. Support of NetBackup-Java Administration Console on AIX platforms

For AIX platforms, the Java Runtime Environment (JRE) is only supported on AIX 5.1. It is not supported on AIX 4.3. Therefore this release of the NetBackup-Java Administration Console cannot be used on AIX 4.3 systems. Customers with an AIX 4.3 NetBackup master server can administer this server remotely from any other UNIX or Windows server platform capable of hosting the NetBackup Administration Console.

5. Windows 2000 NetBackup host access from NetBackup-Java interface as a non-administrator.

If users other than the administrator use the NetBackup-Java interface to log into a Windows 2000 NetBackup host, those users must have write permission to the `install_path\Veritas\NetBackup\Logs` folder. On Windows 2000 systems, the Program Files folder, by default, is not writable by users other than the administrator. NetBackup-Java writes various types of files (some temporary) to the `Program Files\Veritas\NetBackup\Logs` folder under the user's validations. Users without write permission to the Logs folder receive an error message when attempting the NetBackup-Java interface login to the Windows 2000 NetBackup host.

6. Reduced functionality (only the Backup, Archive and Restore component available) or 'cannot connect' errors during initialization of the NetBackup-Java Administration Console will result if one or more of the NetBackup services or daemons on the host specified in the login dialog is not running.
7. Restart NetBackup-Java Administrative Console after restart of daemons
After restarting daemons/services in Activity Monitor or via other commands, we recommend exiting all instances of the NetBackup-Java administration console and starting a new copy of it via the `jnbSA` command. If the VSM product has been installed and available in the GUI, the same applies for the VSM `migrd` daemon.
8. Window managers configured for auto focus are not supported. Auto focus means that windows are activated (get the focus) when you position the mouse cursor over them. The following explains how to correctly set up a CDE environment.
In the CDE environment, use the Style Manager -- Window dialog to change the window behavior to Click In Window To Make Active. NetBackup Java does not run properly if the Style Manager has the following selected: Point in Window To Make Active.
9. If you are not set up properly to display to a machine from where you are executing `jnbSA`, you see one of the following happen: nothing (it is probably displaying on the machine where `jnbSA` is executing), the command fails with no error message (that is, the OS command prompt is received) or the following error message is placed in the log file (the log file name is displayed to the window in which you executed the `jnbSA` command).

```
java.lang.InternalError: Can't connect to X11 window server
using "host_name" as the value of the DISPLAY variable.
```


Prior to starting `jnbSA`, be sure to execute the `xhost` command on the machine where you intend to see the user interface and set the `DISPLAY` environment variable on the machine executing `jnbSA` prior to starting `jnbSA`. Reference the man page for the `xhost` command for additional capabilities.
10. To better facilitate getting support information for problems you may experience with NetBackup Java when running on Solaris Intel, Solaris Sparc, HP-UX, AIX, Red Hat Linux, SuSE Linux and Tru64, the application startup script, `jnbSA`, writes a log file by default to `/usr/opensv/java/logs`. There is one log file for every instance of the application. Normally, these log files are not large (less than 2 KB). However, periodic pruning of the files in this directory is recommended. For more detail, refer to the "Gathering Information for NetBackup Java" section in the *NetBackup Troubleshooting Guide for UNIX and Windows*.
11. The operating system version data seen in various tables may not be accurate for any pre-4.5 host.



12. There is no support in the Administration console for administering pre-4.5 servers.

13. Evaluation software expiration and the NetBackup Java interface application.

Attempts to use the NetBackup Java Administration Console after an evaluation copy of NetBackup has expired results in the following error message being displayed in an error dialog and all the NetBackup Java applications except Backup, Archive, and Restore disabled.

Administrator applications are not accessible due to the following error: Unable to get the attribute table.

14. Administrative capabilities depend on licenses and user authorization

The existence of various administrative capabilities (for example, Vault Management in the Administration Console's tree) is dependent on whether it is licensed and/or a nonroot user has been authorized for it on the relevant NetBackup host. This is checked during each *change server* operation.

In addition, upon completion of any *change server* operation, the Backup, Archive, and Restore capability is not available as it is only available for tasks on the host specified in the console's login dialog.

15. Restart daemons and utilities after a configuration or license key change

After making a change to the NetBackup configuration via the Host Properties dialogs, you must restart all daemons and utilities (including the NetBackup-Java Administration Console) to ensure the new configuration values are used.

16. Configuration conflicts may result if more than one administrator attempts administration tasks simultaneously on the same object. The last update will prevail.

17. Deleting all license keys causes the administration console to be non-functional. You'll have to use the `bpmlicense` command to update the licensing database prior to use of the console.

18. Configuring Host Properties or Frozen Image.

For clients of a server that is the target of a *change server* requires the server specified in the console login dialog be in the server list of all the clients.

19. VNETD connect option, `NBJAVA_CONNECT_OPTION`, not supported for DGUX clients.

The NetBackup-Java console configuration option, `NBJAVA_CONNECT_OPTION`, must be set to 0 when specifying a DGUX client host in the administration or user console's login dialog. If not, the following error dialog will occur when trying to login.

Unable to login, status: 517 Can not connect to the NB-Java user service via VNETD on <hostname> on port 13724.

Exception: java.net.ConnectException: Connection to user service via VNETD is unsuccessful - status: 23. Exception message: Connection to user service via VNETD is unsuccessful - status: 23.

The `NBJAVA_CONNECT_OPTION` applies to all execution instances of the `jbpSA` or `jnbSA` regardless of the host specified in the login dialog. For more information, consult the documentation in the *NetBackup System Administrator's Guide for UNIX, Volume I*.

20. Memory requirements to run the NetBackup-Java Administration Console

VERITAS recommends that you run the console (`jnbSA`, `jbpSA`, or Java Windows Display Console) on a machine with 1 gigabyte of physical memory and 256 megabytes of memory available to the application.

21. Remote display back of the NetBackup-Java Administration Console not recommended

VERITAS does not recommend running the NetBackup-Java Administration Console in any remote display back configuration. Problems have occurred with certain GUI controls (such as, incorrect combo box operations, very sluggish table scrolling with large numbers of rows, and table display problems with large numbers of rows). In addition, other serious problems have occurred with the GUI aborting or hanging caused by a Java Virtual Machine (JVM) failure due solely to the remote display back configuration. These JVM failures have most often been seen on the AIX platform.

Therefore, VERITAS can only recommend that you run the NetBackup-Java Administration Console on your local desktop for administering any NetBackup host (by specifying that remote host in the GUI's login dialog). The NetBackup-Java Administration Console runs on the Solaris Sparc, Solaris Intel, HP-UX, Tru64, AIX, Red Hat and SuSE Linux, and Windows platforms. For the Windows platform, installation is done using the **Install Java Administration Console** option in the NetBackup Windows installation GUI. Refer to Chapter 2 (Platforms Supporting the NetBackup Administration Consoles for UNIX) of this document for the supported versions of these platforms.

22. Access Management always available in the NetBackup Administration Console

With the NetBackup Access Control feature in this release, there is a new node in the NetBackup Administration Console titled Access Management. If not using this new feature and authorizing nonroot users for various administrator capabilities via the GUI's Capabilities Authorization functionality, you will still see this node in the console's tree for any master or media server that is being administered. This behavior is expected, albeit inconsistent when restricting nonroot user's per users authorization



in the `auth.conf` file. The Access Management capability has to be configured and when not, all users will see an appropriate informative message in the right hand pane of the GUI when accessing it.

Note NetBackup Access Control will not be available until the first maintenance update of NetBackup 5.0.

- 23.** An Invalid username error could indicate an invalid password or username.

The Windows platform API does not delineate between invalid passwords and invalid usernames. The following error message could mean either an invalid password or invalid username. This error is received when attempting to login to the GUI's application server on a Windows host.

```
Unable to login, status: 503
Invalid username
```

- 24.** Multiple `bpjava` processes per instance of the console

For increased performance and support for better multi-tasking ability in the console, you will see multiple `bpjava` processes on the host specified in the login dialog. The number will vary depending on the tasks attempted in the console.

