NETVAULT v6.5.2

administrator's guide addendum

Version 6.5.2

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BakBone Software

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Introduction & Installation

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Introducing NetVault Version 6.5.2

NetVault 6.5.2 from BakBone Software is a scalable solution for departments, data centers and enterprises available for several operating systems. NetVault is built on a modular software architecture created for expansion, growth and continued enhancement of a growing variety of applications. NetVault also supports various storage network designs, including Storage Area Networks (SAN) and Network Attached Storage (NAS). Providing enterprise-wide control in distributed and centralized environments, NetVault is able to operate in multi-vendor networks and supports a broad range of servers, clients, database applications, storage media and high-performance devices.

NOTE: PLEASE NOTE: The ***NetVault 6.5.2 Administrator's Guide Addendum*** is to be used in tandem with the **NetVault 6.03 Administrator's Guide**. This guide references and describes features new to NetVault since version 6.03. Existing features within NetVault are fully explained in the NetVault 6.03 Administrator's Guide.

About This Guide

This *Administrator's Guide Addendum* will describe in detail, the features new to NetVault as well as the enhancements made to existing NetVault operations. Each new feature or enhancement will be shown with detailed instructions on its use.

NOTE: This guide assumes that anyone using NetVault has a working knowledge of a computer and its operating conventions, including how to use a mouse and standard menus and commands. It also assumes that the user is trained in how to open, save, and close files. For help with any of these techniques, please see your Operating System documentation.

The *Administrator's Guide Addendum* is divided into four sections:

- **Section One, Installation:** The first section contains a chapter detailing the procedures necessary in installing the upgrade of NetVault 6.5.2
- **Section Two, New Features:** The second section details all features new to NetVault since version 6.03. It is broken down into multiple chapters, each of which introduces the user to a feature that is new to NetVault as well as fully explains how to use it.
- **Section Three, Enhancements:** The third section contains a chapter which describes the enhancements made to existing NetVault components and any new techniques required in using them since version 6.03.
- **Section Four, Appendix:** Various, useful forms of information regarding NetVault.

Technical Support

BakBone Software is dedicated to providing friendly, expert advice to NetVault product customers. Our highly trained professionals are available to answer your questions, offer solutions to your problems and generally help you make the most of your NetVault purchase. Log on to our web site, or contact our Helpdesk, for more information.

BakBone Software Web Site: http://www.bakbone.com

Helpdesk Support Lines

Region	Contact
North America	**Tel:** 1.877.955.BONE (955.2663) **e-mail:** support@bakbone.com
Europe	**Tel:** +44.1202.244727 ● +44.1202.244728 **e-mail:** support@bakbone.co.uk
Asia Pacific Rim	**Tel:** +81.3.5908.3517 **e-mail:** support@bakbone.co.jp

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Installing NetVault 6.5.x

NetVault Version 6.5.x Software is easy to install. Information on every aspect of installing the software is detailed below.

Types of Installation

There are three types of installations:

- **NetVault Server System:** Provides the full range of NetVault facilities with local control using an installed Graphical User Interface (GUI), or remotely over the network with proper security authorization. This type of installation can also act as a client.
- **NetVault Client System:** Provides a subset of NetVault facilities, without the local device support, controlled remotely over the network with proper security authorization.
- **Custom NetVault System:** Provides the facility to install specific NetVault modules.

General Installation Requirements

Before installing NetVault Software, the following requirements must be in place:

- **Sufficient disk space to install and use the software -** The amount of disk space required depends on the operating system, installation method and likely usage of the NetVault system. For example, in a NetVault Enterprise System backing up a large number of NetVault clients, the NetVault Database directory could be fairly large and require more disk space. If you need assistance determining the amount of space required, contact BakBone *Technical Support* (page 6).
- **A TCP/IP network -** A TCP/IP network is required unless you intend to use the NetVault Software in a *standalone* configuration. This type of network is not necessary if the NetVault Server is backing itself up to a local device.
- **NetVault Graphic Requirements -** Minimum graphic display resolution (under Microsoft Windows NT or UNIX X-Windows) of 800 x 600 pixels displaying 256 colors.
- **Permissions** - Ensure that all installs have execute permission.

Installation Procedures per O/S and Environment

Below, the installation process for various operation systems is explained in full detail.

Compaq TRU64 (4.0b and Later)

To install the NetVault 6.5.x software to a Compaq TRU64 system, follow the procedure detailed below:

1. Mounting the CD-ROM: Mount the CD-ROM using the following commands (assuming the mount point "/cdrom" already exists):
    - `su root`

- `mount -r -t cdfs <CD-ROM device node> /cdrom`

2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - `cd /cdrom/TRU64`
      - `./INSTALL NVDIST`

FreeBSD 4.0

To install the NetVault 6.5.x software to a FreeBSD 4.0 system, follow the procedure detailed below:

1. Mounting the CD-ROM: Mount the CD-ROM using the following commands (assuming the mount point "/cdrom" already exists):
   - `su root`
   - `mount -rt cd9660 <CD-ROM device node> /cdrom`
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - `cd /cdrom/freebsd`
      - `./install nvdist`

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

HP-UX 10 and 11, HP9000/700 HP9000/800

To install the NetVault 6.5.x software to an HP-UX 10 and 11, HP9000/700 or HP 9000/800 system, follow the procedure detailed below:

1. Mounting the CD-ROM: Mount the CD-ROM using the following commands (assuming the mount point "/cdrom" already exists):
   - `su root`
   - `mount -r -F cdfs <CD-ROM device node> /cdrom`
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - `cd /cdrom/HP`
      - `./INSTALL NVDIST`

IBM AIX 4.2 and 4.3

To install the NetVault 6.5.x software to an IBM AIX 4.2/4.3 system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the CD-ROM is not already mounted, mount it using the SMIT utility
2. Installing the NetVault SCSI driver: Use the SMIT utility to load the NetVault SCSI driver contained in the file image. For complete installation instructions, see the ui5drv_1.pdf file in the DOC folder on the NetVault 6.5.x installation CD.
3. Installing the NetVault Software:
   a. Log on as root.
   b. Run the commands:
      - `cd <cdrom>/aix` *(where <cdrom> is the device node for the CD-ROM)*
      - `./install nvdist`

LINUX (Intel x86)

To install the NetVault 6.5.x software to a Linux (Intel x86) system, follow the procedure detailed below:

1. Mounting the CD-ROM: Mount the CD-ROM using the following commands (assuming the mount point "mnt/cdrom" already exists):
   - `su root`
   - `mount /mnt/cdrom`
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the commands:
      - `cd /mnt/cdrom/linux`
      - `./install nvdist`

Microsoft Windows NT4

Installation Requirements

The requirements for installing NetVault on a Windows NT system are as follows:

- A computer running Microsoft Windows NT, version 4.0 with at least 32 Mbytes RAM. At this time only the Intel processor (or compatible) is supported. You must also have SP3 (NT 4.0) or later installed.
- Approximately 10 Mbytes of available disk space; more if you intend to use this machine to control a large NetVault domain (a server and many clients) or large multi-drive tape libraries.

- For NetVault Server and Custom installations (with the GUI), it is necessary to pre-install Microsoft Internet Explorer Version 3.02 or later, in order to use the HTML-based help system (NT version 4.0 or later) included with the NetVault Software.
- TCP/IP networking software installed.

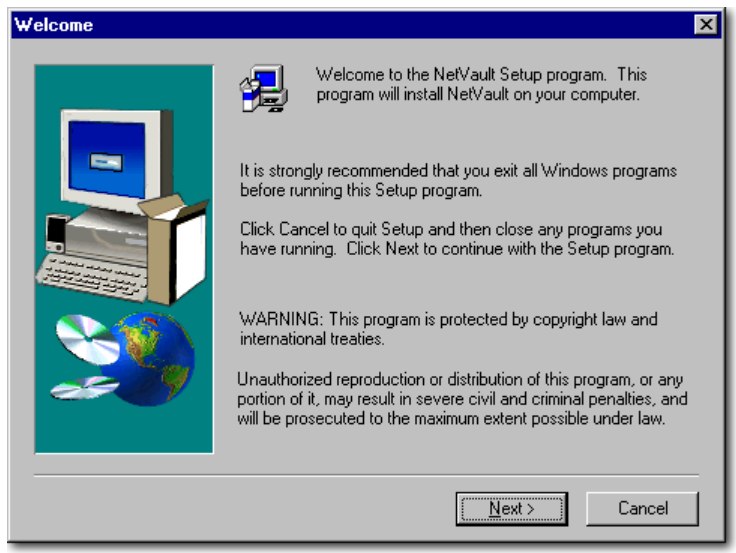
Installation Procedure

To install the NetVault Software on a Windows NT workstation or server, follow these steps:

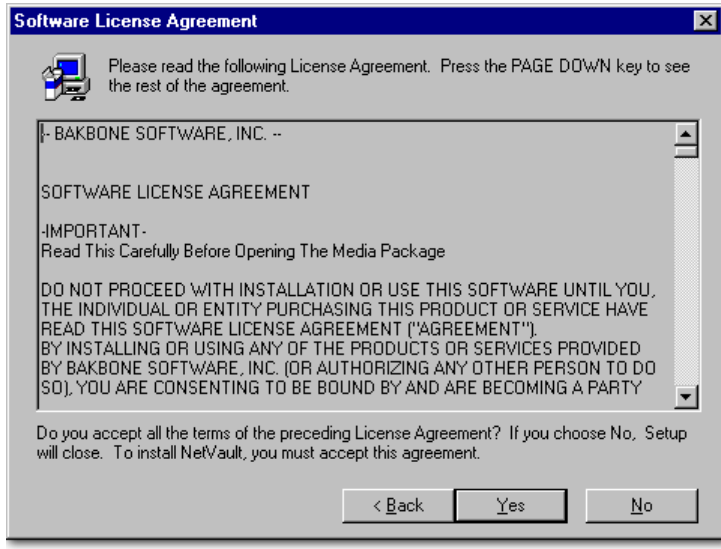
1. Log on as the Administrator or as a user with Administrator privileges.
2. Close all programs.
3. Insert the CD into the CD-ROM drive. Locate and run the **setup.exe** file. The file should be located as follows:

   <cd drive>\winnt\setup.exe

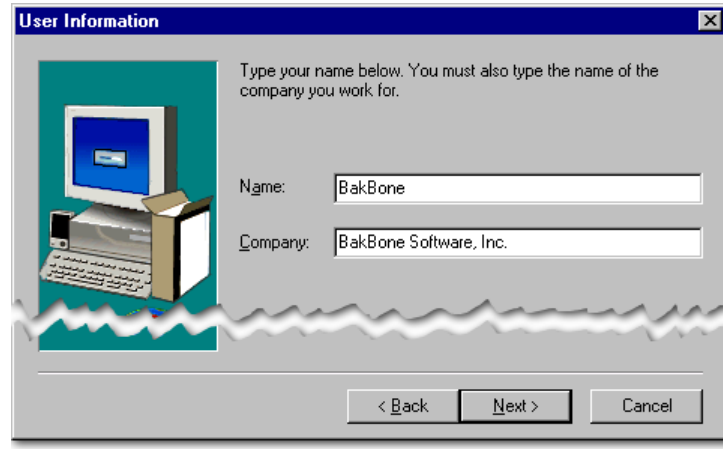
4. An InstallShield Wizard will open and begin the installation setup.
5. Once the **InstallShield Wizard** has loaded, the NetVault **Setup Welcome** dialog box will open, as shown in the figure at right:



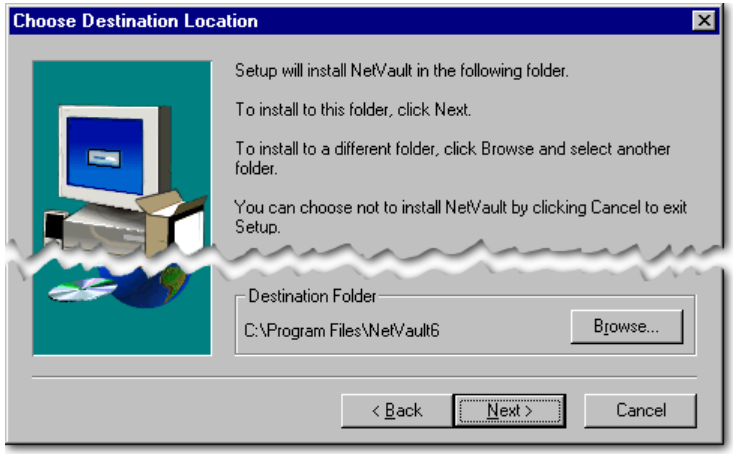
6. Click **Next** to open the **License Agreement** window as shown in the figure on the following page:



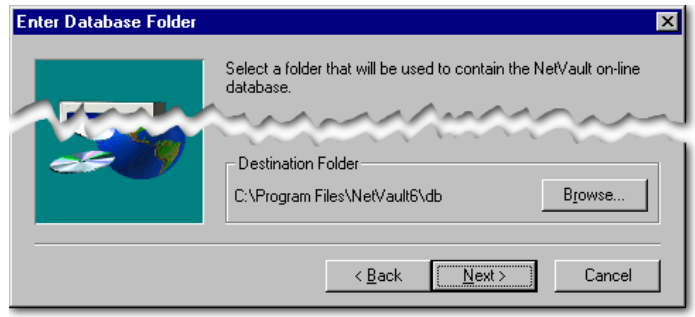
7. Click **Yes** to accept the agreement.
8. The **User Information** window will appear. Enter a valid **Name** and **Company** and click **Next**.



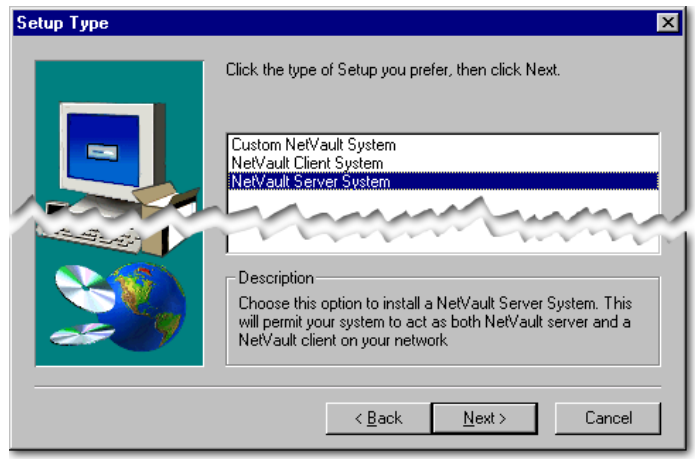
9. The **Choose Destination Location** window is revealed. The default location for an installation of NetVault is displayed in the **Destination Folder** frame (C:\Program Files\NetVault6). If this location is acceptable, click **Next**. Otherwise, click on the browse button and navigate to the desired directory or manually input a path into the window that is displayed (see the figure on the next page).



10. With the installation destination folder defined with the desired installation location, click **Next** to proceed to the **Enter Database** dialog box:



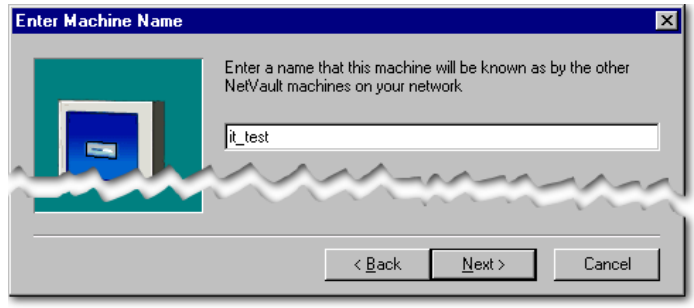
11. Define the destination for the **NetVault Database** in the same manner as the installation (see Step 8, above for more details). When finished click **Next**.
12. The **Setup Type** dialog box will open, as shown in the figure at right:



13. Select the desired **Setup Type** for the desired type of installation:
    - **Custom NetVault System**

- **NetVault Client System**
- **NetVault Server System**

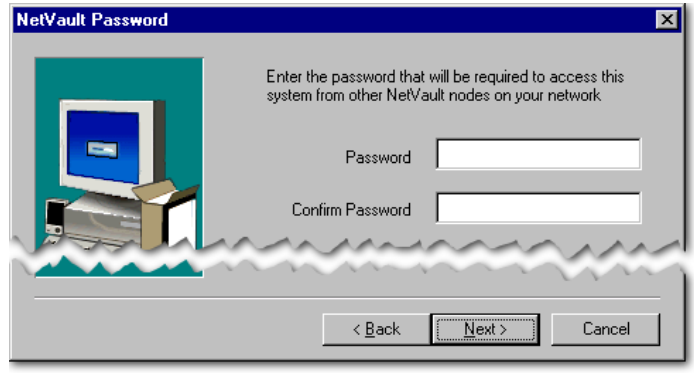
14. Click **Next** to open the **Enter Machine Name** dialog box:



15. Enter the desired NetVault **Machine Name**. This name does not have to be the same as the actual computer's machine name, but it is recommended that the NetVault machine name be the same as the computer name.

NOTE: Machine names are alpha/numeric strings of any length. Avoid using capital letters, spaces (substitute underscores for these, as shown in the example above) and punctuation (especially hyphens) when defining machine names.

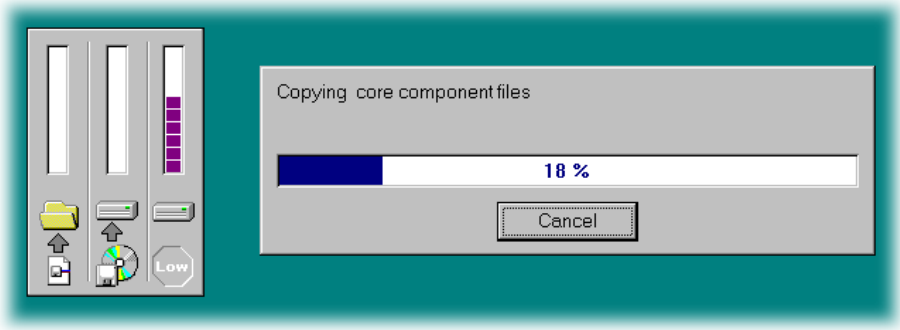
16. Click **Next** to open the **NetVault Password** dialog box:



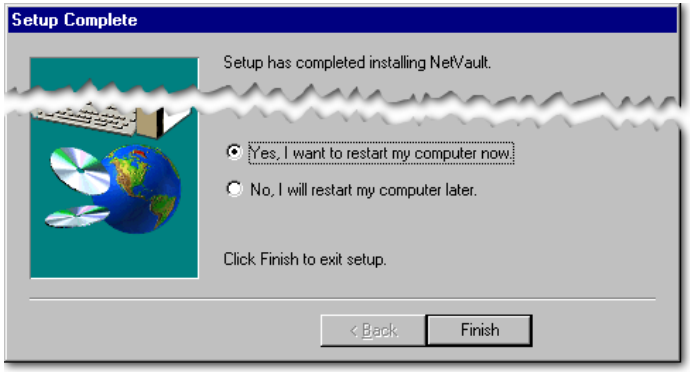
17. Enter the desired **NetVault Password** information in both fields. With the values set properly, click **Next**.

NOTE: This NetVault Security Password allows access to the machine being installed on to other NetVault servers in the domain. This information should be secured so that only the NetVault Domain Administrators for your system have access to it.This password can be changed and security can be disabled using the NetVault Configurator. See the the section *Uninstalling NetVault 6.5.x* on page 31 for more information.

18. The process will begin and the InstallShield progress meter will appear:



19. When the installation is complete, the **Setup Complete** dialog box will open:
20. Select the desired option by clicking the appropriate button:
    - **Yes, I want to restart my computer now.**
    - **No, I will restart my computer later.**
21. Click **Finish**.



NOTE: It is recommended that the machine be restarted. Some NetVault files require updating with a reboot in order to function properly.

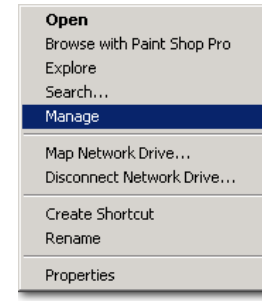
Microsoft Windows 2000

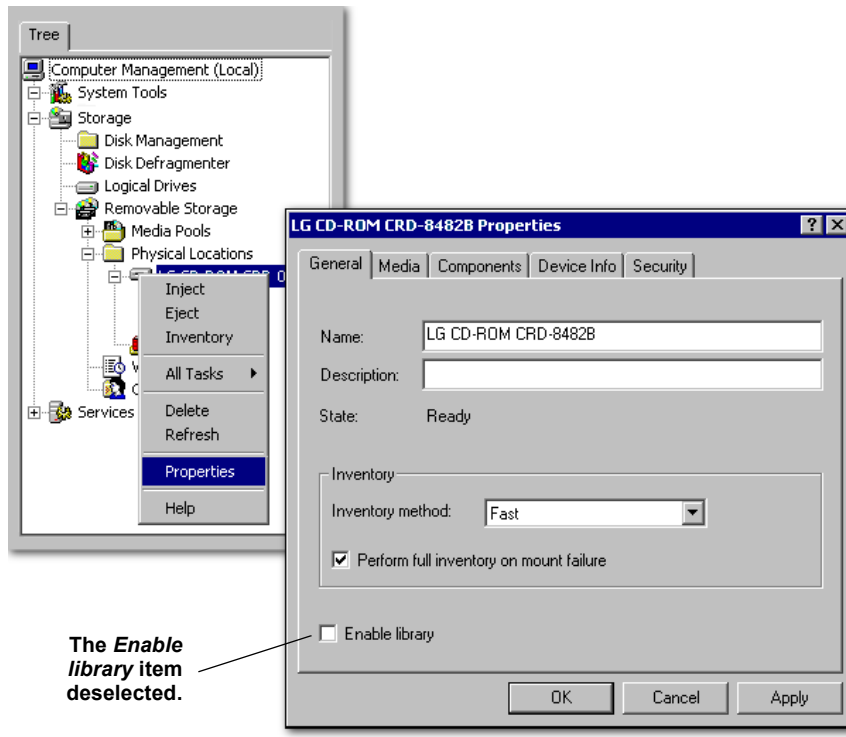
IMPORTANT NOTE: Prior to installing NetVault 6.5.x on a Microsoft Windows 2000 machine, it is necessary to configure the operating system in order to allow certain functions of NetVault to run properly.

