VERITAS NetBackup™ 3.4

Release Notes

VERITAS

Contents

Preface

Introduction

These release notes are intended for the system administrator and other users interested in the 3.4 release of VERITAS NetBackup BusinesServer and NetBackup DataCenter.

Organization

- ◆ Chapter 1 explains important new features included in this release.

- ◆ Chapter 2 lists the platforms and peripherals supported by NetBackup.

- ◆ Chapter 3 contains important operating information not documented elsewhere.

- ◆ Chapter 4 describes notable problems resolved by this release of NetBackup.

- ◆ Chapter 5 describes problems and limitations that you may encounter when using this release of NetBackup.

- ◆ Appendix A lists all NetBackup documents for this release.

NetBackup Product News and Updates

To receive NetBackup product news and updates, sign up for email notification as follows:

1. Go to `http://www.VERITAS.com`.

2. Select *Support* and on the support page click the *Email Notification* link.

3. Enter the information requested and select your product from the available product list.

Related Documents

Windows NT/2000

◆ *NetBackup DataCenter Installation Guide - Windows NT/2000*

   Explains how to get NetBackup DataCenter software installed and running.

◆ *NetBackup BusinesServer Getting Started Guide - Windows NT/2000*

   Explains how to get NetBackup BusinesServer software installed and running.

UNIX

◆ *NetBackup DataCenter Installation Guide - UNIX*

   Explains how to get NetBackup DataCenter software installed and running.

◆ *NetBackup BusinesServer Getting Started Guide - UNIX*

   Explains how to get NetBackup BusinesServer software installed and running.

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

Online Documentation

On Windows NT/2000

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.

◆ *install_path*\NetBackup\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.

◆ *install_path*\NetBackup\ReadmeCl.txt

   The client readme file (ASCII format).

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 on-line versions of these release notes and other documents:

◆ The release notes and the getting started guide are in the following files:

`/cdrom/NetBackup_Release_Notes.pdf`

`/cdrom/NetBackup_Release_Notes.txt`

`/cdrom/NetBackup_GetStarted_UnixServer.pdf`

◆ Other documentation is in the `/cdrom/Doc/` directory.

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.

Conventions

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

Type Style

Table 1. 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.
Sans 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 and is used to call attention to information that makes it easier to use the product or helps you to avoid problems.

> **Caution** This is a Caution and is used to warn you about situations that can cause data loss.

Key Combinations

Some keyboard command sequences use two or more keys at the same time. For example, you may have to hold down the Ctrl key before you press another key. When this type of command is referenced, the keys are connected by plus signs. 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.

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.veritas.com/
```

VERITAS Customer Support can also be reached through electronic mail at:

```
support@veritas.com
```

New Features In This Release   1

Note Unless otherwise stated, the features described in this chapter apply to both
NetBackup BusinesServer and DataCenter.

General NetBackup

1. NetBackup licensing

    As of 3.4, NetBackup requires that a licensing key be entered at the time of
    installation. This allows more products to be on a single CD-ROM and will make it
    easier to add options and upgrade to newer versions of software. A customer can
    easily determine what they are licensed for by using the NetBackup administration
    interface on a Windows NT/2000 NetBackup server or a command line on a UNIX
    NetBackup server to view a central file of license information that is stored on the
    master server.

2. Limit range of ports for firewall security

    The administrator can now specify the range of ports that NetBackup can use for
    communicating between systems. This is useful for configuring communications
    through firewalls. The configuration can be performed on both clients and servers.
    Port selection can be set to be random or the highest available port in the allowed
    range.

3. Faster tape selection

    The NetBackup design has been changed to improve performance when a large
    quantity of partially-full tapes are active. Previously this situation could result in an
    excessive number of calls for tapes, which slowed down the tape selection process.

4. Faster restore in large environments

    The backup image search has been changed to improve performance when restoring
    very large numbers of files (for example, hundreds of thousands).

5. Automatic drive availability checking

The scheduler now periodically checks for the availability of drives. Previously, if all drives in a storage unit became unavailable the entire storage unit was flagged as unavailable until the next scheduling session. A manual operation, `bpschedreq -stunits`, was the only way to make the storage unit available again without terminating the scheduler.

At 3.4, the scheduler periodically checks the status of the storage unit and makes it available any time there are available drives.

6. Scheduler recognizes when tape drives are used for nonbackup purposes

Prior to 3.4, the scheduler was unaware of tape drive usage for nonbackup purposes (such as, restores and duplications) and dispatched jobs when drives were not available. The result was frequently a media mount timeout. The scheduler now knows of nonbackup drive use through the automatic-drive-availability feature (see previous item) so this problem does not occur.

7. Two-step NetBackup catalog backups

The standard catalog-backup method requires the entire catalog backup to fit on a single tape and is a problem with large catalogs. NetBackup now provides a solution with a documented, tested, and supported method for backing up the catalogs in two separate steps. The first step backs up all client backup-image data as a regular backup using a NetBackup class. The second step backs up the rest of the catalog information by using the standard catalog-backup method. This leaves only a small percentage of the catalog data subject to the single-tape restriction. The restore is also done in two steps. See the NetBackup system administrator's guide for more information.

8. Pre- and post-processing support for multiple data streams

New parameters for the `bpstart_notify` and `bpend_notify` scripts make it possible to coordinate which data stream starts or stops an application. This is useful, for example, when using multistreaming to back up databases with a NetBackup database agent that supports multiple data streams.

9. Sun PC NetLink support

NetBackup now supports backups and restores of Sun PC NetLink files.

10. Ability to restore original `atime` during restores

If you create a `/usr/openv/netbackup/RESTORE_ORIGINAL_ATIME` file on a UNIX client, NetBackup resets the `atime` for a restored file to what it was at the time of a backup. This file must not be used when a client is running VERITAS Storage Migrator or restored files can be migrated immediately because of their older `atime`.

11. NetBackup Neighborhood

Users on Microsoft Windows clients can back up files directly from Windows Explorer by right clicking on the file or folder and selecting Backup now.

12. NetBackup Wizards

    The NetBackup-Java and Windows NT/2000 interfaces have the following new wizards to facilitate quick and easy configuration of the product:

    ◆ Getting Started wizard guides you through the configuration process.

    ◆ Device Configuration wizard provides assistance in configuring devices.

    ◆ Volume Configuration wizard provides assistance in configuring tape volumes.

    ◆ Catalog Backup wizard configures NetBackup catalog backups.

    ◆ Backup Policy Configuration wizard configures backup policies (classes).

    ◆ Troubleshooter wizard provides information on resolving problems encountered during backups or restores.

    NetBackup Assistant, also a new application, provides a launch pad for the wizards. The Assistant and some of these wizards were present in the 3.3 release of NetBackup BusinesServer.

13. The following NetBackup administrative commands are now documented and supported:

    ◆ bpclassnew

    ◆ bpclinclude

    ◆ bpconfig

    ◆ bperror

    ◆ bpimmedia

    ◆ bpstuadd

    ◆ bpstudel

    ◆ bpstulist

    ◆ bpsturep

    ◆ bpverify

Windows NT/2000

1. Windows 2000 support

    NetBackup now supports Windows 2000 as both a NetBackup server and client. This includes the ability to handle new functionality such as active directory, active mount points, single instance storage, sparse files, and RSM (Removable Storage Manager).

2. UNC (universal naming convention) support on Windows NT

UNC is now fully supported and is the preferred path-naming convention for backing up network drives.

3. Compression support on PC clients

NetBackup can now be configured so Windows NT/2000, 98, 95 and Novell NetWare clients will compress backup data and uncompress restore data. This capability previously existed only for UNIX clients.

4. Windows NT/2000 tape drivers included with NetBackup 3.4.

NetBackup 3.4 includes the VERITAS tape installer. The tape installer will install VERITAS tape drivers on Windows NT/2000.

5. Microsoft Cluster Server (MSCS) support

NetBackup now supports failover from one media server or client to another in a Windows NT/2000 clustered environment. NetBackup is also able to back up and restore Microsoft Exchange in this environment. SQL Server has no clustering APIs but has been fully tested and is also supported in a clustering environment. Master server failover in a cluster is not supported at this time.

6. OTM (open transaction management) enhancements

   ◆ OTM support has been added for Windows 2000 in addition to all Netware clients supported by NetBackup.

   ◆ Controls have been added to improve administrative flexibility and reduce the size of the cache required. These include improved error handing for cache-full conditions and a new option for setting the method used to determining cache size. This new option is on the OTM tab of the NetBackup Configuration application in the Windows NT/2000 NetBackup administration interface (a Windows NT Administration Client is required to administer OTM in a UNIX only environment).

7. Two utilities are included in the *install_path*\NetBackup\bin directory in order to provide some Windows 2000 features that were not fully integrated into NetBackup in this release. These utilities are:

   ◆ W2KOption.exe provides options to control NetBackup behavior when operating on certain Windows 2000 features.

   ◆ W2KUtil.exe allow the user to backup and restore certain Windows 2000 features outside of general NetBackup backup and restore operations. These features include the Removable Storage Management (RSM) database, the Terminal Services Licensing database, and Windows Management Instrumentation (WBEM) repository.

For further information, see the *install_path*\NetBackup\bin\w2k.txt file (where by default, *install_path* is C:\Program Files\VERITAS.

NetBackup-Java

1. Native Windows NT support for NetBackup-Java and GDM (Global Data Manager)

    The NetBackup-Java interface can now be used in Microsoft Windows environments to directly administer NetBackup Windows NT/2000 servers. In addition, Global Data Manager can now be used in a pure Windows NT/2000 environment. In previous releases at least one UNIX NetBackup server had to be configured to administer a Windows NT NetBackup server through the NetBackup-Java GUI. This requires that the NetBackup-Java Windows Display Console be installed on a Windows NT/2000/98/95 computer and the NetBackup-Java application server be running on the Windows NT/2000 NetBackup master server. The NetBackup-Java Windows Display Console is included in the NetBackup 3.4 server software and requires installation. The NetBackup-Java application server is installed on all Windows NT/2000 NetBackup master servers. The NetBackup-Java application server is not installed on Windows NT/2000/98/95 NetBackup clients and, thus, direct client operations through the NetBackup-Java Backup, Archive and Restore application are not available.

2. Activating and deactivating classes from the Classes menu

    The Classes menu in the Backup Policy Management application now has commands for activating and deactivating classes. Prior to this release, this was possible only by changing the Activate general attribute for the class.

3. Activity Monitor Job Filter

    The Activity Monitor now has a Filter option on the View menu that allows you to filter the output to eliminate jobs or job data that you do not want to see.

Note The following NetBackup-Java features were included in NetBackup BusinesServer 3.3 but are new to DataCenter.

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4. To allow administration through the NetBackup-Java application in a firewall environment, the NetBackup-Java application server's port selection algorithm was changed. The NetBackup-Java GUI application and its application server uses port 13722 for its initial communication. For all subsequent communication, the NetBackup-Java application server now selects the first free port available decrementing from port number 5000 (to 1025). For more information, see the topic on the `bp.conf` file `RANDOM_PORTS` entry as documented in the NetBackup system administrator's guide.

5. The Username and Password fields of the NetBackup-Java login dialog are now editable regardless of where the targeted NetBackup-Java application server is executing (that is, the same or a different UNIX NetBackup server or client machine than where the GUI was initiated). This permits login to the application server under the root account (given knowledge of the root account password) from any user environment (that is, you do not have to login to the operating system first as root).

6. The NetBackup-Java Media and Device Management application has added support for injecting tapes into and ejecting tapes from TLD and TL8 robots.

7. The NetBackup-Java Activity Monitor and Backup Policy Management applications will preserve changes to the order and width of columns in the tables that are visible in their main application window. The state data is saved during a normal shutdown of the NetBackup-Java application via the launch window Exit command on the File menu.

8. The NetBackup-Java Backup, Archive, and Restore (jbpSA) application has been reimplemented with many usability improvements. Some of these are: larger font, resizable window, new calendar controls that make it easier to select dates, and the ability to delete progress files from within the Task Progress tab.

9. The NetBackup-Java administrator application can launch the VERITAS Storage Migrator File System Analyzer tool. The file system analyzer presents file system statistics through simple graphical charts. By using this tool, administrator's can determine the benefits of using storage migrator by interactively analyzing file system data and evaluating configuration alternatives. For more information on VERITAS Storage Migrator and the File System Analyzer, launch the Analyzer tool and refer to the online help.

Media Manager

1. Automatic device discovery and configuration

    NetBackup can now discover and automatically configure devices via 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. This capability is available on Windows NT/2000, Solaris, HP-UX, and Tru64. Note: It does not yet include robotics managed through an outside program interface, such as ADIC DAS, Fujitsu LMF, IBM ATL, StorageTek ACSLS/LibStation, and Microsoft RSM.

2. RSM (Removable Storage Manager) support

    A Windows 2000 NetBackup 3.4 server can use either RSM (supplied with Windows 2000) or the NetBackup Media Manager to control its robotic backup devices. Standalone drives under RSM are not supported. NetBackup integrates Media Manager with RSM in much the same way as it does with STK ACSLS. Note that RSM provides different device support and functionality compared to Media Manager. You should consider this when choosing which application to use.

3. vmd authentication and authorization

Authentication and authorization is supported for the Media Manager volume daemon (`vmd`) (on UNIX) and the NetBackup Volume Manager service (on Windows NT/2000). It is based on the NetBackup implementation of authorization and authentication and includes use of a preferred group configuration entry. `vmd` access is configured and controlled separately for each media server.

4. Starting and stopping Media Manager robotic control services on Windows NT/2000 and daemons on UNIX.

   It is no longer necessary to start or stop robotic control services/daemons manually. In the case of library sharing where a device host only has control for a robot configured, the `ltid` service/daemon recognizes this and starts the appropriate robotic control services/daemons. Also, the `stopltid` function now recognizes robot control services/daemons which are running even when *ltid* is not and terminates them. In other words, all needed device services/daemons are started by starting `ltid` and stopped using `stopltid`. Note that two ACS robotic control processes, acsssi and acssel, are left running (on UNIX only) since they are needed by the ACS test utility.

5. Increased number of supported TLD drives to 80 and number of supported TLD slots to 1630.

6. Increased number of supported TL8 drives to 64 and number of supported tl8 slots to 1200.

7. Media Manager can now be configured to automatically purge debug logs. For `vm.conf` entries, see the system administrator's guide for Media Manager.

8. An option is now presented in the Java and NT Media & Device Management interfaces to automatically empty the inport/mailslot of TL8 robots. This faciliates easier media entry.

9. The Automated Volume Recognition (AVR) drive scanning delay is now configurable using the `vm.conf` `AVRD_SCAN_DELAY` option. The default continues to be a 15 second delay between scan cycles.

10. Multihosted Drives (SSO) has been extended to include TL8 robots.

11. For ACS robotic control on UNIX servers, support for configurable RPC packet return paths were added. A `vm.conf` entry, `ACS_HOSTNAME`, can be used to allow multiple network interface card (NIC) and highly available (HA) configurations to work if network routing changes can not be made.

12. Speed enhancements for determination of drive readiness in TL8 and TS8 robots.

Alternative Backup

1. FlashBackup support on HP-UX

NetBackup FlashBackup, a separately-priced option, is now available for HP-UX 11.0 with VxFS 3.3.2 or HP JFS 3.3. It was previously supported only on Solaris.

2. NetBackup for NDMP support for ACSLS

ACSLS controlled drives can now be attached to an NDMP server and used by NetBackup. However, check with your NDMP vendor to ensure that the NDMP client supports the ACSLS drive types you intend to use.

3. NetBackup for NDMP support for EMC Celerra

NetBackup for NDMP now supports backup and restore of EMC Celerra file servers running EMC NAS 2.1.15.2 or later.

Database Agents

1. Microsoft Exchange individual-mailbox backup and restore

The NetBackup 3.4 Exchange agent supports backups and restores of individual user mailboxes in Microsoft Exchange, rather than having to restore the entire Exchange Server.

2. SQL Server 2000 support

The NetBackup 3.4 SQL-Server agent will support the latest version of Microsoft SQL Server 2000 when it is available. This support will include multiple instance support (utilizing ODBC), partial database restore, transaction log marks, plus other SQL 2000 features. If you have SQL Server product. When this support is added it will be available as a patch on the VERITAS support web site (support@veritas.com) for customers that have the NetBackup 3.4 SQL-Server agent.

3. SAP agent dual-stream capability

The NetBackup 3.4 SAP agent supports sending dual streams of data to NetBackup. This allows the creation of identical backup copies for redundancy and off-site vaulting.

4. SAP agent auto retry of failed streams

The NetBackup 3.4 SAP agent supports re-initiating a failed stream in a multi-stream configuration before reporting a failed backup job to SAPDBA. The number of retries can be set in the SAP backint `util` file.

5. Lotus Notes partitioned-server support

The NetBackup 3.4 Lotus Notes agent can back up and restore partitioned Lotus Notes servers for version 5.0 of Lotus Notes.

6. NetBackup for Oracle 3.4 - Advanced BLI Agent (applies only to Solaris and HP-UX)

The NetBackup for Oracle 3.4 - Advanced BLI Agent package supports all block-level incremental-backup methods. This includes the script-based methods that were a part of Database Edition for Oracle and the new Proxy Copy BLIB fully integrated with Oracle RMAN 8.1.5. This product also has the following new features:

◆ No data clone option

An option to allow *no data clones*, with the script-based methods (non-RMAN proxy copy) of implementing BLIB, permits the backup and restore of multiple SIDs on the same file system. At 3.4, NetBackup also accepts multiple data streams from the same storage checkpoint, thus providing higher performance and greater flexibility in database design.

◆ Multiple streams option

An option to accept multiple data streams during an Oracle backup provides higher performance backups and restores.

7. Oracle GUI-based RMAN script generator on Windows NT/2000

NetBackup 3.4 for Oracle includes a graphical-user-interface based RMAN script generator. This tool greatly simplifies normally complex configuration tasks for Oracle DBAs or Windows NT/2000 system administrators that are unfamiliar with RMAN backups and restores.

NetBackup BusinesServer

The following new features apply only to NetBackup BusinesServer

1. Client-expansion pack

A separately-priced option is now available that permits the backup of four additional clients, thus increasing the maximum to eight. This allows additional expansion in the NetBackup BusinesServer environment before it is necessary to upgrade to NetBackup DataCenter.

2. Lotus Notes support

Lotus Notes is now supported as an optional agent in order to provide hot backup capability for Lotus Notes to NetBackup BusinesServer users.

3. NDMP support

The NetBackup for NDMP separately-priced option is now available for NetBackup BusinesServer. This will permit BusinesServer customers to back up and restore data on a single network-attached storage device. No three-way NDMP support in a BusinesServer configuration (a single network-attached storage device only).

NetBackup BusinesServer and DataCenter Feature Differences

The following describes feature differences between NetBackup BusinesServer and NetBackup DataCenter.

1. Server and client support

   Servers:

   NetBackup BusinesServer does not support all the hardware and operating systems supported by NetBackup DataCenter. Those supported are:

   ◆ Windows NT 4.0 and Windows 2000

   ◆ HP-UX 11.0

   ◆ Solaris 2.6, 2.7, 2.8

   Clients:

   NetBackup BusinesServer can support up to four remote clients in addition to the server as a client. A separately priced client-expansion pack is available that expands the number of clients to eight. NetBackup DataCenter supports an unlimited number of clients. BusinesServer configurations can include a single network attached storage (NAS) file server with the NetBackup for NDMP separately-priced option.

   NetBackup BusinesServer does not support Auspex FastBackup (NS6000, NS8000) clients.

2. Master and media server clusters

   NetBackup BusinesServer supports only one server (the master). Remote media servers are not supported. NetBackup DataCenter supports remote media servers.

3. Device support

   ◆ Remote host support for Media Manager

   Robots must connect to the NetBackup BusinesServer where they are configured (also see Library sharing below). They cannot connect to remote media servers as is supported by NetBackup DataCenter.

   ◆ Library sharing

   For NetBackup BusinesServer, all the drives in a robot and the robotic control must connect to the same server (except in the case of NDMP). NetBackup DataCenter supports robots where different drives can attach to different servers. The robotic control for NetBackup DataCenter, in some instances, can also be on a server that is separate from the drives.

   ◆ Medium to large robotic support

NetBackup BusinesServer supports only the robots defined in the list of supported robots by vendor that appears on the VERITAS support web page (see "Supported Peripherals by Vendor" on page 38. These robots are limited to two drives and 30 slots, based on SCSI mode sense information returned from the robot. NetBackup DataCenter supports higher capacity robots.

◆ Maximum slots per robot

A robot used by NetBackup BusinesServer is limited to 30 slots, based on SCSI mode sense information returned from the robot.

◆ Drives per server

BusinesServer supports only two drives per server. These drives can be a combination of robotic and standalone drives. For example, two drives in a robot or one in a robot and one standalone.

◆ Maximum robots per server

NetBackup BusinesServer supports one robot per server. NetBackup DataCenter supports an unlimited number of robots.

4. Volume level Andrew File System

NetBackup BusinesServer does not support the volume level Andrew File System. This feature is standard with NetBackup DataCenter.

5. Multiplexing

Multiplexing per storage unit and schedule is limited to eight for NetBackup BusinesServer. The multiplexing limit for NetBackup DataCenter is 32.

6. Concurrent jobs per class

NetBackup BusinesServer allows a maximum of four concurrent jobs per class (eight with the separately-priced client expansion pack). There is no limit for NetBackup DataCenter.

7. Follow NFS (Unix) and Backup Network Drives (Windows NT)

NetBackup BusinesServer does not support either of the above settings, which allow backing up NFS mounted directories (UNIX) or network drives (Windows NT). NetBackup DataCenter supports both settings.

8. Concurrent backups per client

NetBackup BusinesServer supports a maximum of four concurrent backups per client (eight with the separately-priced client expansion pack). There is no limit for NetBackup DataCenter.

9. Storage Migrator (HSM)

NetBackup BusinesServer does not support Storage Migrator on either UNIX or Windows NT/2000. NetBackup DataCenter supports Storage Migrator on both. Storage Migrator support is planned for future releases of NetBackup BusinesServer.

10. Separately-Priced Options Not Available For NetBackup BusinesServer

The following separately-priced options are available only for NetBackup DataCenter. NetBackup BusinesServer does not support them.

◆ NetBackup FlashBackup

◆ Block-level incremental backup and restores (available with NetBackup for Oracle Advanced BLI Agent)

◆ NetBackup for EMC

◆ Shared Storage Option

◆ NetBackup Plus Module for Tivoli

◆ Database agents

The following separately-priced database-agent products are not available for NetBackup BusinesServer:

◆ NetBackup for DB2

◆ NetBackup for SAP

◆ NetBackup for NCR Teradata

11. Standard NetBackup DataCenter features that available only as separately-priced options for NetBackup BusinesServer:

◆ Open Transaction Management (Windows NT/2000 and Novell)

◆ Intelligent Disaster Recovery for Windows NT/2000

Supported Platforms and Peripherals   2

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

Supported Platforms

The following table describes hardware and operating system combinations supported by this release of NetBackup BusinesServer and NetBackup DataCenter.

◆ 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.

Table 2. NetBackup DataCenter Supported Platforms

Hardware Type	Operating System	Server OS Version	Client OS Version	Notes
Auspex	NetOS	1.9M1Z3 1.9M1Z4	1.9M1Z3 1.9M1Z4	
Compaq Alpha	Digital UNIX	4.0D	4.0D	
Compaq Alpha	Tru64 UNIX	4.0F, 5.0, 5.0a	4.0F, 5.0, 5.0a	
Compaq Alpha	Windows/NT	NT 4.0, Windows 2000	NT 4.0, Windows 2000	
Cray	UNICOS	----	10.0.x	
Data General (Intel)	DG/UX	----	R4.20MU02	a
HP9000-700	HP-UX	10.20, 11.0	10.20, 11.0	
HP9000-800	HP-UX	10.20, 11.0	10.20, 11.0	
IBM RS6000	AIX	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	
Intel 386, 486, Pentium	Novell NetWare	----	3.12, 3.2, 4.10, 4.11, 4.2, 5.x	b
Intel 386, 486, Pentium	OS/2	----	Warp 3, 4	b
Intel 486, Pentium	Windows	----	Windows 95, 98	
Intel 486, Pentium	Windows	NT 4.0, 2000	NT 4.0, 2000	c
Intel x86	SCO	----	OpenServer 5.0.5	
Intel 386	FreeBSD	----	3.3	
Intel x86	Linux	----	RedHat 5.2, 6.0, 6.1, 6.2 Caldera OpenLinux 2.2 SuSe 6.1 TurboLinux 3.6 Debian GNU/Linux 2.1	d
Intel x86	SCO	----	UnixWare 7.0.1, 7.1	
Intel x86	Solaris	----	2.6, 7, 8	
Macintosh (680x0 or PowerPC)	MacOS	----	7.5.5 to 9.x	
Macintosh (PowerPC)	MacOS X Server	----	1.0, 1.2	

Table 2. NetBackup DataCenter Supported Platforms (continued)

Hardware Type	Operating System	Server OS Version	Client OS Version	Notes
NCR	UNIX SVR4MP-RAS	3.02	3.02	
Pyramid	ReliantUNIX	5.43 C20, C30	5.43 C20, C30	
Sequent	DYNIX/ptx	4.4.2, 4.4.4, 4.5	4.4.2, 4.4.4, 4.5	e
SGI	IRIX	6.5 to 6.5.5	6.5 to 6.5.5	
SPARC/UltraSPARC	Solaris	2.6, 7, 8	2.6, 7, 8	

a. Only on Intel processor-based AViiON servers.

b. Does not support NetBackup Encryption.

c. Requires Windows NT 4.0 Service Pack 4 or later.

d. Requires Motif version 2.1 in order to use the user interface, xbp.
   Motif is available from www.opengroup.org.

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

f. The following NetBackup client support is available through special order:

  - Compaq running OpenVMS VAX V7.2-1

  - Compaq running OpenVMS Alpha for VAX V7.2-1

  - HP3000 running MPE/iX C55.08 (this support includes TurboStore API)

Table 3. NetBackup BusinesServer Supported Platforms

Hardware Type	Operating System	Server OS Version	Client OS Version	Notes
Compaq Alpha	Digital UNIX	----	4.0D	
Compaq Alpha	Tru64	----	4.0F, 5.0, 5.0a	
Compaq Alpha	Windows	----	NT 4.0	
Data General (Intel)	DG/UX	----	R4.20MU02	a
HP9000-700	HP-UX	11.0	11.0	
HP9000-800	HP-UX	11.0	11.0	
IBM RS6000	AIX	----	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	
Intel 386, 486, Pentium	Novell NetWare	----	3.12, 3.2, 4.10, 4.11, 4.2, 5.x	b
Intel 386, 486, Pentium	OS/2	----	Warp 3, 4	b
Intel 486, Pentium	Windows	----	Windows 95, 98	
Intel 486, Pentium	Windows	NT 4.0, 2000	NT 4.0, 2000	c
Intel x86	SCO	----	OpenServer 5.0.5	
Intel 386	FreeBSD	----	3.3	
Intel x86	Linux	----	RedHat 5.2, 6.0, 6.1 Caldera OpenLinux 2.2 SuSe 6.1 TurboLinux 3.6 Debian GNU/Linux 2.1	d
Intel x86	SCO	----	UnixWare 7.0.1, 7.1	
Macintosh (680x0 or PowerPC)	MacOS	----	7.5.5 to 9.x	
Macintosh (PowerPC)	MacOS X Server	----	1.0, 1.2	
NCR	UNIX SVR4MP-RAS	----	3.02	
Pyramid	ReliantUNIX	----	5.43 C20, C30	
Sequent	DYNIX/ptx	----	4.4.2, 4.4.4, 4.5	e
SGI	IRIX	----	6.5 to 6.5.5	

Table 3. NetBackup BusinesServer Supported Platforms (continued)

Hardware Type	Operating System	Server OS Version	Client OS Version	Notes
SPARC/UltraSPARC	Solaris	2.6, 7, 8	2.6, 7, 8	

a. Only on Intel processor-based AViiON servers.

b. Does not support NetBackup Encryption.

c. Requires Windows NT 4.0 Service Pack 4 or later.

d. Requires Motif version 2.1 in order to use the user interface, xbp.
   Motif is available from www.opengroup.org.

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

f. The following NetBackup client support is available through special order:

  - Compaq running OpenVMS VAX V7.2-1

  - Compaq running OpenVMS Alpha for VAX V7.2-1

  - HP3000 running MPE/iX C55.08 (this support includes TurboStore API)

Platforms Not Supported As Of This Release

Table 4. Platforms Not Supported As Of This Release

Hardware Type	Operating System	Server OS Version	Client OS Version
Cray/J90	UNICOS	---	9.x
Digital Alpha	Digital UNIX	3.2 214	3.2 214
IBM RS6000	AIX	4.1.5, 4.2	4.1.5,4.2
Motorola	SVR4.0		4.2
Pyramid	ReliantUNIX	5.43 B0078	5.43 B0078
SGI	IRIX	6.2, 6.4	6.2, 6.4
Sequent	DYNIX/ptx	4.2.1, 4.2.3	4.2.1, 4.2.3
Sun4/SPARC/UltraSPARC	Solaris	2.5, 2.5.1	2.5, 2.5.1

Platforms Not Supported As Of the Next Major Release

The next major release of NetBackup will no longer contain software to upgrade some operating system levels and platforms to include new product features and capabilities. Backward compatibility with 3.2 NetBackup client software will be retained for at least one release level.

Table 5. Platforms Not Supported As Of the Next Major Release

Hardware Type	Operating System	Server OS Version	Client OS Version
Auspex	Auspex	1.92M1Z3, 1.92M1Z4	1.92M1Z3, 1.92M1Z4
Compaq Alpha	Tru64 UNIX	4.0F, 5.0	4.0F, 5.0
Compaq Alpha	Windows	NT 4.0, Windows 2000	NT 4.0, Windows 2000
Cray J90	UNICOS	--	All levels
HP9000-700	HP-UX	10.20	10.20
HP9000-800	HP-UX	10.20	10.20
IBM RS6000	AIX	4.2.1	4.2.1
Intel x86	Linux (RedHat)	---	5.2 (kernel 2.0)
Intel 386, 486, Pentium	Novell	--	3.12, 3.2, 4.10, 4.11
xIntel 386, 486, Pentium	OS/2	--	Warp 3
Intel x86	SCO	--	All levels
Intel x86	Solaris	--	2.6
Macintosh (680x0 or Power PC)	MacOS	--	7.5.5
Pyramid	ReliantUNIX	5.43 C20, C30	5.43 C20, C30
SPARC/UltraSPARC	Solaris	2.6	2.6

Database Agent Platform Support

The following tables define the platform support for NetBackup database agents (sometimes called extensions). These tables contains references such as 4.x. In these instances, the x refers to all revisions that NetBackup supports as stated in Table 2, NetBackup Supported Platforms. For example, AIX 4.x means AIX 4.2, 4.3, 4.3.1, 4.3.2, and 4.3.3.

NetBackup BusinesServer supports the following database agents:

◆ NetBackup for Oracle

◆ NetBackup for Sybase

◆ NetBackup for Informix

◆ NetBackup for Microsoft Exchange

◆ NetBackup for Microsoft SQL Server

◆ NetBackup for Lotus Notes

Table 6. NetBackup for Oracle Support (Part 1 of 2)

Oracle version		Data General (AViiON) DG/UX	Compaq Alpha Digital UNIX	HP9000 HP-UX	IBM RS6000 AIX	Intel Pentium
Oracle 7.2.3	EBU 2.0.12.4	----	----	10.20	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	----
Oracle 7.3.x	EBU 2.1	----	4.0D	10.20	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	----
Oracle 7.3.4	EBU 2.2	R4.20	4.0D	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0,
Oracle 8.0.3	RMAN	----	4.0D	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	----
Oracle 8.0.4	RMAN	4.20	4.0D	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0,
Oracle 8.0.5	RMAN	R4.20	4.0D	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0,

Table 6. NetBackup for Oracle Support (Part 1 of 2) (continued)

Oracle version		Data General (AViiON) DG/UX	Compaq Alpha Digital UNIX	HP9000 HP-UX	IBM RS6000 AIX	Intel Pentium
Oracle 8.0.5.1	RMAN		4.0D	10.20, 11.0, 11.0/64-bit	4.3, 4.3.1, 4.3.2, 4.3.3	----
Oracle 8.0.6	RMAN	----	4.0D	10.20, 11.0	----	----
Oracle 8.1.5	RMAN	----	4.0D	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0
Oracle 8.1.5	RMAN/ Proxy	----	----	11.0	----	----
Oracle 8.1.6	RMAN	----	----	10.20, 11.0, 11.0/64-bit	----	NT 4.0, Windows 2000
Oracle 8.1.6	RMAN/ Proxy	----	----	11.0	----	

Table 7. NetBackup for Oracle Support (Part 2 of 2)

Oracle version		NCR SVR4MP-RAS	SGI IRIX	Sequent DYNIX/ptx	SUN Solaris
Oracle 7.2.3	EBU 2.0.12.4	----	----	----	2.6
Oracle 7.3.x	EBU 2.1	----	----	----	2.6
Oracle 7.3.4	EBU 2.2	3.02	6.5 to 6.5.5	4.4.2, 4.4.4	2.6, 7
Oracle 8.0.3	RMAN	----	----	----	2.6
Oracle 8.0.4	RMAN	3.02	----	4.4.2, 4.4.4	2.6
Oracle 8.0.5	RMAN	3.02	6.5 to 6.5.5	4.4.2, 4.4.4	2.6, 7
Oracle 8.0.5.1	RMAN	3.02	----	----	2.6
Oracle 8.0.6	RMAN	3.02	----	----	2.6, 7
Oracle 8.1.5	RMAN	----	----	----	2.6, 7
Oracle 8.1.5	RMAN/ Proxy	----	----	----	2.6, 7
Oracle 8.1.6	RMAN	----	----	----	2.6, 7
Oracle 8.1.6	RMAN/ Proxy	----	----	----	2.6, 7

Table 8. NetBackup for Informix Support (part 1 of 2)

Informix version	HP9000 HP-UX	IBM RS6000 AIX	SUN Solaris
Informix 7.21, 7.23, 7.24	10.20	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	2.6, 7
Informix 7.30	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	2.6, 7
Informix7.31	10.20, 11.0, 11.0/64-bit	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	2.6, 7
Informix 8.21	----	----	2.6, 7
Informix 8.30	----	----	2.6, 7
Informix 9.14	----	----	2.6, 7
Informix 9.20	----	----	2.6, 7

Table 9. NetBackup for Informix Support (part 2 of 2)

Informix version	Compaq Alpha Digital UNIX	SGI IRIX	Sequent DYNIX/ptx
Informix 7.24	4.0D	----	----
Informix 7.31	4.0D	6.5 to 6.5.5	4.4.2, 4.4.4
Informix 8.21	----	----	4.4.2, 4.4.4
Informix 9.14	----	----	4.4.2, 4.4.4
Informix 9.20	----	----	----

Table 10. NetBackup for Sybase Support

Sybase version	HP9000 HP-UX	IBM RS6000 AIX	SUN Solaris	SGI IRIX	DEC
Sybase 11.x B/R API	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	2.6, 7	6.5 to 6.5.5	4.0D

Table 10. NetBackup for Sybase Support

Sybase version	HP9000 HP-UX	IBM RS6000 AIX	SUN Solaris	SGI IRIX	DEC
Sybase 11.9.x B/R API	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	2.6, 7	6.5 to 6.5.5	4.0D

Table 11. NetBackup for SAP Support (available only for NetBackup DataCenter)

SAP version	Compaq Alpha Digital UNIX	Compaq Alpha Windows NT	HP9000 HP-UX	IBM RS6000 AIX	Intel Pentium	SUN Solaris
Backint R/3, version 3.x	4.0D	NT 4.0	10.20, 11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0, Windows 2000	2.6, 7
Backint R/3, version 4.x	4.0D	NT 4.0	11.0	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0, Windows 2000	2.6, 7

Table 12. NetBackup for Microsoft SQL Server Support

SQL version	Compaq Alpha	Intel Pentium
SQL 6.5 named pipes	NT 4.0 [a]	NT 4.0 [a]
SQL 7.0 VDI	NT 4.0 [a]	NT 4.0 [a], Windows 2000
SQL2000 VDI	----	NT 4.0 [b], Windows 2000

a. Requires Windows NT Service Pack 4 or greater and SQL Server Service Pack 1.

b. Requires Windows NT Service Pack 5 or greater.

Table 13. NetBackup for DB2 Support (available only for NetBackup DataCenter)

DB2 version	IBM RS6000 AIX	Intel Pentium	Sun Solaris
DB2 UDB 5.2 SQLUV API	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0	2.6, 7

Table 13. NetBackup for DB2 Support (available only for NetBackup DataCenter)

DB2 version	IBM RS6000 AIX	Intel Pentium	Sun Solaris
DB2 UDB EEE 5.2, SQLUV API	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0	2.6, 7
DB2 UDB 6.1 SQLUV API	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0, Windows 2000	2.6, 7
DB2 UDB EEE 6.1 SQLUV API	4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0, Windows 2000	2.6, 7

Table 14. NetBackup for Microsoft Exchange Support

Microsoft Exchange version	Compaq Alpha	Intel Pentium
Exchange 5.0 ESE API	NT 4.0	NT 4.0, Windows 2000
Exchange 5.5 ESE API	NT 4.0	NT 4.0, Windows 2000

Table 15. NetBackup for Terradata Support

Teradata version	NCR SVR4MP-RAS	Intel Pentium
TNT 3.0		NT 4.0[a], Windows 2000
V2R3	V3.02	

a. Requires Windows NT Service Pack 5 or greater.

Table 16. NetBackup for Lotus Notes Support

Lotus Notes version	Sun Solaris	IBM RS6000 AIX	Intel Pentium
R5.03	2.6, 7	4.3, 4.3.1, 4.3.2, 4.3.3	NT 4.0, Windows 2000

Devices and Applications Not Supported As Of This Release

◆ TC4 robotics not supported are LAGO 4-mm DataWheel, STK 9704

◆ TC8 robotics not supported are IGM carousel, LAGO 8-mm DataWheel, STK 9708

◆ RS232 (serial) robotic control for SCSI-based robotics

◆ Operator Location management

◆ Mountain Gate D360

◆ Exabyte 8200

◆ ACSLS 5.1.1

◆ IBM ATL versions lower than version 4.0.1.0 on AIX

◆ IBM lmcpd packages lower than version 4.0.1.0 on Solaris

◆ ADIC DAS versions lower than 1.30C7

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 Alpha

◆ HP-UX

◆ IBM AIX

◆ Novell NetWare

◆ IBM DYNIX

◆ SGI IRIX

◆ Sun Solaris

◆ Windows NT/2000

Binary Sizes

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

Table 17. Binary Sizes

Hardware Type	Operating System	NetBackup Server	Media Manager	NetBackup Client
Auspex	Auspex	73 MB	38 MB	8001 KB
Compaq Alpha	OSF/1, Digital UNIX	96 MB	45 MB	7305 KB
Compaq Alpha	Tru64 UNIX	96 MB	45 MB	7305 KB
Cray J90	UNICOS	--	--	32 MB
Data General	DG/UX	--	--	4777 KB
Compaq Alpha	Windows NT	79.5 MB	11 MB	4160 KB
HP9000-700	HP-UX 10.20, 11.0	137 MB	28 MB	8323 KB (a)
HP9000-800	HP-UX 10.20, 11.0	141 MB	31 MB	9067 KB (a)
IBM RS6000	AIX	91 MB	39 MB	8648 KB
Intel 386	FreeBSD	--	--	3707 KB
Intel 386, 486, Pentium	OS/2	--	--	12.7 KB
Intel 486, Pentium	Windows 95, 98	--	--	2.7 KB
Intel Pentium	Windows NT/2000	70 MB	9 MB	12.7 KB
Intel x86	Linux	--	--	4429 KB (b)
Intel x86	SCO UnixWare	--	--	5858 KB (c)
Intel x86	SCO OpenServer	--	--	4778 KB (c)
Intel x86	Solaris	--	--	7036 KB
Intel 386, 486, Pentium	Novell NetWare	--	--	NLM, 1.2 KB GUI, 756 KB
Macintosh (680x0 or PowerPC)	MacOS	--	--	5083 KB
NCR	UNIX SVR4MP-RAS	64 MB	27 MB	5821 KB
Pyramid	ReliantUNIX	77 MB	28 MB	7132 KB
SGI	IRIX	90 MB	39 MB	8691 KB
Sequent	DYNIX ptx	78 MB	35 MB	7389 KB

Table 17. Binary Sizes (continued)

Hardware Type	Operating System	NetBackup Server	Media Manager	NetBackup Client
SPARC/UltraSPARC	Solaris 2.6, 7, 8	150 MB	34 MB	8084 KB (d)

a. A total of 17228 KB installed on the server with the NetBackup-Java interface.

b. Applies to all the supported versions of Linux.

c. A total of 10474 KB installed on the server.

d. A total of 14958 KB installed on the server for Solaris 2.6, 7, 8 and Intel x86 Solaris.

Supported Peripherals

Supported Peripherals by Vendor

For information on supported peripherals by vendor, go to the VERITAS support web page