- 25.** NetBackup Administration Console may display the wrong media server.

In an environment with more than one media server, there are certain cases where the NetBackup Administration Console will display the wrong media server in a drop-down list in the Change Storage Unit dialog. The drop-down list is grayshaded and the user cannot change the media server. If the user proceeds with the change action, the media server for the storage unit will change. The user can correct this with a command line (`bpsturep` with the `-host` option), or delete and recreate the storage unit.

Activity Monitor

- 1.** Daemon tab of Activity Monitor does not show `visd` or `nbd`

Daemons relevant to only GDM and the Advanced Reporter (`visd`, `nbd` and `ar`) do not appear in the Activity Monitor daemons tab.

- 2.** Deleting large number of jobs



When deleting a large number of jobs, do not leave the Activity Monitor node or close the NetBackup Administration Console while any of the deleted jobs are still visible in the Jobs tab. If Activity Monitor is shut down by leaving the Activity Monitor node or by closing the NetBackup Administration Console while jobs are being deleted, some of the jobs may not be deleted.

3. The following message will be displayed if you stop the `bpdbm` daemon on the relevant server when Activity Monitor is active.

```
The connection to server <server_name> was broken.
```

```
Please leave Activity monitor, resolve the problem then reenter Activity Monitor.
```

The reason this message occurs is that stopping the `bpdbm` daemon will also stop the `bpjobd` process. Upon successful startup of `bpdbm` (which will start `bpjobd`), you can use the refresh button on the toolbar to refresh the Activity Monitor job data. The refresh button is only available upon lost communications with the job daemon, `bpjobd`.

File System Analyzer & Storage Migrator

The File System Analyzer and Storage Migrator utilities of the NetBackup-Java Administration Console will only be available upon specifying the root account in the console's login dialog. Nonroot usage of these utilities is not supported.

NetBackup Management

The following subsections contain issues that apply to specific features associated with NetBackup Management in the NetBackup Administration Console.

Host Properties

Configuring 3.4 clients via Host Properties is supported except for Virus Scan related properties. NetBackup no longer supports automatic virus scanning.



Backup, Archive, and Restore

1. On the Task Progress tab, the Status column of the Tasks Performed list may be empty or all jobs listed with status of In Progress. When the `DISALLOW_SERVER_FILE_WRITES` option is set in the `bp.conf` file, this status column is blank. You can check the status of the task by selecting it to be displayed in the progress log file in the bottom area of the Task Progress section.
2. If you are searching for files and directories to restore that were backed up within a specific date, it is best to select a range of dates that includes only the files and directories you want to restore. If you select a large range of dates, all media used during that date range is displayed in the list, even if the selected files and directories were not backed up using all the media shown.
3. The end date/time for searching backups is initially set to midnight of the current day. If the application is left open over multiple days, the end date needs to be updated in order to see backups that have occurred after the initial end date.

Media

The following items are known limitations with features associated with the Media and Device Management portion of the NetBackup Administration Console.

1. It is recommended that you move only one volume or volume group at a time.
2. Administering media servers of a server that is the target of a “change server” operation in the console requires the server specified in the console login dialog be in the server list of all the relevant media servers.

NetBackup Cluster Support

VERITAS recommends that you follow the installation and configuration instructions provided in the NetBackup documentation set included in your package. For more information on configuring NetBackup in a cluster environment, refer to the *NetBackup High Availability Systems Administrator's Guide*.

1. Do not use the old UNIX VCS NetBackup agent with NetBackup 5.0. Instead, use the UNIX VCS agent that is provided with this release. This agent is installed automatically by default.
2. The Activity Monitor in NetBackup Administration Console for Windows is not displaying services after a Windows Cluster failover. The Activity Monitor connects to the cluster and displays the services of the active node. At the time of the failover,



this connection to the service manager becomes invalid. To get a new connection to the cluster server, which will then display the services running on the now active node, perform a **Refresh All** action from the **View** menu in the NetBackup Administration Console after a failover.

3. When adding a node to an existing NetBackup Group in an MSCS cluster, the Server registry entry on the existing nodes is not updated to contain the newly added node name.

The registry entry `HKLM\SOFTWARE\VERITAS\NetBackup\Config\Server` on each node in the NetBackup Group should contain all the node names that NetBackup can run on.

Vault

1. Changes to Vault Eject

Beginning with the NetBackup 4.5 FP3 release, how Vault ejects media changed. During media ejection operations, Vault moves the media to be ejected into the media access port (MAP) of the robotic library. You must extend the MAP, remove the media, and then retract the MAP. If more media will be ejected, Vault will continue to fill the MAP until all media are ejected.

2. The vltcore Binary File Replaced

The vltcore binary file is no longer included with or necessary for Vault. Previously, vltcore was the process that invoked all the NetBackup commands used by Vault. Now, the functionality provided by vltcore is provided by the vltrun binary file.

3. Vault Operator Menu Changes

The Vault Operator Menu (vltopmenu) now uses letters rather than numbers for identifying and selecting menu items. Previously, the numbers could change if new menu options were added. Now, the letters, which represent the words in or purpose of the menu item in English (such as "e" for Eject Media for this Session), should not change from release to release.

4. Printer Settings Must Support More than 80 Columns.

The page numbers for all Vault reports are printed beyond the 80th column, and the `CREATED` column of the Non-vaulted Images Report prints beyond the 80th column. If your printer does not support output more than 80 columns wide, some information will be truncated.

5. Vault Operator Access on UNIX.



If you do not configure NetBackup Access Management, you can still set permissions on UNIX systems so that non-root users can use the operational commands in the Vault Operator Menu to inject and eject tapes and generate reports. The most efficient way to accomplish this is to add the users to whom you want to grant access to a single user group, then give that group permission to execute some of the executable files.

Note Giving users access to the Vault Operator Menu also gives them the capability to change report destinations. If you do not want non-root users to view reports and change report destinations, do not give them access to the Vault Operator Menu. For example, you may not want non-root users to see the Recovery Report or to be able to change to whom reports are e-mailed.

Note Giving users special privileges may violate your organization's computer and network security policies and allow access to private information. Check with your system administration or computer security staff to ensure that you are not violating security policies.

a. Create a UNIX group and add the appropriate users to this group. This group will be referred to as *opsgroup* in the following commands.

b. Log in to the system on which the NetBackup master server is installed and execute the following commands as *root*:

```
# cd /usr/opensv/volmgr/bin
# chgrp opsgroup vmchange vmquery vmupdate
# chmod 4550 vmchange vmquery vmupdate
# cd /usr/opensv/netbackup/bin
# chgrp opsgroup vltrun
# chmod 4550 vltrun
# cd /usr/opensv/netbackup/bin/admincmd
# chgrp opsgroup bpimagelist bpimedia bpmedia bpmedialist
# chmod 4550 bpimagelist bpimedia bpmedia bpmedialist
```

c. Log in to all systems on which NetBackup media servers are installed that control a robot and execute the following commands as *root*:

```
# cd /usr/opensv/volmgr/bin
# chgrp opsgroup vmchange vmquery vmupdate
# chmod 4550 vmchange vmquery vmupdate
```

-
- d.** If you are using ACSLS for robotic control, log in to the ACSLS server and modify the `.rhosts` file in the home directory of user `acsss`. The NetBackup installation process should have added an entry to the `.rhosts` file for the NetBackup master server that grants `root` access. Modify that entry to allow all users in the `opsgroup` access to the ACSLS server as user `acsss`:

```
master_server_name root <user1> <user2> . . . <userx>
```

- e.** If you are using ACSLS for robotic control, verify that the user accounts defined for the operations group exist on both the system on which the NetBackup master server is installed and on which the ACSLS server is installed. For simplicity, each user should have the same user ID on both servers. If both servers are using a naming service (such as NIS), you can skip this step.

To verify proper operation, log in as one of the non-root users on the system on which the NetBackup master server resides, start `vltopmenu`, and execute each menu option.