Configuring a Microsoft Windows 2000 Machine

Devices or libraries being added to a Windows 2000 operating system cannot be under the control of the **Windows 2000 Remote Storage Manager**. To remove the library from the **Remote Storage Manager** control, follow the steps below:

1. With Windows 2000 running and the desktop visible, right-click My Computer on your desktop.
2. Choose **Manage** from the pop-up menu, as shown in the figure at right:
3. Navigate through each level of the tree until the desired device is displayed.
4. Right-click on the device and choose **Properties** from the pop-up menu.
5. In the Properties dialog box that is revealed, and the General Tab selected, click on the **Enable library** checkbox in order to de-select it
6. Click **Apply** to set the change, and then **OK** to exit the dialog box.





7. With this complete, it is now possible to install NetVault 6.5.x.

Installing NetVault 6.5.x

Other than the details listed below, the installation procedure for Windows 2000 is almost exactly the same as the process discussed in the previous section, *Microsoft Windows NT4* on page 9.

1. Insert the CD into the CD-ROM drive. Locate and run the **setup.exe** file. The file should be located as follows:
   - `<cd drive>\w2k\setup.exe`

Microsoft Windows 95/98 Client

Other than the details listed below, the installation procedure for a Windows 95/98 Client system is almost exactly the same as the process discussed in the previous section, *Microsoft Windows NT4* on page 9.

2. Insert the CD into the CD-ROM drive. Locate and run the **setup.exe** file. The file should be located as follows:
   - `<cd drive>\win9x\disk1\setup.exe`

NCR UNIX SVR 5.4 MP-RAS 03

To install the NetVault 6.5.x software to an NCR UNIX SVR 6.4 MP-RAS 03 system, follow the procedure detailed below:

1. Mounting the CD-ROM: Mount the CD-ROM using the following commands (assuming the mount point "/cdrom" already exists):
   - `su root`
   - `mount -r -F cdfs <CD-ROM device node> /cdrom`
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
   - `pkgadd -d /cdrom/ncr/simage` *(for NetVault Server installation), or*
   - `pkgadd -d /cdrom/ncr/cimage` *(for NetVault Client installation).*

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

SCO OpenServer 5

To install the NetVault 6.5.x software to a SCO Open Server 5 system, follow the procedure detailed below:

1. Mounting the CD-ROM: Mount the CD-ROM using the following commands (assuming the mount point "/cdrom" already exists):

- su root
- mount -r <CD-ROM device node> /cdrom

2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - cd /cdrom/scoopen5/
      - ./install nvdist.

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

SCO UnixWare 2.1.3

To install the NetVault 6.5.x software to a SCO UnixWare 2.1.3 system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the CD-ROM does not mount automatically, mount it using the following commands (assuming the mount point "/cdrom" already exists):
   - su root
   - mount -F cdfs -o ro <CD-ROM device node> /cdrom
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - cd /cdrom/uware213
      - cp * /tmp
      - cd /tmp
      - chmod +x install
      - ./install nvdist

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

SCO UnixWare 7

To install the NetVault 6.5.x software to a SCO UnixWare 7 system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the CD-ROM does not mount automatically, mount it using the following commands (assuming the mount point "/cdrom" already exists):

- `su root`
- `mount -F cdfs -o ro <CD-ROM device node> /cdrom`

2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - `cd /cdrom/uware7`
      - `pkgadd -d /cdrom/uware7/simage` *(for NetVault Server installation), or*
      - `pkgadd -d /cdrom/uware7/cimage` *(for NetVault Client installation)*.

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

SGI IRIX 6.2 and 6.5

To install the NetVault 6.5.x software to a SGI IRIX 6.2/6.5 system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the CD-ROM does not mount automatically, mount it using the following commands (assuming the mount point "/cdrom" already exists):
   - `su root`
   - `mount -t iso9660 <CD-ROM device node> /cdrom`
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the commands:
      - `cd /cdrom/irix`
      - `./install nvdist`

Sun Solaris 2.5.1 (SPARC)

To install the NetVault 6.5.x software to a Sun Solaris 2.5.1 (SPARC) system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the Solaris Volume manager is running, the CD-ROM is mounted automatically when it is inserted into the drive. The mount point is "/cdrom/cdrom0".
2. Alternatively, it is possible to mount the CD-ROM using the following commands (assuming the mount point /cdrom/cdrom0 already exists):
   - `su root`
   - `mount -r -F hsfs <CD-ROM device node> /cdrom/cdrom0`
3. Installing the NetVault Software:

a. Log on as root.

b. Run the command:

- `pkgadd -d /cdrom/cdrom0/sol25/simage`
  (for NetVault Server installation), or
- `pkgadd -d /cdrom/cdrom0/sol25/cimage`
  (for NetVault Client installation).

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

Sun Solaris 2.6, 7 and 8 (SPARC)

To install the NetVault 6.5.x software to a Sun Solaris 2.6/7/8 (SPARC) system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the Solaris Volume manager is running, the CD-ROM is mounted automatically when it is inserted into the drive. The mount point is "/cdrom/cdrom0".
1. Alternatively, it is possible to mount the CD-ROM using the following commands (assuming the mount point /cdrom/cdrom0 already exists):
   - `su root`
   - `mount -r -F hsfs <CD-ROM device node> /cdrom/cdrom0`
2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
   - `pkgadd -d /cdrom/cdrom0/solaris/simage`
     (for NetVault Server installation), or
   - `pkgadd -d /cdrom/cdrom0/solaris/cimage`
     (for NetVault Client installation).

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

Sun Solaris 7, 8 (Intel x86)

To install the NetVault 6.5.x software to a Sun Solaris 7,8 (Intel x86) system, follow the procedure detailed below:

1. Mounting the CD-ROM: If the Solaris Volume manager is running, the CD-ROM is mounted automatically when it is inserted into the drive. The mount point is "/cdrom/cdrom0".

Alternatively, it is possible to mount the CD-ROM using the following commands (assuming the mount point /cdrom/cdrom0 already exists):

- `su root`
- `mount -r -F hsfs <CD-ROM device node> /cdrom/cdrom0`

2. Installing the NetVault Software:
   a. Log on as root.
   b. Run the command:
      - `pkgadd -d /cdrom/cdrom0/solintel/simage` *(for NetVault Server installation), or*
      - `pkgadd -d /cdrom/cdrom0/solintel/cimage` *(for NetVault Client installation).*

NOTE: Once the software is installed, use the nvconfigurator to set the security password to allow access from other NetVault servers and clients.

Calculating NetVault Database (NVDB) Size Requirements

When the NetVault server software is installed, the installation includes a NetVault Database directory (db or nvdb) containing four sub-directories:

- **Install** - Very small directory. Contains the **modules** binary file detailing which modules are installed).
- **Keys** - Very small directory. Contains licence key files for the main software and any plugins or APMs installed.
- **MediaDatabase** - This directory grows to be rather large with use of NetVault. Holds records for media and backups performed.
- **ScheduleDatabase** - Small directory (generally less than 10 Mbytes in size) Holds records for all backup and restore jobs).

The only portion of the database for which size requirements are an issue is the **MediaDatabase**. The NetVault Administrator of a particular NetVault domain must estimate the anticipated size of the database to properly allocate adequate disk space for growth. To calculate the space requirements, the following information is necessary:

- **The approximate number of files and directories being backed up in the NetVault Domain** (i.e. on the NetVault server and all NetVault clients).

NOTE: Each file and directory backed up requires on average 60 bytes for an index entry in the NetVault Database.

- **How many generations of each file are being kept -** Each generation is a separate instance of a file or directory backup. For example, if the same file is

backed up seven times, using default backup settings, there are *seven generations* of the file held on media and *indexed in the NetVault Database*.

By default, backups have an infinite life (i.e. the number of generations increases for every backup, causing the NetVault Database to continuously grow in size). Most systems cannot handle this amount of storage requirement, so one of the NetVault Administrator's tasks is to ensure that a suitable **Backup Life** is applied to each backup (a setting found in the **Advanced Options** tab of the NetVault **Backup** window). For more information on **Backup Life**, please see the *Backup Life (Backup Only)* section of *Chapter 16: Using Advanced Features* on page 274 of the *NetVault 6.03 Administrator's Guide*. Below is an example of calculating the NetVault Database size requirements:

- If 200,000 files and 15,000 directories are backed up once, approximately 13 Megabytes is required for NetVault Database indexing. If the same files and directories were backed up three times, 39 Megabytes would be required, and so on.

Under normal circumstances, it is reasonable to set a **Backup Life** option of **Discard after 7 Full Backups** (for backups using the File System plugin).

With this option set, only seven generations of files/directories are retained for a particular backup selection within the NetVault Database. On the eighth backup, the first backup set of files/directories is discarded and removed from the NetVault Database index. Below is a formula for estimating the space requirements (in bytes) for a number of machines:

Approximate number of files and directories backed up per machine	X	***Approximate number of generations to be kept using Backup Life options***	X	***Number of machines backed up***	X	***60***

IMPORTANT NOTES:

1. For some types of backup (e.g. online backup of some databases) it is necessary to keep a very large number of generations. Consult BakBone Technical Support (for contact information, please see the NetVault Administrator's Guide) if space considerations are likely to be an issue.
2. Some Backup Life settings may not clearly indicate the likely number of generations. For example, when choosing the 'Discard after 25 weeks' setting, the number of generations kept depends on how many times you actually do this backup within the 25 week period.

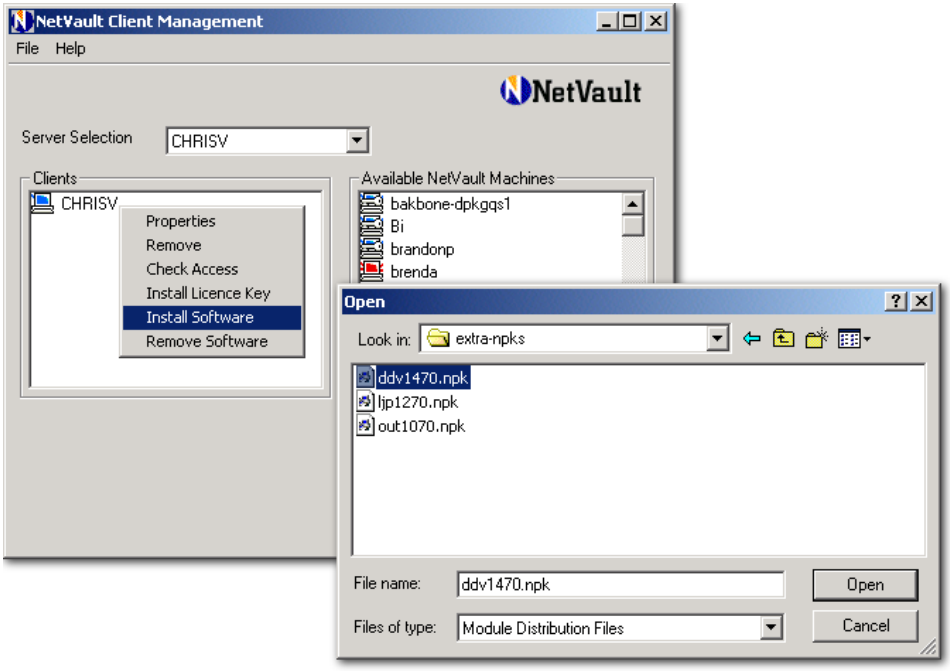
Installing NetVault Plugins and APM's

NetVault plugins and APM's are installed and removed from the NetVault **Client Management** window. A NetVault plugin or APM can be installed on any client of the NetVault server appearing in the **Server Selection** list.

