VERITAS NetBackup™ 4.5

Release Notes

for UNIX and Windows

VERITAS

Contents

Preface

The VERITAS mission for NetBackup 4.5 is to provide heterogeneous data protection solutions from the workgroup or departmental level to the enterprise level. NetBackup BusinesServer 4.5 is a high-performance solution offering ease of use and functionality that is appropriate to smaller work environments. NetBackup DataCenter 4.5 provides powerful functionality, flexibility, mainframe caliber robustness, and high performance in large enterprise environments. NetBackup 4.5 is a major new release in the NetBackup product family with significant enhancements in the area of scalability, application protection, disaster recovery, server-free and off-host backup, and integration with Backup Exec.

These release notes apply to VERITAS NetBackup 4.5 and are intended for the system administrator and other users.

Organization

◆ Chapter 1 explains when this release of NetBackup is required and the important new features that it includes.

◆ Chapter 2 lists the platforms and peripherals supported by this release.

◆ Chapter 3 lists the product dependencies and updates for this release.

◆ Chapter 4 contains important operating information not documented elsewhere.

◆ Chapter 5 describes notable problems resolved by this release of NetBackup.

◆ Chapter 6 describes problems and limitations that you may encounter when using this release of NetBackup.

◆ Appendix A lists all NetBackup documents for this release.

Related Documents

Windows

◆ *NetBackup Installation Guide for Windows*

Explains how to get Windows NetBackup software installed and running.

◆ *NetBackup BusinesServer Getting Started Guide for Windows*

Explains how to get Windows NetBackup BusinesServer software configured.

UNIX

◆ *NetBackup Installation Guide for UNIX*

Explains how to get UNIX NetBackup software installed and running.

◆ *NetBackup BusinesServer Getting Started Guide for UNIX*

Explains how to get UNIX NetBackup BusinesServer software configured.

Note See Appendix A of these release notes for a complete list of related manuals.

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 documention 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.txt` (The `Readme.txt` file (ASCII format) may be slightly more up-to-date than the printed and pdf copies of the release notes.)

- `Readme_Client.txt`

- `Readme_Server.txt`

- `Readme_SMS.txt`

- `Readme_Win2000.txt`

On UNIX

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

`/usr/openv/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 **VERITAS Support** web page, select **Product Listing**.

3. Select **NetBackup Products**. A page appears with a list of the NetBackup products.

4. Choose **NetBackup BusinesServer** or **NetBackup DataCenter**.

5. Under **Knowledge Base**, select **Online Documentation**. The documents page appears. Pick the document you need from the resulting list.

Accessibility

NetBackup contains features that make the user interface easier to use by people who are vision 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 (mouse-less) navigation using accelerator keys and mnemonic keys

For more information, see the NetBackup system administrator's guide.

Conventions

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

Type Style

Typographic Conventions

Typeface	Usage
Bold fixed width	Input. For example, type `cd` to change directories.
`Fixed width`	Paths, commands, filenames, or output. For example: The default installation directory is `/opt/VRTSxx`.
Italics	Book titles, new terms, or used for emphasis. For example: *Do not* ignore cautions.
Sans serif (italics)	Placeholder text or variables. For example: Replace *filename* with the name of your file.
Serif (no italics)	Graphical user interface (GUI) objects, such as fields, menu choices, etc. For example: Enter your password in the **Password** field.

Notes and Cautions

Note This is a Note. Notes are used to call attention to information that makes using the product easier or helps in avoiding problems.

Caution This is a Caution. Cautions are used to warn about situations that could cause data loss.

Key Combinations

Some keyboard command sequences use two or more keys at the same time. For example, holding down the **Ctrl** key while pressing another key. Keyboard command sequences are indicated by connecting the keys with a plus sign. For example:

Press Ctrl+t

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*

the user can use either the *arg1* or *arg2* variable.

Terms

The terms listed in the table below are used in the VERITAS NetBackup documentation to increase readability while maintaining technical accuracy.

Term	Definition
Microsoft Windows, Windows	Terms used as nouns to describe a line of operating systems developed by Microsoft, Inc.
	A term used as an adjective to describe a specific product or noun. Some examples are: Windows 95, Windows 98, Windows ME, Windows NT, Windows 2000, Windows XP, Windows LE, Windows servers, Windows clients, Windows platforms, Windows hosts, and Windows GUI.
	Where a specific Windows product is identified, then only that particular product is valid with regards to the instance in which it is being used.
	For more information on the Windows operating systems that NetBackup supports, refer to the VERITAS support web site at `http://www.support.veritas.com`.
Windows servers	A term that defines the Windows server platforms that NetBackup supports; those platforms are: Windows NT and Windows 2000.
Windows clients	A term that defines the Windows client platforms that NetBackup supports; those platforms are: Windows 95, 98, ME, NT, 2000, XP (for 32- and 64-bit versions), and LE.

Getting Help

For updated information about this product, including system requirements, supported platforms, supported peripherals, and a list of current patches available from Technical Support, visit our web site:

```
http://www.support.veritas.com/
```

VERITAS Customer Support has an extensive technical support structure that enables you to contact technical support teams that are trained to answer questions to specific products. You can contact Customer Support by sending an e-mail to support@veritas.com, or by finding a product-specific phone number from the VERITAS support web site. The following steps describe how to locate the proper phone number.

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

2. Click **Contact Support**. The *Contacting Support Product List* page appears.

3. Select a product line and then a product from the lists that appear. The page will refresh with a list of technical support phone numbers that are specific to the product you just selected.

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

New Since NetBackup Release 3.4 **1**

NetBackup 4.5 contains significant enhancements in the areas of scalability, application protection, and disaster recovery to name a few. Major new features include:

◆ Calendar-based scheduling

◆ The ability to prioritize storage units

◆ Enhanced support for backups across firewalls

◆ Additional user access control

◆ The integration of Vault as a fully supported NetBackup option that provides the ability to create multiple, simultaneous backup copies

◆ The ability to read Backup Exec tapes.

◆ An updated look and feel

  - Old administrative GUI interfaces replaced with Explorer-like interfaces

  - Enhanced Global Data Manager offering better scalability and at-a-glance health monitoring

  - Motif administrative GUI has been retired in favor of the NetBackup Administration Console (Windows) and a greatly improved NetBackup-Java Administration Console

NetBackup 4.5 improves the product's robustness in SAN environments. In addition, the server-free capability introduced with the specialized NetBackup 4.0V release has now been incorporated within the general product and has been expanded to include more platforms and snapshot options.

This section describes in more detail the new features that NetBackup 4.5 offers.

New Publications

The following list shows the new publications included in the NetBackup 4.5 release.

◆ Advanced Reporter System Administrator's Guide

◆ Global Data Manager System Administrator's Guide for UNIX and Windows

◆ "Important: Read This First" (Transitioning Support from NetBackup for EMC to EMC TimeFinder)

◆ NetBackup Database Archiver System Administrator's Guide for UNIX

◆ NetBackup for EMC Fastrax System Administrator's Guide

◆ Vault Operator's Guide

◆ Vault System Administrator's Guide

General NetBackup

1. Terminology changes

As the number of NetBackup customers increases, so does the value of usability improvements. One such change is to improve on the terminology used throughout VERITAS. The following table lists the old terms and the corresponding new term.

Terminolgy Change

NetBackup 3.4 Terminology	NetBackup 4.5 Terminology
class	backup policy, or policy
kill job	cancel job
activity log	debug log
alternate-client/path/target restore	redirected restore
NetBackup Configuration dialog	NetBackup Client Properties dialog (Windows NT/2000 only)
Configure - NetBackup dialog	Host Properties dialog
Administration Client	NetBackup Remote Administration Console
NetBackup Administration window	NetBackup Administration Console

Terminolgy Change (continued)

NetBackup 3.4 Terminology	NetBackup 4.5Terminology
client-user interface	user interface (or named interface)
autoloader, changer, carousel	robotic library (or robot, library, stacker)
transport	robotic arm
entry/exit port, import, mailslot	media access port, or port.
multi-hosted drive	(SAN) shared drive, shared storage, shared library
volume description or description	media description, or description
EVSN, external volume serial number	external media ID or media ID
RVSN, recorded volume serial number	recorded media ID or media ID

2. No Remote Administrative Console license key requirement

Installing NetBackup 4.5 Remote Administrative Console on a non-server platform does not require a license key.

3. Adding options through a license key interface

As of the 4.5 release, NetBackup products for Windows and UNIX enables users to add options and upgrade to newer versions by entering license keys using a NetBackup License Key window in each GUI. This new GUI window makes it easy for users to perform operations relating to License Keys, such as:

- View all existing license key information

- Add a new license key

- Delete an existing license key

- Summary of active licensed features

To upgrade from 4.5 BusinesServer to 4.5 DataCenter, users enter a new license key. This is the only step required. All required software components are already installed.

Features and add-ons are also handled by entering license keys in NetBackup License Key window at the server.

> **Note** When making and saving any license key updates (including adding and deleting license keys) in the NetBackup-Java Administration Console, you must restart the NetBackup Administration Console.

4. Calendar-based scheduling

The 4.5 release includes updates to the Policy wizard that enables customers to create and schedule backups on a calendar basis as well as the frequency based scheduling provided in previous releases of NetBackup. This feature provides methods for selecting specific dates, the day of the month, and the days of the week that a backup should run. It also provides the ability to specify dates to be excluded as valid run days. Refer to the System Administration Guides for UNIX and Windows for more information on configuring your NetBackup product.

5. Renamed NetBackup commands

Included in the NetBackup 4.5 release is a list of the renamed commands shown in the tables that follow. Both old and new names of the commands are supported at this release--so there is no need to change your backup scripts with the new names. In most cases the executable for Windows will be renamed (for all Windows platforms), and for UNIX, the executables will have new links that point to the old names (all UNIX platforms)

> **Note** Only the new command names are documented in the manuals. The old command names are still cross-referenced in the indexes.

Support for the old-name commands will be removed at the next major release of NetBackup. At that time, users will have to change any backup scripts that call the commands by their old names, such as `bpclassnew`.

NetBackup Commands

OLD NAME	NEW NAME (as links on UNIX)
bpclassnew	bppolicynew
bpclclients	bpplclients
bpcldelete	bppldelete
bpclexclude	bpplexclude
bpclinclude	bpplinclude
bpclinfo	bpplinfo

NetBackup Commands (continued)

OLD NAME	NEW NAME (as links on UNIX)
bpcllist	bppllist
bpclsched	bpplsched
bpclschedrep	bpplschedrep
bpclschedwin	bpplschedwin
bpclvalid	bpplvalid

NetBackup man pages, in /openv/man/share/man/man1 (all UNIX platforms)

OLD NAME	NEW NAME (as links on UNIX)
bpclassnew.1m	bppolicynew.1m
bpclclients.1m	bpplclients.1m
bpclinclude.1m	bpplinclude.1m
bpclinfo.1m	bpplinfo.1m
bpclsched.1m	bpplsched.1m
bpclschedrep.1m	bpplschedrep.1m

Note On UNIX, the new names are links to the existing "old name" man page files.

Scripts, for NetBackup Media Manager, in /volmgr/bin (all platforms/OS)

OLD NAME	NEW NAME
multihost_drive_notify (on UNIX)	shared_drive_notify
multihost_drive_notify.cmd (on NT)	shared_drive_notify.cmd

6. Restore enhancements

When initiating a restore using the `bprestore` command or `bp` interface (UNIX only), users can exclude previously selected files and directories by adding an exclamation mark (!) before a file path specification. For example, on Windows NT and Windows 2000:

```
bprestore -s 01/01/01 00:00:00 -e 01/02/01 23:59:59 C:\Program
Files\abc\ !C:\Program Files\abc\*.pdf C:\Program
Files\abc\final.pdf
```

The above command restores `C:\Program Files\abc\`. However, it excludes files ending in `.pdf`, except for the `final.pdf` file in `C:\Program Files\abc\` which it does restore. For more information on using `bprestore`, see the `bprestore` command description. For information on using `bp`, see the *NetBackup User's Guide for UNIX.*

7. Support of Motif administration interfaces versions

NetBackup 4.5 does not include or support the Motif versions of its administration interfaces: `xbpadm`, `xbpmon`, `xvmadm`, `xnb`, and `xdevadm`.

- The supported GUIs for NetBackup 4.5 are the NetBackup Administration Console for the Windows and the Java-based platforms such as, Solaris (2.6, 7, and 8), HP-UX (11.0 and 11i), AIX (4.3.3.10 and 5.1), Red Hat Linux (6.2, 7.0, and 7.1) and Tru64 (5.1) platforms. The Java client GUI will continue to be supported on Windows (95, 98, ME, NT, 2000, XP and LE) to allow remote backup and restore browsing of non-Windows platforms.

- Also any previously installed versions, for example from release 3.4, will be deleted by the NetBackup 4.5 upgrade.

Caution Do not attempt to configure NetBackup 4.5 by using copies of the Motif GUI from an earlier release. Doing so will corrupt your NetBackup 4.5 configuration.

8. Patch uninstaller

The administrator can now uninstall a server or client patch installed on a NetBackup 4.5 server. Only the last installed patch of a certain product/subproduct may be uninstalled on UNIX systems. On Windows systems, only the last installed patch can be uninstalled. This feature should not be used to uninstall any patches previous to the NetBackup 4.5 release. For instructions on how to uninstall a patch, refer to the README file supplied with each patch.

9. VERITAS ServPoint NAS (for Solaris versions only)

   NetBackup 4.5 supports standard backup and restore operations for ServPoint NAS Solaris, including the backup and restore of the NTFS Access Control List (ACL) along with extended file attributes for read-only, archive, system, and hidden file attributes. However, Flashbackup does not backup or restore extended file attributes.

10. VERITAS FastBackup for Auspex

    As of this release, NetBackup FastBackup for Auspex is no longer supported.

11. NetBackup for EMC

    As of the NetBackup 4.5 release, the NetBackup for EMC option is being transitioned to a new product. The NetBackup for EMC option will be formally retired as of the next major release of NetBackup.

    All NetBackup for EMC customers under software maintenance will receive the new license keys that will enable them to transition to greater EMC TimeFinder support for split mirror and offhost backup. For additional transition information refer to *Changes Affecting Support for NetBackup™ for EMC.*

    Support for dynamic linking with EMC SYMAPI 4.2 and later has been added for NetBackup 4.5 and will work with either configuration option outlined above.

12. Accessibility

    All graphical user interfaces (GUIs) for the NetBackup 4.5 products are accessible to disabled users, in compliance with federal laws on accessibility.

13. NetWare Media Server option

    NetBackup 4.5 contains a NetWare Media Server feature. This feature consists of an NDMP client that performs backups and restores using a media device on the NetWare server under the control of a NetBackup master server.

14. NetBackup Administration Console

The NetBackup Administration Console for Windows and Java have been redesigned to offer a more unified interface to the application. This provides the user with a single user interface design that improves usability and functionality. A single tree now provides access to the following administration functions:

- NetBackup Management - wizards for NetBackup

  - Activity Monitor
    - new topology view showing activity (Windows only)
    - daemon, process, job data

  - Reports - reports are selected from nodes in the tree

  - Policies - policies are now expandable in a separate frame

  - Storage Units - fewer tree nodes and includes new storage unit groups

  - Catalogs - consolidates verify, import, and duplicate

  - Host Properties - configuration of servers, clients, and user authorization

- Media Management - wizards for media management

  - Media - new list views to show volume pools and volume groups

  - Devices - new views for topology, drives, robots, and hosts

  - Device Monitor - new topology view and ability to monitor multiple hosts

- Vault - licensed feature for tape management

- Storage Migrator - licensed product for file migration

15. Maximum number of backup copies

The maximum number of copies of a backup is increased from two to ten and the default value is two. In addition, the global configuration parameter controls the maximum number of copies of a backup.

16. Enhanced security (Authentication)

NetBackup 4.5 contains enhancements to the Authentication and Authorization privileges. Traditionally, administrators on NetBackup media servers were able to administer (create policies, monitor jobs, etc.) NetBackup master servers and other media servers. This capability causes security problems in some environments where media servers may belong to different departments. NetBackup 4.5 contains updates that make it possible to restrict the privileges of media servers to only what is required for backups and restores.

When enhanced authentication is turned on, NetBackup will determine if authenticated users have administrative privileges. This enables users other than OS administrators to perform NetBackup administrative tasks.

17. Enhanced catalog format

NetBackup provides an enhanced catalog format designed to improve the scalability and performance of catalog access in NetBackup. This binary catalog format feature improves catalog performance for browsing and searching the on disk catalogs, and in some cases reduce the catalog file size. The new binary catalog format is written by NetBackup on all platforms except for NCR and IBM/Sequent. For more information about the new catalog format feature, please refer to the *NetBackup System Administrator's Guide.*

18. Prioritized storage units

The NetBackup Administration Console contains a NetBackup storage unit model that a user can select to create storage units. A user can prioritize storage units by specifying a subset of available storage units called a *storage unit group.* For more information about storage unit groups, see *NetBackup System Administrator's Guide.*

19. Increased retention levels

NetBackup 4.5 contains 25 retention levels.

20. Network configuration requests routing

In previous versions of NetBackup, network configuration requests were routed directly from the host making the request to the `bpcd` process on the client to which the request is directed. This required that the Administration Console host or GDM host must be listed in the SERVER or MASTER_OF_MASTERS list on the client. The NetBackup 4.5 software contains a new procedure that removes the requirement that all clients must have the Administration Console host or GDM host configured. All network configuration requests will now be routed first to the master server's `bprd` process, which relays the request to the client's `bpcd` process.

21. Enhanced GUI features

NetBackup Administration Console enables NetBackup administrators to:

- Add, delete, and modify the scratch pools.

- Highlight multiple robots or multiple drives and delete them all at the same time.

22. Firewall support

NetBackup improves its usability in Firewall environments by solving the "call-back" connections problem that had forced administrators to "open up" an unacceptable number of ports on the firewall.

Note NetBackup does not address communications from NetBackup master or media servers through firewalls to third party, network-controlled robotic library interfaces including the StorageTeK Automated Cartridge System and Library Station interfaces (ACS robot type), IBM Automated Tape Library and Library Manager Control Point interfaces (TLH robot type), ADIC Distributed AML Server (DAS) and SDLC interfaces (TLM robot type), and the Fujitsu Library Management Facility interface (LMF robot type). Also, firewall communications through the NDMP interface is not addressed in NetBackup.

23. Backup Exec Tape Reader

NetBackup 4.5 includes the Backup Exec Tape Reader feature. This feature enables users to import catalogs, browse and select images, files, directories, and restore data from media written by Backup Exec Windows NT 7.0 or above (BE) using only the NetBackup 4.5 (NB) user interface.

24. SNMP MIB

The VERITAS SNMP Extension MIB is included in this media release. VERITAS SNMP Extension offers an SNMP-based enterprise framework integration and intelligent proactive event management for NetBackup. It enables centralized frameworks to monitor, control, and configure your mission-critical NetBackup environment. Even without the presence of leading frameworks such as HP Openview, Tivoli TNG and CA-UniCenter, SNMP Extension intelligently monitors the NetBackup environment and notifies system administrators of both hardware and software failures and can automatically take corrective actions to resolve the problem. Using the SNMP Extension, customers can achieve enterprise-level data availability management, proactive event management and streamlined business process.

SNMP Extension works with all enterprise frameworks that support SNMP. See SNMP Extension data sheet for detailed information. The MIB is located at goodies directory. To fully implement SNMP Extension in your environment, please E-mail VERITAS consulting at consult@veritas.com.

25. NetBackup installation improvements for Windows

All NetBackup 4.5 for Windows components and options installs via the Microsoft InstallShield for Windows Installer Service version 2.03, providing a common install environment for all Windows servers, clients, agents, and options. All NetBackup for Windows platforms reside on a single CD-ROM. Numerous bug fixes and minor enhancements were also implemented for the install process.

26. New debug logging script

New debug logging script used to assemble a debug log for a particular backup job ID. This script will be delivered in the goodies directory.

27. Ability to promote which backup copy is used as the primary copy for a restore

If you have multiple copies of a backup, only one is considered "primary." The primary copy is the one that will be used when you request to restore your data. If you have stored duplicate copies of your backups off-site, then one of the steps of the disaster recovery process is to specify that those copies are now primary to make them available for the restore process. The new CLI, `bpchangeprimary`, gives you an automated facility to promote the copy that will be used for the restore to be primary. This utility operates based on the volume pool that the backup copies are in the volume group, or the copy number. Various other inputs are also available to further limit the backups to be affected.

Linux

NetBackup supports Red Hat Linux version 6.2, 7.0, and 7.1 on NetBackup BusinesServer and DataCenter servers. For information on configuring devices on these platforms. Refer to "Supported Platforms and Peripherals" on page 31 to see what drives types and robotic devices are supported.

Microsoft Windows

1. Windows XP and Windows LE support

NetBackup offers client-only support for 32-bit Windows XP, 64-bit Windows XP, and 64-bit Windows LE platforms.

2. Path remapping

In some situations, a reboot of the operating system can result in device names changing. These changes caused problems with the NetBackup static device database. NetBackup 4.5 automatically resolves this issue after you start up Device Manager, having serialized drives in a configuration.

3. Logo certification

NetBackup 4.5 for Windows meets Windows 2000 Logo certification requirements. (Released with NetBackup 3.4.1)

4. Integration of NetBackup and MSCS

The first integration of NetBackup and Microsoft Cluster Server (MSCS) available in the NetBackup 3.4 release provided support for a NetBackup fail-over media server. With the release of version 3.4.1, NetBackup supports a NetBackup fail-over master server. In addition, this feature makes the setup, configuration, and operation of a NetBackup fail-over server easier and more reliable.

5. Windows NetBackup performance improvements

VERITAS makes considerable efforts to evaluate and measure NetBackup performance and throughput on a Windows systems. Bottlenecks are frustrating and pin-pointing these bottlenecks only compounds the problem if no guidance is provided on how to resolve it. Beginning with this release, users can reference the *NetBackup Performance Evaluation for Windows NT Systems* document to learn more about:

- Evaluating performance

- Measuring performance of NetBackup components

- Finding bottlenecks and addressing common NetBackup configuration problems

- Evaluating and measuring performance of system components (CPU, Memory, Disk, I/O, etc.)

NDMP

1. Dynamic Support for V2, V3, V4 NDMP protocol

   NetBackup dynamically supports multiple NDMP protocol versions 2, 3, and 4 across all NetBackup for NDMP platforms, including Solaris, HP-UX, AIX, Linux, Windows NT, and Windows 2000.

2. Support for Remote NDMP backup

   NetBackup now supports remote NDMP backup from NDMP server-enabled, network attached storage devices to tape libraries attached to a NetBackup media server. Initial support is limited to Solaris and Windows NT and Windows 2000 media servers and requires the installation of the NetBackup for NDMP option.

ServerFree Agent

1. NetBackup ServerFree Agent provides data protection services for frozen image backup, and supports off-host backup over Fibre Channel networks (in addition to conventional backups to locally attached devices).

2. NetBackup supports two different options for creating frozen image backups, Core Frozen Image Services, and Extended Frozen Image Services (also known as the Array Integration option).

3. NetBackup ServerFree Agent provides two offhost and SAN Data Movement services. NetBackup Media Server and Third-Party Copy Device supports NetBackup standard, FlashBackup, and Oracle policies.

4. The ServerFree Agent capabilities are now supported on both Solaris and HP-UX clients and media servers. Any combination of Solaris and HP-UX server and client may be used.

5. The Extended Frozen Image services includes support for frozen image backups for data configured on EMC Symmetrix, Hitachi 7700/9200/9900, and HP-XP 256/48/512 disk arrays.

6. Support for EMC Fastrax

   The NetBackup Support for EMC Fastrax adds support for the EMC Fastrax product to NetBackup. Fastrax is an integrated EMC solution that provides high performance backup and restore capabilities for EMC Symmetrix systems. It is based on the ServerFree frozen image capability with Fastrax as the offhost option. The first release of this product supports the NetBackup Standard and Oracle policies on the Sun Solaris operating system using Media Manager robot type TLD.

7. The Core Frozen Image Services (EFIS) and OffHost Data Management software, requires a separate license key. For directions on installing and using frozen image software, refer to the *NetBackup 4.5 ServerFree Agent System Administrator's Guide.*

Database Agents

The following subsections contain new information pertaining to NetBackup database agents.

Database Archiver Agent

1. Ability to extract and archive to tape or disk

   NetBackup contains a Database Archiver agent that provides the ability to extract and archive to tape or disk a subset of database data from any Oracle 8i or Oracle 9i database, and then provides the ability to restore and optionally insert this data back into the same or another Oracle database.

   NetBackup Database Archiver uses a system and database independent archive format based on the eXtensible Markup Language (XML) standard to represent relational database table data extracted from the Oracle database. The archive format is self-identifying because it uses the XML Schema standard to describe the table data that is included in the archive.

   Command line interfaces are provided that allow export and import at row and table level granularity. Parameter files control what table data will be included in an archive, and what table data will be extracted from an archive and either restored in XML format to an operating system directory, or parsed and imported back into an Oracle database. The parameter files also control the NetBackup environment including the NetBackup policy and schedule used.

   This option supports Oracle 8.1.x and 9.0.x on the following 32-bit and 64-bit platforms:

Solaris	AIX	HP-UX

Oracle Agent

1. Simplification of Oracle backups and restores

    NetBackup simplifies Oracle backups and restores through the use of Backup and Recovery Wizards. These wizards solicit information to perform the following:

    -   Create ready-to-use Oracle RMAN backup or restore templates. The end user need not understand RMAN in order to perform a database backup or restore.

    -   Generate an RMAN script that can perform an Oracle ServerFree backup or restore (SeverFree backups or restores are activated by the Proxy parameter in RMAN).

    -   Generate an RMAN script that can perform an Oracle BLI backup or restore (Oracle BLI backups or restores are activated by the Proxy parameter in RMAN).

2. Block-Level Incremental Backups (BLIB)

    NetBackup has the capability to perform Block-Level Incremental Backups (BLIB) on Oracle databases by setting up checkpoints (or a frozen-image or snapshot) of the data. This allows for better backup performance, as well as enables the Oracle database to continue running simultaneously with the backup.

    Initially, the VERITAS File System (VxFS) version 3.3 implemented checkpoints using a context view to the checkpoint to gain access to the checkpoint files. VxFS handles the context view enabling NetBackup to use the filenames normally within the NetBackup code. VxFS then redirects NetBackup to the checkpoint file automatically. The current implementation of BLIB in NetBackup uses this context view functionality.

    The newest release of VxFS (version 3.5, due in 2002) eliminates the context view checkpoints that NetBackup relies upon. Therefore, the changes made in NetBackup 4.5 supports VxFS version 3.5 and remains compatible with earlier versions of VxFS.

    Note Earlier versions of NetBackup do not work with VxFS 3.5. Therefore customers who upgrade VxFS to version 3.5 must upgrade NetBackup to version 4.5 to use BLIB.

3. NetBackup for Oracle is now supported on Linux.

4. Support for Oracle and SAP backups and restores

    NetBackup supports Oracle and SAP backups and restores in a Microsoft Cluster Server environment.

DB2 Database Agent

1. Support of latest data management features

NetBackup for DB2 supports the latest data management features introduced in DB2 version 7, including:

- Incremental database backups and restores
- One-step automatic restore of all necessary incremental and full images
- Improved synchronization of archive logs with database backup images
- On-demand log archiving
- Increased log file sizes, up to 32 GB

2. DB2 supports 64-bit databases

NetBackup for DB2 now supports 64-bit databases on these 64-bit platforms:

- AIX 4.3.3
- Solaris 7
- Solaris 8

3. SAP support for DB2

The NetBackup for DB2 Agent now supports DB2 in an SAP environment. Procedures for using NetBackup in SAP and DB2 environments are now documented.

Microsoft Exchange Server Agent

1. Wildcard character support for Exchange path names

A wildcard character is a character such as an asterisk (*) or a question mark (?) that you can use to represent one or more real characters when searching for objects or folders. Wildcard characters can be used to define groups of objects without specifying the objects individually.

The supported meta or wildcard characters for MS-Exchange-Server Policy file lists are *, ?, and [ ].

- Only one wildcard pattern per file list entry is allowed.
- Only wildcard patterns in the final segment of the path name is honored.
- Only wildcard patterns in the Storage Group segment of Exchange 2000 paths is honored.

- Wildcard patterns that are not honored are treated as literal characters.

- For Exchange Mailbox path, any segment of the path may contain wildcard characters - as long as it is the last part.

2. Support Mailbox Feature

   NetBackup 4.5 supports Mailbox Feature backup/restore of duplicate mailboxes.

Lotus Notes Agent

1. NetBackup supports the backup and restoration of Domino databases in a Lotus Domino clustered environment. This functionality is provided by the NetBackup for Lotus Notes database agent and is supported using the Domino R5 backup/restore API.

VERITAS Storage Migrator

1. NetBackup enhances the VERITAS Storage Migrator reporting features to provide administrators with detailed information about the file system and also to generate reports on performance and past trends.

2. With this release, the VERITAS UNIX Storage Migrator (VSM) enables a Database administrator to free disk space by migrating Redo logs to a secondary storage location. This feature provides a GUI to assist Database Administrator in configuring VSM and managing database redo logs.

   Note The only database that currently supports VSM database archive log management is Oracle 8i.

3. VSM 4.5 works with the most recent version of VERITAS ServPoint NAS Samba file system.

NetBackup Java

The following items are new enhancements to the NetBackup Administration Console for Java.

1. The catalog backup configuration application now provides a pick-list of volumes when the type of media chosen for the backup is removable media. Users no longer have to manually type in the volume's media ID and select its density.

2. NetBackup Configuration Enhancements

   From the NetBackup-Java Administration Console, users can configure and set Host Properties. In addition, the NetBackup-Java Administration Console:

   - Provides all the settings & features that are there in the existing NetBackup Administration Console (Windows)

   - Presents all reports with the same look and functionality as the NetBackup Administration Console (Windows)

3. VxHelp for the NetBackup-Java Administration Console

   NetBackup 4.5 Java utilizes VxHelp, a common help component intended for use in all VERITAS products. This component will provide search capability and an improved user interface for the NetBackup-Java Administration Console.

4. Java License Dialog

   The NetBackup-Java Administration Console has been enhanced to contain the same license functionality as seen on the License dialog in the NetBackup Administration Console for Windows.

5. Support for Pluggable Authentication Modules (PAM)

   The NetBackup-Java Administration Console architecture now supports Pluggable Authentication Modules (PAM) on the Solaris, Linux, HP-UX and FreeBSD operating systems. This makes it possible to support other authentication methods like Kerberos on the NetBackup server and client systems specified in the GUI's login dialog.

6. Application Timezone Data Enhancement

   You can now configure the Application Timezone data at the user level and not globally for all users. It is used by both the NetBackup Administration Console and the client, and the Backup, Archive and Restore GUIs. Each user will have to initially configure it during an upgrade to NetBackup 4.5, and it will be preserved across subsequent upgrades of NetBackup.

Activity Monitor Application

1. New Job Types

New job types have been added for verify, duplicate, import, catalog backup, and vault jobs in the Activity Monitor.

2. Improved job monitoring performance

NetBackup contains updates and enhancements that improve the performance of job monitoring. Job monitors receive notification of job updates as they happen and store the data in a binary file rather than a flat file to decrease the disk space required to store each job, thus improving performance.

Global Data Manager (GDM)

1. GDM redesign

A redesigned NetBackup 4.5 GDM now provides overall health-of-the-system monitoring of large numbers of servers across multiple storage domains. It features the ability to display a summary of job and drive activity with drill-down to the detail when needed. GDM also tracks status of daemons and services and displays alerts when they become inactive on the master server or on media servers. In addition, media problems, such as frozen, full, or suspended media are monitored and highlighted, and GDM uses threshold-bound color changes and icons to highlight problems.

The original GDM provided a means to view data across all storage domains. GDM 4.5 improvements have added analysis of backup environment conditions and flagging problems according to thresholds the user sets. The GDM GUI on Windows no longer requires the NetBackup-Java Administration Console, making it more acceptable to Windows users.

2. Viewing and changing the Global Data Manager configuration settings

The NetBackup 4.5 release adds the ability to view and change the Global Data Manager configuration settings. The configuration settings are stored on the GDM Server. A user can display and modify the settings by using the GDM Dashboard GUI. Configuration settings stored on managed master servers and on Dashboard client systems (any host capable of running the GDM Dashboard) are displayed and modified through the NetBackup Administration Console.

NetBackup Advanced Reporter (NBAR)

New Features Since NBAR 3.4

1. NetBackup Advanced Reporter 4.5 supports NetBackup 4.5GA.

New Features since NBAR 3.2.1

1. New Reports and Report Features

- Core reports

  - New Clients at Risk report identifies clients at risk based on the success of previous backups.

  - Health Monitors added to the redesigned Site Summary report

  - Properties dialogs for Classes, Jobs, and Multi-streamed Jobs

  - Reporting on multi-streamed jobs

- NBAR Reports in a GDM (Global Data Manager) environment.

  These are GDM-style reports for NBAR servers. These reports compile data from multiple servers and provide a global overview of a network's backup health. (A NetBackup GDM license is required.) The reports are:

  - Global Site Size

  - Global Media Usage

  - Global Error Details

  - Global Backup Growth

  - Daily GDM Roll-up

2. Additional platforms supported

- Microsoft Windows 2000

- Sun Solaris 8

- This release of NBAR supports HP-UX 11.0 and 11i.

3. Access to the NBAR database through a Perl API, including sample scripts

4. Upgrade support from NBAR 3.2.1. The upgrade process allows users to retain historical data.

5. Navigational enhancements

   - Hover labels provide detailed information throughout each graph

   - Row/cell status icons allow quick visual summary of system health

   - Context-sensitive (right-click) menus

   - Side notes add explanation to the GDM reports

6. Infrastructure

   - Improved ability to change configuration through the new configuration utility

   - Active job caching so that report data can be collected during periods of NetBackup activity.

   - Cautionary message provided when the data loader is in progress. A loader-in-progress icon has been added to the toolbar.

   - Ability to collect NetBackup data and update the NBAR database more than once a day.

   - Improved logging with NetBackup style log files, the ability to log to the database and to modify log settings.

   - Capability of capturing drive information.

Vault

New Since `bpvault` Release 3.4

The following items represent new functionality since the release of `bpvault` in NetBackup 3.4.

1. NetBackup Vault is an off-site backup management extension to NetBackup. This product is integrated with the NetBackup product and automates a number of NetBackup and Media Manager tasks to allow:

   - Image duplication

   - Automatic freeing of disk space after a disk backup image is successfully duplicated

   - Off-site media tracking, reporting, and recycling

   - Media ejections:

     - Ejects the media to be vaulted

     - Injects the media to be vaulted

- Catalog backups.

- Support for a multi-tape catalog backup

This product also has its own GUI interface that supports such features as:

- In-line tape copy

- Load balancing

- Enhanced error handling

- A new "Vault" job type in the Activity Monitor

For more information on the Vault extension refer to the *NetBackup Vault 4.5 System Administrator's Guide* and the *NetBackup Vault 4.5 Operator's Guide.*

2. In-line Tape Copy

In-line Tape Copy enables multiple copies to be created simultaneously during backup time or duplication time. This enables sites to decrease the overall backup plus duplication time and drive usage by creating multiple copies at backup time. Multiple copies may also be created at duplication time. Up to four copies may be created simultaneously. The storage units used to create the simultaneous copies must all be on the same media server. In-line Tape Copy is a part of the Vault product. For more information on In-line Tape Copy refer to the NetBackup System Administrator's Guide.

Note Though VERITAS strongly advises you to use Inline Tape Copy in your backup policy, you can use it to make multiple duplicate copies of your original backup during the duplication step of a Vault job.

3. When `bpduplicate` is canceled, `bptm` will also be terminated.

4. Enhanced load balancing

A Vault 4.5 session, which during duplication will keep all drive pairs busy until all media for the backup images to be duplicated have been mounted.

5. Vault jobs appear in Activity Monitor

Vault jobs and their child Duplication jobs now appear in the Activity Monitor and can be monitored and cancelled.

6. New vault functionality has been developed that enables users to:

   - Have Vault free disk space after a successful duplication of the backup image if your original backup is on disk.

   - Configure a notify script to create a list of non-NetBackup media that are managed by Media Manager, that enables you to easily vault those other tapes.

   - Schedule a Vault job by creating a policy of type Vault.

   - Consolidate all ejects for multiple sessions into one eject operation.

   - Select from new criteria for choosing backup images to vault: Type of backup, Media servers, and Clients.

7. Vault messages are now integrated with standard NetBackup logs. You can enable a vault log in `netbackup/logs` by creating a "vault" subdirectory.