Known Product Limitations

This chapter contains the known product limitations that are applicable to this release of NetBackup. For additional information about known issues with the release, you can refer to Tech Note number 262182 on the VERITAS support web site. This Tech Note will contain the latest information relating to product issues for this release. Here is a link this document, <http://support.veritas.com/docs/262182>.

Note References to UNIX also apply to Linux, unless otherwise stated.

General NetBackup Notes

1. The VERITAS NetBackup 5.0 release has not yet achieved Microsoft Logo Certification.
2. Backing up real time files is not supported for SGI IRIX xfs.
3. Manually initiating a backup of the NetBackup catalog can fail if backups are in progress.

Backing up the NetBackup catalog can fail if it is manually initiated and backups are in progress. The workaround for this is to initiate these backups when no other NetBackup activity is occurring, or to schedule the backup of the catalog to occur automatically.

4. Files Written count (Current, Previous) in Activity Monitor does not include extra directory entries used for restore file browsing.

When viewing the Files Written count for a job in the Activity Monitor, the value for Current Files Written does not include the extra directory entries (which are used during restore file browsing). The value displayed for Estimated Files Written does include those extra directory entries, and are slightly larger.



5. Large sparse files may not backup or restore properly if Microsoft Windows cannot reserve memory in proportion to the file size (approximately 1MB per 1GB of file space). This means that backup/restore of these items is currently not possible. An appropriate error message is logged which will indicate that the system had insufficient resources to perform the operation.
6. There may be a delay in detecting of loss of connection from a NetBackup Windows master server to a media server.

In certain situations, there can be a delay on a NetBackup Windows master server before it detects that the connection to a media server has been aborted. For example, if a media server goes down while running a backup, there may be a delay on the master server before it detects that the media server is no longer available.

While at first it may appear that there is a problem with the NetBackup Windows master server, this delay is actually a result of a certain TCP/IP configuration parameter on Microsoft Windows called `KeepAliveTime` that is set to 7,200,000 (two hours, in milliseconds) by default. More information about the `KeepAliveTime` and other associated TCP/IP configuration parameters on Microsoft Windows may be found in the following Microsoft Knowledge Base articles: Q140325 and Q120642.

The effect of this delay is that NetBackup jobs running on that media server appear to be active for a period of time after the connection to the media server has gone down. In some cases this can result in an undesirable delay before the current backup job fails and is subjected to the normal NetBackup retry logic for execution on a different media server, if one is available.

This delay is especially noticeable when the media server in question is a NetBackup failover media server running in a Microsoft Cluster Server (MSCS) environment. NetBackup relies upon the retry logic of the NetBackup master server to restart NetBackup jobs that were running on the NetBackup failover media server when a failover occurs.

It may be advantageous to modify the `KeepAliveTime` configuration parameter on the NetBackup Windows master server for the reasons described above. However, this must be done using extreme caution because the parameter is a system wide parameter that affects all TCP/IP communications for that system.

Also, it may be advantageous to modify this parameter on Windows media servers that use the failover master server.

7. When running the Device Configuration wizard while administering a media server, all attempts by the wizard to add storage units will fail with an error message that includes the text, `cannot connect on socket`. The workaround for this problem is to run the Device Configuration wizard only when administering a master server. This problem applies only to NetBackup Enterprise Server.

- 8.** When running the Device Configuration wizard while administering a master server, any storage units that are configured will be configured only on the master server being administered, regardless of which media servers are scanned. This can result in storage units being configured on the wrong master server and/or configured on only one master server instead of all that apply. This problem applies only to NetBackup Enterprise Server.

To avoid this problem, run the Device Configuration wizard only when administering a master server and only scan device hosts whose master server is the one currently being administered. If a drive is shared by more than one device host with multiple master servers, you must run the Device Configuration wizard on each of the master servers.

- 9.** The configuration wizard lets you attempt to change device properties when it should fail when running the wizard on a server that is not a NetBackup master server (i.e. a media server). If you want any device changes to be reflected in the configuration of storage units for NetBackup use, you should exit this wizard, change the server being administered to be a NetBackup master server, and rerun the wizard. If you want to proceed without having any device configuration changes reflected in the NetBackup storage unit configuration, you may continue this wizard anyway.
- 10.** Catalog backup jobs started with `-host` option to run on the media servers cannot be killed from the Activity Monitor. If the catalog backup is started on a media server by a vault job, cancelling the vault job from the Activity Monitor will not terminate the catalog backup.
- 11.** Checkpoint Restart is not supported for restores from Backup Exec media. The restore job may be suspended and resumed; however, a resumed restore job will restart at the beginning of the job, since no checkpoints for the restore are available. Failed restore jobs will be in the incomplete state rather than the done state. Like a suspended job, the incomplete jobs may be resumed, but will restart at the beginning of the job.
- 12.** Enhanced Authentication and Authorization is not supported for clustered environments.
- 13.** Do not modify settings in the Access Control properties pane in Host Properties.

The Host Properties interface contains an Access Control properties pane that should not be modified until this feature is formally released in the first maintenance update of NetBackup 5.0. By modifying settings in this pane and saving those changes, you could be denied access to the NetBackup Administration Console. If you have erroneously modified settings in the Access Control pane and have been denied access to the NetBackup Administration Console, you can perform the appropriate procedure below to regain access to the NetBackup Administration Console.



- ◆ For UNIX-based systems, you must modify a line in the `bp.conf` file on the master server. Perform the following steps:
 - ◆ Open `/usr/opensv/netbackup/bp.conf` file for editing.
 - ◆ In the `bp.conf` file you will see one of the following lines:

```
USE_VXSS = AUTOMATIC
```

or

```
USE_VXSS = REQUIRED
```

Change whichever line you have in the `bp.conf` file to the following:

```
USE_VXSS = PROHIBITED
```
 - ◆ Save this file.
 - ◆ Stop and then start the NetBackup daemons.
- ◆ For Windows-based systems, you must edit the registry to modify a specific resource in the Registry Keys.
 - ◆ Select **Start > Run...**
 - ◆ Enter `regedt32` (for Windows 2000 and greater systems) or `regedit` (for Windows NT systems) in the Run window and select **OK**.
 - ◆ Select `HKEY_Local_Machine\Software\VERITAS\NetBackup\CurrentVersion\Config`
 - ◆ Double-click **USE_VXSS**
 - ◆ Change the value to `PROHIBITED` and click **OK**.
 - ◆ Exit the Registry.
 - ◆ Stop and then start the NetBackup services.

Installation

1. VERITAS does not support an upgrade from NetBackup 3.4.1 and prior to NetBackup 5.0. VERITAS recommends that the user upgrades from 3.4.1 and prior to a NetBackup 4.5x version first, and then upgrading from that version to NetBackup 5.0.
2. The following errors can occur during Windows NetBackup server and client installation.



- During NetBackup installation (server or client), a dialog box may appear with an `unspecified error` message from Windows Installer. If this message appears, click **OK** and proceed with the install, which should complete successfully. After completing the installation and configuration, perform a test backup to ensure that NetBackup is working correctly.
 - During NetBackup server installation, the Windows installer may fail and display an `Internal error 2755,995`. If this occurs, execute `instmsiw.exe` in the `x86` directory on the CD-ROM. Ignore any errors it produces. Then, reboot the computer and re-run the installation.
3. During installation of the server on a Windows system, there can be a long delay during the "upgrading databases" portion without the progress bar being updated. Installation should complete successfully.
 4. When installing Microsoft Windows clients (both local and remote installs) the client name is written in all lower case to the registry. If the policies on the server do not specify the client names in all lower case, backups fail because the names do not match.
 5. For Microsoft Windows clients, if you perform a remote install to a computer in another domain, you may encounter errors stating that the system cannot find the file specified. If you encounter this problem, do the following:
 - a. Ensure both the source and target system are members of the same domain.
 - b. Retry the installation and when prompted, enter the user name, password, and domain of a user with administrative rights on the target system.
 6. When upgrading from a NetBackup Server evaluation license key to a permanent NetBackup Enterprise Server product license key on Windows NT or Windows 2000, restart the NetBackup services. Restarting the services will ensure that the Help > About NetBackup menu displays the proper licensing information.
 7. After installing a Windows client locally, the 'Client push' is not possible without first uninstalling the locally-installed client.
 8. Upgrading from NetBackup 4.5

In the NetBackup 4.5 release, the Solaris 7 and 9 client software were the same as the Solaris 2.6 software. In the NetBackup 5.0 release, all these clients are separate. This means that after a Solaris 7 or 9 client has been updated to NetBackup 5.0, any add-ons or database extensions that existed on those clients need to be upgraded to the matching Solaris level.
 9. Upgrading from NetBackup 4.5FP3



In the NetBackup 4.5FP3 release, the Solaris 7 client software was the same as the Solaris 2.6 software. In the NetBackup 5.0 release, these clients are separate. This means that after a Solaris 7 client has been updated to NetBackup 5.0, any add-ons or database extensions that existed on that client need to be upgraded to the Solaris 7 level.