```
www.support.veritas.com/
```

Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and on the product page look under support options.

Robot Type 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 these robot types.

◆ ACS - Automated Cartridge System

◆ LMF - Library Management Facility

◆ ODL - Optical Disk Library

◆ RSM - Removable Storage Manager

◆ TL4 - Tape Library 4MM

◆ TL8 - Tape Library 8MM

◆ TLD - Tape Library DLT

◆ TLH - Tape Library Half-inch

◆ TLM - Tape Library Multimedia

◆ TS8 - Tape Stacker 8MM

◆ TSD - Tape Stacker DLT

◆ TSH - Tape Stacker Half-inch

Table 18. NetBackup DataCenter - Robot Support by Platform (Part 1 of 2)

Robot Type [1]	Compaq Tru64	HP700	HP800 [7]	IBM RS6000	SGI [10]	Solaris	Windows NT/2000
ACS [2]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LMF	no	no	no	no	no	Yes	no
ODL [3]	no	Yes	Yes [8]	Yes	Yes	Yes	no
RSM	no	no	no	no	no	no	Yes [14]
TL4 [4]	Yes	Yes	Yes [8]	Yes	Yes	Yes	Yes
TL8	Yes	Yes	Yes [8]	Yes	Yes	Yes	Yes
TLD	Yes	Yes	Yes [8]	Yes	Yes	Yes	Yes
TLH	Yes [6]	Yes [12]	Yes [12]	Yes [9]	Yes [15]	Yes [11]	Yes [13]
TLM [5]	Yes	Yes	Yes	Yes	Yes	Yes	No
TS8	Yes	Yes	Yes [8]	Yes	Yes	Yes	Yes
TSD	Yes	Yes	Yes [8]	Yes	Yes	Yes	Yes
TSH	no	no	no	Yes	Yes	Yes	no

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 drive support is available.

3. Corsair and FX drives are supported, but not 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. Appropriate patches may have to be installed for single-ended or differential for 10.x.

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

9. IBM ATL version level tested on AIX is 4.0.7.0.

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

11. IBM lmcpd package version level tested on Solaris is 4.0.5.0.

12. IBM lmcpd package version level tested on HP-UX is 4.0.5.0.

13. IBM ATL package version level tested on Windows NT 4.0 is 4.0.5.0. Robotic control is not supported on

Windows 2000 or Alpha-based Windows NT.

14. Supported only on Windows 2000.

15. IBM ATL package version level tested on IRIX is 4.0.1.0.

Table 19. NetBackup DataCenter - Robot Support by Platform (Part 2 of 2)

Robot Type [1]	Auspex (HP)	Auspex (SP)	NCR	Pyramid	Sequent
ACS [2]	no	no	Yes	Yes	Yes
LMF	no	no	no	no	no
ODL [3]	Yes	no	no	no	no
RSM	no	no	no	no	no
TL4	Yes	no	no	no	Yes
TL8	Yes	no	no	no	Yes
TLD	Yes	Yes	Yes	Yes [5]	Yes
TLH	Yes	no	Yes [4]	Yes [4]	Yes [4]
TLM [3]	Yes	no	Yes	Yes	Yes
TS8	Yes	no	no	no	Yes
TSD	Yes	Yes	no	no	no
TSH	no	no	no	no	no

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 drive support is available.

3. DAS media types supported are 3480, 3590, DEC, DLT, 8 mm, 4 mm, and DTF. DAS media types not listed here are not supported. DAS version level tested is 1.30C7.

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

5. No robotic control (tldd is supported, tldcd/tldtest are not).

Table 20. NetBackup BusinesServer - Robot Support by Platform

Robot Type [1]	HP700	HP800	Solaris	Windows NT/2000
RSM	no	no	no	Yes [4]
TL4 [2]	Yes	no [3]	Yes	Yes
TL8	Yes	no [3]	Yes	Yes

Table 20. NetBackup BusinesServer - Robot Support by Platform (continued)

TLD	Yes	Yes [3]	Yes	Yes
TS8	Yes	no [3]	Yes	Yes
TSD	Yes	Yes [3]	no	Yes

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

2. Supported only with Hewlett-Packard and Sony.

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

4. Supported only on Windows 2000.

Operational Notes 3

The following notes explain important aspects of NetBackup operations that may not be documented elsewhere. Unless otherwise stated, all notes apply to both NetBackup BusinesServer and NetBackup DataCenter.

General

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 (or 3.2 or earlier) software installed.

2. To upgrade from 3.4 BusinesServer to 3.4 DataCenter:

    ◆ On Windows NT/2000, enter the new license key. This is the only step required. All required software components are already installed.

    ◆ On UNIX, insert the CD-ROM, reinstall the software and enter the new license key.

3. You must use a 3.4 GA license key with NetBackup 3.4 GA products, the Beta license keys are not valid. If you try to enter a beta key, it is rejected because it has expired. If you attempt to run with a Beta key, you get a "licensed use has been exceeded" error message.

4. For Windows NT/2000 only, if you are installing and using an evaluation license key, it must be a clean install. For example, if you have 3.4 Beta NetBackup installed and want to upgrade to a 3.4 GA evaluation license, you must deinstall the Beta software and do a clean install of NetBackup 3.4 GA. The same applies for NetBackup add-on products on Windows NT/2000, such as the DataBase agents. For example, if you have 3.4 Beta NetBackup for Oracle installed and want to install 3.4 GA NetBackup for Oracle and then use an evaluation license key, you must first deinstall the 3.4 Beta version of NetBackup for Oracle.

5. If you upgrade from NetBackup 3.4 Beta to NetBackup 3.4 GA you will see the following error:

    ```
    <16>bpminlicense main: Function
    ```