8. Vault session directories are now automatically deleted. You can specify the amount of time you would like NetBackup to hold on to those directories using the **Host Properties** node of the NetBackup Administration Console. The default is 30 days.

Media Manager

1. Enhancements to Automatic device discovery and configuration

   NetBackup can automatically discover and configure devices using a simple wizard interface. In environments with multiple servers where peripherals are connected to many servers (for example, when the Shared Storage Option is employed), the time spent on device configuration and reconfiguration of storage units now takes only minutes to complete. In addition to making setup faster, auto-configuration eliminates common mistakes made when configuration is manual.

   In addition to the existing supported platforms, this capability is now available on the following platforms:

   - AIX

   - Linux

   - IRIX

   Automatic device discovery and configuration now supports IBM automated tape libraries (TLH robots).

   Automatic device discovery and configuration now supports optical drives.

When tape drives are configured on AIX, Media Manager will automatically issue `chdev` commands to set non-QIC drives to variable length block mode and to enable extended file marks for those drives capable of supporting them.

When tape drives are configured on HP-UX, Media Manager will automatically create the corresponding *passthru* paths in the `/dev/sctl directory`.

Note The device configuration wizard now supports true cancel functionality. The Cancel button enables the user to choose not to commit the configuration changes.

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2. TLH and TLM robotic drive definitions have changed, as shown in the following table:

Robotic Drive	Drive Definition
TLH	Users now configure robotic drives using the IBM device name. This makes configuration easier, and also eliminates errors caused by the returned data changing.
TLM	Users now configure robotic drives using the DAS drive name. This makes configuration easier and more intuitive.

3. The vmconf script (applies only to NetBackup for UNIX)

The vmconf script is no longer supported in the NetBackup 4.5 release and therefore it will not support new NetBackup features such as 8MM2 and 8MM3 drive types. For UNIX operating system platforms, where some functionality was previously provided (for example, Solaris, AIX, HP-UX, IRIX, and Tru64) the vmconf script has been moved to the `/usr/openv/volmgr/bin/goodies` directory. This script will be removed entirely in the next major release of NetBackup. In addition, for other UNIX operating system platforms, there was no functionality and the script is not available.

4. Mount/unmount callout script (applies only to NetBackup for UNIX)

It is now possible to gather log sense data on drives each time a mount or unmount of the drive takes place. Users can use the following two scripts in `install_path/volmgr/bin/` to gather information on drives. (The scripts contain the information on how this feature can be used.)

`install_path/volmgr/bin/drive_mount_notify`

`install_path/volmgr/bin/drive_unmount_notify`

Note This feature works on mount and unmount operations for drives that are in robots and on an unmount operation for standalone drives. This feature is not available on Tru64 systems.

Note During the mount process, it is possible that another NetBackup process might be using the drive when the `drive_mount_notify` script is called, leading to the script not producing the desired result. If this should occur, a message similar to the following will be written to the system log: `Could not lock the drive for drive_mount_notify script, DriveName = "drive name"`.

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5. Multiple eject/inject for SCSI robotic libraries

NetBackup is now capable of using all of the capacity in a SCSI robotic library's media access port. In addition, the user is no longer restricted in the number of volumes being injected/ejected at a time, except by a library's storage capacity. This feature is supported by Media Manager SCSI robot types TL8 and TLD.

For libraries with separate MAP doors such as libraries connected via pass-through mechanisms, all doors are treated as one continuous MAP by NetBackup. In other words, each time you are prompted by NetBackup, open all the doors, empty all the doors and close all the doors.

Note 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 (for example, Spectra Logic Gator). Make sure users read each library's operator manual thoroughly to gain an understanding of its media access port functionality, because libraries such as these may not be fully compatible with NetBackup's inject/eject features if not properly handled. (Other devices may not be compatible.)

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6. The handling of default media type for robot inventory update has changed.

   If users are specifying Media Type in Update Options before updating the Media Manager volume configuration for reboot (On the Actions menu, click Inventory Robot) and select DEFAULT as the media type:

   And the following is true:

   - The robot is not an ACS, LMF, RSM, TLH, or TLM robot type.

   - Users are not using barcode rules.

   Then, the results are as follows:

   If *all* of the drives in the robot (configured on this robot host) are:

   - The same type, Media Manager uses the media type for the drives.

   - *Not* the same type, Media Manager uses the default media type for the robot.

   Previously, Media Manager used the default media type for the robot, regardless of the drive types.

7. The STK SN6000 (Storagenet 6000 Storage Domain Manager) is supported.

   StorageTek (STK) introduced the SN6000 as a method for providing tape drive virtualization. Logical tape drives are presented to standard host operating system interfaces (tape drivers), while robotic control is accomplished through the Automated Cartridge System (ACS). STK SN6000 requires installation of the Shared Storage Option (SSO) license key.

8. Additional software support in StorageTek's ACSLS

   Support has been added in media management interfaces and robotic control software for drive and media types returned by StorageTek's Automated Cartridge System Library Software (ACSLS) versions 5.4 and 6.0.

9. VERITAS has moved to ADIC's 3.1 client for DAS. This change includes:

   - Adding 250 drive support to TLM robots instead of 15

   - Supporting LTO and SONY_AIT media types

10. NetBackup troubleshooting guide now contains Media Manager error codes

    Error codes for device configuration, device management, media management, and robotics are now listed in the *NetBackup Troubleshooting Guide*, along with error code descriptions and recommended actions.

11. Media ID generation rules: "MEDIA_ID_BARCODE_CHARS"

LTO barcode format causes difficulty with Media ID generation. The Media ID in NetBackup is six characters long and LTO barcodes consist of eight characters (123456LX). By default, Media IDs are created by taking the last six characters of the barcode. The "LX" at the end of these barcodes limits how much media an administrator can have.

A problem occurs when an administrator has multiple barcodes with the same, last six characters.

This feature provides administrators with the ability to create rules that control Media ID generation. Users can create these rules through the NetBackup Administration Console (for Windows or Java). For more information on this feature, consult the *NetBackup Media Manager System Administrator's Guide.*

12. There is no distinction of HP700 and HP800 server systems. With supporting HP-UX systems of 11.00 and newer, there is no difference in the operating system (OS) for the handling of media devices.

13. NetBackup will issue a special command to Quantum SDLT drive to avoid delays during backup operations. The SDLT drive must have FW V35 or above, and the host must have a configured pass-through path to each SDLT drive.

14. AIX systems can now control non-IBM libraries through the use of 6227/6228 F/C cards with the ovpass driver. If you are installing on a system that has been running a prior version of NetBackup, please refer to the *NetBackup Media Manager Device Configuration Guide for UNIX* manual for instructions on how to update the SCSI passthru driver.

15. NetBackup supports the StorEdge Network Foundation F/C HBA on Solaris systems.

16. On Solaris systems, the sg.build script upper limit for Target IDs is 126, and LUNs is 255.

17. Multiple drive/robot delete capability

Users can now select multiple drives or multiple robots from the device dialog within the NetBackup Administration Console and delete them. This is also supported on the command line by entering the drive index or robot numbers.

18. Scratch Pools

Users can add and remove scratch pools from the command line or by using the Volume Configuration wizard within the NetBackup Administration Console.

19. Fibre Channel Fabric support for SGI IRIX devices

Additional pathname support has been added for devices connected though a fabric fibre channel. (For SGI only.)

20. The Media Manager device daemon and NetBackup Device Manager service can log to its own debug log file, if the appropriate directory (folder) is created before starting the daemon/service. Also, debug logging is available for device configuration.

- The following UNIX directories can be created:

  - `/usr/openv/volmgr/debug/ltid`

  - `/usr/openv/volmgr/debug/tpcommand`

- The following Windows directories can be created:

  - `\folder <variable>\volmgr\debug\ltid`

  - `\folder <variable>\volmgr\debug\tpcommand`

21. NetBackup supports multiple 8mm drive types, 8MM2 and 8MM3. This release also supports the corresponding media types 8mm2, 8mm2_clean, 8mm3 and 8mm3_clean, as well as densities 8mm2 and 8mm3. With the addition of a 8MM2 and 8MM3 drive type, the NetBackup robot type TL8, can now support multiple media types. In addition, the NetBackup robot type TLD supports new libraries which contain 8mm drives and DLT, LTO or HCART drives.

22. Support for 4K sector size on Optical Platters

Media Manager supports 4K sector size platters on HP-UX. Storage Migrator also supports 4K sector size, but NetBackup does not.

23. Table-driven robotics

Table-driven robotics provide support for some new library devices without having to modify robotic library control binaries or waiting for a new patch from VERITAS.

Independent of this feature, Media Manager has begun to make the `external_robot_mappings` and `external_drive_mappings` files available for download from the VERITAS support web site (www.support.veritas.com).

24. TapeAlert-based drive cleaning is now performed at both mount and dismount times. Supported TapeAlert flags are `CLEAN_NOW` and `CLEAN_PERIODIC`.

25. Limited drive numbers for TLD and TL8 robotics

The number of drives that can be configured on one media server is limited to 256.

NetBackup SAN Shared Storage Option (SSO)

The following list contains the new SSO features and changes for the NetBackup 4.5 release.

1. Device configuration wizard supports TLH Media Manager robot types.

2. De-centralized drive status to better deal with resiliency issues in SSO.

Before the release of NetBackup 4.5, a shared drive's drive status was common across all servers sharing the drive. SSO assumed that the tape drive was at fault, thus eliminating that resource from other servers that could potentially use it. In current fibre channel environments, it is more likely that a fibre channel host bus adapter is the source of a down drive than the drive hardware or firmware.

In NetBackup 4.5, de-centralizing a drive's status increases SSO's usability and resiliency.

3. Improved data integrity in SSO

NetBackup uses SCSI reserve/release to improve data integrity in SSO (and non-SSO configurations). SCSI reserve/release operates at the SCSI target level and depends on the fibre-to-SCSI bridge hardware working correctly. The following lists the SCIS reserve/release requirements:

- There must be *passthru* driver access to all shared drives. The *passthru* driver must be installed and all required paths must be created. See the *NetBackup Media Manager Device Configuration Guide* for information on configuring and using the *passthru* driver for various UNIX operating systems.

- Host operating systems must be set up properly to enable the SCSI reservation capability.

- Users of Sun Solaris 2.6, or 7 must install an ST driver patch to avoid a problem that keeps the device reserved when it should not be.

- Users of HP-UX must disable the operating system's use of SCSI reserve/release.

  See the *NetBackup Media Manager Device Configuration Guide* for detailed information on Sun Solaris and HP-UX system requirements.

4. Windows NT and Windows 2000 path remapping for tape drives.

During device manager startup, serialized drives are verified and if necessary, the paths are corrected in the Media Manager device database.

5. Improved robotic daemons

Robotic daemons (or processes) capable of supporting SSO (robot types ACS, TL8, TLD, TLH, and TLM) were improved to not issue numerous repeated system log messages in certain cases involving intermittent robot communication problems coupled with finding requested media in other drives.

6. The `avrd` daemon (or process) has been modified to not consume excess CPU time in certain SSO configurations. Under heavy mount or dismount activity the `avrd` process used excess CPU time if the following were both true:

   - There were no locally attached drives configured on a media server.

   - The media server was not serving as the scan host for any shared drives.

7. Using different forms of a volume name on multiple robots

   Multiple robots containing shared drives can use different forms of a volume database host name (For example, Bison and bison.veritas.com). SSO drive registrations previously collided, causing some shared drives to be unusable, when the forms of the host name differed.

8. Enhancement to Media Manager volume daemon

   The Media Manager volume daemon (`vmd`) or NetBackup Volume Manager service, has been modified to not produce a core dump on the device allocation (DA) host in an SSO environment with more than 15 media servers.

9. The handling of media mount errors for backups has changed.

   In earlier versions of NetBackup, depending on the specific kind of error encountered, a mount request became queued or be canceled. When queued, an operator pending action (displayed in the Device Monitor) is created, leading to the mount request suspending until the condition is resolved. The condition becomes resolved if the operator denies the request, or the media mount time-out has been reached.

   The mount request is automatically canceled if NetBackup selects other media to use for backups (only applies to backup requests). On servers running NetBackup 4.5, there are more conditions that lead to the automatic canceling of the mount request. An automatic cancellation of a mount request results in the reselection of different media and produces a stronger likelihood that the backup will continue. The following list contains conditions that lead to automatic media reselection. Automatic media selection happens when the requested media:

   - Is in a DOWN drive

   - Is misplaced

   - Is write-protected

   - Is in a drive not accessible to the media server - **new**

   - Is in an offline ACS (ACS robot type only) - **new**

   - Has an unreadable barcode (ACS robot type only) - **new**

   - Is in an Automated Cartridge System Library Storage Module (LSM) that is not accessible (ACS robot type only) - **new**

   - Has been otherwise determined to be unmountable

Supported Platforms and Peripherals 2

This chapter provides information on the platforms and peripherals that this release of NetBackup supports.

Note Users can also refer to the VERITAS support web page at `http://www.support.veritas.com` for the most current information pertaining to supported platforms, peripherals, and binary sizes.

The following table identifies the primary functionality of this release and the platforms that support these functions.

Platforms for the NetBackup 4.5 Release

Functionality	Platform Support
Core Product / Servers	Solaris, Windows, HP-UX, AIX, Linux[1], and Tru64
Core Product Limited Server Functionality	DYNIX/pts, IRIX, and UNIX SVR4MP-RA3
Vault	Solaris, Windows, AIX, HP-UX, Linux[1], IRIX, and Tru64
GDM	Solaris, Windows, AIX, HP-UX, and Tru64
NetBackup Advanced Reporter	Windows, Solaris, HP-UX

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

Server and Client Platform Support

The tables in this section describe hardware and operating system combinations that this release of NetBackup BusinesServer and NetBackup DataCenter supports.

◆ The Server OS Version column describes the operating system level required to run on a NetBackup master or media server.

◆ The Client OS Version column describes 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.

◆ The following NetBackup client media is available through special order:

  - Compaq running OpenVMS VAX 5.5 - 7.3

  - Compaq running OpenVMS Alpha for VAX 6.1 - 7.3

  - HP3000 running MPE/iX 6.0, 6.5, and 7.0 (this support includes TurboStore API)

◆ 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 drop support for platforms or OS versions.

NetBackup DataCenter Supported Platforms

The following table contains a list of platforms, the associated operating systems, and version levels, that NetBackup supports. This information is also posted on the VERITAS support web page. The following procedure explains how to locate this information.

1. Go to the VERITAS support web page: `www.support.veritas.com`

2. In the left margin of the VERITAS Support page, choose **Compatibility Lists**. The Online Compatibility Lists page appears.

3. From the Product List, choose +**NetBackup Products**. The list refreshes showing a list of NetBackup products.

4. Choose **NetBackup DataCenter**.

5. Select **Platform Compatibility Matrix** from the Version Selection list. The field updates to show the version selection list.

6. From the Compatibility List - Version Selection field, select **NetBackup DataCenter Version 4.5**. The 4.5 platform compatibility list appears.

Table 1. Supported Platforms for NetBackup DataCenter

Hardware Type	OS	OS Version	Server	Client
Compaq VAX[2, 5]	VAX/VMS	5.5-7.3		X
Compaq Alpha[2, 5]	Open VMS	6.1-7.3		X
Compaq Alpha	Tru64 UNIX	4.0F, 4.0G, 5.0a, 5.1, 5.1a	X	X
Data General (Intel)[1]	DG/UX	R4.20MU07		X
HP3000[2, 5]	MPE/iX	6.0, 6.5, 7.0		X
HP PA-RISC (HP9000)	HP-UX	11.0, 11i (11.11)	X	X
IBM	AIX	4.3.3.10[11] 5.1 (Power PC - 32 and 64 bit)	X	X
IBM/Sequent[3, 4, 7]	DYNIX/pts PTX	4.4.2, 4.4.4 - 4.4.8, 4.5 - 4.5.2	X	X
Intel 386, 486, Pentium[2]	Novell	4.2, 5.1, 6.0		X
Intel 486, Pentium	Windows	Windows 95, 98, ME		X
Intel Pentium	Windows	NT 4.0 (SP6A) 2000 (SP2)	X	X
Intel Pentium	Window	XP (32 and 64 bit) LE (64 bit)		X
Intel x86	FreeBSD	4.0, 4.2, 4.3, 4.4		X
Intel x86	Caldera OpenUnix	8.0		X
Intel x86	Caldera OpenLinux	3.1		X
Intel x86	Linux	Debian GNU/Linux 2.2r4[9] SuSe 7.0, 7.1, 7.2 SLES7 TurboLinux 7.0		X
Intel x86[6, 12]	Linux	Red Hat 6.2, 7.0, 7.1	X	X
Intel x86	Solaris	2.6, 7, 8		X

Table 1. Supported Platforms for NetBackup DataCenter (continued)

Hardware Type	OS	OS Version	Server	Client
Macintosh PowerPC	Mac OS	8.5, 8.6, 9.x		X
Macintosh PowerPC	Mac OS X Server	1.2		X
Macintosh PowerPC	Mac OS X	10.0, 10.1		X
NCR[3, 4, 7]	UNIX SVR4MP-RA3	3.02	X	X
SGI[6]	IRIX	6.5.10 - 6.5.14	X	X
Sun/SPARC	Solaris	2.6, 7, 8	X	X
Sun/SPARC[8 10]	Solaris	9	X	X

1. Only on Intel processor-based AViiON servers.

2. Does not support NetBackup Encryption.

3. Functionality in the 4.5 release is limited.

4. Requires level 2.4.0 or later TCP to be installed.

5. Available through special order only.

6. GDM is not supported on this platform.

7. GDM and Vault are not supported on this platform.

8. Extended File Attributes are not supported with the initial release of NetBackup 4.5. Support for this on UFS, NFS & TMPFS file systems will be added in a later release. This feature is a late addition to Solaris and is the reason that NetBackup cannot support it this release. You can monitor NetBackup patch READMEs to learn when NetBackup will support the Extended File Attributes feature.

9. Journal Backup/restore is not supported.

10. NetBackup has added support for Solaris 9 and will officially begin supporting this operating system after Sun Microsystems, Inc. has released it for general availability.

11. This platform (AIX4.3.3.10) is contained in the 4330-02 (or later) Maintenance package. VERITAS recommends users install this package. Contact IBM for more information about this package.

12. The Linux Red Hat 6.2 master server platform does not support Vault in the 4.5 release.

NetBackup BusinesServer Supported Platforms

The following table contains a list of platforms, the associated operating systems, and version levels, that NetBackup supports. This information is also posted on the VERITAS support web page. The following procedure explains how locate this information.

1. Go to the VERITAS support web page: `www.support.veritas.com`

2. In the left margin of the VERITAS Support page, choose **Compatibility Lists**. The Online Compatibility Lists page appears.

3. From the Product List, choose +**NetBackup Products**. The list refreshes showing a list of NetBackup products.

4. Choose **NetBackup BusinesServer.**

5. Select **Platform Compatibility Matrix** from the Version Selection list. The field updates to show the version selection list.

6. From the Compatibility List - Version Selection field, select **NetBackup BusinesServer Version 4.5**. The 4.5 platform compatibility list appears.

Table 2. NetBackup BusinesServer Supported Platforms

Hardware Type	OS	OS Version	Server	Client
Compaq Alpha	Tru64 UNIX	4.0F, 4.0G, 5.0a, 5.1, 5.1a		X
Data General (Intel)[1]	DG/UX	R4.20MU07		X
HP PA-RISC (HP9000)	HP-UX	11.0, 11i (11.11)	X	X
IBM	AIX	4.3.3.10[10] 5.1 (Power PC - 32 and 64 bit)		X
IBM/Sequent[3, 4, 6]	DYNIX/pts (PTX)	4.4.2, 4.4.4 - 4.4.8, 4.5 - 4.5.2		X
Intel 386, 486, Pentium[2]	Novell	4.2, 5.1, 6.0		X
Intel 486, Pentium	Windows	Windows 95, 98, ME		X
Intel Pentium	Windows	NT 4.0 (SP6A) and 2000 (SP2)	X	X
Intel Pentium	Windows	XP (32 and 64 Bit) and LE (64 bit)		X
Intel x86	FreeBSD	4.0,4.2, 4.3, 4.4		X
Intel x86	Caldera OpenLinux	3.1		X

Table 2. NetBackup BusinesServer Supported Platforms (continued)

Hardware Type	OS	OS Version	Server	Client
Intel x86	Caldera OpenUnix	8.0		X
Intel x86	Linux	Debian GNU/Linux 2.2r4[8] SuSe 7.0, 7.1, 7.2 SLES7 TurboLinux 7.0		X
Intel x86[5, 11]	Linux	Red Hat 6.2, 7.0, 7.1	X	X
Intel x86	Solaris	2.6, 7, 8		X
Macintosh PowerPC	Mac OS	8.5, 8.6, 9.x		X
Macintosh PowerPC	Mac OS X Server	1.2		X
Macintosh PowerPC	Mac OS X	10.0, 10.1		X
NCR[3, 4, 6]	UNIX SVR4MP-RAS	3.02		X
SGI[5]	IRIX	6.5.10 - 6.5.14		X
Sun/SPARC	Solaris	2.6, 7, 8	X	X
Sun/SPARC[7 9]	Solaris	9	X	X

1. Only on Intel processor-based AViiON servers.

2. Does not support NetBackup Encryption.

3. Functionality in the 4.5 release is limited.

4. Requires level 2.4.0 or later TCP to be installed.

5. GDM is not supported on this platform.

6. GDM and Vault are not supported on this platform.

7. Extended File Attributes are not supported with the initial release of NetBackup 4.5. Support for this on UFS, NFS & TMPFS file systems will be added in a later release. This feature is a late addition to Solaris and is the reason that NetBackup cannot support it this release. You can monitor NetBackup patch READMEs to learn when NetBackup will support the Extended File Attributes feature.

8. Journal Backup/restore is not supported.

9. NetBackup has added support for Solaris 9 and will officially begin supporting this operating system after Sun Microsystems, Inc. has released it for general availability.

10. This platform (AIX4.3.3.10) is contained in the 4330-02 (or later) Maintenance package. VERITAS recommends users install this package. Contact IBM for more information about this package.

11. The Linux Red Hat 6.2 master server platform does not support Vault in the 4.5 release.

Operating Systems Not Supported As Of This Release

Backward compatibility with NetBackup 3.4 client software is retained for the NetBackup 4.5 release. NetBackup 4.5 no longer supports the following operating systems:

Table 3. Operating Systems Not Supported as of This Release

Hardware Type	OS	OS Version	Server	Client
* Auspex	NetOS	1.92M1Z3, 1.92M1Z4	X	X
Compaq Alpha	OSF/1	4.0D	X	X
Compaq Alpha	Windows	NT 4.0 for Alpha	X	X
* CRAY (SGI J90)	UNICOS	10.0.x		X
Data General (Intel)	DG/UX	R4.20MU02 (AviiON)		X
HP3000	MPE/iX	5.0		X
HP PA-RISC (HP9000)	HP-UX	10.20	X	X
IBM	AIX	4.2.1, 4.3, 4.3.1, 4.3.2	X	X
Intel 386, 486, Pentium	Novell	3.12, 3.2, 4.10, 4.11, 5.0		X
*Intel 386, 486, Pentium	OS/2	Warp3, Warp4		X
Intel x86	FreeBSD	3.3		X
Intel x86	Linux	Debian GNU/Linux 2.1 SuSe 6.1 TurboLinux 3.6, 6.0, 6.5		X
Intel x86	Linux RedHat	5.2, 6.0, 6.1		X
* Intel x86	Caldera/SCO	OpenServer 5.0.5 UnixWare 7.0.1, 7.1		X X
Intel x86	Caldera OpenLinux	2.2		X
Macintosh (680x0 or PPC)	Mac OS	7.x, 8.0, 8.1, and Xserver 1.0		X
* Siemens	Reliant UNIX	5.43 C20, 5.43 C30, 5.44, 5.45	X	X
SGI	IRIX	6.5 - 6.5.9	X	X

* - All versions of Auspex, Cray, OS/2, Caldera/SCO OpenServer and UnixWare, and Siemens Reliant UNIX are not supported with NetBackup 4.5.

Platforms Not Supported As Of This Release

Backward compatibility with NetBackup 3.4 client software is retained for the NetBackup 4.5 release. NetBackup 4.5 no longer supports the following operating systems:

Table 4. Platforms Not Supported as of This Release

Hardware Type	OS	OS Versions	Server	Client
Auspex	NetOS	All versions	X	X
CRAY (SGI J90)	UNICOS	All versions		X
Intel 386, 486, Pentium	OS/2	All versions		X
Intel x86	Caldera/SCO	OpenServer (all versions)		X
Intel x86	Caldera/SCO	UnixWare (all versions)		X
Siemens	Reliant UNIX	All versions	X	X

Please note that all operating system versions for these platforms are not supported with NetBackup 4.5.

Compatibility with NetBackup 3.4 client is maintained with NetBackup 4.5.

Operating Systems 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 4.5 NetBackup client software is retained for at least one release level.

Table 5. Operating Systems Not Supported as of The Next Major Release

Hardware Type	OS	OS Version	Server	Client
Compaq Alpha	TRU64	4.0F, 4.0G, 5.0a	X	X
* HP3000	MPE/iX	6.0, 6.5, 7.0		X
Intel 386, 486, Pentium	Novell	4.2		X
Intel 486, Pentium	Window	Windows 95, 98, ME		X
Intel x86	Windows	NT 4.0, SP6A	X	
Intel x86	FreeBSD	4.0, 4.2, 4.3, 4.4		X
* Intel x86	TurboLinux	7.0		X
Intel x86	Linux	RedHat 6.2, 7.0, 7.1	X	X
Intel x86	SuSe	6.1, 7.0		X
Intel x86	Solaris	2.6, 7		X
Macintosh (680x0 or PPC)	Mac OS	8.5, 8.6, Mac OS X1.2		X
* NCR	UNIX SVR4MP-RAS	3.02	X	X
* IBM/Sequent	DYNIX/pts	4.4.2, 4.4.4 - 4.4.8, 4.5 - 4.5.2	X	X
* SGI	IRIX	6.5.10 - 6.5.12	X	X
Sun	Solaris	2.6	X	X
Sun	Solaris	7	X	

* - All versions of HP3000, IBM/Sequent, NCR MP-RAS, TurboLinux, and SGI IRIX will not be supported in the next major release of NetBackup 4.5. In addition, all versions of IBM/Sequent as a server will not be supported.

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 and platforms to include new product features and capabilities. Backward compatibility with 4.5 NetBackup client software is retained for at least one release level.

Table 6. Platforms Not Supported as of The Next Major Release

Hardware Type	OS	OS Versions	Server	Client
NCR	UNIX SVR4MP-RAS	All versions	X	X
HP3000	MPE/iX	All versions		X
IBM/Sequent	DYNIX/pts	All versions	X	X
Intel x86	TurboLinux	All versions		X
SGI	IRIX	All versions	X	X

Please note that all operating system versions for these platforms are not supported with the next release of NetBackup.

Compatibility with NetBackup 4.5 client will be maintained with the next release of NetBackup.

Database Agent Platform Support

1. NetBackup Database Agents that run on the AIX platform do not have `xbp` available to them.

2. This section also discusses the platforms that are supported by the Oracle GUI (Table 22).

3. The following tables define the platform support for NetBackup database agents (sometimes referred to as extensions). NetBackup supports the following database agents:

- NetBackup for Oracle
- NetBackup for Informix
- NetBackup for Sybase
- NetBackup for IBM - DB2
- NetBackup for IBM - Lotus Notes
- NetBackup for Microsoft SQL Server and Exchange
- NetBackup for SAP
- NetBackup for Oracle DataBase Archiver

Table 7. NetBackup for Oracle Support (Part 1 of 6)

		Oracle 7 (EBU)		
		7.2.3	**7.3.x**	**7.3.4**
Platform	**Version**	(EBU 2.0.12.4)	(EBU 2.1)	(EBU 2.2.x)
Sun	Solaris 2.6 (32-bit)	Yes	Yes	Yes
Sun	Solaris 7 (32-bit)	No	No	Yes
Sun	Solaris 8 (32-bit)	No	No	Yes
Sun	Solaris 7 (64-bit)	No	No	Yes
Sun	Solaris 8 (64-bit)	No	No	Yes
HP	HP-UX 11.0 (32-bit)	No	No	Yes
HP	HP-UX 11i (11.11) (32-bit)	No	No	Yes
HP	HP-UX 11.0 (64-bit)	No	No	Yes
HP	HP-UX 11i (11.11) (64-bit)	No	No	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	Yes	Yes
IBM	AIX 4.3.3 (64-bit)	Yes	Yes	Yes
IBM	DYNIX/pts 4.4.2, 4.4.4 - 4.4.8	No	No	Yes
Microsoft	Windows NT 4.0	No	No	Yes
Compaq	Tru64 (64-bit) V4.0F and G	No	Yes [1]	Yes [1]
Compaq	Tru64 (64-bit) 5.0a	No	No	Yes [1]
Data Gen	DG/UX R4.20	No	No	Yes
NCR	MP-RAS V3.02	No	No	Yes
SGI	IRIX 6.5.10 - 6.5.12 (64-bit)	No	No	Yes

1. Oracle on Tru64 is only available as a 64-bit version.

Note: Unless noted, patch levels are supported.

Table 8. NetBackup for Oracle Support (Part 2 of 6)

		Oracle 8					
		8.0.3	**8.0.4**	**8.0.5**	**8.0.5** (64-bit)	**8.0.6**	**8.0.6** (64-bit)
Platform	Version	RMAN					
Sun	Solaris 2.6 (32-bit)	Yes	Yes	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	No	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	No	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	No	No	Yes	No	Yes	No
Sun	Solaris 8 (64-bit)	No	No	Yes	No	Yes	No
HP	HP-UX 11.0 (32-bit)	Yes	Yes	Yes	No	Yes	No
HP	HP-UX 11i (11.11) (32-bit)	No	No	No	No	Yes	No
HP	HP-UX 11.0 (64-bit)	Yes	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11i (11.11) (64-bit)	No	No	No	No	Yes	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	Yes	Yes	No	Yes	No
IBM	AIX 4.3.3 (64-bit)	Yes	Yes	Yes	No	Yes	No
IBM	DYNIX/pts 4.4.2, 4.4.4 - 4.4.8	No	Yes	Yes	No	No	No
Microsoft	Windows NT 4.0	No	Yes	Yes	No	Yes	No
Compaq	Tru64 (64-bit) V4.0 F and G	No	No	No	Yes	No	Yes
Compaq	Tru64 (64-bit) 5.0a	No	No	No	Yes	No	Yes
Compaq	Tru64 (64-bit) 5.1 and 5.1a	No	No	No	No	No	Yes
Data Gen	DG/UX R4.20	No	Yes	Yes	No	No	No
NCR	MP-RAS V3.02	No	Yes	Yes	No	Yes	No
SGI	IRIX 6.5.10 - 6.5.12 (64-bit)	No	No	Yes	No	Yes	No

Note: Unless noted, patch levels are supported.

Table 9. NetBackup for Oracle Support (Part 3 of 6)

		Oracle 8i						Oracle 9i	
		8.1.5	8.1.5 (64-bit)	8.1.6	8.1.6 (64-bit)	8.1.7	8.1.7 (64-bit)	9.0.1	9.0.1 (64-bit)
Platform	Version					RMAN			
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	No	Yes	No	Yes	No	No	No
HP	HP-UX 11i (11.11) (32-bit)	No	No	Yes	No	Yes	No	No	No
HP	HP-UX 11.0 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	No	Yes
HP	HP-UX 11i (11.11) (64-bit)	No	No	Yes	Yes	Yes	Yes	No	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	No	Yes	No	Yes	No	No	No
IBM	AIX 4.3.3 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	No	Yes
IBM	DYNIX/pts 4.4.2, 4.4.4 - 4.4.8	Yes	No	Yes	No	No	No	No	No
Microsoft	Windows NT 4.0	Yes	No	Yes	No	Yes	No	Yes	No
Microsoft	Windows 2000	No	No	Yes	No	Yes	No	Yes	No
Compaq	Tru64 (64-bit) V4.0 F and G	No	Yes	No	Yes	No	Yes	No	No
Compaq	Tru64 (64-bit) 5.0a	No	Yes	No	Yes	No	Yes	No	Yes
Compaq	Tru64 (64-bit) 5.1 and 5.1a	No	Yes	No	Yes	No	Yes	No	Yes
SGI	IRIX 6.5.10 - 6.5.12 (64-bit)	No	No	No	Yes	No	Yes	No	No
LINUX	RedHat 6.2	No	No	Yes	No	Yes	No	No	No
LINUX	RedHat 7.0	No	No	No	No	Yes	No	No	No
LINUX	RedHat 7.1	No	No	No	No	Yes	No	Yes	No
LINUX	SuSe 7.0	No	No	No	No	No	No	Yes	No
LINUX	SuSe 7.1	No	No	No	No	Yes	No	Yes	No

Note: Unless noted, patch levels are supported.