10. The names of the NetBackup shutdown scripts have changed in this release. Refer to the *NetBackup Installation Guide for UNIX* for more information.

NetBackup Windows Clients

1. Automatic client installation and update when the client is added to a policy is not supported at this release on the Windows NT NetBackup server.
2. The Windows Open File Backup (WOFB) option is used to back up open/activefiles. The WOFB option is enabled by default for all Windows file system backup jobs. A backup job, that has the checkpoint policy attribute and WOFB options both enabled, will not re-use the same snapshot upon being resumed that it used for the original backup job that was suspended or incomplete. Instead, if the WOFB Error Control configuration setting was set to **Abort on Error**, the resumed backup job will abort and a status 156-snapshot error will be encountered. If the WOFB Error Control configuration setting was set to **Disable Snapshots & Continue**, the resumed backup job will be resumed without any volume snapshots. When the backup job is resumed without snapshots (Error Control to "Disable Snapshots & Continue"), the resumed backup job will not back up files from the same point in time as the original incomplete or suspended backup job. As a result, the files in the final backup image may be from more than one point in time (data within a single file is not affected). If data consistency between files based on a point in time is important, do not enable the checkpoint policy attribute when the WOFB option is enabled. Windows 2003 client, feature Open File Backup

VSS does not allow creating more than one snapshot per volume at a time. This can cause a backup to finish with a status of 1 (some files were not backed up) when multistreaming is used to backup folders or files on the same volume and the backup is using VSS.

NetBackup BE Tape Reader

Conversion of Backup Exec on-disk catalogs and ADAMM databases to NetBackup Media Manager volume records and image and .f files is not supported. Backup Exec media will have to be imported using `bpimport` before you can be used with NetBackup 5.0. Refer to the *NetBackup System Administrator's Guide, Volume I* for more details.



Bare Metal Restore for NetBackup

If you are running VERITAS Bare Metal Restore for NetBackup, do not upgrade your NetBackup server or clients until you have read and understood the BMR TechNote 263653 located at <http://seer.support.veritas.com/docs/263653.htm>.

Localization and Internationalization Issues

1. For Windows installations, the install path must not contain Multi-byte characters.
2. For Multi-byte file path characters, characters that are specified on one locale may not display correctly in another locale. For instance, if a Solaris client specifies a file name in the ja locale (EUC) and then attempts to display the file with the Backup, Archive and Restore GUI on HP server in the ja_JP.SJIS locale (SJIS), the file name does not display correctly. This is an operating system limitation and cannot be resolved through NetBackup.
3. The following NetBackup user defined strings must not contain Multi-byte characters:
 - Host Name (Master Server, Media Server, Media Host, Client)
 - Policy Name
 - Policy KEYWORD (Windows Only)
 - Backup, Archive and Restore KEYWORD (Windows Only)
 - Storage Unit Name
 - Storage Unit Disk pathname (Windows Only)
 - Robot Name
 - Device Name
 - Schedule Name
 - Media ID
 - Volume Group Name
 - Volume Pool Name
 - Volume Database Host
4. Viewing log files with non-ASCII characters in some text editors may make the non-ASCII characters appear as gibberish. While there are some editors that will display the log file correctly, you can use the Backup, Archive and Restore GUI ("Task Progress" tab on UNIX, or the "View Status" display on Windows) to view these files.



5. The English version of the NetBackup Database Agents can be used when running on a Japanese OS, as long as there are no Japanese characters in the filename or pathname of the items you want to backup. This is true for all locales that contain multibyte characters.

The NetBackup Exchange agent will work with a localized OS and localized Exchange with Japanese characters in the filename or pathname.

6. To run the NetBackup-Java Administration Console for NetBackup English on an HP-UX system in a localized Japanese O.S., the HP-UX O.S. must apply all of the new patches and fonts recommended by HP to work with SDK 1.4. This is because NetBackup Feature Pack 4.5FP3 is built with JAVA 1.4, and requires these changes. The HP documentation links are:

```
http://www.hp.com/products1/unix/java/infolibrary/font_info.html
http://www.hp.com/products1/unix/java/java2/sdkrtel4/infolibrary/sdk_r
notes_1.4.0.01.html
```

7. To run the NetBackup-Java Administration Console for NetBackup English on an HP-UX system in a localized Japanese HP-UX O.S. environment, the system must have all of the HP-UX patches and Asian fonts needed for JAVA SDK 1.4. This is necessary because NetBackup Feature Pack 4.5FP3 and further releases have been built with JAVA 1.4, and requires these changes to properly display any Asian characters. See the HP-UX documentation for more information:

```
http://www.hp.com/products1/unix/java/infolibrary/font_info.html
```

If this is a NetBackup upgrade installation, and you have applied the patches mentioned above, then you need to unset the environment variable *JAVA_FONTS*, because it was previously set for Japanese JAVA 1.3 fonts to display on an HP-UX system. JAVA 1.4 will now use the system fonts to display Japanese characters and no longer needs a specific path to other fonts.

Either unset *JAVA_FONTS* in *./dtprofile* by commenting-out the following:

```
#export JAVA_FONTS=/usr/lib/X11/fonts/ttfjpn.st/typefaces
```

or unset *JAVA_FONTS* on the console type using the following command:

```
unset JAVA_FONTS
```



Media Manager

1. On UNIX, ejecting tapes through the media access port of the ATL P3000 or Sun StorEdge L11000 robotic library can lead to the error `unable to sense robotic device` (applies only to NetBackup Enterprise Server).

The workaround is to wait until the robot has finished initializing again (checking for media) after the media access port door has been closed, before responding (in the GUI interface) that the tapes have been removed. During testing, the library initialization period for an empty port lasted for 2 minutes, 10 seconds.

2. Some libraries implement different functionality for their media access ports. For example, some libraries have front-panel inject/eject features that conflict with NetBackup's use of the media access port (for example, Spectra Logic Bullfrog). Other libraries require front-panel interaction when using the media access port (e.g., Spectra Logic Gator). Make sure you read each library's operator manual thoroughly to gain an understanding of its media access port functionality, or libraries such as these may not work properly with NetBackup's inject/eject features. The Breece Hill Q47 (TLD) is not supported with NetBackup multiple eject and inject.

3. On UNIX, when configuring robotic volumes with a media management New Volumes/Add Volumes interface, volumes are added to the Media Manager volume database, even if an error is reported because one or more volumes were not currently in their specified slots, or if the barcodes on added volumes could not be verified (for some robot types).

The workaround is to use robotic inventory for managing volumes. With robotic inventory, only the volumes actually contained in the robot are configured, and knowledge of slot information is not required.

4. In environments where network traffic or machine load is high, restarting the Media Management Device daemon (UNIX) or Device Manager service (on supported Windows servers) can result in individual robotic daemons not being active. This situation occurs when the daemon/service start occurs too soon after the shutdown, such that the full shutdown of all daemons/services does not complete before the daemons/services are started. This in turn leads to a newly-started daemon/service being terminated by a delayed stop signal.