```
mlic_build_feature_table(/usr/openv/var/license.txt) failed:
103system call failed
```

Ignore this error because it has no effect and the upgrade will be successful. The error occurs because the betas were released with a different version of our licensing software

6. For Microsoft Windows clients, before upgrading the operating system, first uninstall NetBackup to ensure that platform-specific registry entries are clean. Then upgrade the operating system and reinstall NetBackup.

7. Before doing an upgrade installation, exit all NetBackup applications and stop all daemons (UNIX) and services (Windows NT/2000).

8. 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, it is recommended that you click the Change button, and select Remove from the screens that follow.

9. 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 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.

10. When installing or deinstalling Netbackup for NDMP on a Windows NT/2000 media server (Intel or Alpha), you MUST stop the NetBackup Device Manager Service.

11. There are times when a Windows NT 4.0 system will require 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.

12. Due to space constraints on the VERITAS NetBackup DataCenter 3.4 CD-ROM 303-000616, some pdf files are compressed and two clients are not included, OS2 and Cray. These two clients are available on CD-ROM 303-000615, VERITAS NetBackup BusinesServer and DataCenter 3.4.

13. 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. The master and each media server must be running the same version of NetBackup. The clients can run one revision lower than the servers.

◆ 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 3.4 supports only NetBackup 3.4, 3.3 or 3.2 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 3.4 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. 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 3.4 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 (3.4)
```

14. Windows NT 4.0 service pack 4 is required on supported Windows NT NetBackup servers for this release. This brings the system DLLs to a level supporting the wizards.

15. The Motif administrator interfaces are not supported on NetBackup BusinesServer for UNIX and are not included with the software.

The xnb, xbpadm, xvmadm, xdevadm, and xbpmon applications are not included with NetBackup BusinesServer for UNIX. The NetBackup-Java interface (jnbSA) is the primary administrator interface for UNIX platforms.

16. For NetBackup DataCenter on UNIX, some Motif graphical user interfaces require a fixed-width font for columnar displays.

NetBackup Motif graphical user interfaces that display columnar text require you to use a fixed-width font. If you use a proportional font, the columns do not align correctly. If your X server defaults to a variable-width font, you can force a fixed font to be used (all systems have a font named "fixed") on either the command line or in the application defaults file. For example:

```
xnb -font fixed
```

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

18. 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 will find troff source for them in the directory `/usr/openv/netbackup/bin/goodies/man`.

19. Some command line interfaces are undocumented.

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

NetBackup

1. NetBackup uses reserved ports for `bprd`, `bpcd`, `bpdbm`, and `bpjava-msvc`.

NetBackup uses reserved ports on the client as a security measure. The reserved-port check on the client ensures that an administrative process of the server is sending the command. This can prevent backups of machines that do not allow reserved ports, such as firewall systems. In those cases, we recommend that you change the system configuration to allow access from the IP address of the NetBackup server.

2. 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, 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
```

3. 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 NT/2000).

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

On Windows NT:

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 deassigned in the volume database, regardless of the media's prior state (FROZEN, SUSPENDED, and so on).

4. On UNIX, the NetBackup version of GNU tar 1.09 is available on the CD-ROM.

Source for GNU tar version 1.09, including VERITAS modifications, is available in the Doc directory on the NetBackup Options CD-ROM. It is in compressed tar format. VERITAS assumes no responsibility for the correct installation or use of this source code.

5. 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.

6. On UNIX, backing up files with both NetBackup and dump.ffs.

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 will see 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 adminstrator's guide for UNIX.

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

Example:

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.

8. 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` activity 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 workaround to avoid this problem. Change the NetBackup catalog backup configuration so catalog backups include all the files and directories in the `/usr/open/netbackup/db` directory. If you have questions about what should be done, contact VERITAS customer support.

9. Windows 2000 and User Directed Operations

If users other than the administrator will be using the client interface on a Windows 2000 system to perform backups and restores, write permission to the *install_path*`\Veritas\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 will be aborted.

10. The NetBackup Administration Client for Windows NT is a version of NetBackup for Windows NT that can be used to remotely administer one or more UNIX or Windows NT NetBackup servers. It comes with all of the standard NetBackup Server for Windows NT interfaces and can be used to create backup policies (classes), 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 3.4 NetBackup servers, UNIX or Windows NT.

Although the Administration Client 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 NetBackup Administration Client since, for all practical purposes, using the NetBackup Server for Windows NT interfaces on the Administration Client 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 will be the server name that is being administered instead of the local server name.

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.

   We do 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 via 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, therefore, 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 and NetBackup Volume Manager service) 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 does not support robots with more than two drives, nor does it support robots with more than 30 slots.

7. On Windows NT servers, robotic control processes are stopped when the NetBackup Device Management service is stopped.

The robotic control processes, `tldcd` and `tl8cd`, are now stopped when the NetBackup Device Manager service is stopped. This change eliminates the need to manually stop and restart the robotic control process when device configuration changes are made.

8. 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.

9. UNIX Nonroot permissions for mounting and unmounting media.

For UNIX, the commands for mounting and unmounting media (`tpreq` and `tpunmount`) are released with permission modes set to 500 (-r-x------). If you want any user in the system to be able to mount tapes, the mode can be changed to 555 (-r-xr-xr-x). If you want a specific group of users to be able to mount tapes, perform commands similar to the following:

```
cd /usr/openv/volmgr/bin
chgrp tapeusers tpreq tpunmount
chmod 550 tpreq tpunmount
```

Note The following operating notes on Media Manager do not apply to NetBackup BusinesServer because they are for features that are not a part of that product.

10. Formatting disks for HP-Optical jukebox (applies only to UNIX NetBackup DataCenter) .

All platforms and operating systems do not support 1024 byte-per-sector platters. Most support only 512 byte-per-sector sizes (about 1.2 gigabytes per platter). VERITAS has tested 1024 byte-per-sector platters on both Hewlett-Packard 9000-800 and Silicon Graphics platforms. NetBackup supports only the 512 byte-per-sector sizes on Hewlett-Packard 9000-700 systems.

Before purchasing optical disk platters for a HP-Optical juke box, check your vendor documentation to determine the optical-disk sector sizes supported by your platform and operating system. If you are unsure, call your VERITAS sales representative or VERITAS technical support.

In all cases, we also STRONGLY urge you to use preformatted platters.

11. When using `xvmadm` or `vmadm`, Robot host is NONE for Storage Tek Automated Cartridge System (ACS) media and ACS entries in robot inventory pick lists.

In 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 that:

◆ 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 will be 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.

12. Automatic device discovery and configuration

◆ Auto discovery and configuration is currently available on Windows NT/2000, Solaris, HP-UX, and Tru64.

◆ 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-thru commands to the devices.

◆ On Windows NT/2000, 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, 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-thru, so devices on these adapters are not auto discovered.

- ◆ On Tru64, 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 will do 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.

◆ On a system running Windows 2000, robots configured for use by Microsoft RSM cannot be discovered.

◆ ACS, LMF, TLH, TLM, and RSM robots are not discovered.

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

◆ Optical disks are not discovered.

13. Use of SCSI Allow/Prevent on TL8 Libraries Discontinued

In NetBackup 3.2, TL8 robotic control used SCSI allow/prevent as a security mechanism to prevent unauthorized access to the robotic library. The use of SCSI allow/prevent is now disabled by default, in order to facilitate media injection. Use the `vm.conf` option `PREVENT_MEDIA_REMOVAL` if you want to enable SCSI allow/prevent for restricting access to the library.

14. The ACS Server System Interface (SSI) host used as the return path for RPC communications from the STK ACSLS/LibraryStation server is now configurable. Use a `vm.conf` entry in the form:

```
ACS_SSI_HOSTNAME = hostname
```

This can be used in multiple NIC and HA configurations to avoid making network routing table changes.

15. Multihosted Drives (Shared Storage Option) can be used in NetBackup Datacenter with standalone drives and the following robot types: ACS, TL8, TLD, TLH, and TLM. This supersedes information in the robot overview section of the Media Manager System Administrator's Guide appendixes.

16. Multihosted Drives with TLM robots requires 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. DAS server version 3.01.4 or higher may be needed.

When configuring SSO on TLM, perform the following steps, similar to those shown here where two UNIX servers are involved (server_1 has IP address xxx.xxx.xxx.xxx and server_2 has IP address yyy.yyy.yyy.yyy).

Modify the DAS server's `\ETC\CONFIG` file to create a client entry with hostname set to "any". For example:

```
client client_name = NetBackup-shared
# ip adress = 000.000.000.000
hostname = any
```

Then, place the IP addresses of the servers that will use the shared client entry in the `\MPTN\ETC\HOSTS` file on the DAS server. For example:

```
xxx.xxx.xxx.xxx server_1
yyy.yyy.yyy.yyy server_2
```

Using the DASADMIN interface, allocate the drives UP on the shared client ("NetBackup-shared").

On each of the Media Manager hosts sharing the drives, create an entry with the shared DAS client name such as the following in the `/usr/openv/volmgr/vm.conf` file:

```
DAS_CLIENT = NetBackup-shared
```

Test the DAS configuration using `robtest/tlmtest`, setting the client name (specify "client NetBackup-shared" in `tlmtest`) and running the drive status command "drstat".

17. TapeAlert is supported on NT, Solaris, HP-UX, Tru64, AIX, SGI. For more information on TapeAlert, see the Reference Topics appendix in the Media Manager system administrator's guide.

Using NetBackup With Storage Migrator (HSM)

> **Note** NetBackup BusinesServer 3.4 does not support VERITAS Storage Migrator (HSM) so the following operating notes apply only to NetBackup DataCenter.

1. If you have VERITAS HSM installed on a NetBackup client system and you are upgrading to NetBackup 3.4 on that client, you must upgrade to release 3.4 of VERITAS Storage Migrator for UNIX at the same time you upgrade to NetBackup 3.4.

   If you have VERITAS HSM Enterprise Extension installed on a NetBackup client system and you are upgrading to NetBackup 3.4 on that client, you must upgrade to release 3.4 of VERITAS Storage Migrator Remote for UNIX at the same time you upgrade to NetBackup 3.4.

   Running HSM 3.1.x with NetBackup 3.4 on the same client is an unsupported configuration.

2. Archiving migrated files.

   It is inadvisable to archive files that have been migrated by the client component of VERITAS HSM on UNIX clients where VERITAS HSM is installed. Backing up migrated files will not cause problems.

   A file migrated from a client workstation, through one of these products, 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.

3. It is inadvisable to place the NetBackup databases on a filesystem that is managed by VERITAS Storage Migrator.

NetBackup-Java Interfaces

General Items Applicable to All NetBackup-Java Applications

1. NetBackup-Java GUI application software is installed and configured only on the Solaris, HP-UX, and Windows NT/2000, 95, and 98 platforms that NetBackup supports. NetBackup client capabilities are installed and configured on Solaris Intel 2.6, 7, or 8.

2. The Activity Monitor and Device Monitor applications support activity and device monitoring of Backup Exec machines running Backup Exec version 7.3 and higher.

3. A Solaris Intel NetBackup client cannot be used as a display console for NetBackup-Java administrative applications. Only the jbpSA application is supported on this platform and is started with the jbpSA command.

4. NetBackup-Java uses a reserved port for communication with the authentication service (bpjava-msvc) of its application server program.

5. Dialog modality in Java was changed in version 1.1.6 to use "full application modality" (see Sun's Java bug report 4058370). The reason for the change was to provide consistent behavior across Java environments (the behavior had varied between CDE and other windowing environments). What this means for NetBackup-Java is that if a modal dialog (one which blocks input to other windows) is open, input is blocked for all other NetBackup-Java windows, not just the dialog's parent window. For example: assume you are using the Storage Unit Management application and the "Change Storage Unit" dialog is open. In this instance, if you select the main NetBackup-Java "launch" window and try to start another application it will not respond. You must finish entering your choices into the "Change Storage Unit" dialog (or cancel the operation) before you can interact with another NetBackup-Java application.

6. 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.

7. If you are not set up properly to display to a remote machine from where you are executing jnbSA, you will 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.

8. Due to problems in the HP-UX JRE used by NetBackup-Java you likely will not be able to display to a remote X server when starting up the NetBackup-Java applications on an HP-UX 11.0 system. It hangs with no GUI displayed and no error message. Your alternatives are:

    ◆ Execute NetBackup-Java on another Solaris or HP machine that has a graphics console and login (through the NetBackup-Java login dialog) to the target HP machine you wish to administer. This is the most straightforward and

recommended method of doing remote administration through the NetBackup-Java applications of a NetBackup server that does not have a graphics console or when the console is not accessible.

◆ Use the Java Windows Display console from a Windows NT/2000/98/95 computer.

◆ Use the Windows NT Administration client installed on a Windows NT/2000 computer.

Both the Java Windows Display console and Windows NT Administration client are explained in the *NetBackup Getting Started Guide - UNIX*.

9. Only the CDE and Motif window managers are supported.

VERITAS supports only the CDE and Motif window managers 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 due to unusual or non-standard window manager configurations and will occur randomly and infrequently. In the most common cases of misplaced or shifted components within a dialog, simply resizing the dialog will repaint the display and cause the interface to be displayed 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. The recommended window manager is CDE, with which we have seen the best overall performance.

10. 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 will not run properly if the Style Manager has the following selected: Point in Window To Make Active.

11. 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 will be one log file for every instance of the application. Normally, these log files are not large (less than two 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*.

12. You can access online help for the NetBackup-Java applications in a browser outside of the applications by opening one of the following document files.

For NetBackup BusinesServer

file:`/usr/openv/java/vrts/nbu/help/en/MainHelp.html` - **admin** applications

file:`/usr/openv/java/vrts/nbu/help/en/help.html` - jbp

For NetBackup DataCenter

file:`/usr/openv/java/vrts/nbu/helpDC/en/MainHelp.html` - **admin** applications

file:`/usr/openv/java/vrts/nbu/helpDC/en/help.html` - jbp

13. 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.
```

14. Long waits for application response and/or incomplete data may be returned in the applications as a result of invalid NetBackup configurations or inadequate file-system space in `/usr/openv/netbackup/logs`.

15. NetBackup-Java doesn't support remote display back to a Windows NT/2000/95/98 machine using any X terminal emulator software. Instead, use the NetBackup Windows Display Console..

16. NetBackup-Java does not support monochrome terminals.

17. 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.

18. To allow administration through the NetBackup-Java application executing on a machine outside the firewall, the firewall must permit access to a subset of consecutive ports in the range 5000 to 1025 and port 13722. The subset must include port 5000 and decrement from there.

The NetBackup-Java GUI application and its application server use port 13722 for its initial communication. For all subsequent communication, the NetBackup-Java application server selects the first free port available, decrementing from port number 5000.

Each execution instance of the `jbpSA` or `jnbSA` commands (that is, the UNIX NetBackup-Java GUI application startup) will require one of the ports in this range. In addition, there is one port used for communication between the master server and all the user server programs of the NetBackup-Java application server that are executing on the same UNIX NetBackup server or client.

So, at a minimum, a site has to open ports 13722, 5000 and 4999 to allow one execution instance of an NetBackup-Java application (`jnbSA` or `jbpSA` command) to access the relevant NetBackup server or client inside the firewall.

The number of consecutive free ports counting down from 5000 to open, in addition to the above, is dependent on usage and a site's security policies.

See the various port configuration options as documented in the NetBackup system administrator's guide if changes to the range of ports are required.

19. Evaluation software expiration and the NetBackup-Java GUI application.

Attempts to use the NetBackup-Java GUI application 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
```

20. The NetBackup-Java Windows Display Console is available to facilitate administration and user backup and restore operations on all supported UNIX platforms at locations where use of a Solaris or HP-UX 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 administration from a home office for emergency situations.

21. For reasonable performance of the NetBackup-Java interfaces on UNIX (`jnbSA` and `jbpSA`), VERITAS recommends using a 256 MB machine that has 128 MB RAM available to the application.

22. Windows 2000 NetBackup host access from NetBackup-Java interface as nonadministrator.

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

Activity Monitor Application

1. The initial startup time of the Activity Monitor application in non-GDM mode is dependent on the number of jobs available for display on the server.

   It is possible for Activity Monitor to hang without an indication that it ran out of memory to process all the job data. Increasing the value of the `-mx` argument on the `jre` command in the `jnbSA` script consistent with the amount of memory on the machine where `jnbSA` is executed may avoid this problem and will likely decrease the startup time of the application. Refer to the NetBackup-Java Performance Improvement Hints section of the *NetBackup System Administrator's Guide - UNIX* for more detail.

2. To allow remote job monitoring in the Activity Monitor, the NetBackup master server being monitored must include the monitoring host in the server list.

3. If using auto refresh in the Activity Monitor, the result of `kill` job operations may not become evident until a future refresh cycle in the application completes.

Backup Policy Management Application

Sort operations are intentionally disabled for the Files list. Ordering is very important due to the file directives that NetBackup features use.

NetBackup System Configuration Application

Multiple selections of the Impact Report button will result in multiple executions.

Media and Device Management Application

It is recommended that you move only one volume or volume group at a time.

Reports Application

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

Backup, Archive, and Restore Application

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 option `DISALLOW_SERVER_FILE_WRITES` is set in the `bp.conf` file this status column is blank. You can check the status of the task by selecting it to display the progress log file in the bottom area of the Task Progress section.

2. Modify dates in the Restore section could be December 31, 1969 for some directories. When restoring files, you may see a fabricated modify date of December 31, 1969 for directories that were not fully backed up. These entries appear in the directory listing for ease of navigation to directories and files that have been backed up.

3. 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.

4. 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 GUI can only be done by using the alternate client or server directed restore capabilities when logged into the NetBackup-Java application server running on a non-Windows NetBackup client.

Storage Migrator File System Analyzer (FSA) Application

The FSA application requires administrative access to file systems you want to analyze. On both NetBackup-Java capable UNIX and Windows platforms, launching of the FSA is available from the NetBackup-Java interface File menu. It is available regardless of the user name specified on the NetBackup-Java login dialog. However, if you are nonroot (or Administrator on Windows), you must use the FSA's File menu Change Server option to log in to the relevant host as root (or Administrator). Running the FSA as nonroot (or nonAdministrator) can result in partial scans of the file systems.

Problems Fixed Since the Last Release   4

This chapter describes notable problems resolved by this release of NetBackup. Unless otherwise stated, all fixes apply to both NetBackup BusinesServer and NetBackup DataCenter.

NetBackup

1. Prior to 3.4, if the `no available media` error occurred when the `DISABLE_COUNTMEDIA` file was present, the storage unit would be unavailable for the remainder of the session. If this condition occurs in 3.4, the counting of media is re-enabled for the remainder of the session so the storage units can be used with other pools, or if media becomes available.

Note The following fixes apply only to NetBackup DataCenter and either do not apply to NetBackup BusinesServer or were fixed in the 3.3 release of that product.

2. When performing incremental backups of a Novell NetWare NetBackup client with virus protection software installed, the incremental backup could sometimes appear to be close in size to full backups.

    Under NetWare 4.x or later, there is a new option that can be specified when indicating which datasets to return during a scan - `NWSM_EXCLUDE_ARCH_CHILD_DATA`. When using `NWSM_EXCLUDE_ARCHIVED_CHILDREN`, any dataset that has had its data changed or characteristics changed will be returned in the scan. When using `NWSM_EXCLUDE_ARCH_CHILD_DATA`, only datasets that have had their data changed will be returned in the scan. It is desirable to use `NWSM_EXCLUDE_ARCH_CHILD_DATA` where possible because it appears that virus scan software causes the dataset characteristics to change after a virus scan.

    The NetBackup client code has been updated to detect what version of NetWare it is running on and use `NWSM_EXCLUDE_ARCH_CHILD_DATA` if it is supported to avoid having incremental backups that are the same size as full backups.

3. When using `bp` to restore files, the class type can now be changed to either MS-SQL-Server or MS-Exchange-Server. Previously, if either of these were selected, the class type was changed to Standard.

4. Authentication no longer fails for NetBackup database-agent (extension) backups on multi-processor NT machines.

5. Eliminated the following restrictions on using NetBackup Encryption with NetBackup for Oracle as described in the 3.2 GA errata sheet.

   ◆ The four encryption related configuration options on the NetBackup client were not supported.

   ◆ Restoring an encrypted backup would fail when the NetBackup client and the NetBackup server were on same machine.

   ◆ The encryption libraries (`libvdes40.dll` and `libvdes56.dll`) previously had to reside in `%SystemRoot%\System32`.

6. Media is no longer deassigned if a storage unit is defined for a remote media server that is incorrectly configured as a master server.

7. For Windows NT, if a tape header is larger than 32K, NetBackup now checks the tape format instead of reporting a read error.

8. NDMP three-way backup no longer intermittently saves inaccurate block counts in the catalog resulting in later verify failures.

9. NDMP restores of very large directories no longer inappropriately time out after five minutes.

10. In the NetBackup administration interface for Windows NT server, multiple selected classes in the class list are now deleted. At 3.2, only the first class selected was deleted.

11. Problem is corrected where tapes could be incorrectly deassigned when fragments spanned media.

    Every 12 hours, the `bpexpdate -deassignempty` command is started, which compares the media database to the image database and deassigns media that no longer contain valid images. If backups were in progress during this operation, NetBackup could have incorrectly deassigned a tape that contained a valid image if one or more fragments of the backups spanned media. This occurred in situations where the spanned media only contained fragments for backups that were still in progress.

12. If files are deleted between the time a directory is read and the files are processed a trivial error is now reported.

    Between the time a directory is read and the files are processed, files that are deleted will get:

    ```
    ERR - Cannot lstat /work/mail/.kas.pop. Errno = 2: No such file or
    directory
    ```

These errors previously caused the NetBackup catalog backups to fail and partial success to be reported for normal filesystem backups. These are now reported as TRV (trivial) errors and do not affect the backup status.

Media Manager

1. A core dump problem in the ACS Test Utility was fixed when ACS robots have greater than 15 drives.

2. If a tape was stuck in a TLM robotic drive due to a hardware or media error, the media could not be dismounted (as expected), but the TLM robotic daemon continued trying. A change has been made so that the situation will lead to a DOWN'd drive.

3. Fixed a TL8 robotic problem where tapes in slot 0 of Exabyte 210 and Exabyte 220 robotic libraries could not be mounted.

4. The Media Manager volume daemon (NetBackup Volume Manager service) has been changed to not run out of system resources if repeated failing network connection attempts are made.

5. Mailslot operations have been fixed for TSH robots in the Windows NT/2000 Media and Device Management and Motif (xvmadm) Media Management interfaces.

6. Robotic inventory update for TLM robots was fixed to ignore optical volumes, instead of fail while trying to add optical volume entries.

7. Fixed the Media Manager device daemon (NetBackup Device Manager service) to not hit an exception condition on a TLM robotic drive cleaning request.

8. Modified Multihosted Drive robotic software to better handle drive reselection error recovery situations.

9. Robotic inventory for TLM robots will now work when more than 1000 tape volumes are in the robotic library.

10. The TLH robot control daemon was fixed to allow tape mounts to work when more than one TLH robot is controlled from the same server.

11. SCSI timeouts on robotic/tape operations that take more than 60 seconds no longer timeout on Solaris 7 in 64 bit mode.

12. Provided fixes and enhancements for Multihosted Drives (Shared Storage Option)

    ◆ Corrected a problem where standalone multihosted drives were not always getting allocated properly.

    ◆ Modified Multihosted Drives design so that only one host requires I/O access to a tape drive at a specific point in time. This allows vendors to provide customized scripts to support dynamic hardware configurations.

◆ Placed an upper limit of 180 seconds on the `AVRD_SCAN_DELAY` attribute, since higher values may adversely affect the functionality of Media Manager.

13. Fixed a problem where the AVR Daemon will leave file descriptors open if an NDMP device is not available.

14. Corrected a problem where an Exabyte 210 robot with a barcode reader under TS8 control would fail backups with an error message of "Drive does not exist in robot."

15. Fixed a problem with IBM 3590 E11 stacker robots configured as a TSH robot.

16. Fixed a problem where robot host names were being truncated to 12 characters affecting the NetBackup-Java Media and Device Management interface.

17. When using NDMP, some robot daemons would run out of file descriptors due to a problem when opening a misconfigured robot or when the network connection to an NDMP host was temporarily interrupted.

18. Increased the number of LUNs scanned to support fibre channel/SSO environments.

19. Fixed a problem on Solaris systems where SSO drives are being downed because of a Solaris st driver SCSI reserve/release problem.

20. In the NetBackup administration interface for Windows NT server, the NetBackup Media and Device Management utility now allows Empty inport to be set for TL8 robots when performing an inventory and update.

Known Problems and Limitations 5

The following list explains the known problems and limitations in this release of NetBackup and includes workarounds where known.

General

1. Jobs are not deleted from the jobs list immediately after a master server crash and reboot.

   If the master server crashes and reboots, the job monitor incorrectly assumes that jobs running at the time of the crash are still active and queued. It does delete them, however, when it starts the first backup after the reboot.

2. Uninstalling the Windows NT/2000 server or client software also uninstalls the NetBackup-Java Windows Display Console (if it is currently installed). If you subsequently want to use the Windows Display Console, you must reinstall it on the server or client.

3. On Windows NT/2000, if server and client are in different time zones you may see problems doing restores or listing images.

   Backups are done and timestamped as the server sees them. There is no accommodation for client requests specifying a TZ 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.

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

6. With the current activity monitor, you cannot kill a queued restore. A restore is in the queued state from the time it is first received until NetBackup has figured out what files are needed from each of the images.

    Other limitations with monitoring restores include:

   ◆ Some columns on the job monitor are empty for restore jobs.

◆ Unable to view detailed job monitor for restores.

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. Class and schedule name restrictions.

Do not create class or schedule names that include the comma (,) character; for example: *full, many.*

Only the UNIX NetBackup `bpadm` utility permits this syntax.

9. Files Written count (Current, Previous) in job monitor.

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 Previous Files Written does include those extra directory entries, and are slightly larger.

10. 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.

11. The UNIX NetBackup X user interface (`xbp`) for RedHat Linux was linked dynamically. This means that in order to use `xbp` you must have Motif version 2.1 installed. OpenMotif is available at `http://www.opengroup.org/openmotif`.

12. On UNIX, when initiating a user interface (`bp` or `xbp`) on SCO OpenServer Release 5.0.5 it can fail with the following error:

```
Exit status = client cannot read the mount table
```

The NetBackup executable `bpbkar` can fail when attempting a backup on SCO OpenServer Release 5.0.5 with the following error:

```
FTL - Cannot statfs <filesystem name>
Errno = 2: No such file or directory
INF - EXIT STATUS 60: client cannot read the mount table
```

The reason for this problem is that on SCO OpenServer the `mt_filsys` field of the `mnttab` structure is defined as an array of 32 characters (see config file `/usr/include/mnttab.h`) including ending null. If a mounted filesystems path exceeds this size it is truncated and the `statfs` command fails.

Until this is fixed by SCO the workaround is to not mount filesystems with a path greater than 31 characters.

13. The multiple data streams feature when used in autodiscover mode can cause a delay in the scheduling of jobs if many classes and clients use it. This problem 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 NT/2000, 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).

14. Compaq Alpha systems with the OSF/1 operating system can crash when backing up a symbolic link that has Extended File Attributes. The console may display the following type of message.

```
panic (cpu 1): ufs_getproplist: pl_descp->pl_magic
```

The crash is due to an operating system bug. The use of the `/bin/tar` command to archive the symbolic link also causes the system to crash. This problem has been seen on Digital Alpha machines running the OSF/1 version 3.2 214 operating system.

To work around this problem, add an entry for the symbolic link to the exclude list for the client or remove the symbolic link.

15. On a Windows NT/2000 NetBackup master server, no automatic update of server lists is performed on clients when a media server is added. (This applies only to NetBackup DataCenter. NetBackup BusinesServer does not support media servers.)

The NetBackup clients' server lists are not automatically updated when a media server is added on the Windows NT/2000 NetBackup master server. The clients' server lists must be manually updated. On UNIX clients, a new SERVER=*media_server_name* entry should be added to the `bp.conf` file. Other clients must have the media server name added to the server list through the client user interface.

16. No automatic update of the server lists on the master and media server when a remote media server is added. (This applies only to NetBackup DataCenter. BusinesServer does not support remote media servers.)

The server lists on the NetBackup master and media server are not updated when a media server is added on the Windows NT/2000 NetBackup master server. The server's server lists must be updated manually using the NetBackup Configuration GUI. On UNIX media servers, a new SERVER=*media_server_name* entry should be added to the `bp.conf` file. The Windows NT/2000 master server and any Windows NT/2000 media servers must have the new media server name added to the server list through the client user interface.

17. 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.

18. The new feature for detecting that a drive is in use for a nonbackup operation has a timing limitation. If a drive is requested for use by a nonbackup operation such as a restore, `bptm` does not report the drive in use for nonbackup until the tape has been successfully mounted. If the scheduler starts a job that needs the drive during this time period, it will not recognize that the drive is not available.

19. On UNIX, alternate client restores can set the UIDs or GIDs incorrectly when the UIDs or GIDs are too long.

The tar header has a fixed amount of space for the UID and GID. If the UID or GID exceed the space provided when converted to octal characters, then overflows can result in the tar header containing the wrong value. During restores to the same client this is not a problem because the uname and gname are used to look up the UID and GID and NetBackup uses what is returned by `getpwnam()` and `getgrnam()`. However, for an alternate client restore, the two machines can have different `/etc/passwd` and `/etc/group files`. If these files are different, the `getpwnam()` or `getgrnam()` can fail and NetBackup will set the UID or GID to the decoded values. When the decoded values do not fit in the tar header, the excess leading octal digits are lost and the files are restored with an incorrect UID or GID. UIDs and GIDs between 0 and 16777215 are supported in this release without overflows. Previous releases were limited to values up to 262143.

A possible solution is to share `/etc/passwd` and `/etc/group` files between the machines you plan to cross restore on (or use NIS).

20. 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.

21. On UNIX, `bprd` or `bpdbm` fails to obtain its required port.

If `bprd` is terminated using the `kill` command it may be unable to bind to its assigned port when next initiated. If the problem persists longer than ten minutes, you may need to reboot the server in order to clear the problem.

If `bpdbm` is terminated using the `kill` command rather than the `/usr/openv/netbackup/bin/bpdbm -terminate` command, it may be unable to bind to its assigned port when next initiated. If the problem persists longer than ten minutes, you may need to reboot the server in order to clear the problem.

This problem may be identified by lines in the process activity log similar to the following:

```
<16> getsockbound: bind() failed, Address already in use (114)
<32> listen_loop: cannot get bound socket. errno = 114
<4> terminate: termination begun...error code = 146
```

Similar entries are found in the error logs.

22. 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.

23. On DEC Alpha, there is a problem with arrow key usage in the UNIX interface programs `bp` and `bpadm`.

The program terminates with a core file when arrow keys are used on scrollable displays for `bp` and `bpadm`. This problem occurs on DEC Alpha. If you want to scroll scrollable displays, use the letter keys.

24. On Windows NT/2000 NetBackup servers, backups can fail with `media write error` if maximum transfer size is less than 64 Kbytes.

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 Kbyte (1024) bytes. For the example error message above, the text we would put into the file would be 61440.

25. On Windows NT/2000, 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.

26. When Microsoft Outlook is left running during Windows NT/2000 NetBackup installation, some programs generated by InstallShield are affected. The setup program for NetBackup Server for Windows NT/2000 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.

27. When starting the Windows NT/2000 NetBackup Reports application, it takes extra time if a media server is down (NetBackup Volume Manager service (vmd) is not running). The application is gathering the list of Volume Pools, and it times out for each unavailable Media Server.

28. Alternate client restores using the AFS client type are not supported by the Backup, Archive, and Restore GUI for the Windows NT/2000 client and server (this applies only to NetBackup DataCenter. NetBackup BusinesServer does not support AFS clients).

29. If you are using NIS on an HP-UX 11 NetBackup 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.

30. If you are using NIS on an HP-UX 11 NetBackup 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.

31. 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.

32. On Windows NT/2000 NetBackup server, copies of shortcuts made from the 3.4beta VERITAS NetBackup program group do not work when you upgrade to 3.4GA. The shortcuts in the VERITAS NetBackup group are replaced by newer shortcuts during the upgrade, but copies of the shorcuts are not upgraded and no longer work. The following warning appears if you click one of these copies:

```
The Managed Software Installer failed to install the program
associated with this file.  Please contact your system
administrator.
```

If the copies are in the Startup folder, this warning also > appears when you log on. If you are required to reboot to complete the NetBackup installation (in order to activate OTM) this warning appears after the reboot, but the installation will still be successful.

To continue using a copy of the shortcut,delete the old one and create a new one from NetBackup 3.4 GA shortcut.

33. 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.

34. If a media server has both shared and nonshared drives (requires shared storage option):

◆ Do not configure any class to use only a specific storage unit that is on that media server.

◆ Do not set `MUST_USE_LOCAL_DRIVES` in the `bp.conf` file on that media server.

Either of the above can result in drive allocation problems.

35. If you use NetBackup Windows NT/2000 interface to connect to a NetBackup DataCenter server, you will not be able add or change a storage unit type that is not supported by NetBackup BusinesServer.

36. Timely detection of loss of connection from NetBackup NT master server to a media server

In certain situations, there may 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 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 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.

37. NetBackup DataCenter Installation Guide - UNIX (100-001549). In the note at the top of page 2, the reference to "Performing an Upgrade Installation" should be to page 21 instead of page 37.

38. If you have the NetBackup Advanced Reporter Option Release 3.2 running on your NetBackup Solaris server and you are upgrading NetBackup to Release 3.4, note the following:

The NetBackup Release 3.4 Solaris upgrade process stops all NetBackup daemons including the Advanced Reporter daemons. You must manually start the Advanced Reporter daemons after the NetBackup upgrade process completes. You can start them by issuing the following command:

```
/etc/init.d/nbar start
```

This is important because Advanced Reporter's data loader will not be able to populate its database with NetBackup activity if these daemons are down.

> **Note** If you are also upgrading Advanced Reporter at the same time as NetBackup, you do not need to perform this step since the Advanced Reporter upgrade process starts the Advanced Reporter daemons for you.

Media Manager

1. Sun Dynamic Reconfiguration and the VERITAS `sg` driver.

    On Sun systems 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 reconfigured to use the new device files.

        See chapter "Sun4/SPARC Running Solaris 2.6/7/8" 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 Windows NT NetBackup servers, the Windows NT SCSI configuration information may change after the system's SCSI configuration changes when adding, removing, or reconfiguring SCSI adapters or SCSI tape devices. Windows NT configures the SCSI devices when the system is rebooted. If the configuration was changed, the logical names of the devices can change. For example, if a system had one SCSI tape drive, Tape0, and another tape drive is added to the system, the system now has two tape devices, Tape0 and Tape1. There is no guarantee that the tape drive that was Tape0 before the new tape drive was attached is still Tape0. It may be Tape1 after the reboot.

    See the device configuration wizard.

> **Caution** Because of the dynamic configuration of the logical names for SCSI devices after a system reconfiguration and boot, the Media Manager device configuration may need to be updated when the SCSI configuration changes. For information on configuring devices, see the system administrator's guide for Media Manager.

3. On Windows NT/2000, hardware compression is not supported on the Colorado (HP) T4000 tape drive.

4. On HP9000-700 systems running HP-UX 11.0, there are `vmconf` limitations.

The `vmconf` configuration script for HP9000-700 platforms running HP-UX 11.0 cannot be used for configuring robotic peripherals which have SCSI robotic controls utilizing logical unit number (LUN) 1. This currently affects the HP DAT autoloader and the Quantum DLT2700/4700 peripherals. The workaround is to configure these devices with the NetBackup-Java Media and Device Management interface and enter the device paths as recommended in the *NetBackup Media Manager Device Configuration Guide*.

5. The `xvmadm` Robot Inventory Menu (applies only to UNIX NetBackup DataCenter)

In the UNIX Media Management interface, `xvmadm`, it is possible from the reports Robot Inventory menu to initiate a robotic inventory update by double-clicking to select a robot, even though only read-only inventory types are presented in the dialog.

6. On UNIX, ejecting tapes through the inport 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 workaround is to wait until the robot has finished reinitializing (checking its media port for media) after the inport/export 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 inport lasted for 2 minutes, 10 seconds.

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

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

8. In environments where network traffic or machine load is high, restarting the Media Management Device daemon (on UNIX) or Device Manager service (on Windows NT/2000) 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 lettuce`. If you see this message, we recommend that you stop the Media Management Device daemon (on UNIX) or Device Manager service (on Windows NT/2000), 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 (Windows NT/2000).

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 NT/2000, you can do this by using the Activity Monitor to verify that neither `ltid` nor any robotic daemons are running.

9. 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.

Note The next two limitations apply only to NetBackup DataCenter because they are for features not available on NetBackup BusinesServer.

10. Unsupported robotic daemons.

At this release Windows NT/2000 NetBackup servers do not support ODL, TLM, and TSH robotic daemons.

11. Optical disk media support.

The Windows NT/2000 NetBackup server currently cannot:

◆ Add optical media

◆ Label optical media

In addition, moves do not recognize optical partners, so if both partners are selected the move may fail.

12. Known problems ans limitations with RSM support on Windows NT/2000:

◆ NetBackup cannot immediately use media. RSM media must be manually moved from a robot's physical media list to the NetBackup media pool which corresponds with this device in NetBackup. This must be done BEFORE NetBackup is able to use the media (that is, inventory).

For example, when you configure the robot and its drives using the "Media and Device Management" 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),updates its database and allows writing a Free Media Label on the media.

◆ Occasional mount timeouts 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 Devcie Daemons do not scan RSM devices for physical status. Therefore, physical device status changes may have to be manually updated in Device Monitor.

13. 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.

◆ The NetBackup Media Manager NEVER deletes, frees or deallocates 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 reconfigured in NetBackup and all volumes must have their unique identifiers updated with the above command.

14. Drive Cleaning is not supported for SSO drives. This is due to a problems with tracking the hours of drive usage among hosts.

15. Unsupported robotic daemons. At this release Windows NT/2000 NetBackup servers do not support ODL, TLM, and TSH robots.

16. Robot inventory limitations (applies only to NetBackup DataCenter)

This limitation does not apply to TL8 or API robots (ACS, LMF, RSM, TLH, or TLM).

If any of the drives in a robot use non-default media, the correct media type for the drive must be specified when doing an inventory of the robot, or, for robots with barcode readers, a barcode rule can be used to assign the correct media type. (If the robot has more than one kind of media, barcode rules must be used.)

For example, the default media type for a TLD robot is DLT. If your TLD robot has DLT8000 drives configured as DLT2 drives, you must specify a media type of DLT2 when you inventory the robot. Alternatively, if the robot has a barcode reader, you could create a barcode rule to configure the media with media type DLT2.

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

Note that this limitation does not apply to the Volume Wizard. If you use the wizard to configure your robotic media, you do not have to specify a media type or use a barcode rule to assign the correct media type.

17. When using TLM robotic control, only the first 15 drives returned from the ADIC DAS configuration (allocated to a Media Manager server) can be configured and used.

18. A misconfigured cleaning tape or bad media can result in having all drives in a TL8 robotic library logically configured to the DOWN state.

19. When using NetBackup Media and Device Management on Windows NT, 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/process on the wrong host.

20. Using TLH robotic control, tapes may be mounted in the wrong drives if the IBM Library Manager makes a device unavailable. In this situation, the Media Manager device daemon (NetBackup Device Manager service) should be stopped until the drive can be made available again, or instead, the device configuration must be corrected to account for the modified robot drive numbers.

PC Clients

1. When installing the client (both local and remote installs) the client name is written in all lower case to the registry. If the classes on the server do not specify the client names in all lower case, backups fail because the names do not match.

2. IBM Directory and Security Server Environment Considerations.

   NetBackup in general, and the NetBackup Client for OS/2 in particular are not Distributed Computing Environment (DCE) compliant applications. This means that they are not built to call the DCE services for authentication and naming.

   Instead, NetBackup OS/2 relies on IBMs backward compatibility of the IBM LAN Server APIs to perform authentication etc. IBM DSS for OS/2 modifies the behavior of many of the IBM LAN Server APIs, especially for user account information and access privilege. Consequently, NetBackup OS/2 in an IBM DSS environment may have difficulty accessing, reading, writing, and using Access Control Lists.

3. Alternate path restores for Novell NetWare clients should be done from the Novell server that is the NetBackup client.

   This limitation exists because the user interface on a NetBackup server is unable to resolve the namespaces on Novell servers.

4. Files with the following characteristics are not scanned for viruses:

   ◆ Fully qualified filenames longer than 255 characters

   ◆ Open files that are locked

   ◆ There is no support for cleaning a virus found in a compressed file, although it is reported as detected during a scan.

5. Email being sent to Windows NT client user.

   Email notifications of backup status is not supported.

6. No client installation and update.

Automatic client installation and update when the client is added to a class is not supported at this release on the Windows NT NetBackup server.

7. 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.

This only pertains to NetWare file servers that are NetBackup clients.

8. `bpstart_notify` and `bpend_notify` scripts

When using `bpstart_notify` and `bpend_notify` scripts on Windows NT or Windows 95/98 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`.

DataBase Agents (extensions)

1. Do not perform backup and restore operations with NetBackup for Microsoft SQL Server on `tempdb`. Microsoft SQL Server supports temporary database backups but does not support temporary database restores.

2. SQL Server extension does not handle databases names, filegroup names, or file names that contain any of the following special characters: space, carrot, period, back slash, and front slash. In addition, the Teradata extension does not handle object names that contain any of the same special characters.

3. NetBackup for Lotus Notes is not currently supported on Solaris 7 systems.

Due to a dynamic linking problem being encountered with Lotus libraries, NetBackup for Lotus Notes on Solaris 7 does not currently function and is therefore not supported. As soon as this linking problem is resolved, Solaris 7 support for NetBackup for Lotus Notes will be provided.

4. Unable to recover Domino databases with transaction logging enabled on AIX 4.3.

When transaction logging is enabled on AIX 4.3, a problem has been encountered when attempting to recover Lotus databases. Because of this issue, the integrity of a Lotus database cannot be insured when recovering the database with transaction logging enabled. For this reason, it is recommended to disable transaction logging when running on AIX 4.3 until this issue has been

5. The About boxes for NetBackup for Microsoft SQL Server and NetBackup for NCR Teradata should specify that the copyright is 1993-2000 inclusive.

NetBackup-Java Interfaces

General Items Applicable to All Applications

1. All applications have been seen to hang when trying to display online help from within one of them. If this occurs, the only recourse is to terminate the application and restart it. See "Known Problems with Display of Online Help"later in this chapter for more information.

2. 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 the sort is based on a text comparison, and therefore sorts of columns with numeric values are not always sorted in correct numeric order. Columns that do sort correctly are: Job ID column of Activity Monitor, JBP numeric columns, Backup Policy Management main window: Jobs/Class and Priority columns, Backup Policy Management schedule window: Retention level and Media Multiplexing columns.

3. On rare occasions we have seen repaint problems. For example, you select a menu title, but the menu fails to paint unless you move another window in front of the NetBackup-Java window, then make the NetBackup-Java window visible again. Or you select a row in the table, but it fails to be highlighted until you force a repaint by either minimizing/maximizing the NetBackup-Java window, or covering/uncovering the NetBackup-Java window. Once it gets into this repaint predicament, nothing clears the problem except exiting the program. You must stop NetBackup-Java, then restart it.

4. Quite frequently, buttons, check boxes, and List widgets (list of items with scroll bar) fail to respond to the first mouse-release/click. The result is that the widget behaves as if a mouse-drag operation is occurring. The result with a button is that the button does not respond to the click, just changes in appearance. The result in a check box is that the selection state fails to toggle, instead the check box changes in appearance -- gets a more pronounced beveled border. The result in a List is that it doesn't respond to the selection. Instead, if you drag the mouse the list begins to scroll and the selection changes.

5. In some cases, you can close an application window from the window's menu even while child dialogs are visible.

6. 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.

7. 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.

8. Hangs in NetBackup-Java have been encountered when looking up a host name. The hang is most likely to occur when you are asked to specify a host name. For example, assume you select the Append Host or Change Host feature of a NetBackup-Java application and specify a host name. When you select OK to commit the selection, the operation does not finish and the application no longer responds to user input. The problem is caused by the `java.net.InetAddress` class and occurs when a call to `InetAddress.getByName()` to look up a host name does not return. The problem may be related to Sun Java bug reports 4232651 and 4147517.

9. Some hang conditions that have been observed in the Java applications, are documented problems in Java (see "Java Problems Seen in NetBackup-Java"). To be certain it is not a "new" hang condition, please follow the instructions outlined in the "Gathering Information for NetBackup-Java" section of the *NetBackup Troubleshooting Guide - UNIX*.

10. The Storage Migrator File System Analyzer tool can not be launched from the NetBackup-Java GUI on HP-UX. Upon trying, there is no error message and no GUI application will appear. Your alternative is to execute the File System Analyzer startup script directly. The command is `/usr/openv/java/FSA`.

Backup Policy Management Application

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. On rare occasions, we have seen hangs 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 kill 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.

NetBackup Catalog Backup Application

No checking is done to determine if the format of the pathname is valid. Embedded spaces in pathnames cause problems and Windows NT style pathnames are not supported.

NetBackup System Configuration Application

1. No checking is done to determine if the format of the email address is valid.

2. Blank text fields in the Global Attributes tab are allowed and treated as no change with the exception of the email address field.

Activity Monitor Application

When using Global Data Manager across multiple DNS domains, attempts to use the Activity Monitor to delete or kill jobs from a server in a DNS domain different from that of the machine where you are running NetBackup-Java, can fail with status code 20 (invalid command parameter). This failure occurs because Activity Monitor uses the host's name as it is in the job's record and this is usually the host's unqualified name.

The workaround is to add unqualified names of servers that will be monitored to the `hosts` file of the server where you are running NetBackup-Java (`/etc/hosts` on UNIX and `%SystemRoot%\system32\drivers\etc\hosts` on Windows NT/2000). If there are servers in different domains but with the same same unqualified name, you can have an entry for only one of them (for example, if there are two hosts named shark, you can have only one shark entry in the hosts file).

Device Monitor Application

1. If the `bprd` daemon is down, the Global Data Manager permits connections to device hosts with configurations that disallow connections from the Master of Masters host.

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 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 and Device Management Application

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. If the `bprd` daemon is down, the Global Data Manager permits connections to media managers with configurations that disallow connections from the Master of Masters host.

3. Unexpected results can occur when entering non-numeric values into numeric-only textfield controls. It is recommended that you use the arrow buttons to the right of the control to increment or decrement the numeric value. Numeric textfield controls appear on the following dialogs in Media and Device 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.

4. Administration of optical devices and optical media is not supported in this release. While some of the pick lists contain optical entries (e.g., drive type, media type, and robot picklists), you could receive an error message when trying to use them. Use `vmadm` to add new optical volumes and `tpconfig` for adding new optical drives and robots.

5. 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.

6. 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`).

7. The media inject and eject functionality is incomplete. Only single volumes can be injected or ejected. Multiple tape eject/inject is not supported in this release of the NetBackup-Java Media and Device Management application.

Reports Application

1. Trying to execute reports in more than one copy of the Reports application can cause a hang of all the NetBackup-Java applications that have been initiated from the same launch screen. This occurs most often when executing reports in the different instances of the application for the All Recognized Master Servers node on a Global Data Manager server (master of masters).

2. The View Media Contents report is not functional if you have the All Recognized Master Servers node selected when executing on a Global Data Manager server (master of masters).

3. After specifying non-default report criteria via the Reports Settings dialog, use the dialog's Run button to start the report instead of the Run button on the toolbar. The criteria associated with the toolbar button is not kept in sync with that in the dialog.

4. When running the Media Contents report, explicitly specify a host in the Server picklist field on the Report Settings dialog. If the Server parameter is set to All, then the report cannot find the specified media ID in the Media Manager volume database.

5. 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 interrupt button on the load in progress dialog window is ineffective.

Backup, Archive, and Restore Application

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.

NetBackup-Java Display Console Known Problems

Following are known problems in NetBackup-Java specific to running the applications on a Windows NT/2000, 98, or 95 system (that is, using the NetBackup - Java Display Console for Microsoft Windows).

1. Other installed instances of the Java Development Kit (JDK) or Java Runtime Environment (JRE) can interfere with the correct execution of NetBackup-Java. This is caused by a known Sun Java problem (4071807).

   The Java Runtime Environment program normally should look in the directory where it is installed to find the `javai.dll` runtime library. NetBackup installs a version of JRE 1.1 in the *install_path*\Java\jre directory and expects the Java Runtime Environment program to load `javai.dll` from this same directory. However, if there is a JavaHome key from another JRE installation defined in the Windows registry, it will load `javai.dll` from the JavaHome bin directory instead.

   The versions of JDK or JRE that cause conflicts are any of the Java 1.1 versions. For example, JDK or JRE 1.1.7B. If you have a 1.1.x version of the JDK or JRE on your system, either:

   ◆ Uninstall the conflicting versions of the JDK or JRE (recommended solution).

      or

   ◆ Use the Windows `regedit` program to delete or rename the JavaHome registry keys for the conflicting installations. The registry keys are located in:

   ```
   HKEY_LOCAL_MACHINE
       Software
           JavaSoft
               Java Development Kit
                   1.1 *JavaHome is in here
               Java Runtime Environment
                   1.1 *JavaHome is in here
   ```

2. On Windows NT/2000, the background color is not consistent in all the dialog windows of NetBackup-Java. This a known Sun Java problem (4102565) and is out of our control.

3. On the Windows platforms, you may see transparent backgrounds in some of the NetBackup-Java application dialog windows.

4. On the Windows platforms, on occasion we have seen failures right after initialization. When this occurs, a Dr. Watson window appears with a message indicating that `jrew.exe` had a divide-by-zero exception followed by a program address (various addresses have occurred). This is a timing problem and Java bug 4223311 corresponds to our analysis of the problem.

   5. On Windows NT/2000, secondary dialog windows are sometimes placed off screen. This most often occurs if the main application window is positioned close to the top of the screen. In this case the dialog's title bar may be off screen and you won't be able to reposition the dialog window.

Java Problems Seen in NetBackup-Java

   1. Some UI anomalies seen in this version of the Java Runtime Environment:

   ◆ Buttons don't always respond to the first mouse click. Instead they change in appearance to indicate "mouse-over" action. It may take several clicks to respond depending on system activity.

   ◆ List components sometimes continue to scroll as if a mouse-drag operation is in progress, even though the mouse button has been released. Symptoms: after selecting an item in the list and releasing the mouse button, if you move the mouse below or above the list or to either side, the list scrolls in the direction the mouse is being moved, and the list selection changes.

   ◆ Check boxes occasionally do not toggle their state properly when the mouse is clicked over the check box. Instead, the check box changes in appearance to indicate a mouse-drag operation. It may take several clicks to respond depending on system activity.

   ◆ Menus sometimes stay permanently opened as a result of rapid and frequent mouse or window activity. The menu still remains visible even if the window is closed and re-opened. (Sun bug report 4178589)

   2. Closing an application's main window via a window manager's title bar menu Close selection while the application has a dialog visible, makes a subsequent invocation of the application from the same launch screen unusable. This is a bug we have documented to Sun. We have worked around most cases in which this can occur.

   3. We have seen a number of hangs caused by race conditions when opening/closing modal dialogs (a modal dialog requires a response and blocks input to all other dialogs for the application until the response is received). Refer to Sun bug reports 4122683 and 4161680 as examples. These hangs occur when one modal dialog is opened very soon after another has been closed. In NetBackup-Java the risk of encountering this problem is much higher when switching from one NetBackup-Java application to another, especially if the switch occurs at about the time a NetBackup-Java 'application' is asynchronously popping up a warning message, for example when it displays a "Loading data..." message. For this reason, we recommend you do not switch from one NetBackup-Java application to another when the first application has an open dialog.

   4. When the wait cursor is set for a window, the window's text fields still have the normal text cursor (Sun bug report 4040417).

5. We have seen a number of paint and repaint problems that appear to be caused by the Java JFC Swing classes. These problems are more likely to occur when using an X emulator to run the Java application remotely. One often seen symptom is:

◆ After a dialog is dismissed, a small portion of the window it was covering may be corrupted. If this happens, minimizing/maximizing the window forces a complete repaint of the window.

6. The application may "hang". See Sun bug reports 4089377 and 4041699. The first symptom that the application is "hung" is that when you change from window to window, the portion of a window that was previously covered by another window remains unpainted, and the application does not respond to user input.

The most frequently occurring "hang" we have seen is similar to Sun bug report 4089377. This problem can happen when rapidly selecting tree and list items, or performing operations that cause the display of multiple dialogs in quick succession.

Sun bug report 4041699 describes hangs caused by internal class synchronization that we have seen.

Sun bug reports 4089377, 4091873, and 4041759 describe hangs we have seen during Java class loading and "finalization". The typical symptom is that the logon screen does not appear, or that logon completes but NetBackup-Java stops responding shortly thereafter.

Note that there may be some short periods of time where the NetBackup applications appear to be "hung" momentarily while they are accessing the NetBackup-Java application server. But if a "hang" persists for a considerable period of time, suspect a true application hang or deadlock.

7. We have seen a number of SIGSEGV 11 segmentation violations followed by abort of the Java virtual machine (VM). These problems have been reported to Sun (no bug report numbers available). There are references to various SIGSEGV 11 segmentation violations at the Sun bug tracking web site. For an example, see Sun bug report 4097528. (Note that not all SIGSEGV problems stem from the same cause).

When these types of errors occur, the application fails. The following error message appears in the xterm window where you started the application.