Table 10. NetBackup for Oracle Support (Part 4 of 6)

		Oracle Script-based BLI												
Platform	Version	7.3.4	8.0.5	8.0.5 (64 bit)	8.0.6	8.0.6 (64 bit)	8.1.5	8.1.5 (64 bit)	8.1.6	8.1.6 (64 bit)	8.1.7	8.1.7 (64 bit)	9.0.1	9.0.1 (64 bit)
Sun	Solaris 2.6 (32-bit)	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	No	No
HP	HP-UX 11i (11.11) (32-bit)	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No	No
HP	HP-UX 11.0 (64-bit)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
HP	HP-UX 11i (11.11) (64-bit)	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes

Table 11. NetBackup for Oracle Support (Part 5 of 6)

		Oracle Advanced BLI			
Platform	Version	8.1.5	8.1.6	8.1.7	9.0.1
Sun	Solaris 2.6 (32-bit)	Yes	Yes	Yes	Yes
Sun	Solaris 7 (32-bit)	Yes	Yes	Yes	Yes
Sun	Solaris 8 (32-bit)	Yes	Yes	Yes	Yes
Sun	Solaris 7 (64-bit)	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	Yes	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	Yes	Yes	No
HP	HP-UX 11i (11.11) (32-bit)	Yes	Yes	Yes	No
HP	HP-UX 11.0 (64-bit)	Yes	Yes	Yes	No
HP	HP-UX 11i (11.11) (64-bit)	Yes	Yes	Yes	No

Table 12. NetBackup for Oracle Support (Part 6 of 6)

		Oracle ServerFree							
Platform	Version	8.1.5	8.1.5 (64 bit)	8.1.6	8.1.6 (64 bit)	8.1.7	8.1.7 (64 bit)	9.0.1	9.0.1 (64 bit)
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	No	Yes	No	Yes	No	No	No
HP	HP-UX 11i (11.11) (32-bit)	Yes	No	Yes	No	Yes	No	No	No
HP	HP-UX 11.0 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	No	Yes
HP	HP-UX 11i (11.11) (64-bit)	Yes	No	Yes	Yes	Yes	Yes	No	Yes

Table 13. NetBackup for Informix Support (Part 1 of 3)

		Informix - IDS			
		7.30	7.30 (64-bit)	7.31	7.31 (64-bit)
Platform	Version	On-Bar			
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	No	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	No	No	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	No	Yes	No
HP	HP-UX 11.0 (64-bit)	No	No	Yes	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	No	Yes	No
IBM	AIX 4.3.3 (64-bit)	Yes	Yes	Yes	Yes
IBM	DYNIX/pts 4.4.2, 4.4.4 - 4.4.8	Yes	No	Yes	No
Compaq	Tru64 (64-bit) V4.0 F and G	No	No	No	Yes
Compaq	Tru64 (64-bit) 5.0a	No	No	No	Yes
Compaq	Tru64 (64-bit) 5.1 and 5.1a	No	No	No	Yes
SGI	IRIX 6.5.10 - 6.5.12 (64-bit)	Yes	No	Yes	No

Table 14. NetBackup for Informix Support (Part 2 of 3)

		Informix XPS					
		8.21	8.21 (64-bit)	8.30	8.30 (64-bit)	8.31	8.31 (64-bit)
Platform	Version				On-Bar		
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	No	Yes	No	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	No	Yes	No	Yes	No
HP	HP-UX 11.0 (64-bit)	No	No	Yes	No	No	No
HP	HP-UX 11i (11.11) (64-bit)	No	No	No	No	No	No
IBM	AIX 4.3.3 (32-bit)	Yes	No	No	No	No	No
IBM	AIX 4.3.3 (64-bit)	No	No	No	Yes	No	Yes
IBM	DYNIX/pts 4.4.2, 4.4.4 - 4.4.8	Yes	No	Yes	No	No	No
Compaq	Tru64 (64-bit) V4.0 F and G	No	Yes	No	No	No	No
Compaq	Tru64 (64-bit) 5.0a	No	Yes	No	No	No	No

Table 15. NetBackup for Informix Support (Part 3 of 3)

Platform	Version	Informix IDS 2000						
		9.14	9.20	9.20 (64-bit)	9.21	9.21 (64-bit)	9.30	9.30 (64-bit)
		On-Bar						
Sun	Solaris 2.6 (32-bit)	Yes	Yes	No	Yes	No	No	No
Sun	Solaris 7 (32-bit)	Yes	Yes	No	Yes	No	No	No
Sun	Solaris 8 (32-bit)	Yes	Yes	No	Yes	No	No	No
Sun	Solaris 7 (64-bit)	Yes	Yes	Yes	Yes	Yes	No	No
Sun	Solaris 8 (64-bit)	Yes	Yes	Yes	Yes	Yes	No	Yes
HP	HP-UX 11.0 (32-bit)	No	Yes	No	Yes	No	No	No
HP	HP-UX 11.0 (64-bit)	No	Yes	No	Yes	No	No	Yes
HP	HP-UX 11i (11.11) (64-bit)	No	No	No	No	No	No	Yes
IBM	AIX 4.3.3 (32-bit)	No	Yes	No	No	No	No	No
IBM	AIX 4.3.3 (64-bit)	No	Yes	Yes	Yes	Yes	No	No
IBM	DYNIX/pts 4.4.2, 4.4.4 - 4.4.8	Yes	No	No	Yes	No	No	No
Compaq	Tru64 (64-bit) V4.0 F and G	No	No	No	No	Yes	No	No
Compaq	Tru64 (64-bit) 5.0a	No	No	Yes	No	Yes	No	No
Compaq	Tru64 (64-bit) 5.1 and 5.1a	No	No	No	No	Yes	No	No
SGI	IIRIX 6.5.10 - 6.5.12 (64-bit)	Yes	Yes	No	Yes	No	No	No

Table 16. NetBackup for Sybase Support

Platform	Version	Adaptive Server Enterprise			IQ
		11.9.2	**11.9.3** (64-bit)	**12.0**	**12.4.3**
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	No	Yes	No
Sun	Solaris 8 (64-bit)	Yes	No	Yes	No
HP	HP-UX 11.0 (32-bit)	Yes	No	Yes	No
HP	HP-UX 11.0 (64-bit)	Yes	No	Yes	No
IBM	AIX 4.3.3 (32-bit)	Yes	No	Yes	No
IBM	AIX 4.3.3 (64-bit)	No	No	Yes	No
Microsoft	Windows NT 4.0	Yes	No	Yes	No
Compaq	Tru64 (64-bit) V4.0 F and G	Yes	Yes	Yes	No
SGI	IRIX 6.5.10 - 6.5.12 (64-bit)	Yes	No	No	No

Table 17. NetBackup for IBM Support

Platform	Version	DB2 UDB, EE, EEE		
		6.1	**7.1/7.2** (32-bit)	**7.1/7.2** (64-bit)
Sun	Solaris 2.6 (32-bit)	Yes	Yes	No
Sun	Solaris 7 (32-bit)	Yes	Yes	No
Sun	Solaris 8 (32-bit)	Yes	Yes	No
Sun	Solaris 7 (64-bit)	No	Yes	Yes
Sun	Solaris 8 (64-bit)	No	Yes	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	Yes	No
IBM	AIX 4.3.3 (64-bit)	No	Yes	Yes
Microsoft	Windows NT 4.0	Yes	Yes	No
Microsoft	Windows 2000	Yes	Yes	No

Table 18. NetBackup for IBM Support

| Platform | Version | IBM (Lotus) | | | | | | |
		R5.0.3	R5.0.4	R5.0.5	R5.0.6	R5.0.7	R5.0.8	R5.0.9
Sun	Solaris 2.6 (32-bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 7 (32-bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (32-bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 7 (64-bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM	AIX 4.3.3 (64-bit)	No	No	No	No	No	No	No
Microsoft	Windows NT 4.0	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Microsoft	Windows 2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 19. NetBackup for Microsoft Support

| | | SQL Server | | | Exchange | | |
| | | 6.5 | 7 | 2000 | 5 | 5.5 | 2000 |
Platform	Version	named pipes	VDI	VDI		ESE API	
Microsoft	Windows NT 4.0	Yes	Yes	Yes	Yes	Yes	No
Microsoft	Windows 2000	Yes	Yes	Yes	Yes	Yes	Yes

Table 20. NetBackup for SAP Support

| | | SAP (SAP R/3) | | | | | |
| | | 3.x | 3.x (64-bit) | 4.x | 4.x (64-bit) | 6.x | 6.x (64-bit) |
Platform	Version	Backint					
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	No	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	No	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	No	Yes	No	Yes	No
HP	HP-UX 11.0 (64-bit)	No	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11i (11.11) (32-bit)	No	No	Yes	No	Yes	No
HP	HP-UX 11i (11.11) (64-bit)	No	Yes	Yes	Yes	Yes	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	No	Yes	No	Yes	No

Table 20. NetBackup for SAP Support (continued)

		SAP (SAP R/3)					
		3.x	**3.x** (64-bit)	**4.x**	**4.x** (64-bit)	**6.x**	**6.x** (64-bit)
Platform	Version				Backint		
IBM	AIX 4.3.3 (64-bit)	No	Yes	Yes	Yes	Yes	Yes
Microsoft	Windows NT 4.0	Yes	No	Yes	No	Yes	No
Microsoft	Windows 2000	Yes	No	Yes	No	Yes	No
Compaq	Tru64 (64-bit) V4.0 F and G	Yes	No	Yes	No	No	Yes
Compaq	Tru64 (64-bit) 5.0a	No	Yes	No	Yes	No	Yes
Compaq	Tru64 (64-bit) 5.1 and 5.1a	No	Yes	No	Yes	No	Yes

Table 21. NetBackup for Oracle Database Archiver Support

		DataBase Archiver (Oracle)							
Platform	Version	**8.1.5**	**8.1.5** (64-bit)	**8.1.6**	**8.1.6** (64-bit)	**8.1.7**	**8.1.7** (64-bit)	**9.0.1**	**9.0.1** (64-bit)
Sun	Solaris 2.6 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 8 (32-bit)	Yes	No	Yes	No	Yes	No	Yes	No
Sun	Solaris 7 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Sun	Solaris 8 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
HP	HP-UX 11.0 (32-bit)	Yes	No	Yes	No	Yes	No	No	No
HP	HP-UX 11i (11.11) (32-bit)	No	No	Yes	No	Yes	No	No	No
HP	HP-UX 11.0 (64-bit)	Yes	No	Yes	Yes	Yes	Yes	No	Yes
HP	HP-UX 11i (11.11) (64-bit)	No	No	Yes	Yes	Yes	Yes	No	Yes
IBM	AIX 4.3.3 (32-bit)	Yes	No	Yes	No	Yes	No	No	No
IBM	AIX 4.3.3 (64-bit)	Yes	No	Yes	No	Yes	Yes	No	Yes

Table 22. Platforms supported by the Oracle GUI

Platform	Version	NetBackup Client GUI	RMAN backup/restore Template Support
Microsoft	Windows	Yes	Yes
Sun	Solaris 2.6, 7, 8	Yes	Yes
HP	HP-UX 11.0, 11i (11.11)	Yes	Yes
IBM	AIX 4.3.3-10, 5.1	Yes	Yes
Intel x86	RedHat Linux 6.2, 7.0, 7.1	Yes	Yes
Intel x86	SuSe 7.0, 7.1	No	Yes
SGI	IRIX 6.5.10 - 6.5.14	No	Yes
Compaq	Tru64 4.0F, 5.0a, 5.1	Yes	Yes
IBM/Sequent	DYNIX/pts	No	No
NCR	UNIX SVR4MP-RA3 3.02	No	No
Data General (Intel)	DG/UX R4.20MU07	No	No

Note: For Solaris and HP platforms, both 32- and 64-bit operating systems are supported.

NetBackup Add-on Product Support

The following subsections identify each of the NetBackup 4.5 product add-ons. Each section describe the various robots and operating system platforms that each add-on supports. The following add-ons are available with the NetBackup 4.5 release.

- NetBackup SAN Shared Storage Option (SSO)
- NetBackup Server Free Agent
- FlashBackup
- NDMP (Windows Server and UNIX platforms)
- Database Agents (Refer to "Database Agent Platform Support" on page 40.)
- NetBackup Advanced Reporter (NBAR)
- NetBackup Vault

NetBackup Shared Storage Option (SSO)

Supported Server Platforms:

Compaq Tru64 UNIX	Microsoft Windows	SGI IRIX
HP-UX	IBM/Sequent DYNIX/pts	Sun SPARC/Solaris
IBM AIX		

Support 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)
- TLS and TLD

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

ServerFree Agent

NetBackup ServerFree Agent provides data protection services for frozen image 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 ServerFree Agent on the VERITAS support web site

◆ Contain tables that list the platforms, operating systems, and extended frozen images services that NetBackup ServerFree Agent supports:

- Local backups using a frozen image method
- Offhost backup
- Disk Arrays and Extended Frozen Image Services

Frozen images and OffHost backups are described in the *NetBackup ServerFree Agent System Administrator's Guide.*

Obtaining ServerFree Agent Information on the Web

The VERITAS support web site includes a variety of articles and notes on ServerFree Agent. These provide up-to-date lists of supported operating systems, peripherals, and assistance for some of the configuration procedures found in this manual. To locate this information, do the following:

1. Go to `http:\\www.support.veritas.com` on the web.

2. In the left margin, click **Patches and Updates**.

3. Select **NetBackup Products** from the Product List. Then select **NetBackup DataCenter**.

4. In the filter wizard, enter the following:

   - Keyword: ServerFree

   - File type: PDF (or ALL)

   - Language: English

   - Version: 4.5

   - Platform: All

5. Click **Find Files**.

   The files relating to NetBackup ServerFree Agent 4.5 will be listed along with their descriptions. Do the following to download a file:

   a. Click on the file-name link for more information about the file.

   b. Right-click on the file's download link to download and save the file.

Local Backup with Frozen Image Method

For performing a local backup using a frozen image method, ServerFree Agent supports the following platforms. Note that NetBackup client software must be installed on clients running Solaris 2.6, 7, 8, or 9, or HP-UX 11.00 or 11i.

Table 23. Platforms Supported for Local Backup Using a Frozen Image Method

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

Note The "Core Frozen Image Services" option must be installed. In addition, users must install the Extended Frozen Image Services option to use the TimeFinder, ShadowImage, or BusinessCopy frozen image method.

offhost Backup

For performing an offhost backup, ServerFree Agent supports the following platforms.

Table 24. Platforms Supported for OffHost Backup

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

Note The "Core Frozen Image Services" and "OffHost and SAN Data Movement Services" options must be installed. In addition, users must install the Extended Frozen Image Services option to use the TimeFinder, ShadowImage, or BusinessCopy frozen image method.

ServerFree Agent Supported Peripherals

NetBackup ServerFree Agent supports the following peripherals.

Component	Device/Model
Host-bus adapter (HBA) Vendors	For Solaris servers: - Emulex - JNI - QLogic For HP servers: - HP **Note** Contact your hardware sales representative for the latest firmware level for these devices and for compatibility with SAN equipment.
Robot and Tape drive	Any Robot and Tape drive that NBU SSO option supports
Disk and Disk Arrays	Any disk or disk array that supports serialization or SCSI Inquiry Page Code 83 is supported with Core Frozen Image Services. This includes disk arrays such as SUN T3, EMC Symmetrix, Hitachi 77/92/99xx, and HP XP 256/48/512.
Switch Vendors	- Brocade - Inrange - McData - QLogic
Third-party copy device Vendors	- ATTO - Chaparral - Crossroads - Hitachi/HP/Sun - Pathlight/ADIC - Spectra Logic **Note** Contact your hardware sales representative for the latest firmware level for these devices. **Note** These devices are supported as stand-alone devices or as part of another system such as a tape library.

Disk Arrays and Extended Frozen Image Services

The following table lists the disk arrays supported by the "Extended Frozen Image Services" option of ServerFree Agent when client data is configured over Volume Manager (VxVM) volumes.

Disk Arrays Supported for VxVM and Extended Frozen Image Services

With VxVM on this platform:	EMC Symmetrix	Hitachi 9200/9900	Hitachi 7700	HP XP256	HP XP48/512
Solaris 2.6 and above	Yes	Yes	Yes	Yes	Yes
HP-UX 11.00 and above	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 arrays are supported (no restrictions)

FlashBackup

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

Table 25. Supported Platforms for NetBackup FlashBackup

Hardware Type	OS	Master Server	Media Server	Client
Compaq Alpha	Tru64 UNIX		X	
HP PA-RISC	HP-UX	X	X	X
IBM	AIX	X	X	
SGI	IRIX	X	X	
SPARC	Solaris	X	X	X

EMC Fastrax

The following table lists the platforms and operating systems that NetBackup for EMC Fastrax supports.

NetBackup for EMC Fastrax requires NetBackup DataCenter. (BusinesServer does not support NetBackup for EMC Fastrax.)

Table 26. Supported Platforms for NetBackup for EMC Fastrax

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

NDMP

The following table lists the platforms and operating systems that NetBackup for NDMP supports. NetBackup for NDMP is supported by both BusinesServer and DataCenter.

Note NetBackup for NDMP is installed on a master or media server, not on a client.

Table 27. Supported Platforms for NetBackup for NDMP

Hardware Type	OS
HP PA-RISC	HP-UX
IBM	AIX
Intel Pentium	Windows
Intel x86	Linux
SPARC	Solaris

NetBackup Advanced Reporter (NBAR) Supported Platforms

There are two parts to platform support: the host operating systems and versions of NetBackup that the server components run on, and the operating systems and browsers that the client components run on.

◆ NBAR 4.5 supports NetBackup 4.5 DataCenter.

◆ NBAR 4.5 does not support BusinesServer or Cluster Server machines (for example Microsoft Cluster Server (MSCS) and VERITAS Cluster Server (VCS).

Supported Server Platforms

NetBackup Advanced Reporter 4.5 supports the following operating systems:

◆ Solaris

-   Solaris 2.6, 7, 8

◆ Windows

-   Windows NT 4.0 Workstation with Service Pack 6

-   Windows NT 4.0 Server with Service Pack 6

-   Windows 2000 Professional with Service Pack 2

-   Windows 2000 Server with Service Pack 2

-   Windows 2000 Advanced Server with Service Pack 2

-   Windows 2000 Data Center with Service Pack 2

◆ HP

-   HP-UX 11.0

-   HP-UX 11i (11.11)

Note VERITAS strongly recommends that users install HP-UX patches PHKL_22840 and PHNE_22397 (or later patches that supersede these). These patches have dependencies on other patches. Refer to the HP support site at www.hp.com for more information.

Supported Client Platforms

NetBackup Advanced Reporter 4.5 supports the following operating systems and browsers marked with an X. NBAR supports only English language browsers.

Table 28. Supported Client Platforms

Operating System	Netscape 4.7	Netscape 6	Microsoft Internet Explorer 5.5	Microsoft Internet Explorer 6
Solaris 2.6, 7, 8	X	X		
HP-UX 11.0, 11i (11.11)	X	X		
Windows NT 4.0 Workstation	X	X	X	X
Windows NT 4.0 Server	X	X	X	X
Windows 2000 Professional	X	X	X	X
Windows 2000 Server	X	X	X	X
Windows 2000 Advanced Server	X	X	X	X
Windows 2000 Data Center	X	X	X	X

Note On some platforms, the Java Runtime Environment (JRE) is not installed automatically with Netscape 6. Before running NBAR for the first time, make sure that Java support is enabled, and that the JRE is installed and accessible. To verify that the Java plug-in is installed, enter `about:plugins` as a URL. Users should see Java Plugin in the list of installed plug-ins.

NetBackup Vault

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

◆ Exclude Sequent as a master server platform.

◆ Exclude NCR as a master server platform.

◆ Exclude Linux Red Hat 6.2 as a master server platform.

◆ Exclude robots with no media access port (MAP / CAP).

◆ Inline Tape Copy does not support the following destination storage types:

- NDMP

- third-party copies

- EMC Fastrax

- disk storage units

- 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 can not use destination storage devices on multiple media servers.

◆ The Vault Java GUI does not support IRIX.

Support for Files Greater than Two Gigabytes

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

◆ Compaq Tru64

◆ FreeBSD

◆ HP-UX

◆ IBM AIX

◆ Mac OS X Server (as NetBackup client)

◆ Novell NetWare

◆ IBM DYNIX

◆ SGI IRIX

◆ Sun Solaris

◆ Windows NT, 2000, XP (32 and 64 bit), LE (64 bit)

Support for AFS

The following subsections describe the new features associated with AFS.

Support for AFS 3.6 on Solaris, AIX, and HP-UX

NetBackup 3.4 supports AFS versions 3.5 and earlier. The maximum volume size in these versions is 2GB. The NetBackup 4.5 product supports AFS 3.6 with maximum volume size of 8GB. The new file list directive REMOVE_BACKUP_VOLUMES causes NetBackup to remove backup volumes after performing the backup.

Support is limited to the following OS levels:

HP 11.0 and later	Solaris 2.6 and later	AIX 4.3.3 and later

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.

Table 29. Binary Sizes

Hardware Type	Operating System	NetBackup Server	Media Manager	NetBackup Client
Compaq Alpha	Open VMS (5.5 - 7.2.1)	--	--	7305 KB (a)
Compaq Alpha	Tru64 UNIX (4.0F, 4.0G, 5.0a, 5.1, 5.1a)	352 MB	38 MB	10 MB (c, a) 9 MB (c, a)
Data General (Intel)	DG/UX (R4.20MU07)	--	--	6780 KB
HP3000	MPE/iX (C60.07, C65.07)	--	--	
HP PA-RISC	HP-UX (11.0, 11.11i)	268 MB	31 MB	13 MB (a)
IBM	AIX (4.3.3.10) 5.1 (PowerPC - 32 bits)	352 MB	38 MB	12 MB (a)
Intel 386, 486, Pentium	Novell NetWare (5.1, 6.x)	--	--	12.7 KB
Intel 486, Pentium	Windows (95, 98, ME)	--	--	12 MB
Intel 486 Pentium	Windows: - NT 4.0 (Service Pack 6A) - 2000 (Service Pack 2)	96 MB	9 MB	12 MB
Intel x86	FreeBSD(4.0, 4.2, 4.3, 4.4)	--	--	4717 KB
Intel x86	Linux: - Debian GNU/Linux 2.1, 2.2r - Caldera OpenLinux 2.2, 2.4, 8.0 - SuSe 6.1, 7. 0, 7.1, 7.2 - TurboLinux 3.6, 6.0, 6.5, 7.0	45 MB	20MB	6.5MB
Intel x86	Linux (RedHat 6. 2, 7.0, 7.1)	234 MB	20 MB	6470 KB (a)
Intel x86	Solaris 2.6, 7, 8	--	--	8834 KB

Table 29. Binary Sizes (continued)

Hardware Type	Operating System	NetBackup Server	Media Manager	NetBackup Client
Macintosh (680x0 or PowerPC)	Mac OS (8.5, 8.6, 9,x) (X10, X10.1 Client)	--	--	5715 KB
Macintosh (PowerPC)	Mac OS X Sever (1.2)	--	--	6223 KB
NCR	UNIX SVR4MP-RAS (3.02)	53 MB	27 MB	7961 KB
Siemens	Reliant UNIX (5.44)	--	--	8866 KB
IBM/Sequent	DYNIX pts (4.4.2, 4.4.4 - 4.4.8, 4.5)	56 MB	33 MB	11 MB
IBM/Sequent	PTXs (4.5.2, 4.6.1, 4.6.2)	62 MB	34MB	--
SGI	IRIX(6.5 - 6.5.13)	110 MB	45 MB	17 MB
SPARC	Solaris 2.6, 7, 8	323 MB	36 MB	15MB (a)

a. A total of 22 MB installed on the client with the NetBackup Java Administration Console.

b. Applies to all the supported versions of Linux.

c. A total of 20 MB installed on the server.

Platforms Supporting the NetBackup Java GUIs

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 a `fvwm` or `twm` instead. VERITAS has seen the best overall performance with the CDE window manager and recommends this tool on the non-Linux UNIX platforms.

The following table identifies the platforms that support the NetBackup Java Administrative Console and the NetBackup Java Client GUI in the 4.5 release.

Table 30. Platforms that Support NetBackup Java Administrative Console GUI and NetBackup Java Administration Client GUI

Platform	NetBackup Java Administrative Console	NetBackup Java Client GUI	Supported Windows Managers (UNIX)
Windows 95, 98, ME	No	Yes	NA
Windows NT 4.0 (Service Pack 6A)	No	Yes	NA
Windows 2000 (Service Pack 2)	No	Yes	NA
Solaris 2.6, 7, 8	Yes	Yes	CDE, Motif
Solaris 2.6, 7, 8 (x86)	Yes	Yes	CDE, Motif
HP-UX 11.00	Yes	Yes	CDE, Motif
HP-UX 11i (11.11)	Yes	Yes	CDE, Motif
AIX 4.3.3.10, 5.1	Yes	Yes	CDE
RedHat Linux 6.2, 7.0, 7.1	Yes	Yes	GNOME/Enlightment KDE/KWM
Compaq Tru64 4.0F, 5.0a, 5.1	Yes	Yes	CDE

Platforms Supporting xbp

The following clients have the xbp interface capability.

Table 31. Platforms that Support xbp

Client Type	OS
Compaq Alpha	Open VMS (5.5 - 7.2.1)
Data General (Intel)	DG-UX
HP PA-RISC	HP 11.00
Intel x86	Linux
NCR	UNIX - SVR4MP-RAS (3.02)
IBM/Sequent	DYNIX pts (4.4.2)
SGI	IRIX(6.5)
SPARC	Solaris 2.6
Intel x86	Solaris 2.6

Supported Peripherals

The following subsections describe the supported peripherals and robot types applicable to the NetBackup 4.5 product at the time of this release.

Supported Peripherals by Vendor

For the most current information on supported peripherals:

1. Go to the VERITAS support web page

   `http://www.support.veritas.com/`

2. In the left margin of the VERITAS Support page, choose **Compatibility Lists**. The Online Compatibility Lists page appears.

3. From the Product List choose +**NetBackup Products**. The list refreshes showing a list of NetBackup products.

4. Choose **NetBackup BusinesServer.** (Or choose **NetBackup DataCenter** depending on the product you want information about.)

5. Select **Device Support Matrix** from the product option list. The field updates to show the version selection list.

6. From the Compatibility List - Version Selection field select **NetBackup BusinesServer Version 4.5** (or **NetBackup DataCenter**). This list refreshes and displays a list of vendors who have devices that VERITAS supports.

7. Select a vendor name to see a list of products that VERITAS supports. The page updates and shows the device models, robot type (for library devices), firmware that has been tested, and required patches.

   Users can also locate information that explains what drives, libraries, and robot types that this release supports by clicking one of the following links at the bottom of the Vendor Selection list on the web page.

   - 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 *Media Manager system administrator's guide* for more information about the robot types.)

Note In the future, as NetBackup products support more robots, users can find and download the latest external device mapping files in the **Updates and Patches** section the VERITAS support web site at `http://www.support.veritas.com`.

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 32. NetBackup DataCenter - Robot Support by Platform

Platforms	Robot Types[1]												Tape-Alert[16]
	ACS[2]	LMF	ODL[3]	RSM	TL4[4]	TL8	TLD	TLH	TLM[5]	TS8	TSD	TSH	
Compaq Tru64	Yes	No	No	No	Yes	Yes	Yes	Yes[6]	Yes	Yes	Yes	No	Yes
Microsoft Windows	Yes	No	No	Yes[13]	Yes	Yes	Yes	Yes[12]	Yes	Yes	Yes	No	Yes
HP PA-RISC HP-UX	Yes	No	Yes[7]	No	Yes[7]	Yes[7]	Yes[7]	Yes[11]	Yes	Yes[7]	Yes[7]	No	Yes
IBM AIX	Yes	No	Yes	No	Yes	Yes	Yes	Yes[8]	Yes	Yes	Yes	Yes	Yes
Linux RedHat	No	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
NCR UNIX (MP-RAS)	Yes	No	No	No	No	No	Yes	Yes[6]	Yes	No	No	No	No
IBM/Sequent DYNIX	Yes	No	No	No	Yes	Yes	Yes	Yes[15]	Yes	Yes	No	No	No
SGI IRIX [9]	Yes	No	Yes	No	Yes	Yes	Yes	Yes[14]	Yes	Yes	Yes	Yes	Yes
Sun Solaris	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes[10]	Yes	Yes	Yes	Yes	Yes

NetBackup Release Notes for UNIX and Windows

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

2. Contact your drive and operating system vendors to ensure that the standard tape driver support is available. For Windows platforms, VERITAS recommends using `NetBackupTapeDeviceInstall.exe` to install tape drive drivers.

3. Corsair and FX drives are supported, but not when mixed in the same library.

4. Supported only with Hewlett-Packard and Sony drives.

5. DAS media types supported are: 3480, 3590, DEC, DLT, 8 mm, 4 mm, and DTF. On HP800, OD_THICK is also supported. Any DAS media types not listed here are not supported. DAS version level tested is 1.30C7.

6. No robotic control (tlhd is supported. tlhcd/tlhtest are not).

7. Support for this robot on HP800 requires SCSI pass-through driver from HP.

8. IBM ATL version level tested on AIX is 5.0.7.0.

9. The SGI support column refers only to Integral SCSI (nonVME).

10. IBM lmcpd package version level tested on Solaris is 5.0.7.0.

11. IBM lmcpd package version level tested on HP-UX is 5.0.8.0.

12. IBM ATL package version level tested on Windows NT 4.0 and Windows 2000 is 5.0.7.0.

13. Supported only on Windows 2000.

14. IBM ATL package version level tested on IRIX is 5.0.7.0.

15. IBM ATL package version level tested on IBM/Sequent DYNIX is 4.1.5.0.

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

Table 33. NetBackup BusinesServer - Robot Support by Platform

Robot Type [1]	Hewlett Packard HP-UX	Linux Red Hat	Sun Solaris	Microsoft Windows
RSM	No	No	No	Yes [4]
TL4 [2]	Yes [3]	Yes	Yes	Yes
TL8	Yes [3]	Yes	Yes	Yes
TLD	Yes [3]	Yes[5]	Yes	Yes
TS8	Yes [3]	Yes	Yes	Yes
TSD	Yes [3]	Yes[5]	Yes	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.

5. Linux NetBackup servers support only DLT and HCART type drives.

NetBackup 4.5 Product Dependencies 3

This chapter provides information on the product dependencies of the NetBackup 4.5 release. 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, 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.

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 – 2.6	105847-06[1] (or later)	Sun released this software patch to resolve a SCSI problem found in their latest release of this OS.
		105591-09[1]	Sun problem ID number 4199857. Missing symbols from libCrun.so.1
		105375-20 (or later)	If using ServerFree Agent or Fastrax with VxVM 3.2 Release, then users need to install this patch. Users should install this patch before they install VxVM.
			Note Users do not need to install patch number 105357. Users should ignore this installation script message typo.
		111029-01	The 4354397 `semop()` 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.

Hardware Type	OS – Version	Patch	Description
		110722-01 (or later)	If using ServerFree Agent or Fastrax 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.
		JRE 1.3[2] (required patches)	The fixes for the Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with VERITAS NetBackup Java Administration Console.
SPARC/ UltraSPARC	Solaris – 7	107460-06[1]	Sun released this software patch to resolve a SCSI problem found in their latest release of this OS.
		106327-08[1]	Sun problem ID number 4199857. Missing symbols from libCrun.so.1
		107473-07 (or later)	If using ServerFree Agent or Fastrax 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 ServerFree Agent or Fastrax 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.
		106541-16 (or later)	If using ServerFree Agent or Fastrax 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 `semop()` 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 1.3[2] (required patches)	The fixes for the Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with VERITAS NetBackup Java Administration Console.

OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
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 ServerFree Agent or Fastrax 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 ServerFree Agent or Fastrax 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 `semop()` 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.
		110383-01	The 4354397 `semop()` 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 1.3[2] (required patches)	The fixes for the Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with VERITAS NetBackup Java Administration Console
Intel x86	Solaris – 2.6	104678-09[1]	Sun problem ID number 4199857. Missing symbols from libCrun.so.1.
		111030-01	The 4354397 `semop()` 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 1.3[2] (required patches)	The fixes for Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with VERITAS NetBackup Java Administration Console.

OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
Intel x86	Solaris – 7	106328-08[1]	Sun problem ID number 4199857. Missing symbols from libCrun.so.1.
		110882-01	The 4354397 semop() 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 1.3[2] (required patches)	The fixes for the Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with 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 semop() 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 semop() 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 1.3[2] (required patches)	The fixes for Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the OS with VERITAS NetBackup-Java Administration Console
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)	Required to run NetBackup Advanced Reporter on HP-UX 11.00
	HP-UX 11.00/11.10	PHSS_22543[3] (replaced by 24627)	These patches are necessary to enable any C++ runtime code to work properly.
	HP-UX 11.00/11.10	PHSS_22868[3] (replaced by 24627)	These patches are necessary to enable any C++ runtime code to work properly. Check for existence by doing a swlist -l product PHSS_22543.
	HP-UX 11.10	PHKL_25525[3]	This patch will allow HP-UX 11.00 mmap() to use large files from 2GB to 4GB.

Hardware Type	OS – Version	Patch	Description
	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 1.3[4] (required patches)	The fixes for the Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with VERITAS NetBackup Java Administration Console
	HP-UX 11.00 with IPR0103 and IPR0106[5]	PHSS_24044	Allow POLL_INTERVAL to be set to zero in /var/stm/config/tools/monitor/dm_stape.cfg. This disables the dm_stape monitor within thee Event Monitoring System.
	HP-UX 11.11 with IPR0103 and IPR0106[5]	PHSS_24045	Allow POLL_INTERVAL to be set to zero in /var/stm/config/tools/monitor/dm_stape.cfg. This disables the dm_stape monitor within thee Event Monitoring System.
Intel x86	RedHat Linux 7	glibc (RHBA-2000:079-04)	The glibc bug fix is required to run the Java GUI on RedHat 7 systems.
		ncurses.4-5.0-2	If you do not have this installed, you will see the following error when trying to start the NetBackup menu interface on the client:

```
error while loading shared libraries:
libncurses.so.4: cannot open shared object
file: No such file or directory.
```

The error appears to be more serious on a server, because license keys will appear invalid, when the real problem is that ncurses is not installed.

OS Patches and Updates (continued)

Hardware Type	OS – Version	Patch	Description
AIX	(All versions)	4330-02 (or later)	The fixes for the Java Runtime Environment (JRE) 1.3 are required to ensure proper operation of the operating system with VERITAS NetBackup Java Administration Console. VERITAS recommends users install this Maintenance package. Contact IBM for more information about this patch.
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. **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.

1. For information about the Sun patch bundles, refer to: http://sunsolve.sun.com.

2. For information about the java patches associated with Sun Solaris, refer to:
   http://java.sun.com/j2se/1.3/install-solaris-patches.html

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/infolibrary/patches.html

5. Using the patch IPR0106 works fine, however, VERITAS recommends you upgrade to IPR0109.

Product Dependencies

The following table lists defines the product related dependencies associated with the NetBackup 4.5 release.

Product Related Dependencies

Dependency	Vendor	Description
Windows NT 4.0 Service Pack 6A	Obtain from Microsoft	Required on all NT 4.0 machines in order to install. Install will notify user if not at required level
Windows 2000 Service Pack 2	Obtain from Microsoft	Required on all 2000 machines in order to install. Install will notify user if not at required level
Windows 95	Obtain from Microsoft	Required on all Win95 clients in order to install. Install will notify user if not at required level
Internet Explorer 5.0 or higher (GDM requires 5.5 or higher)	Microsoft	Required for Explorer Extension in the Windows NetBackup GUI
Microsoft Virtual Machine (VM) version 5.x	Microsoft	Required on all Windows NetBackup Advanced Reporter (NBAR) version 4.5 clients (not required for the server) running Internet Explorer.
Windows Socket Update 2	Microsoft	Required on all Win95 clients in order to install. Install will notify user if not at required level
Online JFS 3.3 or higher for HP-UX	HP website	FlashBackup on HP-UX
VxVM 3.1 or higher for Solaris or HP-UX	VERITAS	Core Frozen Image Services - VxVM snapshot mirror frozen image method
VxFS 3.4 or higher for Solaris	VERITAS	This is required for Core Frozen Image Services - VxFS file clone frozen image method. This is also required for Fastrax.
VxFS of any release for Solaris or HP-UX	VERITAS	This is required for Core Frozen Image Services - VxFS file system being used
Online JFS 3.3 or higher for HP-UX	HP website	This is required for Core Frozen Image Services - Online JFS file system being used on HP-UX

Product Related Dependencies

Oracle 8i or above with RMAN proxy copy capability	Oracle	This is required for Oracle ServerFree Agent
TimeFinder release for Solaris or HP-UX; SYMAPI Library release 4.2-154 for Solaris or HP-UX	EMC	This is required for Extended Frozen Image Services - TimeFinder frozen image method
		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 NBU is installed.
RAID Manager Library version 01-03-03/01 for Solaris or HP-UX; ShadowImage release for Solaris or HP-UX	Hitachi Data Systems	This is required for Extended Frozen Image Services - ShadowImage frozen image method
		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 NBU is installed.
RAID Manager Library version 01-03-03/01 for Solaris or HP-UX; BusinessCopy release for Solaris or HP-UX	HP	This is required for Extended Frozen Image Services - BusinessCopy frozen image method
		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 NBU is installed.
SYMAPI release 4.2-154 or above for Solaris. Recommend release 4.3 for improved performance	EMC	This is required for EMC Fastrax Data Engine

Operational Notes

4

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

1. It is not possible to revert to NetBackup BusinesServer after you install and begin using NetBackup DataCenter.

    In addition, VERITAS does not support the installation of NetBackup BusinesServer software on a system that already has NetBackup DataCenter software installed.

2. As of the 4.5 release, NetBackup products for Windows and UNIX enable users to add options by entering license keys using a NetBackup License Key window in each GUI. This new GUI window makes it easy for users to perform operations relating to license keys, such as:

    - View all existing license key information

    - Add a new license key

    - Delete an existing license key

    - Summary of active licensed features

    To upgrade from 4.5 BusinesServer to 4.5 DataCenter, enter a new license key. This is the only step required. All required software components are already installed.

    Features and add-ons are also handled by entering license keys in NetBackup License Key window at the server.

3. Before doing an upgrade installation, exit all NetBackup applications and stop all daemons (UNIX) and services (Windows).

4. NetBackup 4.5 supports a direct upgrade from NetBackup 3.4 and 3.4.1. This release does not support a direct upgrade from versions that were released before NetBackup 3.4 (for example, NetBackup 3.2)

5. When uninstalling NetBackup on Windows 2000 systems, the use of the **Remove** button in the Add/Remove Programs applet can take several minutes. To avoid this wait, click the **Change** button, and select **Remove** from the screens that follow.

6. NetBackup 4.5 supports the Windows Limited Edition (LE) and Windows XP as a NetBackup client. To install or configure a Windows LE client or Windows XP client, follow the Windows client installation instructions.

7. After installing NetBackup for Encryption or NetBackup for NDMP, restart `bpdbm` on the master server. If you install NetBackup Oracle Advanced BLI Agent, restart `bpdbm` on the master server after you change the NetBackup configuration to allow block incremental backups.

For instructions on configuring NetBackup to allow block incremental backups, see the *NetBackup for Oracle Advanced BLI Agent System Administrator's Guide.* For instructions on restarting `bpdbm`, see the section on Managing NetBackup daemons/services in the "Managing NetBackup" chapter of the NetBackup system administrator's guide.

8. When installing or uninstalling NetBackup for NDMP on a Windows media server, you MUST stop the NetBackup Device Manager Service.

9. NetBackup 4.5 enables a NAS (Network Attached Storage) filer to be backed up to a NetBackup media server. The feature is enabled by an NDMP mover agent that runs on the NetBackup media server. The NDMP mover agent runs independently of NetBackup and acts as the 3rd party NAS device in an NDMP 3-way backup.

Users install and configure the NDMP mover agent through command line tools. They can then create backup policies and manage media, devices, and robotics through NetBackup in the same way these operations are currently performed.

10. There are times when installing on a Windows NT 4.0 system requires two system reboots. The first reboot may occur at the beginning of the install process. This reboot updates the Microsoft installer and associated DLLs. The second reboot may occur after you have added your license key and then selected either Master Server, Media Server, or Administrative Client.

11. Windows NT 4.0 service pack 6A or later, or Windows 2000 service pack 2, is required on supported Windows NT NetBackup servers for this release. This brings the system DLLs to a level supporting the wizards.