How do you know if this situation occurs? In the Volume Configuration wizard, at the robot inventory stage, the inventory fails with a message similar to, `cannot connect to tldcd on host <hostname>`. If you see this message, VERITAS recommends that you stop the Media Management Device daemon (on UNIX) or Device Manager service (on supported Windows servers), wait at least 20 to 30

Known Limitations Surrounding Optical Media Support



For the NetBackup 5.0 release, some optical disk media support is limited (applies only to NetBackup Enterprise Server). The following two lists define the limitations as they relate to either the NetBackup-Java Administration Console or the Windows-based GUI.

- ◆ Known optical media support limitations for Java Administration GUI:
 - ◆ No inject or eject capabilities for Single-media access ports. Use the `vmadm` menu interface to perform this function.
 - ◆ The feature, format optical media option, is not available. Use the `vmadm` menu interface or the `tpformat` command to perform this function.

Note For detailed information regarding the use of `vmadm` or `tpformat`, refer to the *NetBackup Media Manager System Administrator's Guide*.

- ◆ Known optical media support limitations for Windows Administration GUI:
 - ◆ Cannot add, update, label, or delete volumes that are optical
 - ◆ No support for moving volume groups. Moves do not recognize optical partners, so if both partners are selected the move may fail.

Use the NetBackup Java Administration Console, `vmadm` menu interface, or media manager commands to perform these functions.
 - ◆ No inject capability for single-media access ports
 - ◆ The feature, format optical media option, is not available. Use the `vmadm` menu interface or the `tpformat` command to perform this function.

seconds, and then restart it.

5. The following are known limitations with RSM support on Windows NT and Windows 2000:
 - ◆ NetBackup cannot immediately use the media. RSM media must be manually moved from a robot's physical media list to the NetBackup media pool that corresponds with this device in NetBackup. This must be done **before** NetBackup can use the media (that is, inventory).

For example, when you configure the robot and its drives using the Devices GUI, a NetBackup media pool is created for that robot number with a pool for each supported media type for that drive type. The user must use the Computer Management application, located in Administrative Tools, to drag and drop the media from the robot's media list to the newly created media pool which corresponds to their media type.
 - ◆ At times RSM has problems writing Free Media Labels to a tape. This is because the On Media Identifier Label (OMID) does not match up with what RSM has recorded in its database. The user should eject such media, delete all references to



it from RSM and then reinsert into the robot. At this point, RSM considers it new media and updates its database and enables writing a Free Media Label on the media.

- ◆ Occasional mount time-outs from RSM robots. If RSM has problems trying to mount assigned media, it probably is because (a) the media label is not unique within the library, (b) it is not in the correct NetBackup media pool, (c) RSM had problems writing a Free Media Label (as stated in the previous limitation above), therefore leaving media in an indeterminate state.
- ◆ Physically DOWN drives may not be DOWN in the Device Monitor. The NetBackup Device Daemons do not scan RSM devices for physical status. Therefore, physical device status changes may have to be manually updated in Device Monitor.
- ◆ Occasionally the RSM API has characters in its database for the serial number of a device, even though the device is not serialized. This appears to be a bug in RSM and creates problems for NetBackup's Automatic Device Configuration. If the device is enabled in RSM when NetBackup discovers it, the false serial number in RSM's database will be captured by NetBackup in its configuration. Subsequent attempts at Automatic Device Configuration in NetBackup will obtain the real SCSI serial number for the device - which is blank - and it will not match the existing configuration. Therefore, NetBackup may delete the device from its configuration and re-add it with the new serial number, and possibly a new drive name or robot number.

6. Robot inventory may add media with a media type that is not compatible with the drive type (applies only to NetBackup Enterprise Server).

This limitation only applies to TLD or TL8 robots that have no drives configured on the robot control host or are using a multimedia robot (for example, DLT7000 and DLT8000 in the same library).

Example 1: If your TLD robot has DLT2 drives on a host that is not the robot control host and the robot control host has no configured drives in that robot then you must specify DLT2 as the media type on the inventory robot update.

Example 2: If you are using a multimedia robot, you must use barcode rules (see the *NetBackup Media Manager System Administrator's Guide*).

If media are configured with the wrong media type, the media will be unmountable, possibly causing backups to fail.

7. Inventory during installation results in duplicate media IDs when a robot contains media with the barcodes that are more than 6 characters and the last 6 characters are not unique. This is a known operational issue, and as a workaround, the user should choose to use the standard inventory, which includes Media ID Generation Rules, by clicking on the **Advanced** button in the wizard.



8. When using NetBackup media management on Windows, a robot may be selected for robotic inventory when listed with the wrong robot control host, leading to a robotic inventory that fails because it tried connecting to a robotic control daemon or process on the wrong host.
9. The physical inventory utility, `bephyinv`, mounts specified media in a robotic library to determine its contents, and updates NetBackup and Media Manager databases when encountering Backup Exec written media. This utility does not request database changes for media written by NetBackup.
10. The VERITAS implementation using SCSI reserve/release has the following limitations:
 - ◆ SCSI reserve/release is not applicable for NDMP configurations (no reserve command is available).
 - ◆ Third party copy configurations must be configured correctly. To retain reservations of a tape device when doing a third-party copy backup, refer to the description of the `mover.conf` file in the *NetBackup Advanced Client System Administrator's Guide for UNIX and Windows*.
 - ◆ Cluster environments or multi-path environments with fail-over capability may leave devices reserved when fail-over occurs.
 - ◆ Servers that do not have configured Pass-through paths to each tape drive should be used with caution in a multi-initiator environment. The lack of a Pass-through path makes it impossible to issue the SCSI reserve command.
11. Cluster environments or multi-path environments with dynamic path sharing (Tru64 for example) will cause backup and restore failures if the path changes during these operations. If path sharing cannot be eliminated, then the NetBackup SCSI reserve/release function must be disabled.
12. Using the `tpconfig` utility options

The `tpconfig -d` utility option may truncate some data if it exceeds a certain threshold. Please use `tpconfig -l` or `tpconfig -dl` to see the entire field. Some fields that are affected include the Drive Name, and the Drive Path. In addition, `vmoprCmd` may also truncate the Drive Name.
13. Limitations exist with the physical inventory utility.
 - ◆ At least one master or media server (hosts where the drives are attached) must be running NetBackup 4.5FP3 or higher.

If the master server is at this version level and one or more media servers are at the NetBackup 4.5 GA level, the utility detects the version of all media servers and only performs inventories on hosts that are at this level. If some of the drives



are attached to servers that are not at this version level, then those drives are not used for mounting the media. If none of the media servers are at the required level, the utility will not be able to perform the inventory operation and an error message is displayed.

- ◆ API and optical disk library (ODL) robot types are not supported.
- ◆ There is no way to distinguish between volume records based on the application type.
- ◆ When moving the media from robotic to standalone drives, there is no option to move the media to a specific volume group.
- ◆ Volume database host of the robot must also be at NetBackup 4.5FP3 or higher version level. If you want to inventory robot number 2 and the volume database host of robot 2 is `whale`, then `whale` must be at the NetBackup 4.5FP3 or higher version level.
- ◆ Cleaning Media Handling:

If the media type is specified as a cleaning media type (for example, `4mm_clean` or `dlt_clean`) in the volume record corresponding to the cleaning media in the robot, `vmphyinv` does not attempt to mount the media. The media is skipped and the next media in the list is mounted.

But if there is cleaning media in the tape library and the media type of the corresponding volume record that is found is not a cleaning media type, or if there is no volume record corresponding to the cleaning media in the Media Manager volume database and `vmphyinv` is used with the slot range or list options, `vmphyinv` tries to mount the media continuously until the mount request times out.

14. A long erase should be avoided on SGI servers, because system performance may become degraded during this operation. If you want to test a long erase, VERITAS recommends that you perform a test of this function during an idle time on the server.

15. Multi-LSM, ACSLS Controlled robots can generate a misleading syslog message.

In a multi-LSM environment, if a mount request is issued for a volume that is in an offline LSM, and the drive is in an online LSM, the message in the syslog will state that the drive is in an offline LSM.