NOTE: NetVault software includes a number of plugins which are automatically installed. They are the **Consolidated Backups, Data Copy, Consolidated File System Backups** and **Raw Device** plugins. If any of these plugins are deleted, NetVault must be reinstalled in order to get them back. APM's can be installed and uninstalled as desired.

Installing a Plugin or APM

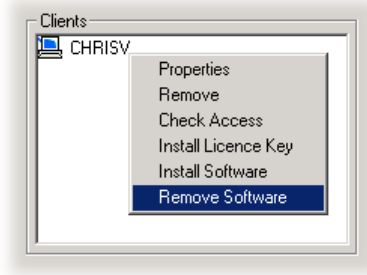
1. Open the NetVault **Client Management** window by clicking the **Client Management** button on the command toolbar (or by selecting **Client Management** from the **Administration** pull-down menu).
2. Select the desired client in the **Clients** list.
3. Right-click and choose **Install Software** from the pop-up menu.
4. In the window that appears, navigate to and select the appropriate installation software (see the figure on the following page).

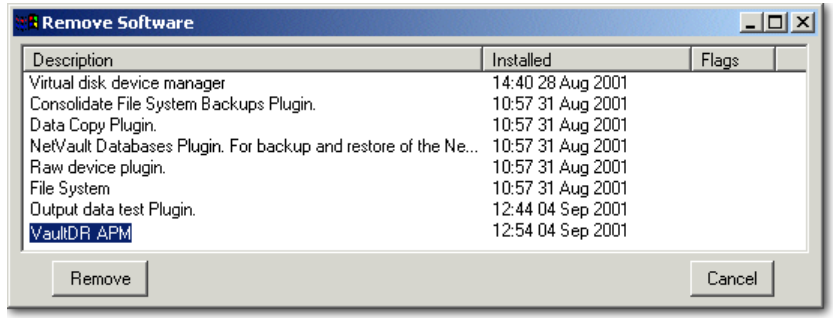


5. Click **Open** to begin the installation process. When the installation is complete, a successful installation message appears in the **Install Software** dialog box.

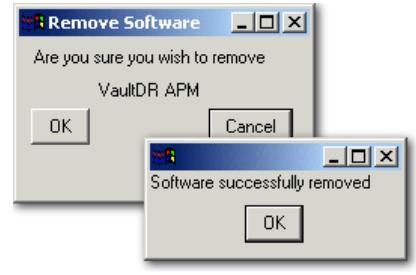
Removing a Plugin or APM

1. Access the **Client Management** window as described in the installation procedure above.
2. Right-click on the NetVault server in the **Clients** list to reveal the pop-up menu and select **Remove Software** (as shown in the figure at right).
3. Select the desired APM to remove from the displayed list and click the **Remove** button (in the figure below, the **VaultDR Offline APM** has been selected).





4. A dialog box will appear asking for confirmation of the remove command. Click on **OK** to proceed (or **Cancel** to abort). Clicking **OK** results in the removal of the software and a confirmation message will appear. Click **OK** to close this dialog box and return to the **Client Management** window.



Licenses for NetVault Version 6.5.x

Once installed, the NetVault software is operational for **45 DAYS**. To license the software, locate the relevant machine IDs, and contact BakBone Customer Support. A License Key will be issued which then needs to be installed. Each of the above mentioned steps is detailed below:

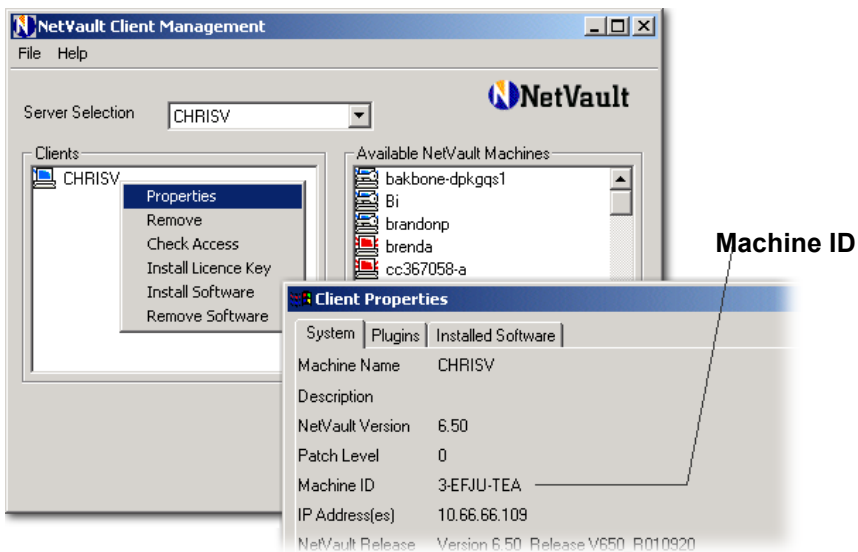
Locating Machine IDs

To get the IDs of your NetVault machine (normally the NetVault server):

1. Open the NetVault **Client Management** window by clicking the **Client Management** button on the command toolbar (or by selecting **Client Management** from the **Administration** pull-down menu).
2. Select the desired machine from the **Clients** list and right click on it.

> **NOTE:** In order to view details on a given NetVault Client, it must first be added to the relevant NetVault Server (the machine being used for this process). For complete details on adding a NetVault Client, please see *Adding a NetVault Client* on page 111 of the *NetVault 6.03 Administrator's Guide.*

3. Choose **Properties** from the pop-up menu to reveal the **Client Properties** dialog box. The Machine ID is displayed in the **System** tab.



Requesting a NetVault 6.5.x License Key

To request a NetVault License Key, it is necessary to contact BakBone Technical Support and provide the following information:

- **Machine ID of NetVault Server and any APMs** - Provide the Machines ID gained in the process detailed above for the NetVault Server as well as any applicable Application Plugin Modules installed on that machine.
- **Machine ID of NetVault Clients and any APMs** - A NetVault Client system (one on which the Client version of the software is installed), is not licensable. Although, any NetVault APMs installed on the system are. Provide the Machine ID(s) for these NetVault Clients as well as the name(s) of the Application Plugin Module(s) installed.

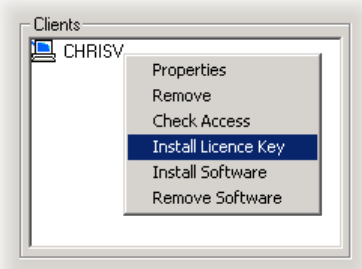
Contacting BakBone Technical Support

To contact BakBone Technical Support, please see the *Technical Support* section of *Chapter 1: Introduction* on page 4.

Installing a License Key

A NetVault License Key is valid only for the Machine ID for which it is issued. License Keys are e-mailed (or faxed) directly to the customer. It is recommended that the key be copied directly from the e-mail into the **Enter Key String** box to avoid possible errors. To install a license key, follow the procedure detailed below:

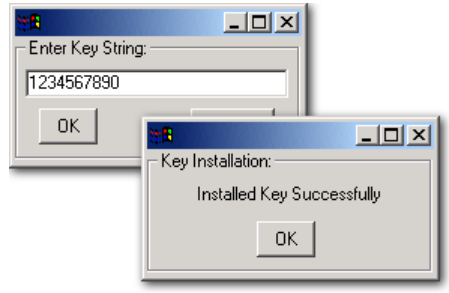
1. Open the NetVault **Client Management** window by clicking the **Client Management** button on the command toolbars (or by selecting **Client Management** from the **Administration** pull-down menu).
2. Select the desired machine from the **Clients** list and right click on it.



NOTE: In order to view details on a given NetVault Client, it must first be added to the relevant NetVault Server (the machine being used for this process). For complete details on adding a NetVault Client, please see *Adding a NetVault Client* on page 111 of the *NetVault 6.03 Administrator's Guide.*

3. Select **Install License Key** from the pop-up menu.

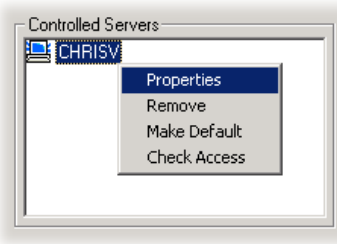
4. The **Enter Key String** dialog box will appear.
5. Input the new key information (or simply copy the new key information from the e-mail, if applicable) into the **Enter Key String** box and click **OK**.
6. If the license key is installed successfully, a message dialog box appears. Click on OK to exit this box and return to the Client Management window.
7. Click **OK** to complete the license key installation.

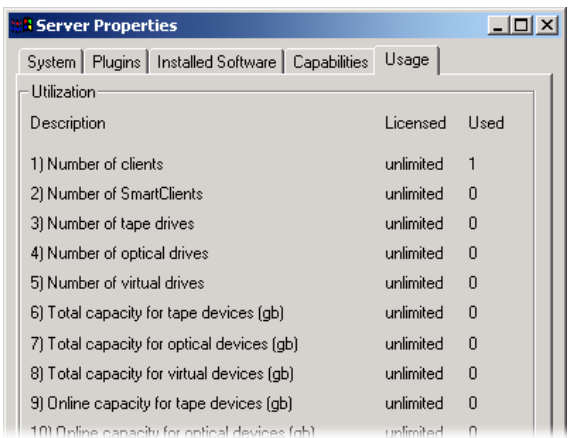


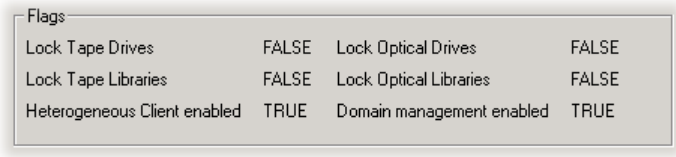
License Usage Screen

Once NetVault is successfully installed, a **Usage** window can be accessed via the **Domain Management** section of NetVault that allows a user to view several aspects pertaining to licensing. This tab will note what is licensed and what licensed items are in use. This can be helpful in keeping various licenses up to date. To access this screen, perform the following actions:

1. Launch NetVault
2. From the **Administration** pull-down menu, select **Domain Management**.
3. In the **Controlled Servers** window, right-click on the desired server and select **Properties** from the pop-up menu.
4. In the window that appears, select the **Usage** tab. The **Usage** window will be displayed and is broken down into two frames:
   - **Utilization:** This frame shows 19 different items associated with licensing. Each item shows its license status as well as its usage status.
   - **Flags**: This frame shows the lock status (True or False) of various drives and libraries (e.g. Tape and Optical) as well as whether or not Domain Management and Heterogeneous Client are enabled (see the figure on the following page).