12. Users can install NetBackup Encryption (40 and 56 bit) on NetBackup 4.5 BusinesServer and DataCenter platforms for Linux. The install is the same as on other Unix platforms.

13. If you install the 56-bit NetBackup Encryption product, the 56-bit DES libraries may not install properly.

To work around this problem, issue the command below from the master server after installing the 56-bit DES Encryption product as explained in chapter 2 of the *NetBackup Encryption System Administrator's Guide*:

- On a Windows NT NetBackup Master Server, execute the following (all on one line):

  install_path\bin\bpinst -CRYPT -crypt_strength des_56
  -client_libraries *install_path*\lib\client *server*

  Where *server* is the name of the master server.

- On a UNIX (non-Linux) NetBackup master server, execute the following (all on one line):

  /usr/openv/netbackup/bin/bpinst -CRYPT -crypt_strength
  des_56 -client_libraries /usr/openv/lib/client *server*

When users push the encryption libraries to the clients as explained in chapter 3 of the *NetBackup Encryption System Administrator's Guide*, include "-crypt_strength des_56" on the bpinst command to ensure that the 56-bit DES libraries are also pushed:

- On a Windows NT NetBackup master server, execute the following (all on one line):

  install_path\bin\bpinst -CRYPT -crypt_strength des_56
  -client_libraries *install_path*\lib\client *client*

  Where *client* is one or more client names.

- On a UNIX NetBackup master server, execute the following (all on one line):

  /usr/openv/netbackup/bin/bpinst -CRYPT -crypt_strength
  des_56 -client_libraries /usr/openv/lib/client *client*

14. To install NetBackup Advanced Reporter or other NetBackup add-on products, run the install script located at the base directory on the CD-ROM. The install script displays a menu from which you can choose the option to install **NetBackup Add-On Product Software**. Follow the prompts to complete the installation.

15. For HP-UX, to avoid problems such as the following during the install:

```
x ./usr/openv/java/allNB.jar, 56759 bytes, 111 tape blocks tar:
chown failed: Invalid argument
```

    a. Ensure the CD-ROM is mounted correctly for HP-UX (see the NetBackup installation procedure).

    b. Execute `id` as root. If the group id (`gid`) is not 1 or 2, do a `newgrp bin`.

       HP-UX often sets the root user's group to 3, 4, or other values higher than 1 or 2. If the group ID is too high, you are unable to modify some files.

16. Patch Uninstaller

The administrator can now uninstall a patch from a single local machine (NT or UNIX). This feature uninstalls only the latest NetBackup server or client patch. This feature should not be used to uninstall any patches previous to the NetBackup 4.5 Release. For instructions on how to uninstall a patch, refer to the README file supplied with each patch. Only the last installed patch can be uninstalled.

17. Prior to NetBackup 4.5, when the NetBackup base package was installed, all possible Java client JRE files were copied to `/usr/openv/java` even though the user may not be interested in some of the client types supported by NetBackup Java.

In 4.5, this has been changed so that when a client type is chosen to be loaded, the appropriate Java JRE file (if there is one) is also loaded. Java client JRE files are no longer loaded as part of the NetBackup base package. There is also a new option in the Installation Options menu which is seen when executing ./install from the CDROM image. It enables the user to choose which Java client JRE files to load.

18. During a normal installation, NetBackup is designed to use random network ports in addition to specifying over which network ports "client" traffic is routed. These capabilities are controlled by the RANDOM_PORT and CLIENT_PORT_WINDOW directives in the bp.conf file. Any adjustments to these directives is not saved from one installation to the next. A user needs to make the same adjustments to these directives as they did for the previous version of NetBackup.

19. NetBackup Startup and Shutdown Scripts

The NetBackup startup/shutdown scripts for various UNIX platforms, formerly in the goodies directory, have been consolidated into one script for all UNIX platforms called `netbackup`.   It is installed during NetBackup installation if there are no S77*netbackup or K77*netbackup scripts already installed. Before installing NetBackup, please remove any pre-existing NetBackup startup/shutdown scripts. For more details, please refer the Installation Guide.

On AIX platforms, `etc/inittab` needs to be modified as suggested within the `goodies/netbackup` script to enable automatic startup. In addition, `/etc/rc.shutdown` should be modified to call `etc/rc.veritas.aix stop`.

20. Canceling and NetBackup Installation

VERITAS has experienced issues while cancelling the installation of NetBackup on systems with the 1.5 Beta version of the Windows Installer engine. Clicking the **Cancel** button during the installation process can cause the system to reboot with no warning, or an opportunity to abort the reboot. If you have such a system, VERITAS recommends that you do not attempt to cancel the installation while it is in progress.

21. Due to operating system differences between the Linux platforms supported in 3.4 and the Linux platforms supported in 4.5, the Linux client platform configuration name has been changed. Linux clients that are intended to run 4.5 NetBackup client software should be configured as Linux/RedHat2.2 in NetBackup policies. Linux clients that will continue to run NetBackup 3.4 client software should remain configured as Linux/RedHat in NetBackup policies.

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 Linux clients that need to be reconfigured, answer no. The installation of the server will complete. You may then reconfigure your Linux clients and run update_clients as documented in the "Upgrading Clients After the Installation" section of the *NetBackup DataCenter Installation Guide for UNIX* or *NetBackup BusinesServer Getting Started Guide for UNIX*.

General NetBackup Notes

1. Back-level support

- Within a NetBackup server-client group, all master and media servers must be running a version of NetBackup equal to or higher than each of the clients. NetBackup 4.5 and later releases support mixed version numbers between a master and its media servers. (This enables customers to upgrade NetBackup on their machines one at a time without having to bring down all servers within a group.) The clients can run one revision lower than the servers.

Note To avoid problems, it is recommended to have master and media servers at the same OS patch level.

- Within a Global Data Manager (GDM) configuration, the Global Data Manager server must be running a version of NetBackup equal to or higher than each of the masters in its domain (for example, Global Data Manager 4.5 supports only NetBackup 4.5 servers).

  The NetBackup server or client that you specify in the NetBackup Java login dialog must be running the same version of NetBackup as the host where you started the NetBackup Java application.

  For example, on UNIX, if you attempt to login to the NetBackup Java application server running on a NetBackup 3.2 host through NetBackup Java applications running on a 4.5 host you get the following error message and cannot continue. You can either change the name of the host in the dialog or choose to exit the application.

```
NetBackup-Java: bpjava-msvc is not compatible with this
application version (4.5GA). You may try login to a
different NetBackup host or exit the application. The
remote NetBackup host will have to be configured with
the same version of NetBackup as the host you started
the application on.
```

  Conversely, on UNIX, if you attempt to login to the NetBackup Java application server running on a NetBackup 4.5 host through NetBackup Java applications running on a 3.2 host you get the following error message and cannot continue. You can either change the name of the host on the dialog or choose to exit the application.

```
bpjava-msvc: the client is not compatible with this server
version (4.5GA)
```

2. The `xnb`, `xbpadm`, `xvmadm`, `xdevadm`, and `bxbpmon` applications are not supported with NetBackup for UNIX. The NetBackup Java interface (`jnbSA`) is the primary administrator interface for UNIX platforms.

3. Local translations to other languages are not included in this package.

4. 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/openv/netbackup/bin/goodies/man`.

5. Some command line interfaces are undocumented.

   Some administrative command line interfaces to NetBackup and Media Manager are not documented and not supported.

6. Starting with the NetBackup 4.5 release, NetBackup will use SCSI reserve/release to improve data integrity in SSO (and non-SSO configurations). SCSI reserve/release operates at the SCSI target level and depends on the fibre-to-SCSI bridge hardware working correctly. `bptm`, `bpbackupdb`, and `bprecover` use SCSI reserve to protect operations to tape from corruption in multiple-initiator environments.

   The use of SCSI reserve/release is on by default, but can be disabled by using an entry in the UNIX bp.conf file or in the registry on Windows NetBackup server.

7. NetBackup 4.5 supports the use of the Windows NT and Windows 2000 `perfmon` tool to inspect runtime performance of NetBackup product. (The Windows NT and Windows 2000 `perfmon` tool displays data in terms of objects and counters.) This feature integrates with Performance Monitor by providing objects and counters that are specific to the NetBackup application.

8. Decoding a time stamp

Occasionally, it is desired to convert the time stamp used by NetBackup for its backup IDs into a human-readable format. Backup IDs take the form of *client name_timestamp*; for example, danr_0818775918.

To convert 818775918 to a readable format, run the following command:

On Windows NT and Windows 2000, execute:

install_path\NetBackup\bin\bpdbm -ctime *timestamp*

For example:

```
C:\Progam Files\Veritas\NetBackup\bin\bpdbm -ctime 868775918

868775918 = Sun Jul 13 01:38:38 1997
```

On UNIX. execute:

```
/usr/openv/netbackup/bin/bpdbm -ctime
```
timestamp

For example:

```
# /usr/openv/netbackup/bin/bpdbm -ctime 818775918
818775918 = Tue Dec 12 07:45:18 1995
```

9. Intentionally destroying NetBackup catalogs.

In a demonstration or "proof-of-concept" environment, it is sometimes desirable to destroy any image catalogs and tape files before taking the system into full production mode.

To delete all backup and archive image catalogs, as well as the information about the secondary storage being used for those images:

a. Log on to the NetBackup server as the root user (on UNIX) or administrator (on Windows).

b. For each media in the NetBackup media listing (use the NetBackup Report interface), enter the following command (one line):

On Windows:

install_path\NetBackup\bin\admincmd\bpexpdate -d 0 -ev *media_id* [-host *hname*]

On UNIX:

```
/usr/openv/netbackup/bin/admincmd/bpexpdate -d 0 -ev
```
media id [-host *hname*]

Where *media id* is the media ID to be deleted and *hname* is the name of the host on which the media resides. You must specify this hostname only if your configuration uses multiple volume database hosts.

Manual expiration of media with `bpexpdate` causes the media to be removed from the NetBackup catalog and to be unassigned in the volume database, regardless of the media's prior state (FROZEN, SUSPENDED, and so on).

10. On UNIX, the ATRIA ClearCase application does not work correctly with backup products.

The ATRIA ClearCase application does not operate correctly with any backup product, including NetBackup. The ATRIA release notes suggest stopping the ClearCase application before starting a backup. One way to accomplish this with NetBackup is to modify the `bpstart_notify` script to stop ClearCase before the backup and to modify the `bpend_notify` script to restart it when the backup is complete.

11. On UNIX, if you back up files with both NetBackup and `dump.ffs`, a `dump.ffs` incremental dump sees all files that NetBackup has accessed as candidates for an incremental dump.

The `dump.ffs` utility looks at the file's "inode-change" time when performing incremental dumps.

If NetBackup has backed up files in the same partition, the file's inode-change time is modified when NetBackup resets access time for any file that is opened and read. Therefore, a `dump.ffs` incremental dump sees all files that NetBackup has accessed as candidates for an incremental dump.

There is no method by which NetBackup can reset the inode-change time. See the description of the (`USE_CTIME_FOR_INCREMENTALS`) option for a client `bp.conf` file in the *NetBackup System Administrator's Guide for UNIX*.

12. On some UNIX platforms with NetBackup configurations it may be necessary to increase the system's message queue resources to avoid `bpsched` hangs.

Example (for Sun systems):

Make the following changes to the `/etc/system` file:

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

Reboot the system.

13. On a UNIX NetBackup server, if the backup of the NetBackup database fails with an EXIT STATUS of 124 and the database is on a RAID partition, check the `bpbkar` debug log for a message such as the following.

```
08:54:35 [27862] <8> bpbkar: WRN - Could not reset access time of
/var/openv/netbackup/db/.snapshot/nightly.0/images/troi/INDEXLEVEL
```

Perform the following to avoid this problem. Change the NetBackup catalog backup configuration so catalog backups include all the files and directories in the `/usr/openv/netbackup/db` directory. If you have on how to change the configuration of NetBackup catalog backups, contact VERITAS customer support.

14. Windows 2000 and user-directed operations

If users other than the administrator are using the Backup, Archive, and Restore interface on a Windows 2000 system to perform backups and restores, write permission to the *install_path*\NetBackup\Logs folder should be given to those users. On Windows 2000 systems the `Program Files` folder, by default, is not writable by users other than the administrator. NetBackup writes log files and progress files to the `Program Files\Veritas\NetBackup\Logs` folder by default. Users without write permission to the `Logs` folder receive an error message when attempting a backup or restore and the operation is aborted.

15. The NetBackup Remote Administration Console for Windows is a version of NetBackup for Windows NT and Windows 2000 that can be used to remotely administer one or more UNIX or Windows NetBackup servers. It comes with all of the standard NetBackup Server for Windows interfaces and can be used to create backup policies, manage volumes, view status, monitor tape drives, and so on, on a remote NetBackup server. It cannot be used as a NetBackup master or media server itself; it is just used for remote administration of other NetBackup servers, UNIX or Windows.

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

The documentation set does not, in most cases, specifically refer to the Remote Administration Console since using the NetBackup Server for Windows interfaces on the Remote Administration Console is identical to using them locally on the server that is being administered. Of course, the master server or device host shown in the interface is the server name that is being administered instead of the local server name.

16. An administrator can use the Backup, Archive, and Restore GUI on a NetBackup Windows master server to direct restores to any Windows client, providing NetBackup on the client is configured to permit them. The Windows Backup, Archive, and Restore GUI cannot be used to restore files on a UNIX client. However, UNIX files can be restored on the client itself, or by using a UNIX master server.

17. For Windows 2000 clients if you do not use the ALL_LOCAL_DRIVES directive in the files list, you must specify System_state:\ in the file list to ensure that the Windows 2000 system state is backed up.

18. The Extended Frozen Image Services option is used to extend the frozen image capabilities of ServerFree backup to include frozen image methods for the following disk arrays:

- TimeFinder frozen image method: EMC Symmetrix Disk Array with TimeFinder SYMAPI - version 4.2.

- ShadowImage frozen image method: Hitachi Data Systems (HDS) 7700 and 9900 Series with Hitachi Open Multi-Raid Coupling Facility also called ShadowImage feature - version 01-03-03101

- BusinessCopy frozen image method: HP XP 256 and 512 Series with BusinessCopy Services - version 01-03-03101

19. The following types of Off-host Backup methods for moving data is supported:

- Local Host

- NetBackup Media Server

- Third Party Copy Device

20. Supported Catalog Locations

NetBackup 4.5 does not support saving catalogs to a remote file system such as NFS or CIFS. NetBackup 4.5 contains a new binary catalog that is more sensitive to the location of the catalog. In addition, storing your catalog on a remote file system can have critical performance issues for catalog backups. For more information on backing up NetBackup catalogs, refer to the VERITAS NetBackup DataCenter 4.5 System Administrator's Guide - UNIX.

21. Inline Tape Copy backup jobs

For Inline Tape Copy backup jobs, the scheduler will add multiplexed jobs to a multiplexed group only if it is creating the same number of copies. For example, if a multiplexed group is creating two copies, the scheduler will not add jobs that will create one copy to the group.

22. The `bpps` command output may show many NetBackup processes with the same name.

On RedHat Linux systems, the `bpps` command output may show many Java processes when the NetBackup-Java Administration Console is running.

If Global Data Manager (GDM) is configured on the Linux machine, `bpps` may show multiple `visd` and `nbdbd` processes.

This is not a problem; each process represents a thread started in the application.

23. VERITAS recommends that the backing up of active file systems be avoided, or the use of snapshot technologies be implemented. The directory structure reported back from the file system (to NetBackup) may not contain all of the files available during the time of backup. NetBackup will not report errors in many cases where the file's existence is not known to NetBackup as reported by the file system.

NetBackup Database Agents

1. Block Level Incremental Notify Scripts process has changed

Starting with 3.4, `bpend_notify.oracle_bli.sh`, `bpstart_notify.oracle_bli.sh`, and `post_checkpoint_notify.oracle_bli.sh` were present in the directory `/usr/openv/netbackup/bin/goodies` on the server and if NetBackup for Oracle on UNIX Advanced BLI Agent had been installed on the client, these scripts were also in the directory `/usr/openv/netbackup/ext/db_ext/oracle/samples`. The `setup_bli_scripts` shell script that was on the client in `/usr/openv/netbackup/ext/db_ext/oracle/bin`. The `setup_bli_scripts` shell script would send the `*_bli.sh` scripts over from the desired server (using FTP) and change them based on answers given to Oracle configuration questions.

With NetBackup 4.5, the `goodies` directory on the server no longer contains these shell scripts. They are present in the NetBackup for Oracle on UNIX Advanced BLI Agent package and are installed on the client in `/usr/openv/netbackup/ext/db_ext/oracle/samples`. `setup_bli_scripts` has been changed to no longer use `FTP` and instead just copies the files from the samples directory to `/usr/openv/netbackup/bin`. It continues to ask Oracle configuration questions and change the notify scripts based on the answers, as it has in the past.

Database Archiver Agent

1. The Database Archiver commands, `bporaexp` and `bporaimp` (or `bporaexp64` and `bporaimp64`) when running on HP-UX require access to a Java library due to the use of Oracle APIs within them. This dependency is resolved via use of the respective Java library that is installed with the NetBackup-Java Administration Console. However, the NetBackup-Java Administration Console software is not installed to HP-UX clients from an SGI, NCR or Sequent servers using the standard client install scripts. So, these commands will fail with the following error it the NetBackup-Java GUI software is not installed.

   ```
   [1]: bporaexp

   /usr/lib/dld.sl: Can't find path for shared library:
   libjava.sl

   /usr/lib/dld.sl: No such file or directory
   ```

   You will need to install the NetBackup-Java Administration Console software via the NetBackup Client Java Software option of the of the CD-ROM install script to be able to use these commands.

DB2 Database Agent

1. Proper use of NORETRY setting in db2.conf

   In the past, the use of the NORETRY setting in the db2.conf file was necessary to support certain roll-forward recovery situations. This is no longer necessary, because of enhancements made to the user-exit program. The NORETRY setting should be removed (disabled) from the db2.conf file.

2. Modify your Windows script files to use the new library.

   The location of the NetBackup for DB2 library, NBDB2.DLL, has changed. In NetBackup 3.4, it was located in the Windows System folder, e.g.

   ```
   C:\WINNT\SYSTEM32\NBDB2.DLL
   ```

   The new library is now located in the NetBackup BIN folder, e.g.

   ```
   C:\Program Files\Veritas\NetBackup\bin\NBDB2.DLL
   ```

   You must modify any existing Windows backup and restore scripts to load the new library from the new location, e.g.

   ```
       DB2 BACKUP DB SAMPLE LOAD
   C:\Progra~1\Veritas\NetBackup\bin\NBDB2.DLL
   ```

3. Change the CLASS setting to POLICY in db2.conf

The CLASS keyword has been changed to POLICY. All occurrences of the CLASS keyword should be changed to POLICY. CLASS is still recognized in this release, but will become obsolete in a future release.

NetBackup Advanced Reporter (NBAR)

The following subsections describe how to install and upgrade NBAR 4.5.

License Keys

The installation assumes you have a valid NetBackup license key installed. In addition, you must have a valid license key for NBAR 4.5. If you are planning to install NBAR in a GDM environment, you must have valid GDM license keys for the GDM server and each managed server. For more information about what constitutes a valid key, consult your VERITAS NetBackup documentation.

Installation Requirements

The following sections list the installation requirements for UNIX and Windows systems.

On UNIX Systems

◆ Users must be a root or super user.

◆ Users must have NetBackup DataCenter 4.5 master installed on the server. You must be installing on a Solaris machine running version 2.6, 7, or 8, or on an HP-UX machine running version 11.0 or 11i.

◆ VERITAS strongly recommends that users install HP-UX patches PHKL_22840 and PHNE_22397 (or later patches that supersede these) if you have not done so. These patches have dependencies on other patches. Refer to the HP support site at www.hp.com for more information.

◆ The volume database must reside on the NetBackup master server and there must be only one volume database for NBAR to report complete and accurate media information.

◆ Users must have a valid evaluation or permanent NBAR license key.

◆ If you are installing in a GDM environment, you must have valid GDM license keys for the GDM server and each managed server.

◆ If users are setting up NBAR in a GDM environment, they must configure the GDM server machine first. The managed servers must identify the GDM server to join the GDM domain.

◆ The installation directory must have sufficient space for the NBAR installation.

On Windows Systems

◆ Users must have administrator rights on the local machine.

◆ Users must be running Windows NT 4.0, Service Pack 6 or greater, or Windows 2000, Service Pack 2.

◆ Users must have NetBackup DataCenter 4.5 master installed on the machine where you want to install NBAR.

◆ The volume database must reside on the NetBackup master server and there must be only one volume database for NBAR to report complete and accurate media information.

◆ To install the server component of the application, users need about 50 megabytes free. You must have sufficient room on the system for the NBAR application and for the database.

◆ Users must have a valid evaluation or permanent NBAR license key.

◆ If you are installing in a GDM environment, you must have valid GDM license keys for the GDM server and each managed server.

◆ If users are setting up NBAR in a GDM environment, they must configure the GDM server machine first. The managed servers must be able to identify the GDM server to join the GDM domain.

◆ If a user plans to use Microsoft Internet Explorer to access NetBackup Advanced Reporter 4.5, it must be installed and configured before installing Advanced Reporter.

◆ Users must have Microsoft Internet Information Server (IIS) 4 or higher running on a Windows NT 4.0 server, Microsoft Peer Web Services (PWS) running on an NT 4.0 workstation, or Microsoft Internet Information Services 5 running on Windows 2000.

Database Sizing Requirements

When you determine the disk space requirements for your NetBackup Advanced Reporter installation, please use the following recommendations.

For a standalone installation:

Plan for 725 bytes of data per day for each client, and add an additional 33 kilobytes of disk space per day for logging at the lowest logging level.

(number of clients) x (number of days of data) x 725 bytes

+

(number of days of data) x 33,000

This figure is approximate and can be affected by the number of jobs per client, the length of host names, and the number of errors NetBackup encounters.

For a GDM installation:

-   For each managed Server in a GDM environment plan for growth of approximately 350 bytes per day.

-   For the GDM server, plan for growth of approximately 450 bytes per day, per managed server.

Note These suggestions are based on averages. Your system may produce more or less data per day, depending on how often data is gathered, the number of characters in your host names, or domain names, etc.

Upgrading from NBAR 3.4 to NBAR 4.5

The following subsection describe how to upgrade from earlier versions of NBAR to NBAR 4.5. The upgrade procedure is different for UNIX and Windows systems.

On UNIX Systems

To install NBAR 4.5, you must first uninstall NBAR 3.4. For information on how to uninstall and install NBAR, please refer to the NetBackup Advanced Reporter System Administrator's Guide.

Note You must close any browser windows that are running NBAR after you have performed an upgrade, and restart the browser. This process will help the browser install the new NBAR applet plugin.

On Windows Systems

The installation process will detect the 3.4 installation and ask you if you want to upgrade (which will preserve the database information) or perform a clean install (which will delete database information). Both choices will delete the 3.4 installation.

> **Note** You must close any browser windows that are running NBAR after you have performed an upgrade, and restart the browser. This process will help the browser install the new NBAR applet plugin.

> **Note** If you want to reinstall version 4.5, you must first uninstall it using **Add/Remove Programs**.

Upgrading from NBAR 3.2.1 to NBAR 4.5

The procedure is different on UNIX and Windows systems.

On UNIX Systems

To upgrade NBAR from 3.2.1, you must first uninstall NBAR 3.2.1 and then install NBAR 4.5.

Due to changes in NBAR's database format with release 3.4, when you upgrade NBAR from 3.2.1, the installation performs a database conversion. During installation, the amount of disk space required to accomplish this task will be displayed. You will be asked for the names of two temporary directories that the database conversion utility will use. You can choose any directories, as long as they have at least as much space as the installation script indicated was required.

> **Caution** To preserve historical NBAR data, you must install to the directory where the previous version of NBAR was installed.

When NBAR is uninstalled, the NBAR historical data in the database files are collected and preserved in the file `<tmpdir>/VERITASnbar-db.tar.Z`. During the installation process, the data in this file is provided to the new database. When you are certain that your new NBAR installation is running correctly, you can delete this file.

> **Note** You must close any browser windows that are running NBAR after you have performed an upgrade, and restart the browser. This process helps the browser install the new NBAR applet plug-in.

On Windows Systems

The installation process detects the 3.2.1 installation and asks the user if he wants to upgrade (which preserves the database information) or perform a clean install (which deletes database information). Both choices delete the 3.2.1 installation.

The upgrade creates a copy of the NBAR 3.2.1 database in the `<install-directory>`\nbar_olddb directory, which might be, for example:

```
c:\Program Files\VERITAS\NetBackup\NetBackup Advanced
Reporter\nbar_olddb
```

After you run NBAR and confirm that the data has been properly migrated, you may delete the nbar_olddb directory to recover the disk space. You can verify that the data has been migrated by viewing reports from a time period predating the upgrade.

Note You must close any browser windows that are running NBAR after you have performed an upgrade, and restart the browser. This process will help the browser install the new NBAR applet plug-in.

Starting the Java Applet GUI for the First Time

When you start Advanced Reporter for the first time, the application will install itself as an extension to your browser and run as a Java plug-in. The first thing that you will see will be a security message from your browser indicating that a request is being made to install a plug-in onto your workstation. Click **Yes** to accept the installation. Your browser may be inactive for a few moments while the plug-in is installed. If you are using Microsoft Internet Explorer, Advanced Reporter starts at this point. Netscape Navigator users must exit the browser completely and restart it before Advanced Reporter will work.

Note If a new version of the plug-in is detected, it will automatically install on your web browser. Selecting the optional **Remember This Decision** checkbox will prevent the security messages from displaying during subsequent updates. If you want to remove the Java applet, please refer to your browser's documentation for information on how to remove a plug-in.

Running the Java Applet GUI

◆ To access NBAR 4.5 installed on a UNIX system, use the following URL from your web browser:

```
http://<host>.<domain>:<port>/nbar.html
```

Note The default port is 8885.

◆ To access NBAR 4.5 installed on a Windows system, use the following URL from your browser:

```
http://<host>.<domain>/nbar/nbar.html
```

Note If the port number of the web server is set to something other than 80 (the default), you must specify the port number in the URL. The syntax is:
```
http://<host>.<domain>:<port>/nbar/nbar.html
```

NetBackup Vault 4.5

Vault 4.5 extends the NetBackup infrastructure to provide automated duplication of specific backup images, and automates the process of off-site media rotation (a critical component of any backup or disaster recovery strategy). Additionally, Vault 4.5 generates reports to track the location and content of each piece of media. Information from Vault is integrated with other NetBackup components and appears as part of the NetBackup Activity Monitor.

System Requirements for Vault 4.5

◆ A NetBackup master server on any NetBackup-supported platform except NCR, and Sequent, and Linux 6.2.

◆ At least one vault robot.

A vault robot if of type: TLD, TL8, TLH, TLM, and must have a media access port. While other types of robots can be used as the source and/or destination of Vault's duplication process, only a vault robot can be used to eject the tapes to be vaulted.

◆ For duplication, NDMP storage units may only be configured for one copy. Fastrax storage units cannot be used as the destination of a duplication operation by Vault. Media Manager storage units may be configured for multiple copy duplication.

Operational Notes

1. VERITAS strongly suggests you use VERITAS Enterprise Consulting Services (ECS) if you plan to configure a complicated environment. We consider a complicated environment to be an environment with multiple robots for each media server, or shared robots. A simple environment is one in which you do not intend to copy data across media servers or robots.

2. The FORCE_RESTORE_MEDIA_SERVER parameter does not work with `bpduplicate`.

3. Be sure to create a time window of the Vault profile that is at least seven days longer than the frequency of the vault job. For example, if you configured a vault job that ran every day, you would create a time window, in the Vault profile, that is at least eight days long.

Note You configure the time window of a Vault profile on the **Choose Backups** tab in the Vault GUI.

4. A session that attempts to eject more tapes than fit in the vault robot's media access port will not perform automatic eject. The operator must use `vltopmenu` or `vlteject` to perform the eject operation manually.

5. In a Vault profile, the number of read drives tells Vault how many concurrent duplication jobs it can run. When no read drive is involved (all backups to be duplicated reside only on disk), the number of write drives is used to determine how many concurrent, duplicated jobs to run.

6. If you have multiple robots on a media server, and if you want Vault to duplicate backup images, there is no way to specify which drives to use as read drives during duplication within one profile. If you want to specify which robot to use to read the backup images during duplication, you must set up one profile per robot, where the robot is specified using the **Source volume group** on the **Choose Backups** tab of the **Change Profile** dialog.

7. If you have configured a Vault profile for duplication, and the image to be duplicated already has multiple copies, Vault chooses the image to use as the same based on these rules:

   - Vault uses the disk copy if one is available

     OR

   - Vault uses the primary copy

8. To perform a catalog backup through Vault, there must be an unassigned tape available in the Catalog backup volume pool and in the robotic volume group for the vault that contains the profile.

9. If you have trouble printing reports from your Vault profile, try the following:

   a. Try the print statement that you have specified in your profile from your command line. If the print statement doesn't work from your command line, it will not work from your vault profile.

   b. In your vault profile add the full path to fully qualify the print command.

10. When printing reports in a default portrait (vertical) format, the Recovery Report often gets truncated, as the lines are too long to fit on the vertical page. To print all reports in landscape format, specify an appropriate landscape print command in your vault profile. To print the Recovery Report in landscape format, but the other reports in portrait format, you can specify two print commands for a Unix server.

    a. You may need to set up your printer to be able to print landscape.

    b. Identify a print command that will print in landscape format on your system. For instance:

       ```
       enscript  -r  -Prosmain05ps
       ```

       Before attempting to print from your vault profile, it is wise to try the print command from your command line. If it doesn not work from your command line, it will not work for your vault profile.

    c. Put both print commands, separated by " + ", in the **Print command:** field of your vault profile. For instance:

       ```
       lpr + enscript  -r  -Prosmain05ps
       ```

11. Using `vltopmenu` to print reports to a printer on a Windows platform:

    The default command provided ("print") may or may not work depending on your system settings. Vault is not aware of those system settings. If the ordinary "print" does not work, then the user may have to do the following:

    a. Map a printer to a device using the `net use` command. On most systems, you can use the following example to do this:

       ```
       net use deviceName \\computerName\printerName
       ```

b. Use the `net use` command to verify if the connection is valid or not. Sometimes these connections are made "unavailable" if the computer is rebooted. So if the user encounters a problem in printing reports on Windows check the status of the connection using the `net use` command. If the connection is unavailable or disconnected, then the user will likely have to delete that instance of `deviceName` (above) and then re-establish it again.

c. The user needs to change the print command in `vltopmenu` using option `p) Change Print Command` to the following: `print /D:LTP1`. This should work if the ordinary "print" does not.

d. The user can delete an existing connection by using `net use LTP1 /DELETE.` In addition, the user can get help by using the `net help use` command.

12. The new expiration date of a duplicated copy is calculated by taking the time of the original backup and adding the time specified via the retention level for that copy.

13. Avoiding re-duplication

If a vault profile is configured to do duplication, there are some rules which the profile follows to avoid making redundant copies of a backup image:

a. If the destination storage unit is a disk storage unit, Vault will not send a duplicate copy of a backup image to that storage unit if there is already a copy of the backup image on that storage unit.

b. If the destination storage unit is a Media Manager storage unit, Vault will not make a duplicate copy of a backup image if there is already a copy of the backup image in the destination volume pool.

However, if Multiple Copies are to be made (using the Inline Tape Copy feature on the Duplication step of the vault profile), then the settings for the **If this copy fails** field for each copy will affect whether or not the duplication operation is requested for a backup image, for example:

- If there is not a copy of the backup image in at least one of the destination volume pools for the configured copies, then Vault will request the duplication operation for the backup image for all configured copies.

- For any single copy, if the **If this copy fails** field is set to **fail all copies** and there is not already a copy of the backup in the destination volume pool, then Vault will request the duplication operation for the backup image for all configured copies.

14. Consolidated reports are generated in a batch of multiple vault sessions, but the data from the multiple sessions does not get merged into single reports. Rather, the reports are concatenated if they share a common destination. The Consolidated Report operation uses the report destination(s) configured for each vault profile that created the sessions for which tapes are being ejected. If a Consolidated Report operation processes sessions for profiles with different destinations, then the report for each session will be sent to the destination(s) configured in the profile. For example, consolidated reports may be sent to various destinations depending upon the configuration of the vault profiles for the sessions being processed.

15. On a single inject operation (`vltinject` or done using the `vltopmenu` option for injecting tapes), the operator must be aware of the following items:

- Media injected into the robot must be of the same media type. If multiple media types are injected at the same time, the following error could occur:

  ```
  media type and volume group mismatchmedia type and volume
  group mismatch

  EXIT status = 101
  ```

- The media must be destined for the same robotic volume group, as specified in the configuration of the logical vault.

  If media destined for different robotic volume groups (as configured for the logical vault) are injected together, the media will be added to the robotic volume group specified in the vault configuration obtained from the robot/`vault`/`profile` triplet specified on the `vltinject` command, or the profile specified using `vltopmenu`.

16. If the vault site is using multiple on-site robotic volume groups, the operator can only combine media for inject from vaults that use the same robotic volume group. It is suggested that the operator only inject media on a per vault basis.

17. To configure vault when you don not have access to a NetBackup Administration Console, use `vltadm`. The user can use this interface from any character-based terminal (or terminal emulation window) for which the administrator has a `termcap` or `terminfo` definition. The terminal type must be supported by the curses library.

Before starting `vltadm` make sure that your terminal type is properly set. If the terminal type is incorrect, `vltadm` may exit prematurely without any warning or error. If you face such a situation, try setting TERM to `xterm` or `vt100`:

```
# setenv TERM xterm (for csh users)

# TERM=xterm; export TERM(for sh users)

# export TERM=xterm (for ksh users)
```

Media Manager

1. SCSI robotic peripherals must not be in sequential mode for use with Media Manager.

Media Manager robotic software expects SCSI robotic peripherals to be in random mode (SCSI control of the robot) rather than sequential mode. The robotic control processes cannot control robotic devices that are in sequential (stacker) mode.

2. Single-ended to differential SCSI converters are not supported.

VERITAS does not recommend or support the use of single-ended to differential SCSI converters on Media Manager controlled devices. You may encounter problems if you use these converters.

3. Drives and robots connected through fibre channel cause increased complexity in the Media Manager configuration. On some operating systems, the use of fibre-to-SCSI bridges may result in inconsistencies in the device path upon a server reboot. After rebooting the server, always verify the device configuration.

4. Authentication and authorization in Media Manager can affect systems where NetBackup authentication/authorization has been enabled. For more information, see the "vmd Security" topic in the system administrator's guide for Media Manager.

5. It is recommended that vmd be running at all times.

Device configuration changes, even those made local to a server, can require vmd (Media Manager volume daemon (UNIX) and NetBackup Volume Manager service (Windows NT)) to be running. It is recommended that vmd be running at all times, including when changes are made to the Media Manager device configuration.

6. NetBackup BusinesServer supports only one robot per server and these robots can have a maximum of two drives and 30 slots.

7. Nonroot access to NetBackup devices and media on UNIX.

On UNIX, NetBackup media is "protected" from nonroot user access (both read and write) because the special files identifying the tape or optical drives allow only root usage when the Media Manager `ltid` process is executing. For example:

```
ls -al /dev/rmt/6_8mm8500cb /dev/rmt/6_8mm8500ncb
crw-------   1 bin bin 5 0x110603 Apr 27 09:06 /dev/rmt/6_8mm8500cb
crw-------   1 root bin 5 0x190603 May 18 05:51 /dev/rmt/6_8mm8500ncb
```

Other special files that reference the same device may exist. These files frequently define different densities at which the device is capable of writing. For example:

```
ls -al /dev/rmt/6_8mm8200
crw-rw-rw-   1 bin  bin 5 0x000602 Apr 27 09:06 /dev/rmt/6_8mm8200
```

To protect NetBackup media from nonroot access, you must manually change the permissions on all of these special files to 600.

See the *NetBackup System Administrator's Guide* for more information on allowing nonroot administration.

8. HP Optical Disks (applies only to UNIX NetBackup DataCenter)

- Hardware Support

  - HP Optical drives support some older optical platters as read-only. When attempting to write to an optical platter which is supported as read-only, the media is reported as needing write enabled regardless of the physical write protect tab setting.

  - Although Media Manager can format optical platters, VERITAS strongly urges you to use pre-formatted platters.

- Platform Support

  - All platforms and operating systems do not support all available sector sizes for optical platters.

  - The format of optical platters is platform specific. Optical platters written on one platform cannot be read on another platform.

  - The Solaris 8 6/00 release introduced volume manager (`vold`), which attempts to manage all removable media devices. When `vold` manages an optical disk, NetBackup cannot access it.