16. On AIX systems, that are using `ovpass` to control robots, the robot will appear to be missing if the robot control daemon has the robot open at the time a remote system is running auto-discovery. The remote system takes control away from the AIX system leaving the global database inconsistent."

To avoid this issue, you should perform your configurations when no backups are running or about to run.



Media Manager Cluster Support Limitations

The following limitations have been identified to affect clustering support in Media Manager.

1. Retries on All Failover Events

When failover occurs, any task that is in process needs to be able to recover and continue. Communication needs to be re-established using the new node, and all operations that were in progress need to be retried on the new node.

2. Breaking SCSI Reservations

When fail over occurs in an environment where SCSI Reserve/Release is being used (explicitly in NetBackup, or implicitly in lower-level drivers or hardware), a SCSI reservation will be left on the drive. The drive will remain unusable by other nodes and other hosts until the SCSI reservation is cleared.

3. Failover for Assigned Drives and In-progress Mount/dismount Activity

State information (drive status, mount status, cleaning status, robotic library status, eject/inject status, etc.) is not in a database, as these states are in process memory, which is lost at failover time. On the new node, none of this information will be reestablished by bringing up the daemons/services. The “SSO drive allocation resiliency” feature in NetBackup 5.0 addresses this only for the device allocator (vmd/DA) component for SSO. This alone does not make SSO failover-safe, plus virtually all other Media Manager tasks also remain non-failover friendly.

4. No Transaction Support in All Database Operations

Current tasks include making multiple database operations to reflect one event. For example, scenarios where changes are made by deletion and re-addition, or changes where multiple records are related (such as, optical partner relationships), or where robots are deleted and drives in the robot need also to be deleted.

NetBackup Advanced Reporter (NBAR)

1. NBAR 5.0 does not support Windows 64-bit hardware (Itanium).
2. NBAR does not support upgrading from a standalone configuration to a clustered configuration



Database Agents

The following known limitations exist for the following database agents.

DB2 Agent

The NetBackup Client GUI does not recognize DB2 V7, 64-bit databases. DB2 V7 does not support 32-bit application access of 64-bit databases.

Informix Agent

You may encounter issues with the `onsmsync` utility with various versions of Informix. Please contact Informix Support for `onsmsync` related patches.

Lotus Notes Agent

1. Backup of password-protected databases is not supported. Attempting to back up a password-protected database causes the job to suspend indefinitely. The suspension occurs within the Lotus Notes server, and can be avoided by not using password protection.
2. Master initiated Lotus Notes, Point-In-Time restores may fail with a status 12. If the `<install_path>` of the NetBackup master server and the NetBackup client is different, the automatic restore of Lotus transaction log extents during the recovery of the Lotus database will not be able to locate the path to the progress log and will fail.
3. The use of exclude lists for Lotus backups on NetBackup Windows clients has been disabled.

Microsoft Exchange Server Agent

For a restore of the Microsoft Key Management Service, failure to remove the contents of the `kmsdata` directory prior to initiating the restore may result in a corrupt For a restore of the Microsoft Site Replication Service, failure to remove the contents of the `srsdata` directory prior to initiating the restore may result in a corrupt database, even after a restore status 0.



Microsoft SharePoint Portal Server Agent

Compression of SharePoint objects has been disabled for this release. You will be able to specify compression as an attribute of the SharePoint class definition. However, SharePoint objects will not be compressed by the SharePoint client software.

Oracle Agent

The NetBackup for Oracle Backup and Recovery Wizards are not supported for DGUX, Sequent, and NCR.

Oracle Agent with the Advanced Client

Encryption is not supported for Oracle backups using the advanced backup methods.

Sybase Agent

The initial release of NetBackup 4.5 for Sybase does not support Sybase IQ. This issue still exists for NetBackup 5.0.

Advanced Client

1. FlashBackup support for Solaris 9 is limited.

FlashBackup supports the backup of extended attributes for UFS file system (Solaris 9), however, extended attributes cannot be restored via SFR. Extended attributes can be restored from FlashBackup images only by raw partition restore.

2. Solstice Disk Suite is not supported.

Advanced Client snapshot methods and offhost backup methods perform mapping of the underlying file system and volume structure. This mapping has been verified for the I/O system components listed in the "Snapshot Methods and Requirements" table in the *NetBackup Advanced Client System Administrator's Guide*. The use of other components in the I/O system, such as other volume managers or storage replicators, may result in an unreliable backup. Such configurations are not supported. An example of an unsupported component is a partition (or any other entity) made with Solstice Disk Suite.

3. Circular mount points are not being processed correctly.



When bpfis is given a path that contains a circular mount point, it returns a recursive path from the circular mount points. bpfis should only return the first level of the circular mount point instead of a recursive path.

4. Support for FlashBackup-Windows clients with UNIX servers.

When using a FlashBackup-Windows policy to back up Windows clients, the master and media servers must also be running on Windows. Support for FlashBackup-Windows clients with UNIX servers is scheduled for the first NetBackup 5.0 maintenance pack.

5. Unique restore features to Instant Recovery snapshots.

There are three restore features unique to Instant Recovery snapshots, listed below. Please note the following restrictions:

- ◆ Block-level restore is for VxFS_Checkpoint snapshots of Solaris and HP-UX clients only.
- ◆ File promotion is for VxFS_Checkpoint snapshots of Solaris clients with VxFS 4.0 only. Note that File Promotion is disabled in this release, and is scheduled to be available in the first 5.0 maintenance pack.
- ◆ Point-in-time rollback (image rollback) is for the following:
 - ◆ VxFS_Checkpoint snapshots of Solaris clients (with VxFS 4.0 only)
 - ◆ VxVM snapshots of either Solaris, HP, or Windows 2000 clients

These restore features are described in the *NetBackup for Advanced Client System Administrator's Guide*.

6. For Instant Recovery backups to tape, if the Allow multiple data streams policy option is selected, you will not be able to restore the backup image by means of the Point in Time Rollback feature. However, you can restore from the snapshot image or tape image using a standard restore.

Note Backups from schedules which have the "Instant recovery backups to disk only" attribute set can be restored by means of the Point in Time Rollback feature.

7. Due to limitations in volume name size in VxVM for Windows 2000 3.1, for backup volumes targeted by the VxVM and FlashSnap snapshot methods, VxVM volume names should be limited to 12 characters in order to guarantee that snapshot volume names, which are derived from parent volume names, are unique.

8. Advanced Client VxVM and FlashSnap snapshot methods on Windows 2000 platforms are supported by VERITAS Volume Manager for Windows 2000. To successfully employ these snapshot methods, VERITAS Volume Manager for



Windows 2000 version 3.1 or greater must be installed. In addition, Service Pack SP1 should be installed, hot fix HF03 should be installed, and the Volume Manager build level should be 5.31.56.0 or greater. After installing VERITAS Volume Manager for Windows 2000, the build level is reflected in the Windows Registry under the subkey HKEY_LOCAL_MACHINE\SOFTWARE\VERITAS\Volume Manager 3.1\Version.

9. The space optimize snapshot method in VxVM 4.0 does not work with offhost backups.

bpadm Interface

1. The new NetBackup 5.0 Advanced Client features have not yet been implemented in the bpadm administration interface. They will be added to bpadm in a future release.
2. Although the bpadm administration interface allows you to select Fastrax as a storage unit type, Fastrax storage units are no longer supported. The Fastrax storage unit option will be removed from bpadm in a future release.

FlashBackup

1. FlashBackup-Windows policies do not back up Windows system-protected files (the System State, such as the Registry and Active Directory).
2. FlashBackup-Windows policies do not support the backup of file names that are in the 8-character plus 3-character format. The 8.3 character format is retained, but the name of the restored file may be different from the original name.
3. FlashBackup-Windows policies do not support the backup of Windows Operating System (OS) partitions (such as C:\). It is possible to specify the partition in the backup policy, and the backup will succeed, but the restore of all Windows System data in the partition cannot be guaranteed.
4. FlashBackup-Windows policies do not support the backup of Windows System database files (such as RSM Database and Terminal Services Database). It is possible to specify a partition in the backup policy that contains these files, and the backup will succeed, but the restore of the data in these files cannot be guaranteed.