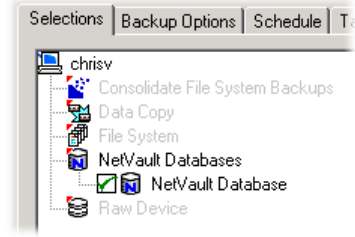
Upgrading NetVault

Upgrading NetVault depends on the NetVault version being upgraded from. Licensing is also an issue when upgrading the NetVault software. Please refer to the section, *Licenses for NetVault Version 6.5.x* on page 24. Use the following procedures as general guidelines only.

IMPORTANT NOTE: Whenever upgrading NetVault from any version, it is ***always*** necessary to upgrade the installation on the NetVault server ***before*** any clients.

Pre-Upgrade

Prior to an upgrade of NetVault it is recommended that the current NetVault Database is backed up using the **NetVault Databases** plugin. This is recommended in the event that an upgrade is unsuccessful. That way, the older version of NetVault can be re-installed and the original database can be recovered. For complete details on the use of this plugin, please see the *NetVault Administrator's Guide*.



Upgrading from NetVault 6.0.3, 6.5.0 or 6.5.x

Run the install program as if attempting a new install. This process is dependent on the OS. (please see ***Chapter 2: Managing NetVault Software*** of the **NetVault 6.03 Administrator's Guide**):

1. The installation program will recognize that NetVault is already installed and the relevant software modules will be automatically updated.
2. There should be no problem regarding existing backup jobs or media created under Version 6.0.1.

Upgrading from NetVault 6.0.1 to 6.5.x

Run the install program as if attempting a new install. This process is dependent on the OS. (please see ***Chapter 2: Managing NetVault Software*** of the **NetVault 6.03 Administrator's Guide**):

1. The installation program will recognize that NetVault is already installed and the relevant software modules will be automatically updated.

2. There should be no problem regarding existing backup jobs or media created under Version 6.0.1.
3. Two new plugins are installed in a sub-directory of NetVault6: (1) the **Data Copy** plugin (for copying backups or backup sets from one item of media to another), and (2) the **Consolidated File Server Backups** plugin (which consolidates a Full backup and a number of incremental backups into a single backup saveset). These two new plugins are extras which can be installed into the active software and have no effect on what was done under Version 6.0.1.

> **NOTE:** The plugins mentioned above are available for install and should be located in the **..\NetVault6\Packages** directory (where "..\" represents the installation location for the NetVault 6.5.x software).

Upgrading from Earlier Versions of NetVault to NetVault 6.5.x

If using a version of NetVault earlier than the ones mentioned above (e.g. versions 6.0.0 and earlier), please contact BakBone Technical Support. For complete details on contacting Technical Support, please see the *Technical Support* section of *Chapter 1: Introduction* on page 4.

General Guidelines for Upgrading NetVault

- Backup the NetVault Database to a specific, identifiable item of media using the Target Media By MID option.
- Make sure that enough time is available to do the upgrade and that everything is working properly before important backups need to be run.
- Leave all normally used devices physically connected to the NetVault server (or client) machines and added to NetVault. This ensures that the device configuration data is properly upgraded.

Common Upgrade Problems and Solutions

When upgrading NetVault software installed using **pkgadd** (e.g. NCR MP-RAS and Solaris), the system may not allow the upgrade (an example of this situation is displayed is displayed on the following page).

- In the file /var/sadm/pkg/install/admin/default (on an NCR MP-RAS box), there is a line that affects pkgadd upgrade:

If...	Requirement...
instance=unique	It is necessary to remove and then re-add a package.
instance=overwrite	It is possible to upgrade without removing and then re-adding a package.

Post Upgrade

Once an upgrade has completed successfully, it is strongly recommended that a backup of the new NetVault Database be created (in order to replace the pre-upgrade backup explained previously -- see the section *Pre-Upgrade* on page 27). The database created during an upgrade is a mix of new elements as well as ones from the previous NetVault installation. Therefore, if the current NetVault database is lost, this backup can be used to restore it, while also maintaining compatibility with the new version of NetVault.

Migrating the NetVault Server

As an Operating System (O/S) introduces a new release and an upgrade to this release is to be performed on the NetVault Server machine, it is necessary to "move" the existing installation of NetVault to the new O/S. This process is referred to as **Migration**. To successfully accomplish this, follow either of the two procedures described below.

Procedure One - With Backup

1. Conduct a backup of the **NetVault Database**, backing it up to tape. This is accomplished through the use of the **NetVault Database Plugin**. For complete details on this procedure, please see the *NetVault 6.03 Administrator's Guide (Chapter 9: Disaster Recovery).*
2. With the backup complete, it is next necessary to **Stop** the NetVault services. This is accomplished through the **NetVault Configurator**:
   a. Launch the **NetVault Configurator**.
   b. Select the **Service** tab.
   c. Click on the **Stop NetVault** button. Wait a few moments until the statement at the top of the tab reads **"Current State: Stopped"**.
   d. Click on **OK** to exit the Configurator.
3. Uninstall NetVault - It is recommended that the procedure detailed in the section *Uninstalling NetVault 6.5.x* on page 31, be followed.
4. Upgrade the O/S as described in the relevant documentation.
5. Re-install NetVault (follow the instructions in this chapter based on the desired O/S).

> **IMPORTANT NOTE:** When re-installing NetVault, ensure that the installation software used corresponds to the new O/S (e.g. Windows NT upgraded to Windows 2000 would require different NetVault installation software).

6. With NetVault installed and running, restore the following **NetVault Database** items using the **NetVault Database Plugin** (and ***only*** these items).
   - **Media Database**
   - **Schedule Database**

- **Logs Database**

Again, for details on this process, please see the *NetVault 6.03 Administrator's Guide (Chapter 9: Disaster Recovery).* This will overwrite the existing NetVault Database items, replacing them with those that were backed up.

Procedure Two - No Backup

1. It is first necessary to **Stop** the NetVault services. This is accomplished through the **NetVault Configurator**:
   a. Launch the **NetVault Configurator**.
   b. Select the **Service** tab.
   c. Click on the **Stop NetVault** button. Wait a few moments until the statement at the top of the tab reads **"Current State: Stopped"**.
   d. Click on **OK** to exit the Configurator.
2. Navigate to the NetVault Databases directory (..\NetVault6\db). Copy the following folders and paste them to safe location (e.g. to a networked machine's hard drive).
   - **Media Database**
   - **Schedule Database**
   - **Logs**

> **NOTE:** These NetVault Database increase in size based on the number of operations that have been performed in NetVault since its initial install. Depending on the size of these folders, this operation could take a considerable amount of time.

3. Uninstall NetVault - It is recommended that the procedure detailed in the section *Uninstalling NetVault 6.5.x* on page 31 be followed.

> **IMPORTANT NOTE:** Prior to uninstalling NetVault, be sure to take note of the existing NetVault Server name. It is required later.

4. Upgrade the O/S as described in the relevant documentation.
5. Re-install NetVault (follow the instructions in this chapter based on the desired O/S).

> **IMPORTANT NOTES:**
>
> 1. When re-installing NetVault, ensure that the installation software used corresponds to the new O/S (e.g. Windows NT upgraded to Windows 2000 would require different NetVault installation software).
> 2. When re-installing NetVault, the NetVault Server must be given the same name as in the previous installation.

6. With NetVault re-installed, ensure that it is closed and Stop the NetVault services (see Step 1., above).
7. Copy the previously moved directories (**Media Database, Schedule Database and Logs**) to the new NetVault Databases directory (..\NetVault6\db).
8. Restart the NetVault services (perform the reverse of the procedure explained in Step 1, above). All information from previous jobs should be present once NetVault is opened.

Uninstalling NetVault 6.5.x

CAUTION: Uninstalling NetVault Software may result in the loss of all NetVault Database entries. This could result in the loss of all backup ***records*** performed with NetVault. Note that actual data backed up will remain intact.

Uninstalling NetVault from MS Windows NT/95/98/2000 Machines

1. Choose **Start** > **Programs** > **NetVault** > **Uninstall NetVault**.
2. InstallShield will remove the software, services, etc. When prompted, click **Yes** to remove the shared library files located in the %SystemRoot%\System32 directory, if desired. No other applications should be using these files.
3. Manually remove the ../NetVault6 installation directory.

Uninstalling NetVault from Solaris or MP-RAS Machines

1. To remove the software (based on installation type), issue the following command:
   - NetVault Server: `pkgrm nv6server`
   - NetVault Client: `pkgrm nv6client`
2. Follow the on-screen instructions to remove the software.

Uninstalling NetVault from other UNIX or Linux Installations

1. Use the `cd` command to navigate to the **NetVault installation** directory, then go to the <path>/netvault6/util directory.
2. Type the following command at the command prompt:
   - `./nvuninstall`
3. Follow the on-screen instructions to remove the software.

NETVAULT v6.5.2

administrator's guide addendum

SECTION 2:

New Features

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Automatic Device Configuration

Once the NetVault 6.5.1 Software has been successfully installed, it is then necessary to configure it with any backup devices on the network. NetVault 6.5.1 has the ability to search this network and locate devices automatically. If any devices are found, NetVault will launch a "Wizard" allowing for configuration of the device. This process also works when a new device is added to the network.

IMPORTANT NOTES REGARDING AUTOMATIC DEVICE CONFIGURATION:

1. Automatic Device Configuration supports devices manufactured by several different vendors, although not all devices are supported. For detailed information on manually configuring a device, please see the section, *Manually Adding Libraries* (page 45).
2. If running Microsoft Windows 2000, the operating system must be configured ***prior to installing the NetVault Software***. For details, please see the section *Microsoft Windows 2000* of *Chapter 2: Installation of NetVault 6.5.0* on page 14.
3. If a device is located in a SAN environment it is recommended that all necessary NetVault Clients be added to the NetVault Server prior to initiating Automatic Device Configuration. This way the device will be automatically configured using all of the available NetVault Clients. For complete information on adding Clients to a NetVault Server, please see the section *Adding a NetVault Client* on page 111 of the *NetVault 6.0.3 Administrator's Guide*.