    Edit `/etc/vold.conf` to comment out the following line as shown below. Optical disks then work as they did before this Solaris 8 change.

    ```
    #use rmdisk drive /dev/rdsk/c*s2 dev_rmdisk.so rmdisk%d
    ```

- NetBackup Support
  - Optical platters with a capacity larger than 5.2GB are not supported.
  - NetBackup can write a maximum of 2GB of data per side of an optical platter. This provides a maximum of 4GB of data per platter. Additional platter capacity is unused.
  - NetBackup supports the following sector sizes and capacity combinations on these platforms:

Table 34. Sector Sizes and Capacity Supported by NetBackup

Bytes/sector	Capacity	Platter Type	Model Number
HP-UX			
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F
512	4.1 GB	Rewritable	Sony EDM4100B
512	4.1 GB	Write-once	Sony CWO4100B
1024	1.3 GB	Rewritable	HP 92298T
1024	1.3 GB	Write-once	HP 92290T
1024	2.6 GB	Rewritable	HP 92280F
1024	2.6 GB	Write-once	HP 92290F
1024	4.8 GB	Rewritable	HP 88143J
1024	4.8 GB	Write-once	HP 88145J
2048	5.2 GB	Rewritable	HP 88147J
2048	5.2 GB	Write-once	HP 88146J
Solaris			

Table 34. Sector Sizes and Capacity Supported by NetBackup (continued)

Bytes/sector	Capacity	Platter Type	Model Number
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F
512	4.1 GB	Rewritable	Sony EDM4100B
512	4.1 GB	Write-once	Sony CWO4100B
IRIX			
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F
1024	1.3 GB	Rewritable	HP 92298T
1024	1.3 GB	Write-once	HP 92290T
1024	2.6 GB	Rewritable	HP 92280F
1024	2.6 GB	Write-once	HP 92290F
AIX			
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F

- Storage Migrator Support:

  - Storage Migrator can use the full capacity of any optical platter supported on a platform.

  - Storage Migrator supports the following sector sizes and capacity combinations on these platforms:

Table 35. Sector Sizes and Capacity Supported by Storage Migrator

Bytes/sector	Capacity	Platter Type	Model Number
HP-UX			
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F
512	4.1 GB	Rewritable	Sony EDM4100B
512	4.1 GB	Write-once	Sony CWO4100B
512	9.1 GB	Rewritable	HP C7988A
1024	1.3 GB	Rewritable	HP 92298T
1024	1.3 GB	Write-once	HP 92290T
1024	2.6 GB	Rewritable	HP 92280F
1024	2.6 GB	Write-once	HP 92290F
1024	4.8 GB	Rewritable	HP 88143J
1024	4.8 GB	Write-once	HP 88145J
1024	9.1 GB	Rewritable	HP C7987A
2048	5.2 GB	Rewritable	HP 88147J
2048	5.2 GB	Write-once	HP 88146J
2048	8.6 GB	Rewritable	HP C7985A

Table 35. Sector Sizes and Capacity Supported by Storage Migrator (continued)

Bytes/sector	Capacity	Platter Type	Model Number
2048	8.6 GB	Write-once	HP C7986A
4096	9.1 GB	Rewritable	HP C7983A
4096	9.1 GB	Write-once	HP C7984A
Solaris			
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F
512	4.1 GB	Rewritable	Sony EDM4100B
512	4.1 GB	Write-once	Sony CWO4100B
512	9.1 GB	Rewritable	HP C7988A
IRIX			
512	1.2 GB	Rewritable	HP 92279T
512	1.2 GB	Write-once	HP 92289T
512	2.3 GB	Rewritable	HP 92279F
512	2.3 GB	Write-once	HP 92289F
1024	1.3 GB	Rewritable	HP 92298T
1024	1.3 GB	Write-once	HP 92290T
1024	2.6 GB	Rewritable	HP 92280F
1024	2.6 GB	Write-once	HP 92290F

9. When using vmadm, Robot host is NONE for StorageTek Automated Cartridge System (ACS) media and ACS entries in the robot inventory pick lists.

   In NetBackup releases previous to 3.0, the robot host field for ACS media (volume) entries was not consistently handled. The robot host for ACS media is set to the value NONE to ensure the following:

   - All compatible media in an ACS robot can be placed in the same volume group.

   - ACS robot inventory requests are sent to the host where the ACS robot is configured under Media Manager.

   When selecting an ACS robot for an inventory operation through the NetBackup administrator's interface, you are prompted to enter the host. You should enter the host where the ACS robot is configured in Media Manager.

   Note Do not enter the ACSLS host unless the ACS robot is also configured on that same host.

10. Automatic device discovery and configuration is supported on the following platforms: AIX, HP-UX, IRIX, Linux, Solaris, Tru64, and Windows.

    The following list provides a brief description of automatic device discovery and configuration functionality.

    - After adding or removing devices from a SCSI bus, the OS must be made aware of the new configuration before NetBackup auto discovery can be used. Often, this requires a reboot of the system.

    - Auto discovery depends on the existence of a way to issue SCSI pass-through commands to the devices.

      - On Windows, a tape driver must exist for each tape device.

      - On Solaris, the sg driver must be properly configured as described in the Media Manager Device Configuration Guide.

      - On HP-UX, device files must exist following the naming conventions described in the Media Manager Device Configuration Guide. Some HP SCSI adapters do not support SCSI pass-through, so devices on these adapters are not auto discovered.

      - On Tru64, Linux, and AIX platforms, device files must exist following the naming conventions described in the Media Manager Device Configuration Guide.

- Auto configuration depends on device serialization. For devices to be fully auto configured, the following two statements must be true for your system:

    - Each robot and drive reports a unique serial number.

    - Each robot reports the serial number of each of the drives contained within the robot.

    All information required for full auto configuration may not be available on some systems. In this case, auto configuration does as much as possible with the limited device information. The user must manually configure the remaining devices.

    Since device serialization is a relatively new capability for some devices, you may need to ask your hardware vendor for newer firmware that returns serial numbers. Even with the proper firmware, some devices require the vendor to perform another action to enable serialization for the device.

- The following robot types are not automatically discovered and configured:

    - ADIC DAS (TLM)

    - Fujitsu Library Management Facility (LMF)

    - StorageTek ACSLS/LibStation (ACS)

    - Microsoft RSM

        When device discovery discovers a device being controlled by Microsoft RSM, it "overrides" that control with standard SCSI control. In other words, it elects NOT to configure the device as an RSM device. RSM only applies to Windows 2000.

- If tape drives are in use, they cannot be discovered.

11. The Shared Storage Option (SSO) can be used in NetBackup DataCenter with standalone drives and the following Media Manager robot types:

ACS	TL8	TLD	TLH	TLM

12. Drives with TLM robots that are shared through the Shared Storage Option (SSO) require that the ADIC DAS server be configured to allow drives to be allocated in DAS simultaneously to all Media Manager hosts that are sharing the drives. See the SSO system administrator's guide for more information.

13. TapeAlert is supported on the following operating system platforms:

Windows NT/2000	Solaris	HP-UX	Tru64	AIX	IRIX

TapeAlert now supports the CLEAN_NOW and CLEAN_PERIODIC flags. For more information on TapeAlert, see the Reference Topics appendix of the Media Manager system administrator's guide.

14. In this release, NetBackup for Linux does not support version 3.x.x or later of the Linux sg driver. NetBackup 4.5 was tested with sg versions 2.1.36 through 2.1.39.

15. The NetBackup Tape Device Driver Installer is included on the NetBackup Windows CD browser. This program installs VERITAS tape class drivers for Microsoft Windows NT and Windows 2000. You can initiate the installation wizard from the CD browser or by double-clicking the following file.

```
NetBackupTapeDeviceDriverInstall.exe.
```

This wizard guides you through the installation of the VERITAS device drivers. The wizard offers the following choices for the devices to be used with VERITAS drivers:

- Choice 1 - Use VERITAS tape drivers for all tape devices. The VERITAS Device Driver Installer identifies existing tape devices and loads an appropriate VERITAS driver, replacing any non-VERITAS drivers currently bound to the device. This is the recommended selection setting.

- Choice 2 - Use VERITAS tape drivers for tape devices that do not already have drivers loaded. VERITAS tape drivers are installed for devices that are not supported by existing Microsoft or OEM drivers. VERITAS tape drivers are set to load prior to Plug and Play drivers. VERITAS tape drivers may detect additional supported hardware and replace the current drivers.

- Choice 3 - Remove VERITAS Tape Drivers. All existing VERITAS tape device drivers are uninstalled. Windows 2000 Plug and Play Manager should detect the devices after a reboot and offer to reinstall tape device drivers of your choice. Windows NT tape drivers require manual reinstallation through the **Control Panel** > **Tape Devices**.

Note VERITAS tape class drivers are not compatible with the Windows 2000 Removable Storage service.

You can also get the NetBackup`TapeDeviceDriverInstall.exe` file from the VERITAS support web site.

`ftp://ftp.support.veritas.com/pub/Support/Products`

The NetBackup Tape Device Driver Install program includes the following Windows drivers:

VERITAS 04mmdat.sys

VERITAS 0archqic.sys

VERITAS 0dlttape.sys

VERITAS 0exabyte2.sys

VERITAS 0tandqic.sys

VERITAS dlttape.sys

VERITAS halfinch.sys

VERITAS sonysdx.sys

VERITAS trscsi.sys

Note When installing NetBackup for the first time, VERITAS recommends that you install the latest device drivers for your storage device immediately after you install the NetBackup software and **before** you configure the product. If you are upgrading NetBackup, you can install the latest device drivers before you upgrade NetBackup.

The VERITAS Tape Device Driver Install wizard (preloaded on your CD-ROM) steps you through the process of installing the latest device drivers. If you do not have a CD-ROM, you can download the NetBackup Tape Device Driver Install software from the VERITAS support web site.

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16. When adding volume records to the Media Manager volume database using robot inventory update or add/change volume operations, the requested operation may fail if the format of the specified robot host name differs from the robot host name associated with other volumes in the same robot. Specify the robot host using the same form of the host name.

17. The `vmconf` script (applies only to NetBackup for UNIX)

The `vmconf` script is no longer supported in the 4.5 release. For UNIX operating system platforms, where some functionality was previously provided (for example, Solaris, AIX, HP-UX, IRIX, and Tru64), the `vmconf` script has been moved to the `/usr/openv/volmgr/bin/goodies` directory. This script is removed entirely in the next major release of NetBackup. In addition, for other UNIX operating system platforms, there was no functionality and the script is not available.

18. It is now possible to gather log sense data on drives each time a mount or unmount of the drive takes place. You can use the following two scripts in `install_path/volmgr/bin/` to gather information on drives. (The scripts contain the information on how this feature can be used.)

```
install_path/volmgr/bin/drive_mount_notify
install_path/volmgr/bin/drive_unmount_notify
```

Note This feature works on mount and unmount operations for drives that are in robots and on an unmount operation for standalone drives. This feature is not supported by Tru64 or Windows platforms.

An IBM ATL driver upgrade is required before using TLH robots. TLH users must upgrade their IBM ATL drivers to the versions listed in the footnotes for the "NetBackup DataCenter - Robot Support by Platform" table on page 68. The latest versions of the IBM ATL driver are not backward compatible. Follow the following procedure to upgrade the drivers:

1. Stop the Media Manager daemons.

2. Install the new IBM ATL driver version, following IBM's upgrade instructions.

3. Install NetBackup 4.5.

Using NetBackup With VERITAS Storage Migrator (VSM)

Note NetBackup BusinesServer does not support Storage Migrator.

1. If you have Storage Migrator installed on a NetBackup client system and you are upgrading to NetBackup 4.5 on that client, you must upgrade to release 4.5 of Storage Migrator for UNIX at the same time you upgrade to NetBackup 4.5.

If you have Enterprise Agent for Storage Migrator installed on a NetBackup client system and you are upgrading to NetBackup 4.5 on that client, you must upgrade to release 4.5 of Storage Migrator Remote for UNIX at the same time you upgrade to NetBackup 4.5.

2. Do not place the NetBackup databases on a file system that is managed by Storage Migrator.

3. Archiving migrated files.

Do not archive files that have been migrated by the client component of Storage Migrator on UNIX clients where VERITAS Storage Migrator is installed. You can back up migrated files.

A file migrated with VSM from a client workstation exists on the workstation as a link file. Should the user subsequently archive this file using NetBackup, the link (not the data) is backed up. Then the link is deleted, causing the data associated with the file to become an "orphan" on the migration server.

If the link file is restored on the client after the administrator on the migration server deletes orphan files, the data associated with the link is irretrievable.

NetBackup Java Interfaces

General Notes

1. The NetBackup Java Console supports activity and device monitoring of Backup Exec machines running VERITAS Backup Exec version 7.3 and higher with the GDM option installed. In the Activity Monitor, the Backup Exec job data is refreshed per the refresh rate specified in the Activity Monitor preferences dialog.

2. Remote display to a different platform type from the one where the application was started is not supported. For example, if you are executing jnbSA on an HP 11.0 machine, you cannot use the DISPLAY environment variable to display back to a Solaris 2.6 machine.

3. Remote display back is not recommended due to its poor performance. This is inherent in the Java technology with the version of Java (1.3) used by the Administration console. Java bug reports, 4204845, 4276423 and 4481344 document the issues.

4. 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.

5. 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.

6. To better facilitate getting support information for problems you may experience with NetBackup Java when running on Solaris or HP-UX, the application startup script, `jnbSA`, writes a log file by default to `/usr/openv/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 - UNIX*.

7. On Solaris the X11 shared library (`libX11.so.4`) is required for NetBackup Java. It resides in `/usr/openwin/lib` if the OpenWindows package is installed. The application startup scripts, `jnbSA` and `jbpSA`, check for the existence of `/usr/openwin/lib` (as the default location for this library) prior to setting the `LD_LIBRARY_PATH` environment variable. If it doesn't exist the following error message appears.

```
Directory /usr/openwin/lib does not exist.  It is the default
location for libX11.so.4 which is required by NetBackup-Java.
Please create the /usr/openwin/lib directory and a symbolic
link for it or modify this script to properly set the
LD_LIBRARY_PATH environment variable.
```

8. NetBackup Java does not support remote display back to a Windows machines using any X terminal emulator software. Instead, use the NetBackup Java Windows Display Console for backup, archive and restore operations. For administrator operations, use the Windows Administrations Console's change server capability.

9. NetBackup Java does not support monochrome terminals.

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

- 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>`

11. When using the NetBackup Java applications on a Solaris X86 machine with a two-button mouse, right button popup menus can only be popped up using the right button with the Ctrl (control) key as follows:

a. Press Ctrl key and hold.

b. Press the second mouse button. A menu appears.

c. Release the Ctrl key.

d. Select an item from the menu in either of the following ways:

- Drag the cursor to the item and release the second mouse button

  OR

- Release the second mouse button and then select the menu item with the first mouse button.

12. 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.

13. The operating system version data seen in various tables may not be accurate for any pre-4.5 host.

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

15. 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 result 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`

16. In 4.5 only the Backup, Archive and Restore application is available in the NetBackup - Java Interface on the Windows platform. Remote NetBackup server administration can be performed using the Windows Administration Console or the Windows Remote Administration Console. Consult the relevant Getting Started or Install Guide sections titled 'Installing Alternative Administration Interfaces' for more details.

17. The NetBackup Java Windows Display Console is available to facilitate user backup and restore operations on all supported UNIX platforms. This is valuable for locations where use of a NetBackup Java capable UNIX NetBackup machine for displaying the GUI is not possible. This is done through the NetBackup Java application server.

The display console requires no other NetBackup software to be running on the Windows machine you wish to install on and has been tested through PPP and dialup-modem type capabilities on Windows 95, thus easily facilitating truly remote backup or restore operations from a home office for emergency situations.

18. 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.

19. 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.

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

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

22. 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.

23. 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.

24. The NetBackup-Java Windows Display Console Readme.txt file refers to supported platforms being Windows NT/2000/98/95. It should refer to all Windows NetBackup platforms as supported platforms, see Chapter 2, "Supported Platforms and Peripherals" for more information.

25. Memory requirements to run the NetBackup Java Administration Console

VERITAS recommends that you run the console (jnbSA or jbpSA) on a machine with 512 megabytes of physical memory, with 128 megabytes of memory available to the application.

26. OS patches for Platforms supporting NetBackup-Java Administration Console

Most of the platforms supporting the NetBackup-Java Administration Console require some operating system patches (see Chapter 3, NetBackup 4.5 Product Dependencies). Following are the two most common indications the prerequisite patches are not installed on a Solaris platform.

- Following error occurs when you try to start the Administration Console.

  ```
  Warning! The libthread.so on your system is an older version
  than the one this VM was tested with. Please read the install
  documentation for patch installation instructions. Could not
  create the Java virtual machine.
  ```

- NetBackup Administration Console core dumping with the following message in the log file written by the console's startup script (in /usr/openv/java/logs).

  ```
  # An unexpected exception has been detected in native code
    outside the VM.
  #
  # Program counter=0xff2c607c
  #
  # Problematic Thread: prio=5 tid=0xe8480 nid=0xb runnable
  ```

27. When logged into an HP-UX NetBackup server, you may see a warning dialog with the following message when using the Activity Monitor.

```
Connection timed out (Status 238)
```

This warning can occur if the refresh rate for the **Processes** tab data is set lower than the TCP TIME_WAIT state time-out. This defaults to 60 seconds on HP-UX platforms. The Activity Monitor refresh rate also defaults to 60 seconds, so this should not be an issue unless the refresh rate is changed to be more frequent.   When this occurs, the NetBackup Administration Console will continue to function normally and the display will likely refresh properly on the next refresh cycle.

However, if Activity Monitor is active with a refresh rate lower than the TCP TIME_WAIT state time-out and you are attempting other administrative tasks, (for example, updating a vault configuration) you may see the same error status (238) in the context of the administrative task. This may have adverse effects that may force you to retry the task.

While this problem could occur on other platforms, VERITAS has only seen it on HP-UX. You can check the value of this TCP TIME_WAIT state time-out by executing,

```
ndd -get /dev/tcp tcp_time_wait_interval
```

This problem, and others that may have manifested from it, seem to be avoided by running Activity Monitor with a refresh cycle equal to or longer than the TCP TIME_WAIT interval.

28. Solaris terminology change from 3.4 to 4.5

A Solaris system will be listed as SunOS 5.x in the host properties of any master/media/client listed in the NetBackup-Java Administration Console. For example, Solaris 9 will now be displayed as SunOS 5.9 rather than Solaris 2.9 as it did in 3.4. This has been changed to be displayed as the OS and version as returned by the `uname(2)` command.

Activity Monitor

1. Daemon tab of Activity Monitor does not show `visd` or `nbdbd`

The daemons relevant to only GDM and the Advanced Reporter, `visd`, `nbdbd` and `ardbd`, does 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 shutdown 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 will have to move to another application (for example, select Reports or the root node of the console's tree) and, then, back to Activity Monitor to get Activity Monitor to reconnect to `bpjobd` and continue operating.

File System Analyzer & Storage Migrator

1. 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.

Reports

The following Reports functionality should be taken into consideration when attempting to access a Report.

1. Data Collection

Data collection can happen only once in the reports. For example, the first time a Report application is accessed, the report tries to collect the appropriate data to populate the combo-boxes. If the collection process is interrupted in some way, there is no way to for the user to populate the combo-boxes again with the proper data. (This information can be List of MediaIDs, MediaServers, Clients, and Volume Pools.)

Data collection is not report specific. For example, if an interrupt occurs while collecting a list of MediaServers in MediaSummary report, the information for MediaServers will be lost in all the reports and not just in the MediaSummary report. As a result, if the user visits the MediaLists report, the data collection for MediaServers will not happen because of the previous interrupt.(User interrupted collection of a particular data while he is on some report means abortion of data to the whole reports-application and not just to that report.)

2. Media Contents Report

The Media Contents report in the Reports application requires a specific media ID and does not work with value All.

The Media Contents report requires the mount of media and is likely to take a long time for any data to be returned to the application. In this context the stop report button is ineffective. Pressing the **Stop report** button enables the user to run this report on some other Media but this actually does not relinquish the mount on the old Media immediately.

3. Time Settings

Start time and End time in the Report Settings does not retain their values upon revisit to the report node unlike other entries in the panel.(Start time and End time will get reset based on the values provided in default time settings window).

4. Printing

If all the columns are unable to fit in one page, the reports function will print them on multiple pages. However, if a single column is unable to fit on one page (width-wise) it will not span that column onto a different pages. It will print the column on one, single page by wrapping down the cell-data. This may cause some row-alignment problems with other pages of the report.

5. Error messages

In case of any error during the execution of the Reports application, it will display the error message in an Attention Dialog. If you run a report that causes an error and then you leave the Reports application, the error message will still appear. (The Report application keeps running and rendering in the background).

6. Media Summary Report

The first visit to the Media Summary Report causes it to start populating of its combo boxes. It takes extra time if a media server is down (NetBackup Volume Manager service (vmd) is not running). The application gathers the list of Volume Pools, and it times out for each unavailable Media Server. If the media server is out of network it hangs indefinitely. If the media server hangs use the interrupt dialog to proceed.

Backup Policy Management

Sort operations are intentionally disabled for the Files list. Ordering is very important due to the file directives that NetBackup features use.

Host Properties

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

2. If you are logged on to a server that has a GDM license installed, it is possible to configure all the servers mentioned as KNOWN_MASTERS in bp.conf without having to do a "Change Server".

Media and Device Management

The following subsection(s) contains known limitations with features that are associated with the **Media and Device Management** portion of the NetBackup Administration Console.

Media

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.

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 NetBackup Java Backup, Archive and Restore (jbpSA) application cannot be used to back up, archive or restore files directly on NetBackup Windows clients. Restoring of files to NetBackup Windows clients with the NetBackup Java Administration Console can only be done by using the redirected or server directed restore capabilities when logged into the NetBackup Java application server running on a non-Windows NetBackup master server.

4. 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.

Problems Fixed Since NetBackup Release 3.4   5

This chapter describes notable problems resolved by this release of NetBackup. Unless otherwise stated, all fixes apply to both NetBackup BusinesServer and NetBackup DataCenter.

General NetBackup

1. On all NetBackup servers. host name comparison checks could occur if the hosts being compared had a different number of IP addresses. This caused problems such as not adding a device host because the host name comparison with an existing device host produced a false match. This applied to all NetBackup servers.

2. NetBackup 4.5 enhances the NetBackup debug and error logs to make it easier for Customer Support and others to track down problems.

NetBackup bpsched

1. A timing problem was resolved that occurred in rare cases where the main scheduling process started and finished too quickly for the requesting process to finish posting the request. This resulted in a failure, with the error message, `error getting msg queue`.

2. A problem was resolved that caused an extra stream to be initiated in a multiple data stream policy.

3. A change was made to correct a problem that occurred on very busy systems. If a large number of jobs were queued for a disk storage unit and these jobs started and terminated fast enough, the main scheduling process would not get enough time to process new requests. This resulted in jobs (even of higher priority) not being run until the queued jobs for the disk storage unit were complete.

4. A problem was resolved that caused a multiple data stream policy to fail with an error indicating that there were no clients configured in the policy.

5. Corrected a problem in message queue management that was originally intended to prevent deadlock.

6. Corrected a problem that caused a scheduler hang if a file name was exactly 1023 bytes in length.

PC Clients

For NetBackup Windows clients, the following interface problems were fixed:

◆ Problems with the include/exclude list property pages in the configuration property sheet.

◆ Problem displaying sizes of files larger than 2 GB when navigating through the Network node in the backup window tree.

UNIX Clients

For NetBackup Solaris clients, in the `bpbrm` log on the NetBackup server when either `bpbkar` or `tar` was initiated, the following error message was encountered:

```
ld.so.1: fatal: relocation error: file
/opt/lotus/notes/latest/sunspa/libnotes.so: symbol verifyAtomics:
referenced symbol not found
```

Alternative Backup

For HP9000, RS/6000, Solaris, Linux, and Windows NT Alpha/Intel NetBackup servers:

◆ Different NDMP server platforms reported media errors in different ways.

NetBackup did not handle a `NDMP_NOTIFY_PAUSED` with a reason code of `NDMP_MOVER_PAUSE_MEDIA_ERROR`.

◆ If a configured NDMP host was not available when NetBackup started, the `tldcd` and/or `tl8cd` process would crash.

◆ Corrected end case problems processing EOM (end-of-media) when writing to NDMP media.

In certain cases, such as writing the tar header/trailer during a NDMP backup, if EOM was encountered it would erroneously be interpreted as a media error. This occurred on HP700/800, RS/6000, Solaris and Windows NT Alpha/Intel NetBackup servers.

DataBase Agents

DB2 Database Agent

1. Support for case-sensitive log file paths in Windows NT & 2000.

    The user-exit program now supports case-sensitive Windows path names during roll-forward recovery.

2. Improved processing during roll-forward recovery.

    The user-exit program now properly interacts with DB2 when reporting, `file not found`. In the past, this was reported as an error. Now, this case reports the successful status of, `no more logs for processing`. See the related information regarding the NORETRY setting in the Operation Notes chapter.

Microsoft SQL Server Agent

1. SQL Server limitations on database names

    For NetBackup Windows clients, NetBackup for SQL Server limitations on database names containing special characters such as spaces, front and back slashes, and periods were removed.

2. Known SQL Issues

    There still are known issues outside of the SQL Server extension related to usage of the front square bracket and the ampersand.

Microsoft Exchange Server Agent

1. Support provided for Microsoft Exchange 2000 on Intel platform.

2. Implemented Microsoft Exchange 2000 Active/Active support for Microsoft Cluster environment.

3. For Mailbox backup and restore feature in Exchange 2000, a new method is used to enumerate mailboxes. This lifts the limitation of the need for "All Users" address list (under Recipients/All Address Lists) in Exchange System Manager.

4. The 300-character limitation for a subject of a mailbox message has been removed.

5. For Active/Active configuration of Exchange 2000 in a Microsoft clustering environment, backups and restores of Mailboxes are performed through the appropriate virtual server instance. This lifts the limitation of Mailbox feature backup and restore being performed through the FIRST installed virtual server.

Note You must now use the appropriate virtual server instance name for backup/restore operations of mailboxes.

6. Exchange 2000 database backup fails with Status 1 due to FS_BAD_DBLK caused by OTM Error Control being set to a non-zero value.

7. Backup of Exchange Mailboxes exits with status 0 for misconfigured NetBackup Client service account.

8. To help reduce the time required for processing Exchange mailbox backups, disabled the estimation phase of the backup for Exchange policies.

9. The 300-character limitation for a mailbox folder path that contains subfolders has been removed.

Lotus Notes Agent

1. Provided support for Windows NT/Windows 2000 clients to allow file list entries to contain a path with a lower-case drive letter.

2. Added functionality to determine transaction logging style prior to attempting a backup of transaction log extents. Previously, this would have caused the backup to complete with a partial success with the error message: `ERR - NBLN_ArchiveLogStart() NSFBeginArchivingLogs() Failed: 0xEA1: Error code Text String not found!!`.

3. Restoring Lotus databases by specifying a parent directory only would cause a restore to fail with a status 5, despite the fact that the directory and database(s) appear to be successfully restored. Added a fix to correctly handle the restore of the parent directory and allow the restore to complete with a status 0.

4. Added functionality for Windows NT/Windows 2000 clients to allow the backup of the current Lotus transaction log extent. This same functionality is not currently supported for Unix clients.

5. Insure that all Lotus databases are successfully closed when a backup is terminated abnormally.

Sybase Agent

1. Allowing striped restores for Sybase databases

Allow striped restores of large Sybase databases to work without increasing the CLIENT_READ_TIMEOUT and NUMBER_DATA_BUFFERS_RESTORE values. For Sybase 11.9.x, this patch provides for improved synchronization between the stripes during backup, which allows the restore to complete without the need to increase the CLIENT_READ_TIMEOUT or NUMBER_DATA_BUFFERS_RESTORE values. For Sybase 12.x, this patch takes advantage of the new feature in the Backup Server API 2.1 which allows the stripes to run independently of each other.

Media Manager

1. The `vmd` process (Media Manager volume daemon, NetBackup Volume Manager service) has been fixed to not core dump on the DA (device allocation) host in an SSO environment with more than 15 media servers.

2. The `vmd` process has been fixed to not return a false error during volume record reinsertion. This allows `vmdb_compact`, the volume database compaction utility, to work.

3. The `vmd` process has been changed on UNIX servers to detect incoming connections using system calls that are more reliable. Previously, `vmd` would be not always be alerted when a requesting connection was pending.

4. The `avrd` process has been fixed to not consume excess CPU time in certain Shared Storage Option configurations. Under heavy mount/dismount activity, if there were no locally attached drives configured on a media server, and if the media server was not serving as the scan host for any shared drives, the `avrd` process uses excess CPU time.

5. Robotic inventory filters for TLH robots did not work on Windows NT/2000. Volumes in the desired IBM volume categories did not get returned on the inventory request when the volume category in the `vm.conf INVENTORY_FILTER` entry was provided in hexadecimal format.

6. The device monitor interface has been modified to avoid inconsistent views from different hosts for the recorded media ID (previously called the RVSN)

7. Partial robotic inventory (robot inventory with filters) has been changed to return UNKNOWN for media types that are not recognized, instead of returning with an error.

8. TLH (Tape Library Half-inch) robotic drive addressing has been changed to be based directly on the vendor drive name. Previously, the drive mapping could change and become invalid if hardware errors or library reconfiguration occurred while TLH robotic control was active. TLH robotic drive addressing had previously been based on a drive list returned from an IBM Library Device Driver interface. If this drive list changed without being accompanied by a change in the device configuration, mount requests may have led to media being mounted on the wrong drives, or drives may have been configured DOWN. NetBackup is now insulated against run-time changes in the drive list.

9. A hard limit on the number of host-drive pairs of 256 was removed from `mmcrawl`. The correct limit for maximum number of drive per host is 256. But in an SSO configuration, there can be, for example, 50 media servers, each with 20 drives, resulting in 50 * 20 or 1000 drives, which exceeds the limit of 256. Now, all of the hosts and their associated attached drives are detected and the host-drive array size is calculated before allocating space for the array and populated with information.

10. Enhancements to `mmcrawl` were made in dealing with API-style robots such as TLH, TLM, and ACS.

11. Correct device discovery issues with ADIC Scalar 1000 libraries. Discovery no longer bases the robot type selection solely on the `external_robot_mappings` file. The drive type installed in the robot in now factored into the selection.

12. TapeAlert based drive cleaning now recognizes the CLEAN PERIODIC flag as well as the CLEAN NOW flag for automated drive cleaning. TapeAlert support was added for the AIX platform. TapeAlert checks are now performed on both tape mount and tape dismount.

13. Eliminated multiple rescans of a particular host during device discovery.

14. Support was added for robotic auto cleaning in STK's L series robots.

15. Added support for a larger number of drives (1680) in an `STK ACSLS/Library Station` configuration.

16. A core in `robtest` was corrected. The configuration included an ACS robot with 20 drives.

17. The menu-based media management interface, `vmadm`, has been corrected to display the volume pool list only once (instead of twice) when the output mode is screen.

18. Multiple robots containing shared drives can now use different forms of a volume database host name. SSO drive registrations previously collided, causing some shared drives to be unusable, when the forms of the host name differed.

19. Robotic daemons/processes capable of supporting SSO (robot types ACS, TL8, TLD, TLH, and TLM) were corrected to not issue numerous repeated system log messages in certain cases involving intermittent robot communication problems coupled with finding requested media in other drives.

20. Some types of errors returned by SCSI devices where ignored on Solaris. This could cause volumes configured in a robot that is turned off to be moved to standalone residence.

21. The `tlhcd` manual page is now installed on HP-UX and IRIX, where it was previously missing.

22. The TLM robotic daemon was not updating its internal tables to reflect the location of a requested volume when it was determined that the requested media was found in another drive that was in use. The associated mount request will now be queued waiting for the volume to become available, instead of being resubmitted immediately, only to fail.

23. A race condition occurred in `ltid`, the Media Manager device daemon and NetBackup Device Manager service, when a remote drive scan, drive assignment, or drive control command unexpectedly failed. This applied only to configurations with the Shared Storage Option. During the race condition, `ltid` continually retried the remote operation, terminated the existing `rdevmi` (remote device management interface) process, created a new `rdevmi` process on the remote host, and reregistered shared drives with `vmd/DA`, the device daemon and NetBackup Volume Manager service.

24. Device reset did not make a tape drive available if the drive was shared (multihosted), assigned to the host where the reset was performed, and there was no active mount request. Reset of a shared, unassigned drive did not make the drive available, even if the `vmd/DA` reservation was removed.

25. Shared tape drives remained assigned indefinitely, even after unmounts were requested, if the robot went into the logical DOWN state while drives were assigned.

26. The vm.conf entry DAYS_TO_KEEP_LOGS did not work if there was not a single character between the key and the value. "DAYS_TO_KEEP_LOGS = number_of_days" will now be recognized allowing debug log files to be pruned.

27. In 3.4 if a particular drive needed cleaning, but the robotic daemon could not mount the cleaning tape due to a drive reservation conflict or the cleaning tape was already in use, the cleaning request would never get satisfied. The re-queuing algorithm in the robotic daemons has been corrected to account for these situations.

Known Problems and Limitations 6

The following list explains the known problems and limitations in this release of NetBackup and includes solutions where they are known.

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

Documentation

1. Correction to ServerFree Agent Guide

Chapter 5 of the *NetBackup ServerFree Agent System Administrator's Guide* incorrectly states that the multiple data streams feature is not supported for the Third-Party Copy Device offhost backup method. In fact, this feature is supported for the Third-Party Copy Device method, provided that your robot and drives are properly configured to use it.

2. The NetBackup Vault System Administrators Guide erroneously states the following about option 4 of `vltopmenu` ("Run Reports for this Session"): "This step prints all the reports that are generated as part of this session (identified by sessionID and profile). The reports will be sent using the print command."

This is incorrect. This should read, "This option generates the reports as configured for a vault profile. It will generate the reports selected for the profile, and it will send them to any or all of the destinations specified for the profile (e-mail, a directory on disk, or the configured print command)."

If the user edits the profile to change the report configuration after the vault session completes, the changed configuration is not seen by `vltopmenu` (nor by `vlteject`); the reports will be generated based on the report configuration which was intact when the session ran.

3. An erroneous step number appears on Page 56 of the N*etBackup BusinesServer Getting Started Guide for UNIX* and on Page 58 of the *NetBackup DataCenter Installation Guide for UNIX*. Step 8 on Page 56 of the *NetBackup BusinesServer Getting Started Guide for UNIX* is the final step of the procedure; Step 9 should not appear. In the *NetBackup DataCenter Installation Guide for UNIX*, Step 7 on Page 58 of is the final step of the procedure and Step 8 should not appear.

Installation

1. When Microsoft Outlook is left running during Windows NetBackup installation, some programs generated by InstallShield are affected. The setup program for NetBackup Server for Windows initialization, for example, will proceed very slowly and can appear to be hung. The recommended solution from InstallShield is to close Outlook before running setup. See InstallShield Knowledge Base article Q102626 for further information about this problem.

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 Windows, there can be a long delay during "upgrading databases" 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. A remote install of any Database Agent from the VERITAS NetBackup 4.5 Database Agents CD-ROM onto a Linux 4.5 server is not supported. The 4.5 Database Agents must be installed locally on each of the Linux server's clients.

6. 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.

7. When upgrading from a BusinesServer evaluation license key to a permanent DataCenter base product license key on Windows NT and Windows 2000, restart the NetBackup services. Restarting the services will ensure that the Help > About NetBackup menu displays the proper licensing information.

8. When installing NetBackup 4.5 on a Windows 95 system, you may encounter an `Unable to load nbcs95.dll` error. If this happens you need to download the Windows Socket 2 update for Windows 95 from Microsoft's support web site.

9. Windows 64-bit client installs

   The Windows 64-bit client installs are located in `\pc_clnt\ia64` folder, and will be inaccessible from the launch screen.

   The debug symbols are not on the CD-ROM and will not install if selected.

   You will not have the ability to choose to not install the documentation.

Note A dialog window containing the message "OK" appears when the 32-bit client install is selected on a 64-bit system. Do no attempt to install a 32-bit client on a 64-bit system.

---

10. The installation script is adding `c:\program files (x86)\common files\veritas shared` to the path environment variable, causing problems for `nbwin`. The work-around for this problem is to remove it from the path environment variable.

11. Client CD-ROM installations should always be done from the CD-ROM labeled **Server: AIX, Alpha (Tru64).**

12. Client installs that are done directly from the CD-ROM may fail on IBM/Sequent and DGUX platforms because of a problem with the links on the CD-ROM. The solution to this problem is to install the client from the CD-ROM labeled Server: AIX, Alpha (Tru64).