NetBackup Java Interfaces

General

1. A problem exists from the way Tru64 reports the timezone to the Java Timezone class causing the time in the Tasks Performed window to be one hour off from the actual time. To correct this problem, the user can enter the correct settings in to the Adjust Application Timezone dialog, and save this as the default. A persistent file is saved in the user's directory, and is used on subsequent program operations to enable the GUI to use the correct default timezone.

2. Paint problems in tables with large sets of data viewing with Exceed

There is a Java bug (4642927) that causes table painting problems when the GUI is viewed through Exceed for large data sets, for example, the job table in the Activity Monitor. This bug may cause the GUI display to deteriorate to the extent where it is unusable. Resizing the window causes the GUI to paint correctly. Another workaround involves adding the following to the java command in the jnbSA or jbpSA startup scripts.

```
-Dsun.java2d.pmoftscreen=false
```

This workaround will greatly degrade the performance of the GUI.

Other options to consider are:

- ◆ Install the NetBackup-Java Windows Display Console and use it on the Windows desktop. You can administer any NetBackup server by specifying the server in the login dialog.
 - ◆ Install and use the Windows Remote Administration Station to remotely administer your UNIX NetBackup servers.
3. If a non-modal dialog is visible and behind the parent frame and subsequently a modal dialog is made visible, Java moves the original non-modal dialog in front of the parent frame, but behind the newest dialog (a modal dialog requires a response and blocks input to all other dialogs for the application until the response is received). When the modal dialog is hidden, the non-modal dialog is moved back to its original position behind the parent frame.
 4. If you enter text into a dialog's text field while either NetBackup Java is busy performing other operations, or while your system is busy, the characters you enter may be transposed in order when displayed in the text field. For example, if you have started the Backup Policy Management Install Client Software operation and it is currently busy installing software, if you then try to perform other operations in



Backup Policy Management which require entering text, the characters you enter into the text field may be displayed in the field out of order. You may also notice that response time is slow.

5. On Tru64 platforms, the menu and button mnemonics do not work properly.

Backup Policy Management

1. Remote client software install limitations:
 - ◆ It does not support software install for non-UNIX clients and a small subset of UNIX clients are also not supported. An attempt to install on a UNIX client for which remote install is not supported, results in an Unknown hardware type: hardware type message.
 - ◆ It is enabled only when a master server node is selected, and only if the master server is the server the user logged into when starting NetBackup Java.

Storage Migrator

The Storage Migrator Administration utility does not honor the console's `NBJAVA_CLIENT_PORT_WINDOW` option settings. It will use whatever free local port the operating system provides to connect to its daemon process on the host.

Vault

1. The command line interface for the parsable output from the Vault reports is not published.
2. Non-vaulted Images Report problem.

If you use the NetBackup Administration Console on a Microsoft Windows system to manage a NetBackup master server on a Windows system, you cannot generate the Non-vaulted Images Report from the Administration Console. To work around this problem, you can use `vltopmenu` to generate this report on the Windows system. (The report will be generated properly if you use a Windows NetBackup Administration Console to manage a NetBackup master server on a UNIX system.)

3. Simultaneous Job Limitations.



If a Vault job fails with Media Manager error code 303, it may be because of other processes using a resource (such as a tape drive) that a Vault job tries to use. The other process can be a NetBackup or a Vault process. If a Vault job fails with error code 303, retry the job before trying the troubleshooting steps that are documented in the *NetBackup Troubleshooting Guide for UNIX and Windows*.

For information about running multiple Vault sessions simultaneously, see “Running Multiple Sessions Simultaneously” in the *NetBackup Vault System Administrator’s Guide*.





NetBackup Features End of Life

The purpose of this chapter is to notify our customer of changes in how VERITAS will support NetBackup features that may affect you. VERITAS will provide notification of one major release before discontinuing support of an item. This section contains a list features that will not be supported as of the next Major Release of NetBackup. For a list of Supported Platforms and Databases that will not be supported at the next major release, refer to, Chapter 2, “Supported Platforms and Peripherals” on page 21.

General NetBackup Features

1. Dropping support of the nonroot_admin script in the next major release
Authorizing nonroot users for administrator capabilities via the nonroot_admin script will not be supported in the next major release of NetBackup. The documentation will be removed at that time. However, in preparation for this, the script has been moved to the `/usr/opensv/netbackup/bin/goodies` directory.
The NetBackup Access Control feature will supersede this method of granting administrator privileges to nonroot users.
2. The creation or use of ASCII catalogs will not be supported in the next major release of NetBackup.

Client Interface

1. Support of the Motif client interface
At the next major release after NetBackup 5.0, NetBackup will no longer include the Motif version of the client interface (xbp).
 - ◆ The command line interface (bp) will continue to be supported. It is available on all UNIX client platforms.
 - ◆ The Java client GUI interface (jbpSA) will continue to be supported. Refer to the Platforms Supporting the NetBackup Administration Consoles for UNIX subsection for a list of supported platforms.



Terminology End of Life

The items in this section provide notification of various terms that will no longer be used or referenced in NetBackup products after the next major release beyond NetBackup 5.0.

- ◆ At the next major release after NetBackup 5.0, all commands that contain a *cl* will be replaced with *pl*. The following table contains the old command names along side the new name that will replace it.

Old Command Name	New Command Name
admincmd/bpclassnew	admincmd/bppolicynew
admincmd/bpclclients	admincmd/bpplclients
admincmd/bpcldelete	admincmd/bppldelete
admincmd/bpclexclude	admincmd/bpplexclude
admincmd/bpclinclude	admincmd/bpplinclude
admincmd/bpclinfo	admincmd/bpplinfo
admincmd/bpcllist	admincmd/bppllist
admincmd/bpclsched	admincmd/bpplsched
admincmd/bpclschedrep	admincmd/bpplschedrep
admincmd/bpclschedwin	admincmd/bpplschedwin
admincmd/bpclvalid	admincmd/bpplvalid
goodies/cltemplates	goodies/pltemplates

- ◆ The term *slave server* has been changed to *media server*.



Related Documents

A

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

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

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

Installation Guides

- ◆ *VERITAS NetBackup Installation Guide for UNIX*
NetBackup_Install_UNIX.pdf
Explains how to install NetBackup software on UNIX-based platforms.
- ◆ *VERITAS NetBackup Installation Guide for Windows*
NetBackup_Install_Win.pdf
Explains how to install NetBackup software on Windows-based platforms.
- ◆ *VERITAS Security Services Installation Guide*
VxSS_InstallGuide.pdf on the VERITAS Security Services CD-ROM.
Explains install and configure the VERITAS Security Services.

System Administrator's Guides - Basic Product

- ◆ *VERITAS NetBackup System Administrator's Guide for UNIX, Volume I*
NetBackup_AdminGuideI_UNIXServer.pdf
Explains how to configure and manage NetBackup on a UNIX server, including managing storage units, backup policies, catalogs, and host properties.



- ◆ *VERITAS NetBackup System Administrator's Guide for UNIX, Volume II*
NetBackup_AdminGuideII_UNIXServer.pdf
Explains additional NetBackup features such as access control and enhanced authorization and authentication. The guide also discusses using NetBackup with AFS and Intelligent Disaster Recovery (IDR).
- ◆ *VERITAS NetBackup System Administrator's Guide for Windows, Volume I*
NetBackup_AdminGuideI_WinServer.pdf
Explains how to configure and manage NetBackup on a Windows server, including managing storage units, backup policies, catalogs, and host properties.
- ◆ *VERITAS NetBackup System Administrator's Guide for Windows, Volume II*
NetBackup_AdminGuideII_WinServer.pdf
Explains additional NetBackup features such as access control and enhanced authorization and authentication. The guide also discusses using NetBackup with AFS and Intelligent Disaster Recovery (IDR).
- ◆ *VERITAS NetBackup Media Manager System Administrator's Guide for UNIX*
MediaMgr_AdminGuide_Unix.pdf
Explains how to configure and manage the storage devices and media on UNIX servers running NetBackup. Media Manager is part of NetBackup.
- ◆ *VERITAS NetBackup Media Manager System Administrator's Guide for Windows*
MediaMgr_AdminGuide_Win.pdf
Explains how to configure and manage the storage devices and media on Windows servers running NetBackup. Media Manager is part of NetBackup.
- ◆ *VERITAS Security Services Administrator's Guide*
VxSS_AdminGuide.pdf on the VERITAS Security Services CD-ROM.
Explains how to configure and manage core security mechanisms, including authentication, protected communications, and authorization.