Recognizing a Device

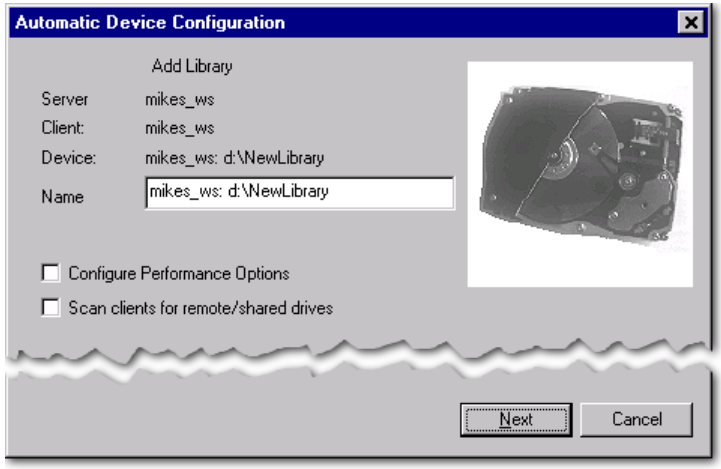
1. Launch NetVault and select the **Device Management** button (or select **Device Management** from the **Administration** pull-down menu). The software will then automatically scan the SCSI bus on all NetVault Clients and the Server.
2. NetVault searches for a Library capable of ***serialization*** (the library is capable of telling a user which drives are in which drive bays) on the network, and/or attached directly to the NetVault Server itself.

3. If any applicable devices are located, a Device Configuration “Wizard” will launch.
4. If a Library is found, it will be configured (see the figure above).
5. To Auto Configure the Device, select **Yes**.
6. To avoid configuration, select **No**. Note that if “No” is selected, each time NetVault is loaded, the Wizard will recognize this device and prompt the user to configure it again, unless the **Do not ask again for this device** box is checked.

NOTE: Standalone drives (e.g. single tape drives directly attached to the NetVault Server or Pseudo-drives) are not automatically deteected on launch. It is necessary to Manually activate Auto device scanning. For complete details, please see *Manually Selecting Automatic Device Configuration* on page 41.

Adding the Device

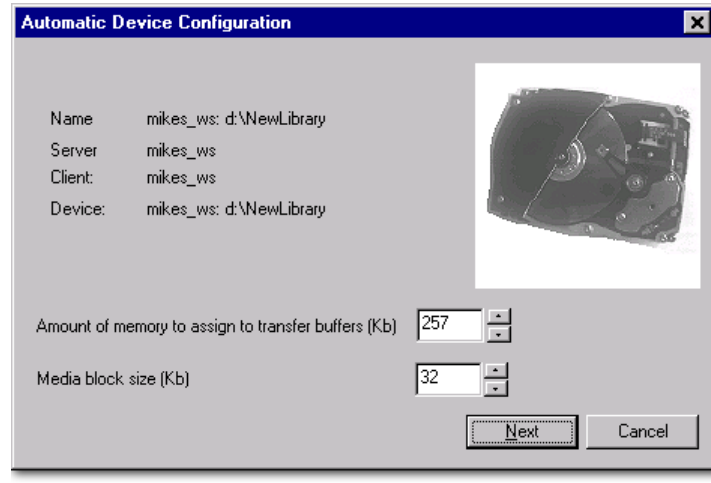
1. From the **Add Library Screen** (see figure above), the **Name** field will display the path to the library and the library’s name, at default. Change this title as desired.



2. The default performance options can be changed by checking the box to the left of **Configure Performance Options**. Selecting this and then clicking Next will reveal an additional window for custom configuration (see the **Configuring Performance Options** section, below).
3. Checking the box to the left of **Scan clients for remote/shared drive** (and then clicking on Next) will reveal a window that makes it possible to add the library in a SAN environment where the drives can be seen by many clients (see the *Scan Clients For Remote/Shared Drives* on page 40).

Configuring Performance Options

1. The **Configure Performance Options** screen allows for setting the following:



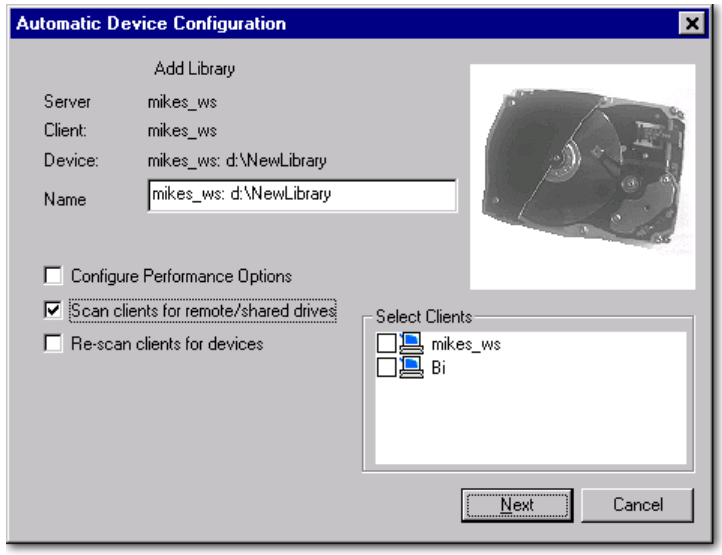
   - **Amount of memory to assign to transfer buffers (Kb)**: Often referred to as the ***shared memory setting***, this allows the user to set the size of the buffer for transfer. The default of 257 which is the minimum shared memory size, is equal to 8 buffers of 32 Kb plus one Kb. Increasing this value will optimize performance, if available memory will allow.
   - **Media Block Size**: Increasing the Media Block Size may increase the backup performance on various types of devices.

> **IMPORTANT NOTES**:
>
> 1. If the Media Block Size value is increased, the shared memory setting must be increased as well. The value of the shared memory setting must be equal to at least four times the Media block size ***plus*** one (in Kb).
> 2. Configuring total shared memory size also depends on the operating system being used. Always use caution when setting block size and shared memory size on a system.

2. With all options set as desired, click **Next** to proceed.

Scan Clients For Remote/Shared Drives

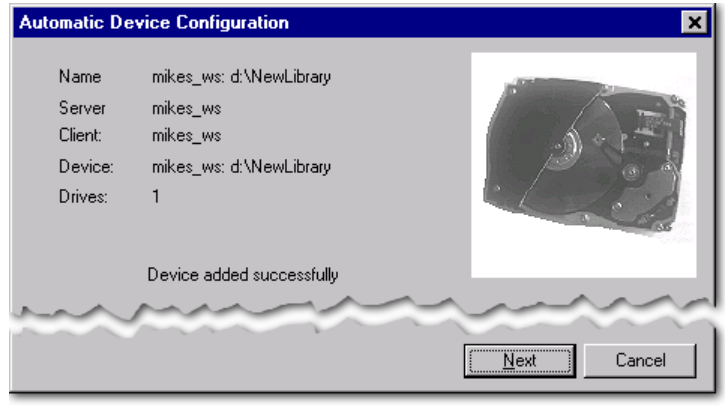
1. Clicking on **Scan clients for remote/ shared drives** reveals the following on the **Add Library Window:**



   - **Re-scan clients for devices:** It is possible that the information gathered automatically by NetVault when initially auto detecting devices is out of date. Selecting this item will force a re-scan of the bus, rather than using the cached, original information.
   - **Select Clients Window.** This window displays a list of available clients. Select any or all of the clients listed that may have a device attached. NetVault will scan the selected clients and if a device is found, it will automatically add it to the client as part of the SAN attached library.
2. With all options set as desired, click **Next** to proceed.

Final Confirmation of an Added Device

Once NetVault has scanned the SCSI bus and successfully added the device(s), the following window will appear (*see the figure at right*).



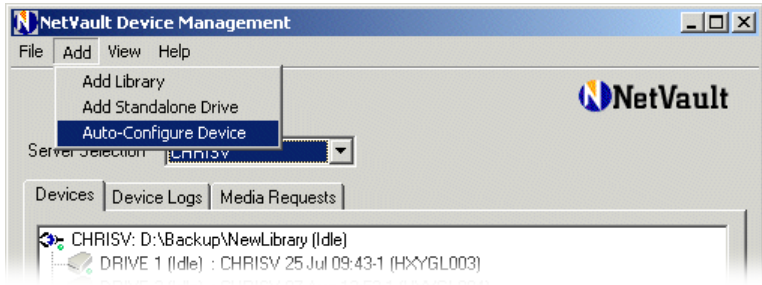
1. To exit and complete this operation, click **Finish**.

Manually Selecting Automatic Device Configuration

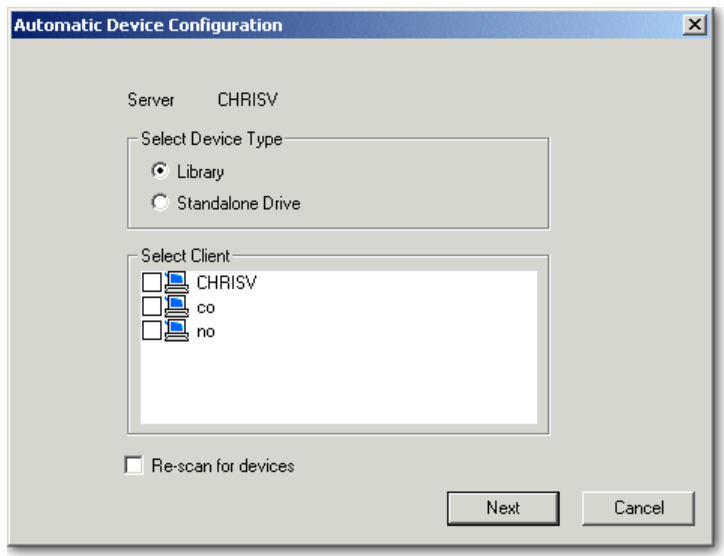
In order to manually select Automatic Device Configuration, follow the procedure detailed below:

NOTE: In order to scan for standalone drives (e.g. single tape drives directly attached to the NetVault Server or Pseudo-drives), this procedure must be followed.

1. From the NetVault **Device Management** window, with the **Devices** tab selected, select **Auto-Configure Device** from the **Add** pull-down menu..

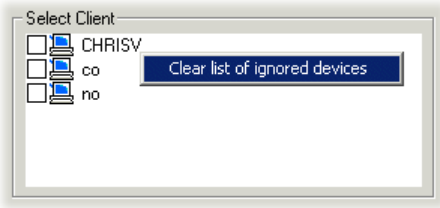


2. From the **Automatic Device Configuration Window** that appears, the following options are available:



- **Select Device Type Frame:** Select the type of device desired (Library or Standalone Drive) by clicking the appropriate radial button.

- **Select Client Frame:** A list of available clients is displayed in this frame. Select the NetVault Client to be searched here.
- **Re-scan for devices:** It is possible that the information gathered automatically by NetVault when initially auto detecting devices is out of date. Selecting this item will force a re-scan of the bus, rather than using the cached, original information.
- **Clear list of ignored devices**: By right-clicking on a client in the **Select Client Frame**, a pop-up menu is accessed with this option. This option is selected if during the initial automatic configuration performed from the NetVault Server, the **Do not ask again for this device** checkbox was selected. This will refresh the list and allow previously ignored devices to be automatically recognized.



3. With all options set as desired, click **Next** to proceed.
4. If any devices are found on the selected client, the Automatic Device Configuration Wizard will launch. This procedure is exactly the same as configuring a device for a server (see ***Automatic Device Configuration - From A NetVault Server***, above for details on this procedure).