13. After installing a Windows client locally, the 'Client push' feature is not possible without first uninstalling the locally-installed client.

14. When installing Windows XP 64-bit client, an error will be reported that NB32.hlp is missing.

15. NetBackup 4.5 supports a direct upgrade from NetBackup 3.4 and 3.4.1. This release does not support a direct upgrade from versions that were released before NetBackup 3.4 (for example, NetBackup 3.2).

16. Mounting a CD-ROM on SCO UNIXWARE

The SCO UNIXWARE CD-ROM mounting directions in the NetBackup Installation Guides for UNIX are incorrect. The directions should be as follows:

   a. Login as root.

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

   c. Enter:

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

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

   Enter:

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

17. Installation Requirement for Internet Explorer browser

Several of the installation docs mention that Internet Explorer 5.5 or greater is required for NetBackup Client and Server. The actual installation requirement is Internet Explorer 5.0 or greater for NetBackup Client and Server, and Internet Explorer 5.5 or greater for Global Data Manager.

18. Windows XP (64-bit) Add\Remove Prog-> Change -> Modify does not work properly

The 64-bit client is not able to change port numbers during install. Changes to port numbers should be made in the registry after the install has been completed. Altering the services logon is not possible until after the install has been completed. This must be done in the services control panel.

19. Win XP (32-bit) - Remote installs status says it is uninstalling client

During a remote install using Windows XP, the Windows Installer service produces a message that says it is 'uninstalling' when the service is actually installing. The install will continue successfully.

20. Installing a client from the remote server (push) NetBackup Administration Console screens are misleading

When trying to perform a NetBackup client push Install, the user can be mislead into believing that their local system will be changed. After clicking **client install** from main browser page, a pop-up window will state, `NetBackup Setup will now configure  your computer for the installation of NetBackup. This may take a few minutes.  Click OK to continue.` The next pop-up window misleadingly states, `The NetBackup Setup Wizard will upgrade NetBackup on your computer... Setup will upgrade NetBackup Master Server  to NetBackup version 4.5GA.` The local system is not changed despite these dialogs.

Mac OS Client

1. The name and location of the Mac OS client software as described in the *Installation Guide for PC Clients* is incorrect.

The Macintosh folder is no longer inside the `PC_clnt` folder. The Macintosh folder is now at the top level of the NetBackup 4.5 Windows installation CD-ROM. The name of Mac OS client file is no longer `netbacku.sea.bin`. The file is now called `NetBackup_Admin.sea.bin`.

2. Mac OS AppleShare IP servers should use the NetBackup 3.4 client.

There is an incompatibility between AppleShare IP and the new NetBackup 4.5 client. This problem will typically be identified as a crash when you try to restore files from the NetBackup user interface on a Mac OS 8.6 or Mac OS 9 system running the AppleShare IP server.

VERITAS recommends that you use the NetBackup 3.4 client on AppleShare IP servers until this issue is resolved. The NetBackup 4.5 Windows installation CD-ROM includes version 3.4.1 of the NetBackup Mac OS client. This version is the same as the Mac OS client included in the NetBackup 34_2 patch. The 3.4.1 client software is in the AppleShare_IP folder in the Macintosh folder of the NetBackup 4.5 Windows installation CD-ROM. The file name is `NetBackup_Admin.sea.bin`.

Localization Issues

The following subsections contain known issues that relate to running NetBackup 4.5 on localized operating systems.

Windows

1. For Windows installations, the install path must not contain Multi-byte characters.

2. Archive Operation

File pathnames that contain Japanese characters are not correctly removed after an archive command. The data is backed up correctly and can be correctly restored.

General Localization Issues

1. The locale issues described below apply to the following environments:

- English Server and Japanese Client

- Japanese Solaris Server and Japanese Windows Client

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.

2. Platform specific restrictions of character types for certain fields must be adhered to when cross platform administration is done between Unix and Windows servers. The platform specific restrictions are outlined as follows:

Item	UINX	Windows
Policy KEYWORD	Not restricted	ASCII only
Backup, Archive and Restore KEYWORD	Not restricted	ASCII only
Storage Unit - disk pathname	Not restricted	ASCII only

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 with text editor not supported. When the backup log file contains non-ASCII characters in file pathnames, the non-ASCII characters may appear as gibberish. To view the log file correctly, use the Backup, Archive and Restore GUI ("Task Progress" tab on UNIX, or the "View Status" display on Windows).

When executing the `bpbackup` and `bprestore` command lines, the -M and -L parameters must be used to generate a log that can be viewed by the "View Status"/"Task Progress" dialog. The following Windows example describes its usage:

- `bpbackup -M`

  `-L D:\Progra~1\Veritas\NetBackup\Logs\user_ops\<`*login name*`>\logs\<`*logfile*`>`

  `<backup filename>`
- `bprestore -M`

  `-L D:\Progra~1\Veritas\NetBackup\Logs\user_ops\<`*login name*`>\logs\<`*logfile*`>`

  `<restore filename>`

Note The short name (`Progra~1`) must be used for "Program Files" directory because NetBackup does not handle spaces in the log pathname for the `-L` parameter.
- <*login name*> set to the name of the user that is logged in.
- <*logfile*> is a unique logfile name for each new backup or restore.

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.

General Notes

1. The NetBackup menu interface gets an error loading shared libraries on Red Hat 7.

You must install the ncurses4 package from Red Hat (ncurses.4-5.0-2). If you do not you will see the following error when trying to start the NetBackup menu interface:

```
error while loading shared libraries: libncurses.so.4:

cannot open shared object file: No such file or directory
```

2. On linux, the NetBackup menu interface (bpadm) the output for reports is not correctly aligned.

This problem may occur when logging into Red Hat Linux from another Unix OS (for example, Solaris, HP/UX, AIX) with the TERM variable set to xterm. If you set the TERM variable to vt100 or dtterm the columns are correctly aligned. This symptom has not occurred if you are using another Linux system to log in.

3. On Windows, if server and client are in different time zones you may see problems doing restores or listing images.

Backups are done and time-stamped as the server sees them. There is no accommodation for client requests specifying a time zone or time offset.

4. Backing up real time files is not supported for SGI IRIX xfs.

5. 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 work-around 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.

6. 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.

7. Daylight Savings Time causes minor problems for NetBackup.

When Daylight Savings Time changes take effect, anomalies can occur in the scheduling of some client backups and the displaying of some report screens. This is due to the method NetBackup uses in calculating the beginning of a backup window and comparing it to (potentially) completed backups.

In the Spring, when Daylight Savings Time takes effect, you see misordered reports (for example, All Log Entries, Backup Status). This is due to the discrepancy between Greenwich Mean Time (which UNIX uses) and your system's "local time." After the time changes (for the day of the time change only), you see entries logged between midnight and 2 am displayed after entries logged between 3 am and midnight. You also must adjust the starting time of the display to 11 p.m. of the previous day to see all entries made for that day.

If a backup occurs within one hour of the backup window's opening and the backup window spans the time change, the backup may be re-executed (in the fall) or seen as already having occurred (in the spring). This is due to the fact that once a backup has completed it is given an absolute time, while the opening of the backup window is calculated in a relative fashion.

Until this algorithm is corrected, you should carefully check backups that are scheduled to occur when the time changes to assure that your data is adequately protected.

8. Policy and schedule names cannot include commas.

Do not create policy or schedule names that include the comma (,) character; for example: *full, many*.

 Only the UNIX NetBackup `bpadm` utility permits this syntax.

9. On UNIX, restores of NFS mounted files fail when attempting to perform a server directed restore. The progress log may show the following types of messages.

```
Could not make directory /net/machine/abc: The file access
permissions do not allow specified action
Couldn't change access and modification time of
/net/machine/abc: Not owner
Couldn't change access and modification time of
/net/machine/abc: Operation not permitted
Could not create file /net/machine/abc/123: Permission denied
Could not create file /net/machine/abc/123: A file or directory
in the path name does not exist
```

To work around this situation, the owner must restore the NFS files on the client machine.

10. The multiple data streams feature when used in autodiscover mode can cause a delay in the scheduling of jobs if many policies and clients use it. This occurs because the scheduler must contact the client to discover the current backup requirements. To reduce the impact of this behavior, there is a parameter called `preprocess interval` that you can set with the `bpconfig` utility. To start this utility on UNIX, execute `netbackup/bin/admincmd/bpconfig`. To start this utility on Windows, execute `NetBackup\bin\admincmd\bpconfig`. On UNIX, you can also set it through `bpadm`. Using the `bpconfig` utility use the `-prep` option to set the number of hours for the `preprocess interval`. In `bpadm`, `preprocess interval` is found in the global parameters. This value of `preprocess interval` limits the number of times that the client is contacted by allowing autodiscover to occur only this often. The default value for this is four hours. If the time spent preprocessing is excessive due to a large number of clients, the period can be increased. If there are schedules with a frequency of less than four hours, the `preprocess interval` can be reduced. (if the `preprocess interval` is set to 0, the default of four hours is used).

11. Block-level Incrementals using VxFS (applies only to NetBackup DataCenter) requires the use of VERITAS File System version 3 and cannot be used to backup raw partitions.

12. The limit to the amount of data that can be backed up in a single stream is one terabyte.

The last file backed up must start within one terabyte. For larger backups, use multiple data streams.

13. On Windows NetBackup servers, backups can fail with `media write error` if maximum transfer size is less than 64 KB.

Backup with NetBackup can fail with `media write error` if the maximum transfer size of the tape device is less than 64K (65536) bytes. The maximum transfer size of a tape device is determined by the limits imposed by the tape device, the SCSI bus, the tape device driver, the SCSI bus driver, and the operating system.

NetBackup checks the maximum transfer size for a tape device before performing the actual tape writes. If the maximum transfer size is less then the block size NetBackup uses (typically 64 KBytes), the backup fails with a `media write error` to prevent writing data to tape that it cannot recover. When the backup fails an entry similar to the following appears in the NetBackup Problems report.

```
io_open: The tape device at index X has a maximum block size
of 61440 bytes, a buffer size of 65536 cannot be used
```

This can be worked around by changing the block size NetBackup uses to the maximum block size for the device or less. The NetBackup block size can be changed by creating a text file named

install_dir\NetBackup\db\config\SIZE_DATA_BUFFERS

The contents of this file should be the text value of the block size in bytes. The block size MUST be a multiple of 1 KB (1024) bytes. For the example error message above, the text that was put into the file 61440.

14. On Windows NetBackup servers, client configuration conflicts are possible when using the NetBackup Configuration application.

If a user is updating the NetBackup client configuration through the Configuration dialog box in the client Browser at the same time the client configuration is being updated by the NetBackup Configuration application on the NetBackup server, only one set of updates are saved. This is the last set written.

In addition, configuration conflicts are possible when configuring a client/server. If two separate applications (for example the client and server) are updating the same configuration parameters, the last one written will be the one used.

15. If you are using NIS on an HP-UX 11 NetBackup media server, you may need to edit the `/etc/passwd` file. In order for the NetBackup server binaries to recognize NIS user names, the last line of the `/etc/password` file must be:

```
+:*:::::
```

Without this line, you might see a problem during user backups on an HP-UX 11 NetBackup media server. If the user name is defined in NIS, a user backup might fail with a `system call failed` message.

16. If you are using NIS on an HP-UX 11 NetBackup media server, you may need to edit the `/etc/group` file. In order for the NetBackup server binaries to recognize NIS user names, the last line of the `/etc/group` file must be:

```
+:*:::::
```

Without this line, you might see a problem during restores on an HP-UX 11 NetBackup media server. If the user name is defined in NIS, a user backup might fail with a `system call failed` message.

17. Large sparse files may not backup or restore properly if Windows 2000 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.

18. For FlashBackup, the HP-UX VxFS snapshot mechanism requires a dedicated cache partition for each snapshot. If two backups start simultaneously, both trying to mount the same cache partition, a number of conditions can occur if the following VxFS patches are not installed:

> vxfs 3.3.2 patch 2
>
> vxfs 3.3.3 patch 1

If FlashBackup detects that the intended cache partition is already mounted in `/etc/mnttab`, it fails with an error code 20. However, if the backups occur simultaneously, both attempting to mount the cache partition at the same time, both mount commands may work, causing invalid backups and a hung `umount` command.

The solution is to:

a. Change your configuration to use a dedicated cache partition for each backup. For multiple data streams, each stream must have its own dedicated cache partition.

b. Install the VxFS patches as listed above.

19. If you use the NetBackup BusinesServer Windows interface to connect to a DataCenter server, you can add or change only storage unit types that are supported by NetBackup BusinesServer.

20. There may be a delay in detecting of loss of connection from a NetBackup Windows NT master server to a media server.

In certain situations, there can be a delay on a NetBackup Windows NT 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 NT master server, this delay is actually a result of a certain TCP/IP configuration parameter on Microsoft Windows NT 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 NT 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 NT 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.

21. On Windows, the `bpdown` command has a peculiar behavior when using the `-s` or `-r` options. If you do not have an IBM Automated Tape Library configured, you get a popup error dialog saying that the dynamic link library `libibm.dll` could not be found. This is harmless. Click the **OK** button and the `bpdown` function will complete. The `bpdown` function reports that one or more robot daemons could not be shut down, but that means only that the function to shut down the IBM Automated Tape Library failed because you do not have one configured.

If the popup dialog is annoying, you can stop this from happening by deleting (or renaming) the `tlhcd.exe` file from VERITAS *install_dir*`\volmgr\bin directory`.

22. Due to a problem in Windows ME Explorer, files created by copy operations in Explorer are not marked with the archive bit. Rather, the status of the archive bit for the destination is the same as in the source file. This means that using default NetBackup parameters for incremental backups, these newly created files will not be backed up. This problem does not occur in any other supported Windows operating system.

There are two ways to work around this:

- Use the copy command in a DOS window to perform copies.

- Clear the **Perform incrementals based on archive bit** checkbox on the **Windows Client** tab of the Client Properties dialog box (see the **Configure NetBackup** menu item in NetBackup Administration). This will also have side effects as timestamps from copied files retain the source file timestamp.

23. There are known problems with the Windows GUI that inhibits a user from creating a large number of policies (more than 1000).

24. Inline Tape Copy Limitations on the NetBackup-Java Administration Console

On the Attributes tab of the New/Change Policy dialog, the **Multiple copies** checkbox and the **Configure...** button are always disabled. In the final release, these features will be removed from this dialog. The appropriate place to configure Multiple Copies (Inline Tape Copy) is in the New/Change Schedule dialog; you will check the **Override number of copies** checkbox. In the final release of the product, this will not be an override item, and the label will be changed to **Multiple copies**. The user will then be able to press the **Configure...** button to configure multiple copies for this schedule.

Note This limitation only exists in NetBackup-Java Administration Console.

Note The Inline Tape Copy feature is not available on BusinesServer for the 4.5 release.

25. Reading properties for NetWare clients

The NetBackup Administration Console - Host Properties cannot read properties for NetWare clients.

26. Mouse anomalies in the Windows XP 64-bit Backup, Archive, and Restore GUI

Occasionally moving the mouse in the XP 64-bit Backup, Archive and Restore GUI will cause a GPF. This issue has been raised with Microsoft, although ensuring that the machine's path environment variable does not point to any 32-bit file systems helps.

27. Microsoft Windows 95, 98, and ME clients do not work with the VNETD feature.

28. Querying the volume database while deleting volumes may return incorrect results

If a large number of volumes are deleted from the database, and a query is made shortly after, the query will return erroneous results. The database retains its integrity, and the correct volumes are deleted, but any query done before a delete is complete will return incorrect information. Waiting until the delete is complete will keep this from happening. If `vmquery` returns strange results, the database is not corrupted

29. The Windows IDR (Intelligent Disaster Recovery) feature will not be supported in the next major release of NetBackup after NetBackup 4.5. NetBackup Bare Metal Restore will support disaster recovery for Windows servers.

30. Disk image backup problems on a Windows NT 4.0 NetBackup master or media server when NetBackup 4.5 Activity Monitor is doing remote administration.

If a connection to the Windows NT 4.0 processes interface is made over a network, WINLOGIN will lock the local hard drive partitions. (This may be a deficiency in Microsoft Windows.) Locking the local hard drive partitions can cause disk-image backups to fail because the disk image backups also require a lock on the partition. Because NetBackup Activity Monitor uses the windows process interface, these partitions will be inadvertently be locked thus preventing disk image backups.

The work-around for this problem is to make sure no remote administration consoles are monitoring the master server of the server that is doing a disk image backup.

31. Daemons may fail with sockets errors.

If a user has the following line in their `/etc/nsswitch.conf` file, then `vmd` and `bpdbm` will fail to start with socket error messages.

```
services:  nisplus [NOTFOUND=return] files
```

To resolve this issue, the user can replace that line with either of the following lines.

```
services:  files nisplus [NOTFOUND=return]

services:  nisplus files
```

32. 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 work-around for this problem is to run the Device Configuration wizard only when administering a master server. This problem applies only to DataCenter.

33. HP-UX performance issue with catalog file conversion.

Because of an operating system (OS) limitation acknowledged by Hewlett Packard, catalog file conversion performance degrades on HP-UX when the binary catalog file size is greater than 4 Gigabytes.

If a user attempts to convert ASCII catalog files to binary catalog files on NetBackup 4.5 (using `cat_convert` utility program), performance degrades on HP-UX systems if the binary catalog file size exceeds 4 Gigabytes. This is because of a known HP-UX Operating System mmap (memory map) 4 Gigabyte limitation on Version 11.xx.

The binary catalog record file size will reach 4 Gigabytes with the backup of approximately 56 million files.

Memory mapped support for large files was introduced in HP-UX with version 11.00.

Note If the following patches are not installed, the mmap size is limited to 2 Gigabyte and you will see performance issues when binary file size gets to the 2 Gigabyte limit.

- HP-UX 11.00 requires patch PHKL_25525
- HP-UX 11.11 requires patch PHKL_25227

The list below shows the possible work-arounds to this problem:

- Do not convert any ASCII catalog (.f) files for backups of more than 56 million files.

- Transfer the large ASCII catalog (.f) files to a non-HP-UX NetBackup 4.5 server for conversion to binary catalog and then transfer the binary catalog files back to the HP-UX NetBackup server. This conversion could be done on any OS platform where `cat_convert` is supported (all NetBackup platforms except NCR and IBM/Sequent).

- Proceed with the conversion on HP-UX. This may take several days depending on the size of the files.

34. 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 DataCenter.

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.

35. 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 administrated 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.

36. 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.

37. Files that are manually compressing while the backup is running do not get backed up however, the backup job exits with a status code 0. For example, a user begins the manual compression of a large database file. While the compression of the file continues NetBackup starts a regularly scheduled differential incremental backup. The backup exits with a status code 0, but the database file is not backed up.

Because the file being compressed keeps the original "mtime," it will not be backed up until the user starts a cumulative incremental backup or a full backup. (By default, NetBackup uses ONLY the file's "mtime" to determine if that file should be included in an incremental backup.) This situation could cause data loss if the user happened to delete this file before a cumulative incremental backup or a full backup occurred.

A temporary solution to this problem is to never initiate a compression process on files that will not complete prior to the start of a scheduled backup. Or, turn on the busy file processing feature.

38. You may encounter messages when logging is enabled

If logging is enabled, you may see messages similar to the following in some of the log files:

```
10:51:22.443 [4128] <2> adjust_backup_copy_range_opt: Backup
copy range field is improperly formatted.  Changing to default
backup copy range.

10:51:22.443 [4128] <2> adjust_backup_copy_range_opt: Backup
copy range field is improperly formatted.  Changing to default
backup copy range.
```

These messages may safely be ignored.

39. Catalog backup jobs started with `-host` option to run on the media servers cannot be killed from 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.

40. NetBackup 4.5 is fully supported on Solaris 9 with one exception -- Extended File Attributes. Support for Extended File Attributes on Solaris 9 UFS, NFS & TMPFS file systems was a late addition to Solaris; hence it will be added in a later NetBackup patch. Monitor NetBackup patch READMEs to find out when Extended File Attributes are supported, or you can use the `-@` option on the `ls` command. An "@" will be displayed after the file permission bits for files that have extended attributes.

41. Linux 7.1 supports fully qualified files names up to a length of 4095 characters. NetBackup 4.5 supports a maximum length of 1023 characters.

42. Restricted media servers may not be able to do Lotus Notes restores or Single Instance Store and Hard Link restores.

The *NetBackup System Administrator's Guide* includes a section called Restricting Administrative Privileges of Media Servers. This section describes how to set host properties on a master server to prevent operating system (OS) administrators on one or more of its media servers from being NetBackup administrators on the master server.

A media server configured with these restricted privileges may not be able to do a "secondary restore". Secondary restores can occur during Lotus Notes restores or Single Instance Store and Hard Link restores. The likely error is, `client is not validated to perform the requested operation (135).`

If you need to do Lotus Notes restores or Single Instance Store and Hard Link restores, you must make sure the media server is an unrestricted server in the master server's hosts properties. This means the media server is in the **additional servers** list rather than the **media servers** list for the master server. (Or for a UNIX master server, the media server is listed in a **SERVER** entry rather than a **MEDIA_SERVER** entry.)

43. When a Vault job is canceled using the Activity Monitor after it has started a catalog backup of a remote media server, the `bpbackupdb` job on the local master server is terminated. But the partner `bpbackupdb` job on the remote media server is not terminated and it runs to completion.

44. Solaris terminology in the host properties of any master/media/client in the NetBackup Administration Console (for Windows) is inconsistent.

   A Solaris system will be listed as Solaris 2.x in the host properties of any master/media/client, which is inconsistent with the NetBackup-Java Administration Console, which displays Solaris systems as SunOS 5.x. For example, a Solaris 9 system would be displayed as Solaris 2.9 in the NetBackup Administration Console (for Windows), while the same machine would appear as SunOS 5.9 in the NetBackup-Java Administration Console.

45. All user directed backup, archive, and restore operations are initiated from the Backup, Archive, and Restore user interface. To access this user interface, select Backup, Archive, and Restore from the VERITAS NetBackup folder in the Start menu, or select the Backup, Archive, and Restore option from the File menu in the NetBackup Administration Console, or select the Backup, Archive, and Restore button from the main toolbar in the NetBackup Administration Console.

46. There is no vertical scroll bar on the **Results** tab for the **Catalog** node of the tree in the NetBackup Administration Console. To view portions of a log file that do not fit within the available window, select the log file from the list control in the upper portion of the window and use the **Full View** option to view the entire log file.

47. The **Drive Status** column (optionally displayed in the Drives list accessed from the Media and Device Management->Devices->Hosts node in the tree) shows the status as a number instead of text, in other words it shows a "1" for down and a "2" for up.

48. Although a user will be able to generate an ISO image using the NetBackup IDR wizard, the user will be unable to burn a CD-ROM. This problem occurs only on Windows NT4.0 systems. As a work-around, the ISO image could be copied to a Windows 2000 system and burned from there, or the ISO image could be burned on the NT4.0 system using an alternative brand of CD-ROM burning software.

49. The Intelligent Disaster recovery PrepWizard is looking for Help in the wrong location. When selected it will return an error with an offer to find the file yourself. If you direct it to `<install path>\Help\DRPrepwizard.hlp`, Help will be available.

Backup Exec Tape Reader

1. If the NetBackup device configuration is modified on a host, and `ltid` is restarted, it will be necessary to restart the "Backup Exec 8.x Device & Media Service" service on the same host before performing any operation relating to Backup Exec media. For more detailed information, see *NetBackup DataCenter System Administrator's Guide for Windows.*

Media Manager

1. Sun Dynamic Reconfiguration and the VERITAS `sg` driver.

On Sun NetBackup media servers that support Dynamic Reconfiguration (DR), unload the VERITAS `sg` driver before performing DR operations.

a. Stop the NetBackup and Media Manager daemons.

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

b. Uninstall the `sg` driver.

```
/usr/sbin/rem_drv sg
```

c. Perform DR operations.

d. Update NetBackup configuration as necessary.

As the result of dynamic reconfiguration, the device files associated with devices may have changed. NetBackup must be configured again to use the new device files.

See the Sun chapter in the *NetBackup Media Manager Device Configuration Guide* for more information.

e. Install the `sg` driver.

```
/usr/openv/volmgr/bin/driver/sg.install
```

f. Restart the NetBackup and Media Manager daemons.

```
/usr/openv/volmgr/bin/ltid
/usr/openv/netbackup/bin/initbprd
```

2. On supported Windows servers, hardware compression is not supported on the Colorado (HP) T4000 tape drive.

3. 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 DataCenter).

The work-around 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.

4. 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 (e.g., 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.

5. 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 work-around 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.

6. 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 seconds, and then restart it.

   Ideally, you should verify that all device processes have terminated before starting the Media Management Device daemon (UNIX) or Device Manager service (on supported Windows servers).

   On UNIX, you can do this by executing the `vmps` command located in the `volmgr/bin/` directory and verifying that neither `ltid` nor any robotic daemons are running. On Windows, you can do this by using the Activity Monitor to verify that neither `ltid` nor any robotic daemons are running.

7. Some robotic daemons are not supported (applies only to NetBackup DataCenter), for example, Windows NetBackup servers do not support ODL, and TSH robotic daemons.

8. Drivers on Solaris

When system memory gets low, Solaris unloads unused drivers from memory and reloads drivers as needed. Tape drivers are a frequent candidate for unloading, since they tend to be less heavily used than disk drivers. Depending on the timing of these unload/load events for the `st` (Sun), `sg` (VERITAS), and fibre channel drivers, various problems can result. These problems range from devices disappearing from a SCSI bus to system panics.

As a result of Sun's investigation and our experiences with these problems, VERITAS recommends adding the following lines to the `/etc/system` file:

```
forceload: drv/st
```

```
forceload: drv/sg
```

Other `forceload` statements can be necessary for various fibre channel drivers, such as the following example for `JNI`:

```
forceload: drv/fcaw
```

These statements prevent the named drivers from being unloaded from memory.

9. 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.

10. Known Limitations Surrounding Optical Media Support

User interface support

For the NetBackup 4.5 release, some optical disk media support is limited (applies only to NetBackup DataCenter). 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.

11. Drive Cleaning for SSO drives

Frequency-based drive cleaning is not supported for SSO drives. This is due to a problems with tracking the hours of drive usage among hosts.

12. The following are known problems and limitations with RSM support on Windows NT and Windows 2000:

- NetBackup cannot immediately use 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(s), delete all references to it from RSM and then reinsert into the robot. At this point, RSM considers it new media(s) 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.

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

   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 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.

14. 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.

15. The physical inventory utility, `bephyinv`, mounts specified media in a robotic library to determine its contents, and updates NetBackup, Media Manager, and the Backup Exec ADAMM databases when encountering Backup Exec written media. This utility does not request database changes for media written by NetBackup.

16. Robot inventory update will return an error if it encounters unsupported characters in the volume serial number or media identifier returned by third party API's such as those used for the robot types ACS, RSM, LMF, TLH, and TLM. Supported characters are those that appear in this set:

   ```
   ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789.
   -+_
   ```

   (The dash is only allowed if it is not the first character.)

17. The Automated Cartridge System (ACS) robotic control software supports some characters in a volume identifier that are not considered valid media ID characters in NetBackup:

   '$', '#', the yen symbol, and leading/trailing spaces on virtual labels

   In NetBackup, the valid media ID and barcode characters consist of those characters in the set:
   "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789.-+_"
   (The dash is only allowed if it is not the first character.)

18. The VERITAS implementation using SCSI reserve/release has the following limitations:

- NCR servers are unable to issue the SCSI reserve command and should be used with caution in a multi-initiator environment.

- SCSI reserve/release is not applicable for NDMP/FASTRAX 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 ServerFree Agent System Administrator's Guide.*

- 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.

19. Cluster environments or multi-path environments with fail-over capability may leave devices reserved. If fail-over doesn't break device reservations, then the NetBackup SCSI reserve/release function must be disabled.

20. 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.

21. The Device Monitor on a UNIX or Windows host that points to a Windows NT or Windows 2000 server may display incorrect data after a tape has been mounted. The incorrect data is caused only if the tape mount operation encountered a tape in the drive that wasn't expected. This can be caused by re-starting the NetBackup Device Manager service while tapes are mounted.

22. 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 effected include the Drive Name, and the Drive Path. In addition, `vmoprcmd` may also truncate the Drive Name.

23. Windows NT and Windows 2000 path remapping for tape drives requires all drives attached to the server to be serialized. This means they return a serial number in response to a SCSI Inquiry, page code 80.

PC (Windows) Clients

1. Redirected restores for Novell NetWare clients must be done from the Novell server that is the NetBackup client.

   This limitation exists because the user interface on a NetBackup server cannot resolve the name spaces on Novell servers.

2. E-mail notifications of backup status are not sent to Windows NT client users.

3. 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.

4. NetWare file servers that are NetBackup clients

   When changing the debug logging levels, some of the changes take effect right away while other require the BPCD.NLM to be unloaded and then reloaded. A change to the level debug value takes effect right away while a change to the tcp debug value does not take effect until the BPCD.NLM is unloaded and then reloaded.

5. When using bpstart_notify and bpend_notify scripts on Windows clients, the script should not require user interaction to complete. The backup waits for the notify script to complete and eventually times out. The backup fails with a status code 24, socket write failed.

6. On Windows 95 clients, the default main toolbar in the NetBackup client interface may display improperly if the client has a comctl32.dll that is at a revision less than 4.7. To avoid this problem, select **View**->**Toolbar Options**->**Large Buttons** from the main menu to use the large toolbar buttons.

7. Redirected restores using the AFS client type are not supported by the Backup, Archive, and Restore interface for the Windows client and server (this applies only to NetBackup DataCenter. NetBackup BusinesServer does not support AFS clients).

8. The VNETD "no-callback" option is not available for the following NBU clients:

   - Win95/98/ME

   - NetWare

   Configuring these client types for the VNETD "no-callback" option will result in failed backups. This applies whether the NBU client is configured via the Administration Console or the bpclient command executed directly on an NBU Master Server.

   These client platforms follow the traditional NBU communication patterns with regard to TCP/IP connections.

9. Backing up Windows servers which have Remote Storage Management (RSM) installed and are running a real-time virus scanning package:

If a system has files on RSM-managed volumes that are "offline" or stored on tape and that system is running a real-time virus scanning package such as McAfee™ or Norton™ Anti-Virus, NetBackup will fail to protect the system.

This is because the virus scanning software intercepts the NetBackup file "open" calls in such a way that offline files are recalled to disk. If sufficient numbers of files are recalled in a short time, the system assumes that NetBackup is a "runaway" recall job and effectively stops the client backup software. The server software eventually times out and the backup is abnormally terminated.

One way to work around this problem is to (temporarily) stop the real-time virus scanning, perform a backup, then resume the scanning.

This issue is being negotiated with various virus scanning vendors but no date has been set for a resolution.

Note The virus scanning feature for the NetBackup Windows client has been removed from the 4.5 release.

10. Windows NT and Windows 2000 clients running in a non-English locale will display the results of the following commands in English.

- `bpduplicate`
- `bpimport`
- `bpmedialist`
- `bpverify`

11. A `.dr` file must exist before using the **Disaster Recovery Preparation** Wizard (drprepwizard.exe). If at least one full backup has been performed, `drfile.exe` can be used to create the `.dr` file. The `.dr` files are in the install path, `\NetBackup\IDR\Data`.

12. Files on a CD-ROM drive cannot be backed up.

13. OTM is not available for NetWare 6.0 clients.

14. To decrease CPU utilization during restores to Windows NT and Windows 2000 clients, the following registry entries should be created and set as indicated:

HKEY_LOCAL_MACHINE\
 SOFTWARE\
  VERITAS\
   NetBackup\
    CurrentVersion\
     Config\
      RESTORE\
       USE_WSARECV   : 1 (REG_DWORD)
       USE_SELECT   : 0 (REG_DWORD)
       USE_CALLBACK_EVENT   : 1 (REG_DWORD)

UNIX Clients

1. On UNIX, redirected restores can set the UIDs or GIDs incorrectly when the UIDs or GIDs are too long.

When restoring files from one platform type to another, it is possible that UIDs and GIDs on one system may be represented with more bits on the source system than on the destination. This means that if the name for the UID/GID in question is not common to both systems, the original UID/GID could be invalid on the destination system. In this case, the UID/GID would be replaced with that of the user doing the restore.

2. The UNIX user-interface application `xbp` cannot correctly perform OK requests on two or more instances of the `xbp_confirm` dialog, if those dialogs are displayed simultaneously.

The `xbp_confirm` dialog is used when requesting user-directed backups, archives, or restores. One `xbp_confirm` dialog can proceed with a click on its OK button, the other(s) cause `xbp` to wait indefinitely with the cursor shown as a wristwatch. The `xbp` process can be cleaned up with a `kill` command from a shell prompt. There is no limitation against sequentially displayed instances of the `xbp_confirm` dialog, i.e., once you OK or Cancel an `xbp_confirm` dialog, you can proceed to use `xbp` in other ways possibly including additional backup or archive or restore requests. The problem occurs only if you bring up additional `xbp_confirm` dialogs before using OK or Cancel to complete usage of the previous instance. In a future release, `xbp` will be modified to either allow multiple simultaneous `xbp_confirm` dialogs, or to prevent this usage with a specific warning message.

GDM

Installation

1. Installing GDM on a supported Unix server platform requires installing the NetBackup server software as explained in the NetBackup Installation Guide for UNIX, then installing GDM from the NetBackup Add-On Product Software CD-ROM. Installing GDM on a Windows server platform requires installing just the NetBackup server software.

2. The Information Server (`visd`) requires the Persistent Store (`nbdbd`) daemon/service to be active. If the `nbdbd` daemon is unavailable, then the GDM collector will shut down because it is unable to store collected data. The message you will see in the `visd` syslog or event log output is:

```
NetBackup Data Collector:  Maximum number or restarts exceeded,
shutting down…
```

On Windows systems, the Information Server will also generate an event (Event ID of 100 in source NetBackup GDM PSODBC) in the Event Log. The description will contain the sentence **Cannot connect to the database server**. When verifying the availability `nbdbd`, also check that `nbdbd`'s port number is not in use by another application.

3. After installing GDM on a Windows platform, ensure that the Information Server service has been set to automatic start up. In some cases, the install process leaves the Information Server service to manual start-up. Also verify that the Persistent Store service has been set to automatic start up.

Configuration

1. Care must be taken when configuring GDM domains. A managed server should not exist in more than one domain, e.g., monitored by more than one GDM server. Membership in GDM domains should be exclusive. If two or more GDM Servers cross monitor the same managed server(s), performance problems occur, sometimes leading to loss of data integrity. Also, a GDM Server should be managed only by itself; it should not reside in another domain managed by another GDM Server.

2. Changing data collection settings on a managed server must be done by connecting directly to the managed server or they will not take effect. An easy workaround to change the data collection rate or look back interval on a managed server is to use the **Action** -> **Change GDM Server**… dialog and specify the managed server's fully-qualified hostname as if it were the GDM Server. Then use the Action -> Configure -> Data Collections dialog. The managed server should be the only entry that appears. Also, shutting off data collection on a managed server is available only in the Windows Dashboard interface.

3. Unreachable media servers (or media server daemons) will negatively impact data collection. If network connectivity problems exist between a media server and its master server, then data collection for that site will be delayed while the collector on the master server vainly attempts to query the media server for the status of its drives. If the media server is unreachable because a volume manager (vmd) on either the master or media server is inactive, then data collection will report a data collection failure condition. Data collection automatically resumes normal operation as soon as the media server becomes reachable.

General

1. GDM is not recommended in an SSO environment where drives are shared by multiple master servers. System resources are taxed by multiple, duplicate data collection efforts by the GDM components on the master servers. Since each master server's SSO configuration is aware of the other master servers and their devices, each master server's GDM collector reaches out to the other servers to gather device status information for the shared drives. In effect, a shared drive is examined for status information by each master server. (An SSO environment involving only a master server and its media servers is not negatively impacted in this way by GDM.)

2. Use only the "stop" and "start" options of the Windows Service Control Manager to start and stop visd.

   If the "restart" option of the Service Control Manager is used, two different entries for the GDM Server can be made in the GDM configuration. One entry will have the server name in all CAPS and the other will have all lower case letters. This may cause visd to hang or crash. If this happens, restart visd by using the "stop" and "start" options and remove the duplicate server name with lower case letters.

3. On UNIX platforms use kill -9 command to stop visd. visd does not always stop when the kill command with -INT, -TERM, or -HUP option is used. Make sure that only one visd process is running at one time.

Dashboard Interface Issues

1. Access to the Dashboard's configuration settings is unrestricted. Users with the remote administration client installed on their workstations can start the GDM Dashboard and connect remotely to a GDM Server. From there, the user can adjust configuration settings such as threshold levels, the list of managed servers, and data collection rates.   Administrators should stress to all users having access to the NetBackup graphical interfaces on their systems that the GDM configuration settings apply globally, not just to their view.