```
Abort - core dumped
```

One particularly noteworthy scenario when NetBackup-Java will not initiate due to insufficient memory - failing with `Abort - core dumped` message.

To get more detail, follow the procedure for NetBackup Java as outlined in Chapter 1 of the *NetBackup Troubleshooting Guide - UNIX*.

8. We have seen a few bus errors followed by the abort of the Java VM (problem reported to Sun, no bug report number available):

When these types of errors occur, the application can fail. The following error message appears in the xterm window where you started the application.

```
Killed
```

To get more detail, follow the procedure for NetBackup-Java as outlined in Chapter 1 of the *NetBackup Troubleshooting Guide - UNIX*.

9. On occasion we have seen the CDE and Motif window managers hang while using the NetBackup-Java applications. If this occurs, the only recourse is to `telnet` into the system, execute the `/usr/openv/netbackup/bpps` command and kill all `jre` processes listed.

Known Problems with Display of Online Help

Following is a list of known problems in the HotJava HTML Component of Java that may adversely affect the display of online help. If this becomes too frequent, you could use a Web browser to view NetBackup-Java online help. You can view online help outside of the applications by opening the following locations in a Web browser for NetBackup-Java administrator applications and `jbpSA`, respectively.

For NetBackup BusinesServer

```
file:/usr/openv/java/vrts/nbu/help/en/MainHelp.html - NetBackup-Java admin
```

```
file:/usr/openv/java/vrts/nbu/help/en/help.html - jbpSA
```

For NetBackup DataCenter

```
file:/usr/openv/java/vrts/nbu/helpDC/en/MainHelp.html - NetBackup-Java admin
```

```
file:/usr/openv/java/vrts/nbu/helpDC/en/help.html - jbpSA
```

Alternatively, you can make a configuration change that forces the NetBackup-Java applications to use a Web browser for viewing online help. Refer to the documentation for the `browser_path` option in the following two files.

`/usr/openv/java/JBPSimple.properties` - used by `jbpSA` only, i.e., `jbpSA` command

`/usr/openv/java/Launch.properties` - used by `the admin apps, i.e., jnbSA` command

1. Sometimes the Java runtime environment hangs when a help file is displayed in the help browser. The only solution is to restart NetBackup-Java.

2. Forward and backward navigation using the toolbar buttons doesn't always work properly due to problems in the HotJava HTML Component. Incorrect navigation occurs when the displayed URL includes a fragment identifier after the # sign. For example, suppose you select hot links in the help Table of Contents to go to pages with URLs similar to the following:

```
deviceBody.fm2.html#10345
```

```
deviceBody.fm2.html#10356
```

```
deviceBody.fm2.html#10457
```

When you select the hot links, the help browser navigates first to the head of deviceBody.fm2.html, then to the labeled fragment, #10345 for example. But when you try to navigate backwards using the back button, it goes to the head of the page (deviceBody.fm2.html in this example) but doesn't scroll to the labeled fragment.

In our experience, navigation works using the hot links, but navigation using the forward and backward buttons is problematic when the URL points to a fragment within the page.

3. The Home button doesn't always work. The help browser calls the HotJava HTML Component's setDocumentURL() method when the button is pressed, but sometimes the HTML component does not display the requested URL.

4. The help browser has a status bar at the bottom of the window. The only item displayed in the status bar as a page is selected is the URL. The help browser was designed to listen for change in status and error messages from the HotJava HTML Component, but neither of these properties is reported by the HTML component.

5. Placing the mouse pointer over a hot link does not result in displaying the link's URL as one might expect in a browser. The help browser listens for the HotJava HTML Component's indicatedElement property, which is supposed to change when the mouse is over a hyper-text link. Unfortunately the property change is fired erratically and the method for accessing the property almost always returns null.

6. The HTML document's title is displayed in the title bar of the help browser only the first time a help browser window is opened. This is because the getDocumentTitle() method of the HotJava HTML Component works only for the first instance of the HTML component. When the component is created multiple times for multiple help browser windows, calls to getDocumentTitle() from any instance of the HTML component other than the first instance return null.

Errors When NetBackup Daemons Are Not Running

The following error messages can appear in an attention dialog, depending on whether:

◆ The server is configured as a Global Data Manager

◆ The specific daemons that are not running on the relevant machine(s)

◆ The application you start

Messages:

◆ `Could not get retention level information: Unable to get retention levels definitions. error= 25 (cannot connect on socket)`

◆ `Unable to connect to host (name), it failed to respond`

◆ `The Media Manager device daemon (ltid) is not active on host (name)`

◆ `Cannot connect on socket`

◆ `Cannot connect to vmd (70)`

◆ `Connection requested by invalid server`

◆ `Error accessing server (name) - cannot connect on socket`

If you acknowledge these initial messages and continue to use the application, a warning message dialog appears containing one of a variety of error messages. Also, these types of errors can appear if the daemons are stopped while the NetBackup-Java applications are running. Examples include:

◆ `Error accessing server (name) - cannot connect on socket`

◆ `Unable to connect to host (name), it failed to respond`

◆ `The Media Manager device daemon (ltid) is not active on host (name)`

◆ `A command execution error occurred. The application will not be fully functional.`

◆ `An error occurred while reading configuration information. Select 'Refresh' to reload class data`

◆ `Unable to retrieve complete data`

◆ `Connection requested by invalid server`

◆ `Unable to load information about NetBackup storage units`

◆ `Unable to load information about NetBackup volume pools`

◆ `An error occurred while changing class, status:25 cannot connect on socket`

◆ `Could not get retention level information: Unable to get retention levels definition. error=25 (cannot connect on socket)`

◆ `Could not get Class_att_defs information: Unable to get the attributes table`

◆ `Warning - netbackup database backup is currently disabled`

◆ `Cannot connect on socket`

◆ `Unable to retrieve complete information for host(s)`

◆ `JSAT21: insert failed - cannot connect to vmd (70)`

◆ `Cannot retrieve data from Media Manager server: cannot connect to vmd (70)`

◆ `Cannot connect to vmd (70)`

In many cases, with the Device Monitor and the Media and Device Management applications, the last part of the error message will be `cannot connect to vmd (70)`. For the other NetBackup-Java applications, a commonly occurring message is `cannot connect on socket`. Also, in some of the applications, data doesn't appear (for example, file and directory listings on the restore tab of `jbpSA`).

Related Documents

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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 website at `www.adobe.com`. VERITAS assumes no responsibility for the correct installation or use of the reader.

Release Notes

NetBackup Release Notes

> Provides important information about NetBackup software, such as the platforms and operating systems that are supported and operating notes that may not be in the manuals or the online help.

Getting Started Guides

NetBackup BusinesServer Getting Started Guide - UNIX

> Explains how to get UNIX NetBackup BusinesServer software installed and running.

NetBackup BusinesServer Getting Started Guide - Windows NT/2000

> Explains how to get Windows NT/2000 NetBackup BusinesServer software installed and running.

Getting Started Cards

◆ *NetBackup FastBackup - Getting Started Card*

> Provides installation requirements and instructions for NetBackup FastBackup on an Auspex platform.

◆ *NetBackup BusinesServer Getting Started Card - Windows NT/2000*

Provides installation requirements and instructions for NetBackup BusinesServer on Windows NT/2000 servers.

◆ *NetBackup BusinesServer Getting Started Card - UNIX*

Provides installation requirements and instructions for NetBackup BusinesServer on UNIX servers.

Installation Guides

◆ *NetBackup Installation Guide - PC Clients*

Explains how to install NetBackup PC client software. The PC clients are Windows 2000, Windows NT, Windows 95, Windows 98, Macintosh, OS/2 Warp, and Novell NetWare.

◆ *NetBackup DataCenter Installation Guide - UNIX*

Explains how to install NetBackup DataCenter software.

◆ *NetBackup DataCenter Installation Guide - Windows NT/2000*

Explains how to install NetBackup DataCenter software.

System Administrator's Guides - Basic Product

◆ *NetBackup DataCenter System Administrator's Guide - UNIX*

Explains how to configure and manage NetBackup DataCenter on a UNIX system.

◆ *NetBackup DataCenter System Administrator's Guide - Windows NT/2000 Server*

Explains how to configure and manage NetBackup DataCenter on a Windows NT/2000 server system.

◆ *NetBackup BusinesServer System Administrator's Guide - UNIX*

Explains how to configure and manage NetBackup BusinesServer on a UNIX server.

◆ *NetBackup BusinesServer System Administrator's Guide - Windows NT/2000*

Explains how to configure and manage NetBackup BusinesServer on Windows NT/2000.

◆ *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.

◆ *NetBackup DataCenter Media Manager System Administrator's Guide - Windows NT/2000*

Explains how to configure and manage the storage devices and media on Windows NT/2000 servers running NetBackup DataCenter. Media Manager is part of NetBackup.

◆ *NetBackup BusinesServer Media Manager System Administrator's Guide - 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 - Windows NT/2000*

Explains how to configure and manage the storage devices and media on Windows NT/2000 servers running NetBackup BusinesServer. Media Manager is part of NetBackup BusinesServer.

System Administrator's Guides - Agents and Options

◆ *NetBackup for DB2 on UNIX System Administrator's Guide*

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

For this product, you may also need the following manuals from IBM:

*IBM DB2 Universal Database Extended Enterprise Edition for AIX
Quick Beginnings for DB2 Extended Enterprise Edition*

API Ref IBM DB2 Universal Database API Reference
Version 5

*Guide IBM DB2 Universal Database Administration Guide
Version 5*

Cmd Ref IBM DB2 Universal Database Command Reference

◆ *NetBackup for DB2 on Windows NT System Administrator's Guide*

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

For this product, you may also need the following manuals from IBM:

*IBM DB2 Universal Database Extended Enterprise Edition for AIX
Quick Beginnings for DB2 Extended Enterprise Edition*

API Ref IBM DB2 Universal Database API Reference
Version 5

*Guide IBM DB2 Universal Database Administration Guide
Version 5*

Cmd Ref IBM DB2 Universal Database Command Reference

◆ *NetBackup for EMC System Administrator's Guide*

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

◆ *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*

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 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

◆ *NetBackup for Lotus Notes on Windows NT System Administrator's Guide*

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 on UNIX System Administrator's Guide*

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*

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*

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 NCR Teradata System Administrator's Guide*

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

◆ *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:

Oracle7 Enterprise Backup Utility Installation and Configuration Guide

Oracle7 Enterprise Backup Utility Administrator's Guide

Oracle7 Server Administrator's Guide

Oracle8 Server Backup and Recovery Guide

Oracle8 Server Administrator's Guide

◆ *NetBackup for Oracle on Windows NT 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 NT/2000 NetBackup Client.

For this product, you may also need the following manuals from Oracle Corporation:

Oracle7 Enterprise Backup Utility Installation and Configuration Guide

Oracle7 Enterprise Backup Utility Administrator's Guide

Oracle7 Server Administrator's Guide

Oracle8 Server Backup and Recovery Guide

Oracle8 Server Administrator's Guide

◆ *NetBackup for Oracle - Advanced BLI Agent System Administrator's Guide*

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, you may also need the following manuals from VERITAS Software:

Database Edition for Oracle Administrator's Guide

Storage Edition for Oracle Administrator's Guide

◆ *NetBackup for Oracle - Advanced BLI Agent for Backups without RMAN System Administrator's Guide*

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, you may also need the following manuals from VERITAS Software:

Database Edition for Oracle Administrator's Guide

Storage Edition for Oracle Administrator's Guide

NetBackup for Oracle - Advanced BLI Agent System Administrator's Guide

◆ *NetBackup Plus Module for TME 10 System Administrator's Guide*

Explains how to install, configure, and use NetBackup / Plus Module for TME 10 to manage NetBackup in the Tivoli Management Environment TM (TME) rather than through the standard NetBackup administrator interfaces.

◆ *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 3.0

◆ *NetBackup for SAP on Windows NT System Administrator's Guide*

Explains how to install, configure, and use NetBackup for SAP on Windows NT/2000.

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 3.0

◆ *NetBackup for SYBASE 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 Utility Programs for Unix

SYBASE SQL Server Administration Guide

User's Guides

◆ *NetBackup User's Guide - Macintosh*

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 - Microsoft Windows*

Explains how to use NetBackup on a Windows 2000, Windows NT, Windows 95, or Windows 98 client to perform backups, archives, and restores. This guide also contains some configuration instructions for the NetBackup client software.

◆ *NetBackup User's Guide NonTarget Version - Novell NetWare*

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 client software.

◆ *NetBackup User's Guide Target Version - Novell NetWare*

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 BusinesServer User's Guide - OS/2 Warp*

Explains how to use NetBackup on an IBM OS/2 Warp client to perform backups and restores. This guide also contains some configuration instructions for the NetBackup client software.

◆ *NetBackup User's Guide - UNIX*

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

Device Configuration Guide - Media Manager

◆ *NetBackup Media Manager Device Configuration Guide*

Explains how to add device drivers and perform other system level configuration for storage devices that are supported by NetBackup DataCenter and NetBackup BusinesServer Media Manager on UNIX hosts.

Troubleshooting Guides

◆ *NetBackup Troubleshooting Guide - UNIX*

Provides troubleshooting information for UNIX based NetBackup products.

◆ *NetBackup Troubleshooting Guide - Windows NT/2000*

Provides troubleshooting information for Windows NT/2000 based NetBackup products.