Customizing Automatic Device Configuration

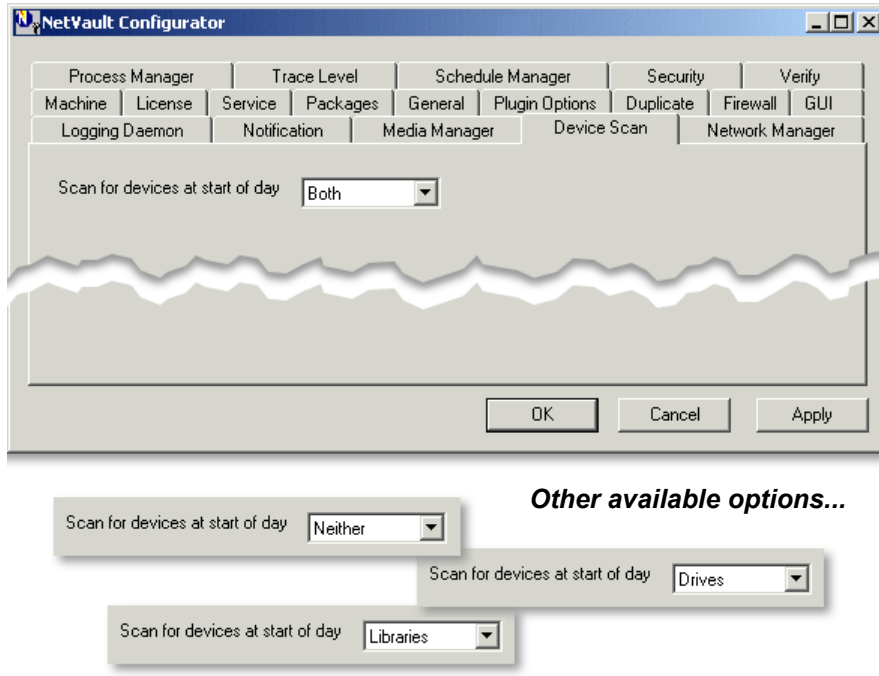
The Automatic Device Configuration utility is customizable via the NetVault Configurator. To access the Configurator in order to customize the settings for it, follow the procedure below:

NOTE: Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is recommended that NetVault be closed prior to accessing the Configurator.

Start of Day Device Scanning

When NetVault starts on a client or server, a process is started that scans the SCSI bus and records what it finds in two configuration files (one for drives and one for libraries). It is possible to select the type of device that Device Auto Configuration searches for on the network for this process.

1. Launch the **NetVault Configurator.**
2. Select the **Services Tab.**
3. Click on **Stop NetVault** in order to stop the NetVault services. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator.
4. Select the **Device Scan Tab.**

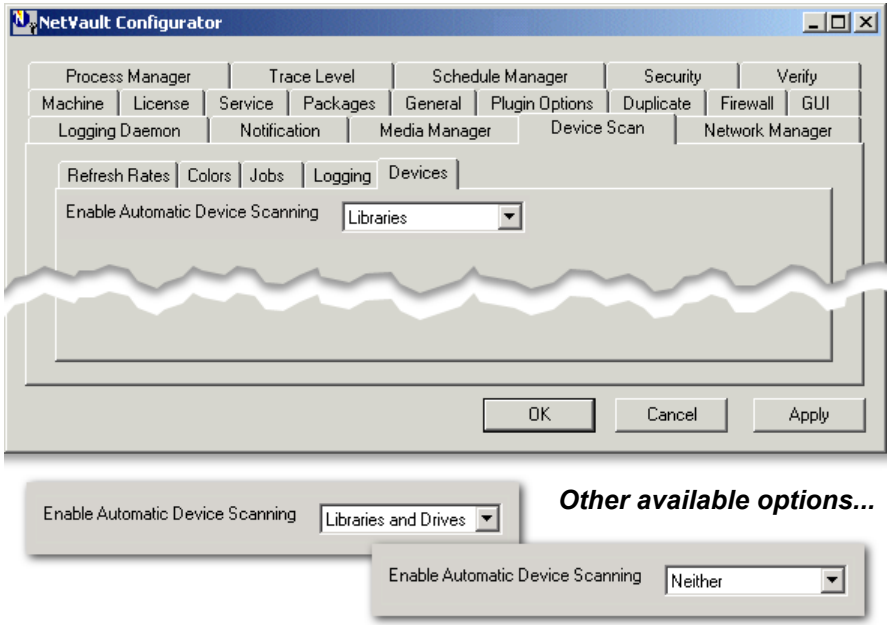


5. From the pull-down window shown, select from one of the following options:
   - **Both (default):** With this selected, Automatic Device Configuration will search the SCSI bus for both Libraries and Standalone Drives.
   - **Neither:** Automatic Device Configuration will not search for anything.
   - **Drives:** With this selected, Automatic Device Configuration will search the SCSI bus exclusively for Standalone Drives
   - **Libraries:** With this selected, Automatic Device Configuration will search the SCSI bus exclusively for Libraries.
6. With the proper option selected, click on **Apply** to add the change and remain in the Configurator. Again, ***DO NOT*** click on **OK,** as it will exit the Configurator.
7. Select the **Services Tab** again, and click on **Start NetVault**, in order to re-start the NetVault Services. For more details on Starting and Stopping NetVault Services, see the *NetVault 6.03 Administrator's Guide*).
8. Click on **OK** to apply all changes and exit the Configurator.

Choosing Device Types for Automatic Device Configuration

When launched, the NetVault Device Management window triggers Automatic Device Configuration. It is possible to select the device types that will be scanned for during this process through the NetVault Configurator.

1. Launch the **NetVault Configurator**
2. Select the **Services** tab
3. Click on **Stop NetVault** in order to stop the NetVault services. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator.
4. Select the **GUI Tab**
5. From the **GUI Tab**, select the **Devices Tab**. From the Enable Automatic Device Scanning pull-down window, it is possible to select the following:



- **Libraries (Default) -** on launch of the Device Management window, the Automatic Device Configuration facility will search exclusively for potential libraries.
- **Libraries and Drives** - on launch of the Device Management window, the Automatic Device Configuration facility will search for potential libraries as well as drives.
- **Neither** - Selecting this item shuts down Automatic Device Configuration and no devices will be searched for.

6. With the desired option set, click on **Apply** to add the change and remain in the Configurator. Again, ***DO NOT*** click on **OK,** as it will exit the Configurator.

7. Select the **Services Tab** again, and click on **Start NetVault**, in order to re-start the NetVault Services (For more details on Starting and Stopping NetVault Services, see the *NetVault 6.03 Administrator's Guide*).
8. Click on **OK** to apply all changes and exit the Configurator.

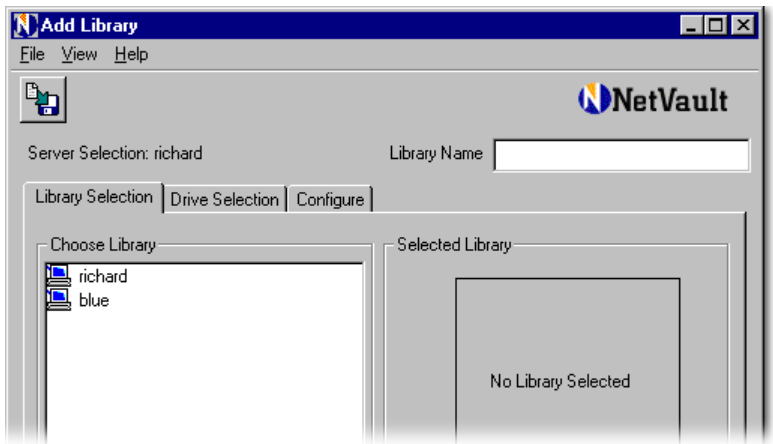
Manually Adding Libraries

Libraries not able to make use of the new **Automatic Device Configuration** facility, are added via the **Add Library** window. A library can be added to the **NetVault Server** itself as a client, or to a **NetVault SmartClient**™ (a NetVault Client with direct access to a device).

The example below explains how to add an Exabyte 480 Library, with single Quantum DLT 4000 drive, to a client which is also the NetVault Server.

Before adding the device, the NetVault Server does not have any devices added (so no backup can be run). To add a library, follow the instructions below.

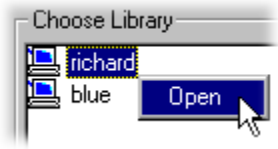
1. Open the NetVault Device Management window by clicking the **Device Management** button on the command toolbars or by choosing the **Administration Device Management** command.
2. Choose **Add Library** to open the **Add Library** window which contains the following options:



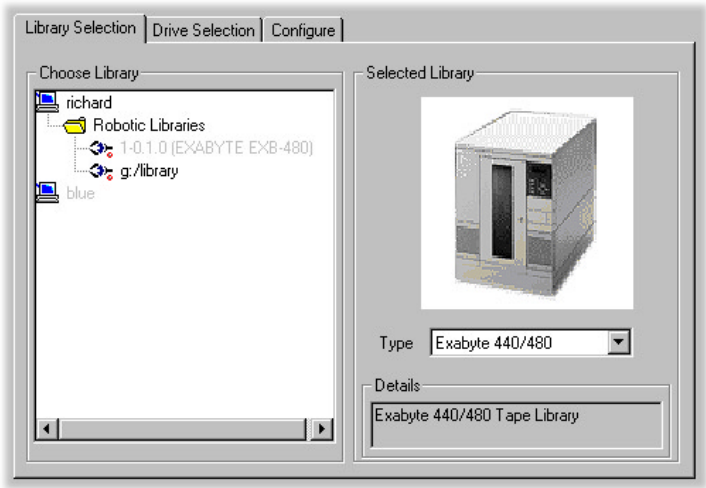
- **Library Selection tab:** Displays the list of clients to which libraries are connected, and shows the libraries available to be added.
- **Drive Selection tab:** Displays the list of clients to which drives are connected, and shows the drives available to be added. The correct drive for each library drive bay must be selected.
- **Configure tab:** Displays an overview of the complete library configuration and allows additional configuration to be set up using library (armchanger) and drive pop-up menus.

- **Save details:** Once complete with the appropriate settings, click this button in order to save the Library configuration modifications.

3. Select the client with the desired Library in order to add it (for this example, the richard client is selected).
4. Right-click and choose **Open** from the pop-up menu (or double-click on the client name). The available libraries for the client will be displayed in the **Choose Device** frame. NetVault normally displays the SCSI ID and device string for the library (armchanger).

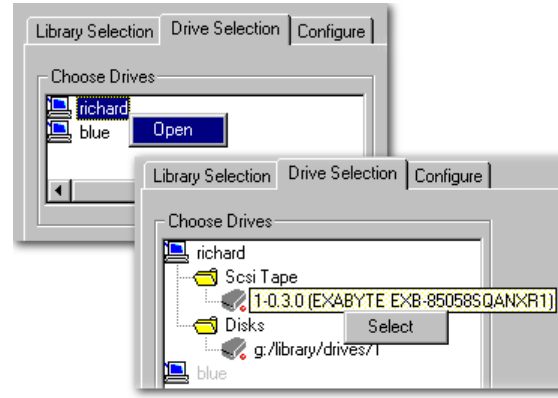


5. Select the library, right-click and choose **Select** from the pop-up menu. The library picture, **Type** and **Details** are displayed in the **Selected Library** frame and the library (armchanger mechanism) is selected.