2. In the Windows Dashboard interface, filtering media on the Last Accessed field is unreliable. When the filter is defined to use a comparison value of "equal to" none of the media will be displayed. When the filter is defined to use a comparison of "not equal to" all media will be displayed. When the filter is defined to use a value of "before" or "after", the results will be correct for all media with a last accessed date value different from the date defined in the filter. Media with the last accessed date equal to the date defined in the filter may or may not be displayed.

3. If the Java Dashboard will be used in a firewall environment, when configuring GDM for firewall support, do not set a Dashboard port window of size one, i.e., 20001-20001. (See the GDM Manual for an explanation of how the Dashboard port window is set.) If the port window has the same begin and end port, the Java Dashboard interface will crash. To identify a port window of size one as the source of a crash, look in the Java log file for the line `[ Listener: Couldn't initialize. Illegal address configuration? ]`.   The problem can be corrected by setting a window with different begin and end ports, for example, 20001-20002.

4. The Java Dashboard interface assumes a default GDM Server of "localhost". This value will not work for all Unix systems. Use the Action -> Change GDM Server… dialog to specify the fully-qualified domain name of the GDM Server of the domain you wish to monitor.

5. Java Dashboard performance depends upon the console system's environment. The default configuration, specifically the INITIAL_MEMORY and MAX_MEMORY options within the gdm.conf file, assumes sufficient memory resources on the machine you execute the `gdmSA` command. To ensure satisfactory performance, run `gdmSA` on a 512 MB machine that has at least 128 MB of RAM available to the application.

6. On many Unix systems, cross-platform display fails for graphical interface applications. Therefore, VERITAS does not recommend displaying the Java Dashboard remotely back to a different platform type from the one where the application was started. For example, if you execute `gdmSA` on an HP 11.0 machine, you should not use the DISPLAY environment variable (or `gdmSA`'s `-d` display option) to display back to a Solaris machine.

7. To better facilitate getting support information for problems you may experience with the Java Dashboard interface, the application startup script (`gdmSA`) writes a log file by default to `/usr/openv/java/logs`. There is one log file for every instance of the Java Dashboard. Normally these log files are not large (less than 2 KB). However, periodic pruning of the files in this directory is recommended.

8. When opening a new Java Dashboard window and viewing the same managed server in both windows, the robot LED drive graphics will appear and be updated in only one of the windows.

9. The count of "jobs in progress" in the top portion of a managed server's details does not imply only active jobs. The "jobs in progress" count includes active, queued, re-queued, and new jobs. Consequently, when looking at jobs in the drill-down list, if you use the "All Active Jobs" filter, the number of jobs you see in the list will differ from the number shown in the "jobs in progress" field.

10. The Windows Dashboard does not show a warning flag when the suspended media count is above the specified threshold.

11. On Tru64 systems, text in the Java Dashboard interface may appear irregularly sized causing parts of the words or letters to be slightly cropped. This is due to font sizing problems on the Alpha platform.

12. There is no "All active media" filter in the media table as noted in the GDM manual.

NetBackup Advanced Reporter (NBAR) 4.5

This subsection explains known problems in this release of NetBackup Advanced Reporter.

Installation

The issues mentioned below apply to the installation process.

1. Slow Installation When Upgrading from 4.5 Beta to 4.5 GA

When you upgrade from a Beta installation of NetBackup Advanced Reporter 4.5, the installation may need to correct data gathered by the Beta application. The Beta version of the product did not gather duration and throughput data for certain jobs. The first 4.5 GA data loader run will correct any accumulated data but may take longer to run than a normal upgrade installation. Allow the loader to run to completion to ensure that your data has been corrected.

2. Additional Procedure Needed after Upgrading GDM Configurations

If you upgrade an NBAR 3.4 managed server to a NBAR 4.5 GDM server, you must use the configuration utility to first delete all managed server and GDM server entries, and then add them again. Follow the steps below.

a. To delete all server entries, from the command line, type:

UNIX: `arconfig.sh -x <server_name>`

Windows: `arconfig.bat -x <server_name>`

where <*server_name*> is the name of the server from which you wish to delete the entries.

b. To ascertain that this step has been successful, type:

UNIX: `arconfig.sh -c`

Windows: `arconfig.bat -c`

There should be no entries.

c. To add the server entries again, type:

UNIX: `arconfig.sh -a <server_name>`

Windows: `arconfig.bat -a <server_name>`

where <*server_name*> is the name of the server to which you wish to add the entries.

    d. To ascertain that this step has been successful, type:

        UNIX: `arconfig.sh -c`

        Windows: `arconfig.bat -c`

        There should be server entries.

3. Unavailable Next button during Windows Install

If you encounter a dimmed **Next** button on the System Settings dialog, click the **Change System** button and enter the DNS domain name for your computer.

4. Time to Completion

Be aware that if you have a large amount of data to load from the NetBackup database, it may take a long time (upwards of 30 minutes) for your installation to complete. If you have time constraints when you are performing the installation, you can choose not to seed the database at this time. This will significantly decrease installation time.

5. Cannot Remove Temp Directory during Windows Upgrade

During an upgrade installation on Windows systems, you may see a warning dialog with the title "Error" and the message "Could not remove temporary directory. Error code -1."

Click **OK** to dismiss the warning. It is not serious and in itself does not mean that the upgrade installation failed. Most likely, the installation was unable to clean up and delete the `nbar_temp` directory (for example, `c:\Program Files\VERITAS\NEtBackup Advanced Reporter\nbar_temp`). VERITAS advises you not to cancel or uninstall NetBackup Advanced Reporter at this point as that could cause a loss of data that existed prior to the upgrade.

6. Reinstalling

If you must reinstall NetBackup Advanced Reporter 4.5, you must uninstall the original installation first. In a few cases, the uninstall process may not remove all files. However, leftover files from a previous installation should not interfere with a new installation.

Browser and Client Issues

The issues detailed below relate to browser or NBAR client problems you may encounter.

1. Older Versions of the Microsoft Virtual Machine in Internet Explorer

NBAR 4.5 requires at least Microsoft Virtual Machine (VM) for Java version 5.0, release 5.0.0.3802. This version of Advanced Reporter does not support Microsoft VM 4.x.

VERITAS strongly recommend you upgrade to the latest version of the Microsoft Virtual Machine.

- Display Errors

   If the NBAR GUI has display problems such as too-small toolbar buttons, reports not displaying on screen, or a persistent hourglass, you may need to update your version of the Microsoft virtual machine (VM). Download and install the latest version of the Microsoft VM from `http://www.microsoft.com/java`.

- Licensing Errors

   If the NBAR applet displays a licensing error, and the NetBackup utilities indicate that Advanced Reporter is correctly licensed, you may need to update your version of the Microsoft virtual machine (VM). Download and install the latest version of the Microsoft VM from `http://www.microsoft.com/java`.

2. Unintentional Activation of Hyperlinks in Netscape 4.7x

When the context menu pops up over a hyperlink, clicking the menu item which lies directly above the hyperlink activates the underlying hyperlink. In this case both the menu click and the hyperlink click actions will take place. The underlying link may also be activated when a drop-down list lies over a hyperlink.

3. Applet displays incorrect license information

If you have both an unexpired evaluation key and a permanent key for NBAR, the NBAR GUI may show only that the application has an evaluation key. There are three things you can do:

- Ignore the message. It will have no affect on how the application runs.

- Remove the evaluation key and re-run `arloader`.

- Wait for the evaluation key to expire.

4. Connection error in the browser after upgrading

If you receive a connection error in a Netscape™ browser after you have upgraded NBAR, first make sure that all browser windows are closed, and then restart the browser. If this does not solve the problem, you may have to uninstall and reinstall the NBAR object.

To delete this object in Netscape 4.7:

- On Windows: From the **Edit** menu, navigate to `Preferences\Advanced\Software Installation\SmartUpdate`. Delete the "NetBackup Advanced Reporter" plugin.

- On UNIX: Delete the `<user_home>`/`.netscape/java/download/nbar.jar` and the `<user_home>`/`.netscape/registry files`.

To delete this object in Netscape 6:

- On Windows: From the WINNT directory, delete the `mozver.dat file`.

- On UNIX: Delete the `<user_home>`/`.mozilla/mozver.dat file`.

To delete this object in Internet Explorer 5.5 and 6.0

a. From the **Tools** menu, navigate to `Internet Options\Settings\View Objects`. Delete the VERITAS NetBackup Advanced Reporter object.

b. From the **Tools** menu, navigate to `Internet Options\Settings`. Verify that the browser is configured to automatically check for a newer version of stored pages.

c. From the **Tools** menu, navigate to Internet Options. Delete **Temporary Internet Files**.

d. Close all open instances of Internet Explorer.

e. Start Internet Explorer and type in the address for your NBAR server.

5. Cannot Load NBAR Using a Symbolic Link on HP-UX Systems

If you access a Netscape browser through a link rather than the executable on an HP-UX system, the browser will not successfully load NBAR. To avoid this, run Netscape from the directory where it is installed.

6. Large font size in Netscape browser on HP-UX 11.0 machines

Occasionally the Java GUI applet will display very large fonts which cut off some of the information on the screen. If this happens, you must download and install the latest version of Netscape.

To download and install the latest version of Netscape:

a. Uninstall the current version of Netscape.

b. Make sure the `$HOME/.netscape` directory, and the directory in which Netscape was installed are removed.

c. Download the latest version of Netscape.

d. Install the latest version of Netscape using the new Installer.

These steps should result in a display with normal-size fonts.

7. Trouble accessing help topics

If you are using a Netscape 4.7x browser, you may have a problem accessing **Help Topics** from the **Help** menu. You may receive one of the following errors:

- `Error 404: Not Found`

The requested URL (Universal Resource Locator) "/guide/index.html" was not found on this server. The link you followed is either outdated, inaccurate, or the server has been instructed not to let you have it.

- Netscape's network connection was refused by the server A.B.C.D. The server may not be accepting connections or may be busy.

These errors are caused if Netscape eliminates the port number when it programmatically retrieves the document.

You can access the Help Topics using the following URL:

`http://<master server>:<port number>/nbar/guide/index.html`

8. Persistence of GDM tree in console

If you have configured a server as a GDM server, then uninstall NBAR from the server, and reinstall NBAR on that machine, but configured as a standalone server, the GDM tree may still be visible on the left side of the NBAR Java Console.

If this occurs, from `<install_directory>`/bin run the following command:

On UNIX: `arconfig.sh -xdel <server_name>`

where `<server_name>` is the name of the server you are trying to reconfigure.

On Windows: `arconfig.bat -xdel <server_name>`

where `<server_name>` is the name of the server you are trying to reconfigure.

Note VERITAS continues to retain this GDM information as a precaution in case incorrect options were chosen when the product was installed.

9. Disk space requirements for the Java applet on Windows

The Advanced Reporter Java applet is distributed to a Microsoft Internet Explorer web browser as a Java distribution unit. Java distribution units requires a large amount of disk space on Windows NT machines configured with FAT file systems. Specifically, the drive containing the directory where temporary internet files reside (usually the same drive where Windows NT is installed) must have at least 125 MB of free disk space available when you download the Java applet for the first time. If you try to download and run the applet on a system with insufficient disk space, the **Start** button may not appear on the Advanced Reporter splash screen.

For further details, refer to the following Microsoft Knowledge Base article:
`http://support.microsoft.com/support/kb/articles/q232/6/38.asp`

10. Unable to Launch NBAR from Start Menu on Windows NT Servers

You may receive an error if you try to start NBAR 4.5 from the Start Menu shortcut on Windows NT servers that have Windows Desktop Update/Active Desktop installed.

If you receive the following error, try replacing the Start Menu item to fix the problem.

```
The object that
C:\WINNT\Profiles\Administrator\Desktop\AdvancedReporter.lnk
refers to has been removed or is inaccessible
```

To replace the Start Menu item:

a. Open the `C:\WINNT\Profiles\All Users\Start Menu\Programs\VERITAS Netbackup\Advanced Reporter` folder.

b. From the right-click menu, choose **New** - **Shortcut**.

c. Enter the URL for NBAR in the Command line: field.

The syntax for the URL on a Windows system is:

`http://<host>.<domain>/nbar/nbar.html`

If the port number of the web server is set to something other than 80 (the default), you must specify the port number in the URL. The syntax is:
`http://<host>.<domain>:<port>/nbar/nbar.html`

d. Name the shortcut. If you name it **NetBackup Advanced Reporter** you will replace the broken shortcut. If you name it something else, you will need to delete the broken shortcut.

The Windows Desktop Update component is an option when you install Microsoft Internet Explorer 4, and the component may be included in later, customized versions of Internet Explorer. For more information about the Windows Desktop Update, refer to the following Microsoft Knowledge Base article:
`http//support.microsoft.com/support/kb/articles/q165/6/95.asp`

Reporting Issues

The following issues have to do with NBAR data gathering and reports.

1. Effect of Early Class Retirement after Upgrading

NetBackup Advanced Reporter "retires" data from policies that have been deleted or modified. When you upgrade from a 3.2.1 installation to a 3.4 installation, or from a 3.2.1 installation to a 4.5 installation, most policies will be retired as the database schema has changed from release to release. This change means that until sufficient new data has been gathered by the new NBAR installation, the Windows Utilization, Windows Usage by Policy and Schedule Forecast report will be empty.

2. Effect of Short or Unqualified Server Names in Historical Data

In NetBackup Advanced Reporter 3.4 and 4.5 master server information is stored with a fully qualified domain name. However, in NetBackup Advanced Reporter 3.2.1, master server information is stored with its short or "unqualified" name. This change means that the master server information from a 3.2.1 installation is not available to a 3.4 or 4.5 installation.

This limitation only affects sites which have upgraded from NBAR 3.2.1 to NBAR 3.4 or NBAR 4.5.

This limitation affects the following reports:

- Drive Throughput

The NBAR client cannot access historical master server information from a 3.2.1 installation for this report.

- Client History

Due to a change in NetBackup Advanced Reporter's schema, this report only displays fully qualified names server names. Therefore, you will not be able to generate a Client History report for a server which was stored with a short name.

- Clients at Risk

This report displays server names stored either in a fully qualified format (3.4 or 4.5 data), or in a short or "unqualified" format (3.2.1 data). A report may display two rows for the same client, one for the short name and one for the fully qualified name of the server. Use the data associated with the fully qualified name to determine the risk levels after the upgrade.

3. Frequent changes to backup policies

NBAR has a maximum limit of 32,678 historical records of backup policies. A record is consumed with each policy creation, deletion, and modification. If this limit is reached, NBAR will stop collecting data. If you have many policies (thousands), and you frequently modify policies, you may encounter a failure with NBAR's data collection. If you experience this problem, VERITAS suggests you contact you VERITAS Customer Support.

4. Use of unqualified server names

If you are using short, unqualified names in NetBackup policies, NetBackup Advanced Reporter will store the domain name of the NetBackup server in the database, for the client record and report this on reports. In order to prevent the potential for inaccuracy it is recommended to use fully qualified names, when the domain name of the client is different from the master.

5. Calendar-Based Schedules in the Schedule Forecast Report

The Schedule Forecast report will show incorrect forecast data for calendar-based schedules.

6. User backups

Advanced Reporter does not collect backup information about user backups.

7. NetBackup Database Extensions and Add-ons

Certain NetBackup Database Extension products and NetBackup Add-ons do not follow the typical NetBackup paradigm in the way they perform backups, and are not picked up by NBAR.

The following NetBackup DataBase Extension products are not tracked by NBAR today:

Oracle-OBackup, Informix OnBar, Sybase, DataTools SQL BackTrack, Microsoft SQL Server, SAP, DB2, and Extensible Client.

In addition, NetBackup for NDMP backups are not currently tracked by Advanced Reporter.

8. IP addresses not updated

The Host Listing report does not update the IP address when a client's IP address changes. NBAR stores information about a host when it is first recognized as part of the NetBackup environment. If the IP address changes after the host has been added to the NBAR database, it will not be reflected in the database, or, in consequence, in the Host Listing report.

9. No file path information

For some failed jobs, no file path information will display in the **File Path** tab of the **Job Properties** dialog.

10. Display of NetBackup Directives

NetBackup Advanced Reporter does not fully support the display of NetBackup directives in files lists. The Files tab of the Class Properties dialog displays any listed directives but does not associate them with any item in the list. Each directive is listed only once for each policy, no matter how many times it is entered in the file list.

11. Job IDs after upgrading

One of the changes in NBAR 3.4 was that the NBAR job IDs now match NetBackup job IDs. Therefore, if you upgrade from NBAR 3.2.1, all jobs reported on in NBAR from the time you upgrade will have the same job IDS as they do in NetBackup. Jobs reported before the upgrade, however, will not have matching IDs.

12. Timeframe Change Does Not Refresh Data

You cannot refresh the data in the Job Details for Policy report by changing the timeframe. You must close the report and regenerate it.

13. Incorrect Report Dates on Drill-Down

You may find that the dates the Job Details Report displays do not match the date on the Windows Usage for Policy report from which you drilled-down. Shorten the time frame you are using to make this occurrence less likely.

14. Some X-axis Labels Do Not Display

You may find that when you generate the Windows Usage for Policy report that not all the date labels on the x-axis appear. If you increase the display size of the interface to the full screen, all the labels will display.

Documentation Errata

This section describes inaccuracies in the documentation.

1. Clients at Risk Report Description Is Misleading

The description for the Clients at Risk report claims that the user can configure the default value for Risk Level 1. An assignment of Risk Level 1 is based on the number of days without a successful backup for a policy that the client belongs to. It is not configurable.

2. Incomplete Syntax for the Configuration Utility

In the description of commands used with the configuration utility, the examples show the term `arconfig` followed by one or more parameters. For example:

```
arconfig --man
```

to bring up the man page. In reality, you must identify the utility and its extension for these commands to work.

For example,

UNIX: `arconfig.sh --man`

Windows: `arconfig.bat --man`

Miscellaneous

The following issues affect NBAR or how NetBackup perceives NBAR.

1. Problems seeing X- and Y-axis labels on Windows systems

If the monitor display colors are set to 256 colors or fewer on a Windows machine, you may have difficulty in seeing the X-axis and Y-axis labels on the NBAR reports

2. Windows NT Event Viewer

The Windows NT Event Viewer cannot see Event Log message descriptions for the NetBackup Advanced Reporter 4.5 System Monitor service until you reboot the system after installing Advanced Reporter.

3. Problems Printing

If you are having trouble with reports that print without graphics, or are not complete, make sure that you have the latest drivers downloaded from the printer vendor.

4. Reconfiguring a standalone server to a GDM configuration

Whenever you use the `--add` `(-a)` or `--join` `(-j)` switches with the `arconfig` utility as you are reconfiguring a standalone server to either a GDM server or a managed server respectively, you must use both the `--port` and `--momport` switches as well. The command line will not fail if both switches are not used, but the `mysqlportlocal` line in the nbar.conf file will be removed. The removal of this line will prevent any additional data loading. To fix this problem, you can re-run `arconfig` with both `--port` and `--momport`, or add the removed line to the nbar.conf file.

For example:

Correct: `arconfig.sh --add rhode.veritas.com --momport 3306 --port 3306`

Incorrect: `arconfig.sh --add rhode.veritas.com --momport 3306`

Note Contrary to the information in --man, the --add (-a) switch is only used to create a GDM server from a standalone NBAR server.

---

5. Multiple Entries in bp.conf

You may see more than one KNOWN_MASTER entry in `bpconf` for a host added through the configuration utility. You can ignore them, the multiple entries will not cause a problem.

6. Known_Master Parameter Must Be Added to bp.conf

In the Troubleshooting chapter of the *NetBackup Advanced Reporter System Administrator's Guide*, VERITAS explains how to configure your system to access GDM data by adding a MASTER_OF_MASTERS entry to the bp.conf file.

You must also add a KNOWN_MASTER entry where KNOWN_MASTER=<name_of_managed_server> to the GDM server's bp.conf file for each managed server.

Database Agents

1. Observe the following special considerations before using NetBackup's Open Transaction Manager (OTM) to back up and restore databases. This information is an excerpt from VERITAS TechNote 233219. Also see VERITAS TechNote 233254.

The Open Transaction Manager (OTM) capability in NetBackup is designed to provide a Point-In-Time backup of data. With active files and directories, OTM has been an extremely useful option for NetBackup to backup active data. This TechNote summary is intended to clarify OTM usage with databases.

Many of the popular databases vendors provide a formal Application Program Interface (API) specifically designed for use with backup products. VERITAS software works closely with some of these database vendors to ensure that these interfaces are stable, efficient, and reliable when used in conjunction with NetBackup and its database extension features. Many of these APIs were jointly developed to ensure your data is protected and can be restored when needed. Oracle, Microsoft (SQL Server, Exchange), IBM (Lotus Notes,DB2), Sybase and Informix are examples of database vendors that provide an API for use with backup products. VERITAS Software strongly recommends that NetBackup's database extension features be used when a backup API is available and backing up a database in a hot mode is required. Hot backups are done on active databases and only by using these formal APIs will the confidence of a backup and the ability to perform a successful restore be achieved. VERITAS recommends that OTM not be used for hot backups of these databases. Cold or inactive backups of these databases may be possible with OTM, but success will vary with each database vendor. Customers should contact the specific database vendor to identify the recommended method for database backup where data reliability is ensured as database programs recover from a Point-In-Time restore differently. If the data being backed up and restored does not conform to the specification designed into the database product being used, the integrity of the database, as a whole can be in question.

There are several databases that do not have a backup/restore API. Some customers have explored using OTM to backup these databases. The safest method is to back up these databases when they are inactive (cold). In specific cases where VERITAS

Software does not provide a database extension product for a specific database, VERITAS recommends shutting down the database and performing a file system level or cold backup.

If the databases cannot be backed up cold and the only option is hot, the OTM feature documentation identifies the criteria for creating a Point-In-Time snapshot is file system inactivity for five seconds. If the file system does not achieve a quiescent state, it will not execute the OTM snapshot. NetBackup will not fail the backup when a quiescent state is not achieved. It will continue the backup as if NetBackup OTM was not being used. The result is that NetBackup will skip open or active or locked files. The backup job will end with an exit status code 1. Exit Status code 1 indicates the backup job completed but not all files were successfully backed up.

If the decision is made to use the NetBackup OTM feature to back up database environments, VERITAS strongly recommends that you first back up the data and validate that the backup exited with a Status 0. Then the database should be restored and the integrity of the data and the functionality of the database confirmed. Using OTM to back up active database without using formal APIs has risk. Customers should contact the database supplier to ensure support of database backups using Point-In-Time technology. Also, significant back up and restore testing should be performed to assure database availability and reliability.

DB2 Agent

1. NetBackup for DB2 does not support the following DB2 features:

- Data Links Manager
- LOAD command using the COPY YES option.

SQL Server Agent

1. SQL Server Agent GUI Support

The SQL Server Agent GUI supports a new display for restoring SQL Server from Backup Exec images. This display contains a history of Backup Exec images of databases, database differentials, transaction logs, file groups, file group differentials, and tables. There is an important restriction in the layout of the backup history: Both file group and table images are represented with the same icon. The icon used for representing both types of images is the file group icon shown below. Where this icon appears in the Backup Exec restore history, keep in mind that the backup image may be either a SQL Server 6.5 table or a SQL Server 7/2000 file group.

Lotus Notes Agent

1. The `ALL_LOTUS_DATABASES` file list directive is not supported for NetBackup Windows clients. If the `ALL_LOTUS_DATABASES` file list directive is encountered when performing a Lotus-Notes backup on a NetBackup Windows client, the backup will fail with a status 69: The file list string is invalid. (This file list directive is supported and can be safely used for NetBackup Unix clients.)

    On your NetBackup master server(s), review each Lotus-Notes policy.

    -   If the `ALL_LOTUS_DATABASES` file list directive does not appear in any Lotus-Notes policy, no action is necessary.

    -   If only NetBackup Unix clients are specified in the client list for the Lotus-Notes policy containing the `ALL_LOTUS_DATABASES` file list directive, no action is necessary.

    -   If only NetBackup Windows clients are specified in the client list for the Lotus-Notes policy containing the `ALL_LOTUS_DATABASES` file list directive, remove the directive from the file list and replace it with the folder(s) containing the actual Lotus database(s). For example, specify the full path to the Domino data directory in the file list.

    -   If both NetBackup Unix and Windows clients are specified in the client list for the Lotus-Notes policy containing the `ALL_LOTUS_DATABASES` file list directive, the policy must be separated into two policies: one exclusively for NetBackup Unix clients and another exclusively for NetBackup Windows clients. Do not use the `ALL_LOTUS_DATABASES` file list directive in the policy for NetBackup Windows clients. The `ALL_LOTUS_DATABASES` file list directive can be safely used in the policy for NetBackup Unix clients.

2. If a backup or restore of Lotus databases or transaction log extents is attempted when the Lotus Domino server is not currently running, the operation will fail with a media manager system error 174 on termination. This issue has been reported to Lotus support as SPR: RMAN56HLPV and will effect Lotus Domino server installations on Solaris and AIX.

Oracle Agent

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

2. The Window NT and Window 2000 client restore browser for Oracle, will fail if a double click is performed on an Oracle tablespace object from with in the right panel.

3. RMAN syntax error when running a recovery template generated with point-in-time recover of a tablespace or datafile. The Recovery Wizard Recover Limits page provides the option to recover a tablespace or datafile limited by a point-in-time. However, RMAN only allows point-in-time recover for the whole database.

As a workaround, you can use the Template Administration edit command to remove the point-in-time recover option.

4. The backup or recovery template may fail at runtime when a temporary table-space is in the object list (Oracle 9i). With Oracle 9i, temporary table-spaces cannot be backed up or restored.

Workaround:

Do not include a temporary tablespace in the list of objects to be backed up or restored.

5. Duplicate SIDs appear in the Oracle browse tree. (UNIX only)

NetBackup gets the Oracle database (SID) list from the files `/etc/oratab` and `/var/opt/oracle/oratab`. Duplicate SIDs will appear in the browse tree if these files contain duplicate information or if one is linked to the other.

Workaround:

Remove the duplicate entries or remove the link.

6. Oracle tree can not be browsed after running a template from the backup or recovery Wizard (Windows NT/2000 only).

The browser will lose it's connection to the database if the template was created with the option to take the database offline before the backup or recovery starts. This connection is not reestablished causing indeterminate browser behavior.

Workaround:

Exit and restart the NetBackup Client GUI.

7. A template for an Oracle 8.1.x database fails to run after being edited using Template Administration (Windows NT and Windows 2000 only). The edited template will use Oracle 8.0 binary names.

Workaround:

Do not use Template Administration to edit Oracle 8.1.x templates.

Sybase Agent

1. Sybase IQ Support

The initial release of NetBackup 4.5 for Sybase does not support Sybase IQ.

2. Special Environment Variables For Compaq Tru64 clients only

For NetBackup 4.5 for Sybase, the Sybase ASE Backup Server must be started with special environment variables, `_RLD_ARGS=-taso` and `LD_LIBRARY_PATH=/usr/openv/lib`. The NetBackup 4.5 for Sybase install script, install_sybackup, sets these environment variables in the Sybase ASE login scripts. For Sybase ASE 12.0, these login scripts are `SYBASE.sh` for the Bourne shell or `SYBASE.csh` for the C shell. For Sybase ASE 11.9.2, these login scripts are `.profile` for the Bourne shell or `.cshrc` for the C shell. All of these login scripts are located in the Sybase ASE home directory.

The user must invoke one of these login scripts so that the user's environment configured correctly before the Sybase ASE Backup Server is started. If the user's environment is not configured correctly before Sybase ASE Backup Server is started, one of the following errors will be reported when a backup is attempted from NetBackup 4.5 for Sybase.

```
Backup Server: 4.145.2.73: [0] Error for device
'sybackup::-SERV -SCHED Default-Application-Backup::00'. Pipe
I/O returned 0 bytes Backup Server Internal Error: 4.62.3.4:
Multibuffering subprocesses died, archive sybackup::-SERV
-SCHED Default-Application-Backup::00. Backup Server:
4.141.2.66: [0] The 'write' call failed for device
'sybackup::-SERV -SCHED Default-Application-Backup::00' with
error number 32 (Broken pipe). Refer to your operating system
documentation for further details.
```

```
Backup Server: 4.124.2.1: Archive API error for
device='sybackup::-SERV -SCHED Default-Application-Backup::00':
Vendor application name=<UNINIT>, Library version=0, API
routine=<UNINIT>, Message=Unable to open API library for device
'sybackup::-SERV -SCHED Default-Application-Backup'. Library
path is '/db/sybase1200/ASE-12_0/lib/libsybackup.so'. dlopen()
returned: Code=22, Message=dlopen: cannot load
/db/sybase1200/ASE-12_0/lib/libsybackup.so
```

After installing or upgrading to NetBackup 4.5 for Sybase, the user must stop and start the Sybase ASE Backup Server with these environment variables to prevent this problem.

NetBackup Java Interfaces

General

1. You can sort a table based on the data in a single column by clicking on the column header. The sort order alternates between ascending and descending order with each click. A known limitation in this release of NetBackup Java is that (in some cases) the sort is based on a text comparison, and therefore sorts of columns with numeric values are not always sorted in correct numeric order.

2. Occasionally the wait cursor will not get changed back to the normal cursor. The cursor reverts to the standard cursor once the mouse is moved off the dialog of frame and back on to it.

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. The NetBackup Java interface works best in 24-bit color. Using fewer colors can cause a flashing effect seen when the color pallet does not contain enough colors.

6. If you display NetBackup Java on a Solaris Ultra that has a standard VGA card, you may see reduced resolution graphics for large images on other screens. Closing other applications that use graphics, such as Netscape, can improve the appearance of NetBackup Java.

    Adding a 3-D graphics (24-bit TrueColor) card such as those listed below, to the workstation will eliminate these problems.

    -   Creator3D
    -   Elite3D m3
    -   Elite3D m6

7. The Java GUI `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 glibc(RHBA-2000:079-04) bug fix from Red Hat (`http://www.redhat.com`).

8. 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 TimeZone.properties 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.

9. Response time may be degraded for some Media or Device Management administration tasks for non-root administrators. This does not effect any other administration tasks, nor the running of NetBackup Administration Console under the root account.

10. NetBackup Java Administration Console may hang during operation

    Because of a problem in the Java virtual machine (refer to Sun Bug Report 4332685), the NetBackup Java Administration Console may hang during operation. This problem is likely to occur when running the application on a multi-processor server. If you encounter a hang when running `jnbSA`, VERITAS recommends that you use the `/usr/openv/java/get_trace` utility to get a stack trace while `jnbSA` is still hung.

    To run `get_trace`:

    a. Login as the root user.

    b. Enter `/usr/openv/java/get_trace`. The output from `get_trace` will usually be printed to the `jnbSA` log file in `/usr/openv/java/logs`. The name of the log file is reported when `jnbSA` is started. Refer to the following example:

       Enter `# ./jnbSA`.

       The log file for this instance is
       `/usr/openv/java/logs/root.jnbSA.35646.log`

       In some environments, for example when running as root on AIX, the stack trace may not be printed directly to the log file, but instead the log file will report that the stack trace was dumped to a separate file. If that is the case, in the log file you will see a line similar to the following (the actual name of the javacore file will differ):

       `Writing java dump to javacore41056.1013533765.txt...   OK`

       In the example above, the stack trace would be found in the file named `javacore41056.1013533765.txt`, located in the directory where `jnbSA` was started.

After running the `get_trace` and obtaining the stack trace information, you need to determine if the NetBackup-Java hang was caused by the bug 4332685. To verify this information, perform the following steps:

a. Open the log file or `javacore` file in a text editor tool

b. Search for `MediaTracker.waitForID`. You will see text similar to the following (line numbers and the name of the thread may differ):

```
"AWT-EventQueue-0" (TID:0x300985e8, sys_thread_t:0x51cef8c8,
state:CW, native ID:0x506) prio=6
at java.lang.Object.wait(Native Method)
at java.awt.MediaTracker.waitForID(MediaTracker.java:638)
at javax.swing.ImageIcon.loadImage(ImageIcon.java:226)
```

At this time, the only work-around VERITAS can suggest for this problem is to run `jnbSA` on a single-processor machine.

11. When running either the NetBackup-Java administration console or the client GUI on a NetBackup client, the text area in the middle of the 'About NetBackup Administration Console' and 'About NetBackup Client' dialogs, respectively, will be empty. The data is only available when starting either GUI on a supported NetBackup server. In addition, the title of the About dialog that appears from the client GUI is wrong. It should be 'About NetBackup Client'.

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

13. On AIX platforms, interrupting the loading of data does not work. The user will not get control until the load of the data actually completes or the request times out.

14. An error dialog will sometimes appear if interrupting the loading of data when the GUI is configured with NBJAVA_CONNECT_OPTION equal to 1. This is essentially a false alarm - the GUI will continue to function normally. While first part of the message in the error dialog may vary depending on the exact data loading dialog one interrupts, the following will also be appear in the error dialog.

Cannot connect to the NetBackup-Java user service via VNETD on *<servername>* on port 13724.

Exception: `java.net.ConnectException: Incompatible VNETD version:`

Exception Message: `Incompatible VNETD version:`

15. In the Volume Configuration Wizard, on the Select Device page, the host listed in the Robot Name column and in the Robot Control Host column may not be correct for the following types of robots: ACS, LMF, and TLM. Instead of the robot control host, it may display one of the hosts that is attached to one or more of the robot's drives.

Note None of these types of robots are supported by the Volume Configuration Wizard.

16. If you run the NetBackup-Java Administration Console from a system that is not the database host (typically the database host will be the master server), and you start an inventory on a robot, the media ID generation rules are displayed from the database host. This is wrong, as the actual inventory operation will read the rules from the local vm.conf file.

Backup Policy Management

1. Sort order in the table is not maintained after deleting one or more rows. After a delete operation the table reverts to its original, unsorted order.

2. Sort order in table is not maintained after changing tree nodes: If you click on a table header to sort the list, then select another tree node, the table reverts to displaying data in unsorted order.

3. 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.

4. Hangs may occur in the Backup Policy Configuration wizard during startup or when specifying a client to add to the client list. The sequence of events leading up to the hang are as follows:

a. On the Client list wizard page, select the **Add** or **Change** button.

b. A dialog for adding or changing the client appears.

c. Enter a host name in the Client name: field.

d. Select the **Add** or **OK** button.

Under normal circumstances this sequence causes the host name to be added to the client list. Under rare circumstances, after selecting **Add** or **OK**, the operation does not finish and NetBackup Java no longer responds to user input. This hang is caused by a problem in the Java virtual machine. Occasionally, calls to `java.net.InetAddress.getByName()` to look up a host name do not return and do not time out. The problem is more likely to occur if the host name does not exist on the network. All that can be done if this hang occurs is to cancel NetBackup Java and restart the application.

This hang has also been seen during startup of the Backup Policy Configuration wizard. The symptom in that case is that the wait cursor becomes visible after selecting the Create a Backup Policy button in the NetBackup Assistant, but the Backup Policy Configuration wizard never appears and NetBackup Java no longer responds to user input.

Media and Device Management

The following subsections describe known problems and limitations associated within any of the Device Monitor, Media, or Devices functions within the NetBackup Administration Console.

Device Monitor

1. If a device host does not have a valid configured device, then the Media Manager device daemon (`ltid`) starts and shuts down after a brief initialization phase. Therefore, attempts to start the daemon through the Start/Stop Media Manager Device Daemon dialog results in a report that the daemon was started successfully, but a short time later the application displays the error message that the daemon is inactive. The appropriate response is to configure a device and then start the Media Manager device daemon (`ltid`).

Media Management

1. When connecting to (or refreshing) a media manager, the cursor can remain in the hourglass state for several seconds after the **Loading data from ...** popup dialog has disappeared. If the media manager has a significant number of volumes or device hosts, the delay is due to data being added to unseen portions of the tree and table panes.

2. Enhanced authorization for non-root users is not working for all Media Manager tasks in the Administration console.

3. Unexpected results can occur when entering non-numeric values into numeric-only text field controls. It is recommended that you use the arrow buttons to the right of the control to increment or decrement the numeric value. Numeric text field controls appear on the following dialogs in Media management: Add New Volume, Move Volumes, Change Volumes, Add New Robot, Change Robot, Add New Drive, Change Drive, ACS Drive ID, Add New Barcode Rule, and Change Barcode Rule.

Devices

1. When changing or viewing the attributes for a Windows NT controlled robot through the Change Robot dialog, the port, `lun`, target and bus fields show a value of zero if the robot's device host (the host on which the robot was defined) is running a NetBackup version earlier than 3.2. Use `tpconfig` to retrieve the correct SCSI values.