System Administrator's Guides - Agents and Options

- ◆ *VERITAS NetBackup Advanced Client System Administrator's Guide*
NetBackup_AdminGuide_AdvancedClient.pdf
Explains how to install, configure, and use NetBackup Advanced Client. Advanced Client includes the features of FlashBackup, instant recovery, and frozen image and offhost backup.



- ◆ *VERITAS NetBackup for DB2 System Administrator's Guide for UNIX*
NetBackup_AdminGuide_DB2_Unix.pdf
Explains how to install, configure, and use NetBackup for DB2.
- ◆ *VERITAS NetBackup for DB2 System Administrator's Guide for Windows*
NetBackup_AdminGuide_DB2_Win.pdf
Explains how to install, configure, and use NetBackup for DB2.
- ◆ *VERITAS NetBackup Encryption System Administrator's Guide*
NetBackup_AdminGuide_Encryption.pdf
Explains how to install, configure, and use NetBackup encryption software to provide file-level encryption of backups and archives.
- ◆ *VERITAS NetBackup for Informix System Administrator's Guide*
NetBackup_AdminGuide_Informix.pdf
Explains how to install, configure, and use NetBackup for Informix to back up and restore Informix databases that are on a UNIX NetBackup client.
- ◆ *VERITAS NetBackup for Lotus Notes System Administrator's Guide for Windows*
NetBackup_AdminGuide_LotusNotes_Win.pdf
Explains how to install, configure, and use NetBackup for Lotus Notes to back up and restore Lotus Notes databases and transaction logs on a Windows client.
- ◆ *VERITAS NetBackup for Lotus Notes System Administrator's Guide for UNIX*
NetBackup_AdminGuide_LotusNotes_Unix.pdf
Explains how to install, configure, and use NetBackup for Lotus Notes to back up and restore Lotus Notes databases and transaction logs on a UNIX client.
- ◆ *VERITAS NetBackup for Microsoft Exchange Server System Administrator's Guide*
NetBackup_AdminGuide_MSExchg_Win.pdf
Explains how to configure and use NetBackup for Microsoft Exchange Server to perform online backups and restores of Microsoft Exchange Server.
- ◆ *VERITAS NetBackup for Microsoft SQL Server System Administrator's Guide for Windows*
NetBackup_AdminGuide_MSSQL_Win.pdf
Explains how to install, configure, and use NetBackup for Microsoft SQL Server to back up and restore Microsoft SQL Server databases and transaction logs.
- ◆ *VERITAS NetBackup for NDMP System Administrator's Guide*
NetBackup_AdminGuide_NDMP.pdf



Explains how to install, configure, and use NetBackup for NDMP to control backups on an NDMP host.

- ◆ *VERITAS NetBackup for Oracle System Administrator's Guide for UNIX*

NetBackup_AdminGuide_Oracle_Unix.pdf

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

- ◆ *VERITAS NetBackup for Oracle System Administrator's Guide for Windows*

NetBackup_AdminGuide_Oracle_Win.pdf

Explains how to install, configure, and use NetBackup for Microsoft Oracle to back up and restore Oracle databases that are on a Windows NetBackup Client.

- ◆ *VERITAS NetBackup for SAP System Administrator's Guide for UNIX*

NetBackup_AdminGuide_SAP_Unix.pdf

Explains how to install, configure, and use NetBackup for SAP on UNIX.

- ◆ *VERITAS NetBackup for SAP System Administrator's Guide for Windows*

NetBackup_AdminGuide_SAP_Win.pdf

Explains how to install, configure, and use NetBackup for SAP on Windows-based servers.

- ◆ *VERITAS NetBackup for SYBASE System Administrator's Guide for UNIX*

NetBackup_AdminGuide_Sybase_Unix.pdf

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

- ◆ *VERITAS NetBackup for SYBASE System Administrator's Guide on Windows*

NetBackup_AdminGuide_Sybase_Win.pdf

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

- ◆ *VERITAS NetBackup Global Data Manager System Administrator's Guide for UNIX and Windows*

NetBackup_AdminGuide_GDM.pdf

Explains how to install, configure, and use Global Data Manager (GDM) for NetBackup on UNIX and Windows-based operating systems.

- ◆ *VERITAS NetBackup Vault System Administrator's Guide for UNIX and Windows*

NetBackup_AdminGuide_Vault.pdf



Describes how to configure and use logical vaults and profiles to duplicate backups, perform catalog backups, eject media, and generate reports.

- ◆ *VERITAS NetBackup Advanced Reporter System Administrator's Guide for UNIX and Windows*

NetBackup_AdminGuide_AdvancedReporter.pdf

Explains how to install, configure, and use NetBackup Advanced Reporter to monitor and report on Netbackup activities.

- ◆ *VERITAS NetBackup SAN Shared Storage Option System Administrator's Guide for UNIX and Windows*

MediaMgr_AdminGuide_SSO.pdf

Provides information on installing and configuring the NetBackup Shared Storage Option (SSO) on UNIX and Windows-based servers. SSO is an extension to tape drive allocation and configuration for NetBackup Media Manager.

User's Guides

- ◆ *VERITAS NetBackup User's Guide for UNIX*

NetBackup_UserGuide_Unix.pdf

Explains how to use NetBackup on a UNIX client to perform backups, archives, and restores.

- ◆ *VERITAS NetBackup User's Guide for Windows*

NetBackup_UserGuide_Windows.pdf

Explains how to use NetBackup on a Microsoft Windows clients to perform backups, archives, and restores. This guide also contains some configuration instructions for the NetBackup Backup, Archive, and Restore software.

- ◆ *VERITAS NetBackup Vault Operator's Guide for UNIX and Windows*

NetBackup_OperGuide_Vault.pdf

Describes procedures for sending tapes offsite, receiving tapes on site, and running reports on offsite media and vault jobs.

- ◆ *VERITAS NetBackup Administrator's Guide for Novell NetWare Client*

NetBackup_AdminGuide_NetWare_Client.pdf

Explains how to install and use the NetBackup's NetWare Client software. With the NetWare Client, full and incremental backups can be scheduled to occur automatically and unattended under the control of the NetBackup master server. The NetWare Client also provides two methods for performing user-directed backups and



restores: Target, which uses a character-based, menu-driven interface running on the NetWare server, and NonTarget, which uses the NetBackup for NetWare NonTarget Browser that is installed and run from a Windows computer.

Device Configuration Guide - Media Manager

- ◆ *VERITAS NetBackup Media Manager Device Configuration Guide for UNIX and Windows*
MediaMgr_DeviceConfig_Guide.pdf

Explains how to add device drivers and perform other system-level configurations for storage devices and media servers (or SAN media servers) that are supported by NetBackup Media Manager.

Troubleshooting Guide

- ◆ *VERITAS NetBackup Troubleshooting Guide for UNIX and Windows*
NetBackup_Troubleshoot_Guide.pdf

Provides troubleshooting information for UNIX- and Windows-based NetBackup products, including Media Manager.

NetBackup Commands

- ◆ *VERITAS NetBackup Commands for UNIX*
NetBackup_Commands_UNIX.pdf

Describes NetBackup and Media Manager commands and processes that can be run from a UNIX command line.

- ◆ *VERITAS NetBackup Commands for Windows*
NetBackup_Commands_Win.pdf

Describes NetBackup and Media Manager commands and processes that can be run from a Windows command prompt.