2. If a device host does not have a valid configured device, then the Media Manager device daemon (`ltid`) starts and shuts down after a brief initialization phase. Therefore, attempts to start the daemon through the Start/Stop Media Manager Device Daemon dialog will report that the daemon was started successfully, but a short time later the application displays an error message indicating that the daemon is inactive. The appropriate response is to configure a device and then start the Media Manager device daemon (`ltid`).

Backup, Archive, and Restore

1. Depending on the task submitted, you may not see the **Type of Task** (Backup, Restore, Archive) listed in this column on the display in the Progress tab.

2. If the NetBackup for Lotus agent is installed, and the Lotus node is expanded, the Transaction Logs node may appear even if transaction logging is not enabled, or is configured for circular style logging.

Host Properties

1. NetBackup no longer supports automatic virus scanning. Hence it is no longer possible to configure Virus Scan related parameters from Host Properties.

2. Host Properties can be used to configure 3.4 clients as well. Any attempt to change a property that was newly introduced in 4.5 will fail without giving any error messages / warnings. It is not possible to configure Virus Scan related parameters even for 3.4 clients.

Storage Migrator

1. 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.

EMC Fastrax

1. A message containing the following may appear in the `online_util` log:

   ```
   onlfi_initialize_vfms: ld.so.1: bpblr: fatal: relocation error:
   file /usr/openv/lib/libfi_fsclone.so: symbol vrts_get_machtype:
   referenced symbol not found
   ```

   This error is harmless and should be ignored.

2. During the second pass of backup object mapping, the NBU backup and restore manager `bpbrm` can terminate the media manager process if the client does not respond for a time greater than the configured client read timeout value. The default timeout is 300 seconds. This problem can occur if the ratio of the number of extents in the first pass mapping to the configured timeout value is greater than approximately 1000 extents per second.

3. After Fastrax backup definition has been suspended due to Fastrax resource limitations, backups can stall if no currently defined objects can be completely moved to tape. In this state, LBOs containing only one extent are created until the backup process eventually exceeds the number of LBOs definable on a single Fastrax stream. The problem can be addressed by breaking up the failing backup into multiple smaller backups.

4. Sparse files cannot be restored through the Fastrax backup copy type because there exists no mechanism to preallocate the sparse space needed for the restored sparse file. Sparse files backed up with Fastrax will be restored as fully allocated files containing indeterminate data in the holes that existed in the sparse file. So sparse file should not be backed up and restored through a Fastrax backup.

5. Unable to import Fastrax tapes through the NetBackup Administration Console.

   There is no capability through the NetBackup Administration Console to specify that it is a Fastrax tape that is being imported.

   To avoid this problem, use the `bpimport` command specifying the option `-backup_copy 3` to indicate that it is a fastrax tape that is being imported.

6. Before terminating the NetBackup `ltid` daemon it is necessary to ensure that all Fastrax BCS streams connected to Fastrax tape drives are closed. The `ltid` daemon is terminated whenever a NetBackup package is installed or removed, and by the commands `/usr/openv/netbackup/bin/goodies/bp.kill_all`, which attempts to kill all NetBackup processes, and `/usr/openv/volmgr/bin/stopltid`.

It is vital that administrators of NetBackup for EMC Fastrax first execute the `/usr/openv/netbackup/bin/goodies/bp.kill_all_fastrax` command before installing or removing any NetBackup package, and before executing the `stopltid` command. This command insures that all BCS streams are properly closed and then terminates all NetBackup processes. In addition, administrators should always run the `bp.kill_all_fastrax` command in place of the `bp.kill_all` command. Failing to follow these guidelines can result in disabling Fastrax backup and restore pending a reboot of the Media Manager host.

7. If the file `/usr/openv/netbackup/logs/symlogs/fastrax_limits` exists on the NetBackup media server, `bptm` will configure Fastrax resource limitations according to the contents of the file. This file must be a two-line ASCII file, the first line being a comment line with arbitrary content and the second line containing eight blank-separated integers. The first six of these integers represent, in this order,

1) the maximum allowed number of LBOs in the lifetime of a Fastrax BCS stream

2) the maximum size of user data per LBO in bytes,

3) the maximum number of extents in use per backup LBO

4) the maximum number of extents in use per restore LBO

5) the maximum number of extents in use per Fastrax data mover

6) the maximum size in bytes of metadata per LBO.

The two trailing integers are for internal use and should be set to zero. The default values for these integers are the following:

64 1099511627776 140000 140000 200000 104857600 0 0

The default value for the first integer (the maximum allowed number of LBOs in the lifetime of a BCS stream) is too low. If necessary, this `fastrax_limits` file can be used to increase this value to the correct maximum, which is 1024. If this maximum is exceeded, the backup will terminate with a fatal error. The rest of the default values should not be changed.

ServerFree

1. If it becomes necessary to do detailed analysis of a problem with a frozen image, offhost, EMC Fastrax, or FlashBackup configuration then the logging may have to be adjusted. The normal logging levels from the NetBackup Administration Console may not give enough detailed information in the logs in these cases. There are five options in the bp.conf configuration file that a user can use to raise the debug logging above 5 in the main logs. The five options are:

- `BPBRM_VERBOSE`

- `BPDBM_VERBOSE`

- `BPRD_VERBOSE`

- `BPSCHED_VERBOSE`

- `BPTM_VERBOSE`

The VERBOSE option can also be used to override the overall logging level set by the GUI but the specific log options will override the VERBOSE option for that specific log. A logging level setting of 21 is sufficient to provide all needed information.

An example of setting one of the specific log options to a higher logging level is: BPTM_VERBOSE = 21

2. When backing up a Sun T3 disk array using an offhost method of ThirdPartyCopy, the disk must be visible to the Media Server.

3. The Extended Frozen Image Methods of TimeFinder, ShadowImage, and BusinessCopy have a limitation when used with an HP-UX 11i Client that uses VERITAS Volume Manager version 3.2. The frozen image backup may not work if the volume was originally created under VERITAS Volume Manager version 3.1/3.1.1 but is now being used under version 3.2. If the volume was originally created under version 3.2 then there are no limitations.

Vault

NetBackup Vault 4.5

1. Vault is not fully integrated with the NetBackup Scheduler. Resource contention and media contention problems exist. If your Vault profile is to do duplication, you must ensure that it does not run at the same time as a backup on the same devices.

   The scheduler does not do resource (tape drive and media) allocation for `bpduplicate` jobs nor for restore jobs. Therefore, contention for these resources will be a problem if backup jobs or restore jobs are attempted during vault duplication activity. If a vault profile is configured to do duplication, it will kick off a number of `bpduplicate` jobs. If backup jobs happen to be running at the same time, drives will be requested for both types of processes. This can cause backup jobs to get requeued until drives free up from the vault process. Other errors and side effects can also occur.

   One solution to this problem is to configure your backup policies to use Inline Tape Copy (this appears as "Multiple copies" in the GUI) to write your on-site and your off-site copies of your backup during your backup job. Then configure your vault profile(s) to merely eject the off-site copy. This approach will use more drives during your backup session, but will ultimately use fewer drive resources in total. This is because it takes two drives to create a single duplicate copy (one read drive and one write drive).

   Another solution to this problem is to send your original backups to disk, and configure your Vault profile(s) to copy the disk images to multiple tapes. You can choose to configure your Vault profile to free up the disk space after the images have been successfully duplicated. You may want to leave one or more drives available for restore activity during your vault sessions.

2. Use Inline Tape Copy in your backup policies

   VERITAS strongly recommends you use the multiple copies (Inline Tape Copy) feature in your backup policies to create both the on-site copy and the copy that will be sent to the vault, rather than using Vault duplication to create either of these copies. Avoiding the Duplication step in a Vault profile avoids all resource contention issues and can significantly simplify the vaulting process.

3. If you experience problems vaulting with ACS or TLM robots, you may be experiencing a `robotic_control_host` problem. To fix this, alter the `vault.xml` file located in `/usr/openv/netbackup/db/vault` (on UNIX) or `<install_path>\netbackup\db\vault` (on Windows NT or Windows 2000). The entry for RoboticControlHost under the `<ROBOT>` tag should be changed to the name of the media server that is controlling the drives of the robot in question.

For example, if a robot TLM(1) is defined on host `alpha_svr` and the robotic control host for the TLM(1) robot is a host named `beta_svr`, change the RoboticControlHost `vault.xml` entry to be `alpha_svr` instead of `beta_svr`.

After editing, the XML line should look like:

```
<ROBOT Name="TLM(1)" RobotType="TLM" RobotNumber="1"
VolDbHost="alpha_svr" RoboticControlHost="alpha_svr">
```

Caution   Be very careful not to remove any of the quote marks nor otherwise disturb the XML format. Doing so will result in the XML file not being loaded.

4. When your NetBackup-Java Administration Console is logged into an HP-UX NetBackup server, and when you are using this console to edit Vault profiles, you may see a warning dialog with one of the following error messages. (Both of these errors occur because the Socket connection timed out.)

- `There was an error updating the vault.xml file.` If you get this error message, the changes you were making were unfortunately not saved. You must reenter your configuration changes. You can proceed to use the product. Check the VERITAS Support web site (`http://www.support.veritas.com`) for updates that will fix this problem.

- `The vault configuration was saved to... An attempt to rename this file failed.  To proceed...` In the event that this error message appears, do as the message suggests and rename the temporary file as instructed.

Please refer to the NetBackup-Java Administration Console release note about `TCP TIME_WAIT` state timeout on an HP-UX NetBackup server.

5. Once you have media in your off-site vault, VERITAS recommends that you do not rename your off-site volume group(s) or off-site volume pool(s). This is because the Picking List for Vault report is based on the off-site volume group and off-site volume pools configured in your vault profile. If you are not regularly running a vault profile which uses these pools and groups, you will not be generating reports to request the expired media in these groups and pools to be returned from your off-site vault for reuse.

   If you do want to change to a new off-site volume group and/or off-site volume pool(s), then you can work around this limitation by configuring a vault and a profile which use the old off-site volume group and the old volume pool(s), but does nothing other than to generate the report(s). For instance, you could configure a vault for which you specify the old off-site volume group. For this vault, configure a profile for which you specify some criteria on the Choose Backups tab which will cause no backup images to be found. Skip the Duplication step and skip the Catalog Backup step. List your old volume pool(s) in the volume pool list on the Eject step. Configure the profile to generate only the Picking List for Vault and Distribution list for Robot reports. Schedule this profile to run on a regular basis. Tapes in the old off-site volume group and in the old volume pool(s) will be requested for return from the vault as they expire.

6. If you configure a profile to perform duplication across robots. **Do not** use the **Any Available** storage unit setting in your backup configuration. This may result in deadlock during the Vault session's duplication process if there are not enough drives available to read and write within a destination robot. In NetBackup 4.5 there is a new feature called Storage Unit Groups. VERITAS suggests you use this feature to set up a Storage Unit Group which includes all storage units except the one you want to use as the destination storage unit for duplication in Vault. Specify this Storage Unit Group rather than "Any Available" in the backup policy.

7. Allowing Non-Root Access for Vault Operators on UNIX

   To allow non-root users access to operational commands (inject tapes, eject tapes, run reports) from `vltopmenu`, the user must perform the following steps.

Note Please check with your system administration manager or security officer before performing these steps. Some companies consider these actions a security issue. These actions can result in opening access further than is deemed appropriate and may result in failing internal security audits.

   a. Create a UNIX group for the operations staff and make sure all appropriate UNIX accounts belong to this group. This group will be referred to as *<opsgroup>* in the commands below.

b. To allow the user to eject tapes and generate reports from `vltopmenu`, log in to the NetBackup master server and execute the following commands as root:

```
# cd /usr/openv/volmgr/bin

# chgrp <opsgroup> vmquery vmchange

# chmod 4550 vmquery vmchange

# cd /usr/openv/netbackup/bin

# chgrp <opsgroup> vltcore

# chmod 4550 vltcore
```

Then log in to any NetBackup media server that is controlling a TLD robot and execute the following commands as root:

```
# cd /usr/openv/volmgr/bin

# chgrp <opsgroup> vmquery vmchange

# chmod 4550 vmquery vmchange
```

c. To allow the user to inject tapes from `vltopmenu`, log in to the NetBackup master server and execute the following commands as root:

```
# cd /usr/openv/volmgr/bin

# chgrp <opsgroup> vmupdate

# chmod 4770 vmupdate
```

Then log in to any NetBackup media server that is controlling a TLD robot and execute the following commands as root:

```
# cd /usr/openv/volmgr/bin

# chgrp <opsgroup> vmupdate

# chmod 4770 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". There should already be an entry for the master server (added during the install process) that grants root access. The entry should be modified to allow all users in the operations group access to the ACSLS server as user "acsss":

```
master-server root <user> . . . <user>
```

    e. If you are using ACSLS for robotic control, verify that the user accounts defined for the operations group exist on both the master server and the ACSLS server. For simplicity, it is recommended to assign the same user ID on both servers for each user. If both servers are using a naming service (e.g. NIS, NIS+), then this step can be skipped.

To verify proper operation, log in to the master server as an operations user, then execute `vltopmenu` and then execute each menu option.

8. If you choose to perform a catalog backup through Vault, you may run into a situation where the catalog backup requires more than one piece of media to duplicate. In this case, the catalog backup will fail. Please refer to the *NetBackup System Administrator's Guide* topic on Protecting Large NetBackup Catalogs for information on how to deal with this situation. Once you have satisfied those requirements, you must configure the **Backup policy for mulitple-tape catalog backups** parameter on the **Catalog Backup** tab for the Vault profile. You must also include the pool to which the catalog data is written (by way of the policy) in the list of off-site volume pools on the **Eject** tab.

9. Editing Vault profiles from multiple User Interfaces (NetBackup Administration Console (Java and Windows), or `vltadm`) concurrently can destroy changes that others have made. The Vault configuration is read into the user interface and held until a refresh of the Vault portion of the Console occurs. The last Vault configuration to be written will take effect and can overwrite changes made by others.

10. Incorrect Report Titles

The following titles may be misleading or have been renamed:

- The Vault System Administrator's Guide refers to the Vault inventory reports by outdated report titles.

- The Inventory List for Vault has been renamed Vault Inventory.

- The Full Inventory List for Vault has been renamed Offsite Inventory.

- The Complete Inventory List for Vault has been renamed All Media Inventory.

11. If a file has been migrated by Storage Migrator, then a regular backup will save only the file pointers. Subsequently, Vault will simply vault the backup. Therefore, the real data for the file may not be vaulted. To ensure your ability to restore your migrated data, you must ensure that you also vault a copy of your Storage Migrator tapes. You can use the `vlt_ejectlist_notify` script to add the copied Storage Migrator tapes to the list of tapes to be vaulted.

12. Vault administration activities are not supported for a non-root administrator defined through role-based authorization.

13. Non-root administrators are not able to configure vault.

14. On Windows, the user cannot cancel `vlteject` immediately after it is invoked. It will not terminate until three minutes after it was started.

15. When configuring a logical Vault, the user must select an "Offsite volume group" for the Vault. When media is ejected by Vault, they are moved into the "Offsite volume group". A similar volume group field is available on the "Choose Backups" tab of the profile dialog. This field is labeled as the "Source volume group". The user should take notice that the *Source volume group* (on the **Choose Backups** tab) is a source volume group and not a destination (offsite) volume group. Vault enables you to configure the Offsite volume group as the Source volume group. This would be an invalid configuration and no images would be vaulted because images in the Offsite Volume Group have already been vaulted, and Vault will not re-vault them. The user should make sure that the source volume group is never the same as the offsite volume group for the logical vault in which the profile is defined.

16. There exists a problem with this release of Vault that could potentially occur when performing a Catalog Backup during a vault session. If for any reason the catalog backup step of a vault session is not successful, then it is likely that the user will see the following: The tape used for the catalog backup is assigned early in the process of the vault session. If there are problems that cause the catalog backup to fail, the tape is left in an assigned state and is therefore unavailable for use. Ideally, this tape would get de-assigned by Vault so that it is free for use next time around. The user is advised to take notice if a vault catalog backup fails and note the media id that may have been assigned for use by the vault process. If the tape was left assigned, then the user should de-assign the tape using the instructions provided in the *Vault Systems Administrators Guide*.

17. Most selection criteria for images to be processed by Vault are specified on the **Choose Backups** tab of the **Profile** dialog. There is an additional filter on the **Duplication** tab of the profile dialog that may cause some user confusion if not noted carefully. The confusion can occur when the user specifies a **Source volume group** other than **All volume groups** on the **Choose Backups** tab and also specifies **Disk only** as the **Source of backups…** on the **Duplication** tab. If the user configures their vault profile this way, they are probably not going to expect the results that they will see. Unless some images reside in both the "Source volume group" and on some disk storage unit, Vault will not find any images to be duplicated.

It is worth noting that the **Source volume group** on the **Choose Backups** tab spans all steps of a vault profile (most notably Duplication and Eject) where as the **Source of backups...** field on the **Duplication** tab applies only to the Duplication step. Even when no images are found for duplication (as discussed above), if there are images in the source volume group which are also in an off-site volume pool (specified on the Eject tab), then these will be ejected.

18. Depending on the number of policies, schedules, clients, media servers, and storage units in the NetBackup environment, `vltadm` may take some time to start. `Vltadm` fetches all of this information from the NetBackup server(s) at start up and populates its own database. The time taken to fetch this information depends on many factors such as the available memory, system load, and network traffic to name a few. During this startup time, `vltadm` displays no indication of this activity. `Vltadm` differs from the NetBackup Administration Console (Windows and Java) in this respect. In the consoles, most fields are loaded as and when required.

19. If a NetBackup media server is known by more than one name, the user can configure duplication rules which will never be used.

As with any computer, media servers may be known by more than one name. A server has a fully qualified name, a short name, and may have more than one network interface card, each of which has its own name. If the NetBackup master server has more than one storage unit for a media server, then each storage unit can use a different name for the media server. This media server name will be stored in the header for the backup image, and will be used by Vault to determine how to treat a backup image. In this case, the Vault administrator can choose to treat each of these media server names as a separate media server, or to treat all of these media server names as the same media server. This treatment effects the selection of backup images to process (to duplicate and/or to eject), and the way in which Vault will duplicate the images.

If the administrator chooses to treat all names for a media server as the same media server, then he or she must configure an entry in the **Alternate media server names** list on the **Vault Properties** dialog, to group all names for the media server together. Subsequently, when running a vault profile, Vault will expand any one of those names to mean the whole group of media server names. The two places where this occurs in the vault profile are in the **Media servers** list on the **Choose Backups** tab of the profile, and in the **Media server** field for a duplication rule when the Advanced configuration of the **Duplication** tab is being used.

The problem can occur even when the user has grouped a list of media server names together using the **Vault Properties** dialog. Vault enables the user to configure a separate duplication rule for each media server name in the group of names. This would be an invalid configuration, because only the first duplication rule that uses a name from the group of names, would have any effect. In addition, because the media server name for the duplication rule will be expanded to include all media server names in the group, all images written by all storage units that use those media server names will be handled by the first duplication rule which uses any name from the group.

The user should know that only the first duplication rule that uses a media server name from a group of media server names from the "Vault Properties" dialog will be used.

20. If a NetBackup media server is known by more than one name, the user must take extra precaution to ensure that all backups are vaulted.

As with any computer, media servers may be known by more than one name. A server has a fully qualified name, a short name, and may have more than one network interface card, each of which has its own name. If the NetBackup master server has more than one storage unit for a media server, then each storage unit can use a different name for the media server. This media server name will be stored in the header for the backup image, and will be used by Vault to determine how to treat a backup image. If these names for the media server are not grouped together in an entry on the **Alternate Media Server Names** tab of the **Vault Properties** dialog, then the user could inadvertently exclude some backup images from being vaulted.

In a vault profile, if the user specifies at least one but not all of the names for a media server in the **Media servers** list on the **Choose Backups** tab, and if all names for that media server (that are used by storage units) are not grouped together in Vault's **Alternate Media Server Names** list, then images written by the storage units for which the media server name does not appear in the **Media servers** list will not be vaulted. Should a disaster occur, not all data would be available for recovery.

To ensure that all backups are vaulted, every time a new storage unit is added to the NetBackup configuration, the user should do one of two things:

a. If there is another storage unit which uses a different name for the new storage unit's media server, then configure these two media server names to be alternate media server names on the **Vault Properties** dialog.

b. Otherwise, identify the vault profile(s) that is/are to vault the backups that are to be sent to the new storage unit. If the **Media servers** list on the **Choose Backups** tab for these profiles is not set to "<All media servers>", then add the name of the media server to the **Media servers** list. Ensure that the other criteria on the **Choose Backups** tab will enable this profile to find the appropriate backups written to this media server. If the profile is configured to do Advanced configuration of the Duplication step, then you probably want to add a duplication rule for the new media server.

21. During the execution of a vault job for a specific `<robot_number>/<vault_name>/<profile_name>`, if any media IDs added using the `vlt_ejectlist_notify` script are either non-existent or do not belong to the robotic volume group defined in the vault configuration, such media will be excluded from the list of media to be ejected, but no obvious indication will be given that some media IDs were rejected. The vault job will terminate with status 0. The end of session notification e-mail will not contain any information about the media IDs that were rejected, though the count of media ejected will be included at the end of the e-mail. It will be up to the site analyst to ensure that the media introduced via the `vlt_ejectlist_notify` script is actually ejected by comparing the contents of the `<install_path>/netbackup/vault/sessions/<vault_name>/sid<sesssion_id>/ addon_medialist` file with the **Distribution List for Vault** report.

22. If you configure a vault profile for duplication and specify an alternate read server to read images that were written on a host other than the alternate read server and the alternate read server does not have access to the media containing the images to be read, the duplication of such images will fail with status 191("no images were successfully processed") and the vault job for this profile will fail with status 1 (if some of the images were duplicated) or 308 (if none of the images were duplicated).

The `bpduplicate` error 191 is used to flag that none of the images on the source media were duplicated. The real cause of the failure however is logged to the `detail.log` and the `duplicate.log.x` file in the `<install_path>/netbackup/vault/sessions/<vault_name>/sid<session_id>`.

For the above configuration error, the `bpduplicate` read process will fail with error 98 (`error requesting media (tpreq)` message) and the `bpduplicate` write process will fail with error 90 (`media manager received no data for backup`). The end of session e-mail will however report that the `bpduplicate` job failed with status 90.

23. There are three different situations where media will not get recalled from the off-site vault:

a. Vaulted media are in an obsolete volume pool or an obsolete off-site volume group. If you change your profile to no longer use an off-site volume pool or an off-site volume group after media in this volume pool or volume group has already been vaulted, then those media will not get recalled for reuse without extra effort on your part.

b. Vaulted media which is frozen will never appear on a **Picking List for Vault** report. If NetBackup gets a fatal error on a tape, it freezes that tape. If Vault then sends that tape off-site, it is never recalled.

c. If media shows up on a **Picking List for Vault** report, but for some reason stays in the off-site vault, either by accident or over-sight, that media will not appear on a subsequent **Picking List for Vault** report.

The recommended action is to run an audit of your off-site media (a Vault Inventory report) periodically and manually recall these expired media in question. (For Scenario a in the list above, an alternative solution is provided elsewhere in this section of this document.)

24. A vault policy that has been created by copying a non-vault policy with a defined client list will create one vault job for every client in the client list, even though the client is not used by the Vault job. The first of these vault jobs will operate as a normal vault session; the rest will terminate with a status 275 (a session is already running for this vault). It is suggested that clients be deleted from the Vault policy to prevent unnecessary vault jobs from starting.

25. Running the `vltopmenu` command on a profile that skips the eject step will give unexpected results. The command completes with the text, `The operation has completed`, when it should have stated that the eject step is not performed for this profile. Running the `vlteject` CLI results in no output.

26. When creating a profile in the NetBackup Administration Console (Windows or Java) that uses Advanced Duplication, and the **Choose Backup** tab has <**all media servers**> selected for Media Servers, after saving the profile a confusing dialog box may appear. The dialog box is informing the user that the media servers that are not in the duplication step should be removed from the **Choose Backup** list of media servers. If the total media servers defined on the master server is large, the dialog box could be mis-formatted.

27. If a vault robot has no media in it and the user tries to create a vault for the robot, a confusing message can appear. The message is:

```
There was an error while loading data. You will not be able to
save any changes to the shown data.
```

Since there are no media in the robot, there are no volume groups, so the Vault cannot show a list of volume groups for the user to choose from. To solve this problem, media should be added to the robot before creating a vault for the robot.

Running `bpvault` 3.4 on NetBackup 4.5

1. If running `bpvault` 3.4 on a NetBackup 4.5 master server, **do not modify the Maximum Backup Copies default**. Modifying this default setting can break vault. The "Maximum backup copies" setting in the master server's Host Properties must be set to 2.

Upgrading from `bpvault` to Vault 4.5

1. After upgrading to Vault 4.5, you might have a problem with the Media Manager settings saved for your vaulted media. The five Media Manager settings are: Vault Slot ID, Vault Location, Sent Date, Return Date, and Session ID. In bpvault 3.4 these fields were populated but were not used. Vault 4.5 uses these fields and no longer writes to the Description field. If you ever changed the Description field without changing the Media Manager fields, then the Media Manager fields now need to be updated to match the data in the Description field. All Media Manager fields should match what you had been using in the Description field.

2. When upgrading to Vault 4.5, it is best if you continue to use the same volume pools and off-site volume groups that you were using in your bpvault 3.4 configuration. This is because the Picking List for Vault report is based on the volume pools and volume groups which are off-site. If you are not regularly running a vault profile which uses these pools and groups, you will not be generating reports to request the expired media in these pools and groups to be returned from your off-site vault.

   If you do want to change to a new off-site volume group and/or off-site volume pool(s), then you can work around this limitation by configuring a vault and a profile which use the old off-site volume group and the old volume pool(s), but does nothing other than to generate the report(s). For instance, you could configure a vault for which you specify the old off-site volume group. For this vault, configure a profile for which you specify some criteria on the Choose Backups tab which will cause no backup images to be found. Skip the Duplication step and skip the Catalog Backup step. List your old volume pool(s) in the volume pool list on the Eject step. Configure the profile to generate only the Picking List for Vault and Distribution list for Robot reports. Schedule this profile to run on a regular basis. Tapes in the old off-site volume group and in the old volume pool(s) will be requested for return from the vault as they expire.

Related Documents A

This appendix lists and describes the technical manuals that pertain 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 `Docs` 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 `www.adobe.com`. VERITAS assumes no responsibility for the correct installation or use of the reader.

Getting Started Guides

NetBackup BusinesServer Getting Started Guide for UNIX

Explains how to get NetBackup BusinesServer software installed and running on UNIX-based platforms.

NetBackup BusinesServer Getting Started Guide for Windows

Explains how to get NetBackup BusinesServer software installed and running on Windows-based platforms.

Installation Guides

◆ *NetBackup Installation Guide for PC Clients*

Explains how to install NetBackup PC client software. The supported PC clients are Microsoft Windows, Macintosh, and Novell NetWare.

◆ *NetBackup DataCenter Installation Guide for UNIX*

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

◆ *NetBackup DataCenter Installation Guide for Windows*

Explains how to install NetBackup DataCenter software on Windows-based platforms.

System Administrator's Guides - Basic Product

- *NetBackup DataCenter System Administrator's Guide for UNIX*

  Explains how to configure and manage NetBackup DataCenter on a UNIX server.

- *NetBackup DataCenter System Administrator's Guide for Windows*

  Explains how to configure and manage NetBackup DataCenter on a Windows server.

- *NetBackup BusinesServer System Administrator's Guide for UNIX*

  Explains how to configure and manage NetBackup BusinesServer on a UNIX server.

- *NetBackup BusinesServer System Administrator's Guide for Windows*

  Explains how to configure and manage NetBackup BusinesServer on a Windows server.

- *NetBackup DataCenter Media Manager System Administrator's Guide - UNIX*

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

- *NetBackup DataCenter Media Manager System Administrator's Guide for Windows*

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

- *NetBackup BusinesServer Media Manager System Administrator's Guide for UNIX*

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

- *NetBackup BusinesServer Media Manager System Administrator's Guide for Windows*

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

System Administrator's Guides - Agents and Options

- *NetBackup Database Archiver System Administrator's Guide*

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

◆ *NetBackup for DB2 on UNIX System Administrator's Guide*

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

For IBM DB2 version 5.2, you may also need the following manuals from IBM:

IBM DB2 Universal Database for UNIX Quick Beginnings Version 5.2

IBM DB2 Universal Database for UNIX Extended Enterprise Edition Quick Beginnings Version 5.2

Cmd Ref IBM DB2 Universal Database Command Reference

For IBM DB2 version 6.1, you may also need the following manuals from IBM:

IBM DB2 Universal Database for UNIX Quick Beginnings Version 6

IBM DB2 Universal Database for UNIX Extended Enterprise Edition Quick Beginnings Version 6

Administration Guide:Design and Implementation Version 6

Administrative API Reference Version 6

Command Reference Version 6

Troubleshooting Guide Version 6

Quick Beginnings: Enterprise Extended Edition for UNIX Version 6

Quick Beginnings for UNIX Version 6

◆ *NetBackup for DB2 on Windows System Administrator's Guide*

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

For IBM DB2 version 5.2, you may also need the following manuals from IBM:

IBM DB2 Universal Database for NT Quick Beginnings Version 5.2

IBM DB2 Universal Database for NT Extended Enterprise Edition Quick Beginnings Version 5.2

Cmd Ref IBM DB2 Universal Database Command Reference

For IBM DB2 version 6.1, you may also need the following manuals from IBM:

IBM DB2 Universal Database for NT Quick Beginnings Version 6

IBM DB2 Universal Database for NT Extended Enterprise Edition Quick Beginnings Version 6

Administration Guide:Design and Implementation Version 6

Administrative API Reference Version 6

Command Reference Version 6

Troubleshooting Guide Version 6

Quick Beginnings: Enterprise Extended Edition for Windows NT Version 6

Quick Beginnings for Windows NT Version 6

◆ *NetBackup Encryption System Administrator's Guide*

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

◆ *NetBackup FlashBackup System Administrator's Guide for UNIX*

Explains how to install, configure, and use NetBackup FlashBackup. The FlashBackup product combines the increased performance of raw-partition backups with the ability to do individual file restores.

◆ *NetBackup for EMC Fastrax System Administrator's Guide for Solaris*

Explains how to install, configure, and use NetBackup for EMC Fastrax. This product allows backup and restore of EMC Symmetrix client data by means of an EMC Fastrax system functioning as a third-party copy device.

◆ *NetBackup for Informix System Administrator's Guide*

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

For this product, you may also need the following manual from Informix Software Incorporated:

Informix-Online Dynamic Server Backup and Restore Guide

Informix-Online Dynamic Server Administration Guide

◆ *NetBackup for Lotus Notes System Administrator's Guide for Windows*

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

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

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

◆ *NetBackup for Microsoft Exchange Server System Administrator's Guide for Windows*

Explains how to configure and use NetBackup for Microsoft Exchange Server to perform online backups and restores of Microsoft Exchange Server.

You may also need the following resources from Microsoft Corporation:

Microsoft Exchange Server whitepapers and FAQs (go to
`http://www.microsoft.com/exchange` and search for "Disaster Recovery")

Microsoft Exchange Administrator's Guide

Microsoft Exchange Concepts and Planning Guide

Microsoft TechNet

Microsoft BackOffice Resource Kit

`http://www.msexchange.org`

◆ *NetBackup for Microsoft SQL Server System Administrator's Guide for Windows*

Explains how to install, configure, and use NetBackup for Microsoft SQL Server to
back up and restore Microsoft SQL Server databases and transaction logs.

For this product, you may also need the following manual from Microsoft
Corporation:

Administrator's Companion - Microsoft SQL Server

◆ *NetBackup for NDMP System Administrator's Guide*

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

◆ *NetBackup for Oracle on UNIX System Administrator's Guide*

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

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Manager Administrator's Guide

Oracle7 Enterprise Backup Utility Administrator's Guide

Oracle Server Backup and Recovery Guide

Oracle7 Enterprise Backup Utility Installation and Configuration Guide

◆ *NetBackup for Oracle on Windows System Administrator's Guide*

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.

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Manager Administrator's Guide

Oracle7 Enterprise Backup Utility Administrator's Guide

Oracle8 Server Backup and Recovery Guide

Oracle7 Enterprise Backup Utility Installation and Configuration Guide

◆ *NetBackup for Oracle Advanced BLI Agent System Administrator's Guide - Solaris and HP-UX*

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

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Manager Administrator's Guide

Oracle8 Server Backup and Recovery Guide

For this product, also refer to the following VERITAS manuals:

Database Edition for Oracle Database Administrator's Guide

Storage Edition for Oracle Database Administrator's Guide

NetBackup for Oracle Advanced BLI Agent System Administrator's Guide for Backups Without RMAN

◆ *NetBackup for Oracle Advanced ServerFree Agent System Administrator's Guide - Solaris and HP*

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

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Manager Administrator's Guide

Oracle8i Backup and Recovery Guide

Oracle8i Server Administrator's Guide

Oracle8i Recovery Manager User's Guide and Reference

◆ *NetBackup for Oracle Advanced BLI Agent System Administrator's Guide for Backups without RMAN - Solaris and HP-UX*

Explains how to verify NetBackup for Oracle Advanced BLI Agent for Backups Without RMAN.

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Manager Administrator's Guide

Oracle8 Server Backup and Recovery Guide

For this product, also refer to the following VERITAS manuals:

NetBackup for Oracle Advanced BLI Agent System Administrator's Guide

Database Edition for Oracle Database Administrator's Guide

Storage Edition for Oracle Database Administrator's Guide

◆ *NetBackup for SAP on UNIX System Administrator's Guide*

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

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Backup Utility Installation and Configuration Guide

BC SAP Database Administration : Oracle

You may also need the following manual from SAP AG:

BC-BRI BACKINT Interface R/3 System, Release 3.x and 4.x

◆ *NetBackup for SAP on Windows System Administrator's Guide*

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

For this product, you may also need the following manuals from Oracle Corporation:

Oracle Enterprise Backup Utility Installation and Configuration Guide

BC SAP Database Administration : Oracle

You may also need the following manual from SAP AG:

BC-BRI BACKINT Interface R/3 System, Release 3.x and 4.x

◆ *NetBackup for SYBASE on UNIX System Administrator's Guide*

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

For this product, you may also need the following manuals from SYBASE Incorporated:

SYBASE SQL Server Installation and Configuration Guide

SYBASE SQL Server System Administration Guide

SYBASE SQL Server Utility Programs for Unix

SQL Server Configuration Guide

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

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

For this product, you may also need the following manuals from SYBASE Incorporated:

SYBASE SQL Server Installation and Configuration Guide

SYBASE SQL Server System Administration Guide

SYBASE SQL Server Utility Programs for Windows 95, Windows 98, and Windows NT

SQL Server Configuration Guide

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

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

◆ *NetBackup ServerFree Agent System Administrator's Guide for UNIX*

Explains how to install, configure, and use ServerFree Agent for frozen image and SAN offhost backups.

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

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

◆ NetBackup Advanced Reporter System Administrator's Guide

NetBackup Advanced Reporter (NBAR) is a backup and storage management monitoring tool designed to simplify the task of monitoring and reporting on an organization's VERITAS NetBackup activities.

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

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 DataCenter Media Manager.

User's Guides

◆ *NetBackup User's Guide for Mac OS*

Explains how to use NetBackup on a Macintosh client to perform backups, archives, and restores. This guide also contains some configuration instructions for the NetBackup client software.

◆ *NetBackup User's Guide for Windows*

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.

◆ *NetBackup User's Guide for Novell NonTarget*

Explains how to use NetBackup nontarget software on a Novell NetWare server to perform backups and restores. The nontarget version of NetBackup has a Microsoft Windows interface. This guide also contains some configuration instructions for the NetBackup Backup and Restore software.

◆ *NetBackup User's Guide for Novell NetWare Target*

Explains how to use NetBackup target software on a Novell NetWare server to perform backups and restores. The target version of NetBackup has a menu driven interface that runs under DOS. This guide also contains some configuration instructions for the NetBackup client software.

◆ *NetBackup User's Guide for UNIX*

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

◆ *NetBackup Vault 4.5 Operator's Guide for UNIX and Windows*

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

Device Configuration Guide - Media Manager

◆ *NetBackup Media Manager Device Configuration Guide for UNIX*

Explains how to add device drivers and perform other system-level configurations for storage devices that are supported by NetBackup DataCenter and NetBackup BusinesServer Media Manager on UNIX hosts.

Troubleshooting Guides

◆ *NetBackup Troubleshooting Guide for UNIX*

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

◆ *NetBackup Troubleshooting Guide for Windows*

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