6. Click the **Drive Selection** tab.
7. Select the NetVault Client (richard) in the **Choose Drives** frame.
8. Right-click on the desired NetVault Client and select **Open** from the pop-up menu. A list of avaialable drives will be displayed.

9. Select the desired drive, right-click and choose **Select** from the pop-up menu.
10. If a library has more than one drive, the appropriate number must be set for each drive in the **Select for drive bay** box (see the figure on the following page).



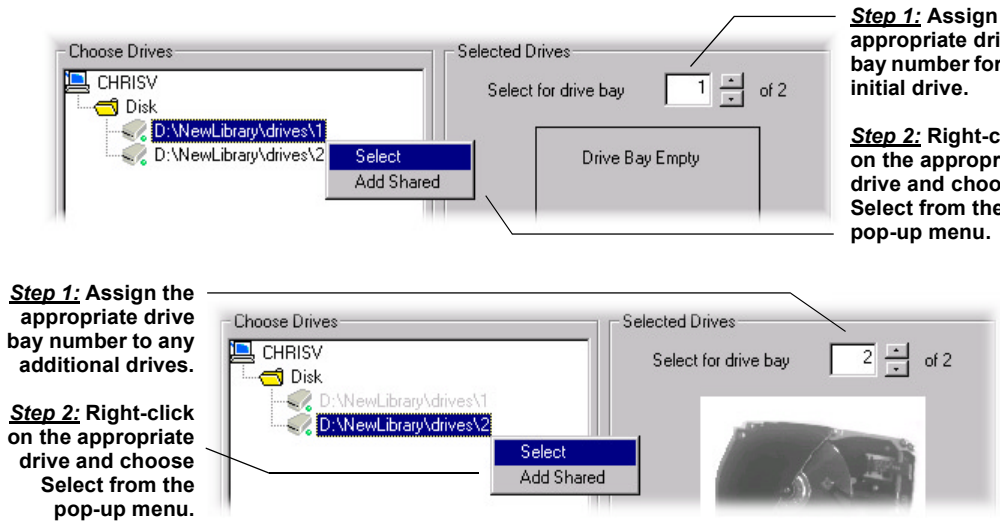
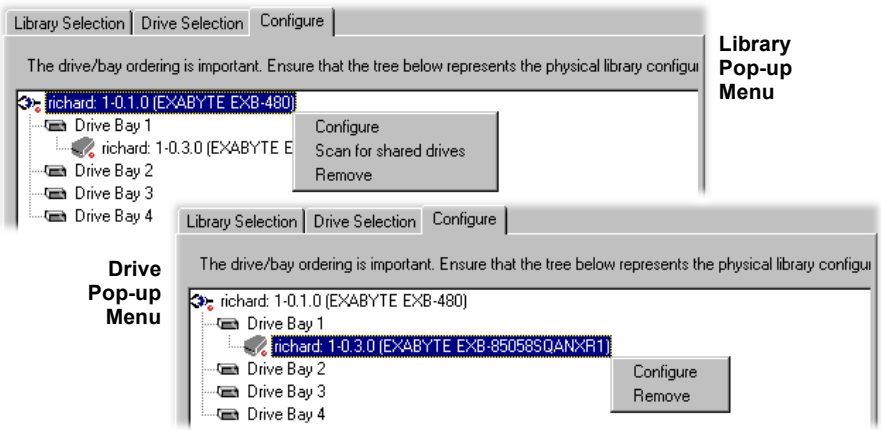


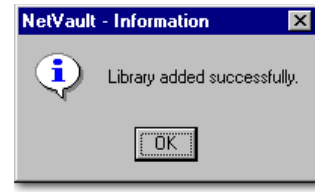
Figure: Adding Multiple Drives to a Library

IMPORTANT: When adding multiple drives to a library, the drive order is critical. Make sure the correct drive bays are used for each added drive.

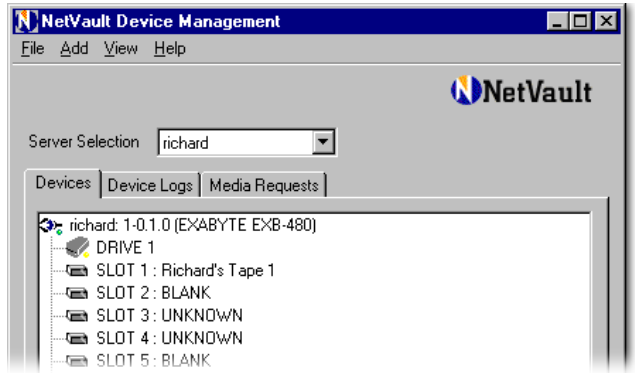
11. The drive is now added. The equipment picture in the **Selected Drives** frame and the **Type** will match the particular library. For a library with multiple drives, repeat the last step for each drive you want to add.
12. Click the Configure tab.The Configure window allows for advanced configuration of library and drive parameters. It is recommended that this window be accessed in order to view the details of selected before saving and adding it to NetVault.



13. Click the **Save Details** button to save the library configuration. The **NetVault - Information** will appear ststing that the Library has been added successfully.



14. The **NetVault Device Management** window will now display the new device and initialization will begin. Initially, only the library and drive(s) are displayed. As each slot is initialized, it is shown with a media title of **UNKNOWN**.



Other media types include:

- **Blank:** New or previously blanked media.
- **Foreign:** Previously used NetVault media will be displayed with the Media Label originally assigned to it. **FOREIGN:** will precede this media if it is not recognized by the NetVault database. This media must be scanned for use.
- **NetVault5 NT (or other OS):** Media used under NetVault 5.
- **Other:** Media formatted in some other manner.

Adding a Shared Library

This section demonstrates how a **Shared Library (Dynamic Drive Sharing)** is added to NetVault. The library uses an arm-changer under the control of one client, but with one or more drive(s) connected to two clients.

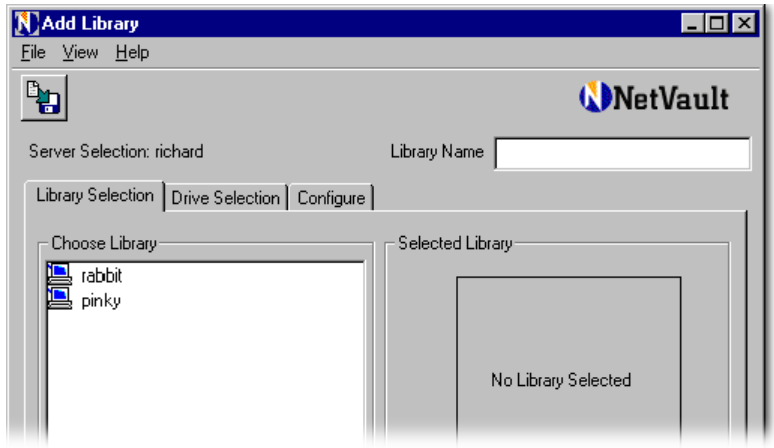
In this example, an ADIC FastStore Library, with a single Quantum DLT 7000 drive, is added to two clients *(example clients: rabbit and pinky)*. These two clients are connected to the device via a shared-SCSI connection and are running different operating systems (Microsoft Windows NT and Sun Solaris, respectively). Note that the client *rabbit* is the NetVault Server for this NetVault Domain.

Before adding the device, the NetVault Server *rabbit* does not have any devices added, so no backups can be run.

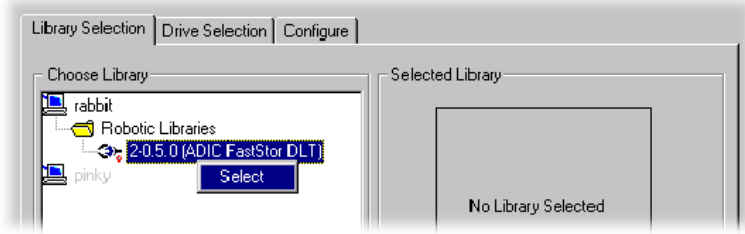
The **NetVault SmartClient**™ used with **Dynamically Shared Drives**™ on a Storage Area Network (SAN) also uses this feature to support centralized tape library/device sharing.

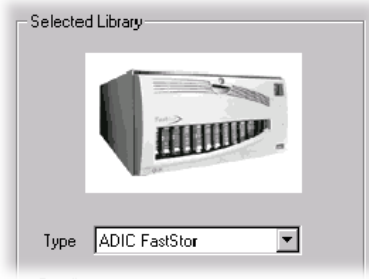
Manually Adding a Library and Drive(s) to the Initial Client

1. Open the NetVault Device Management window by clicking the **Device Management** button on the command toolbars or by choosing the **Administration Device Management** command.
2. Open **Add Library** to open the Add Library window (as shown in the figure at right):



3. Select the first client *(rabbit)* and right-click on it. This is the client that will control the library armchanger.
4. Choose **Open** from the pop-up menu. The available libraries for the client will be displayed in the **Choose Library** frame. NetVault also displays the SCSI ID and device string for the library (armchanger).
5. Right-click on the desired Library and choose **Select** from the pop-up menu (as shown in the figure at right). The Library (armchanger mechanism) is selected. The library picture, **Type** and **Details** will be displayed in the **Selected Library** window (as in the figure at right).



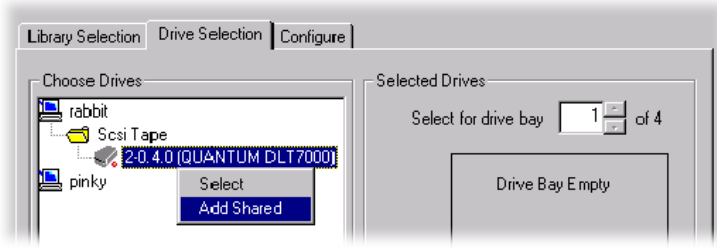


6. Click the **Drive Selection** tab.
7. Select the NetVault Client in the **Choose Drives** frame of the Drive Selection tab.
8. Right-click and choose **Open** from the pop-up menu to display the libraries available to be added to the selected NetVault Server's control.

9. Right-click on the desired NetVault Client and select **Open** from the pop-up menu. This will display the drives available for addition to the selected NetVault Server.

> **IMPORTANT:** If a library has more than one drive, the appropriate number must be set for each drive in the **Select for drive bay** box (see *Figure: Adding Multiple Drives to a Library* on page 48).

10. Right-click on the desired drive in the **Choose Drives** frame and choose **Add Shared** from the pop-up menu (as shown in the figure at right).The drive has been added for the first client. The picture in the **Selected Drives** frame, as well as the information shown in the **Type** box, should match the desired library.



11. If the Library has multiple drives, repeat the previous step for each applicable drive.

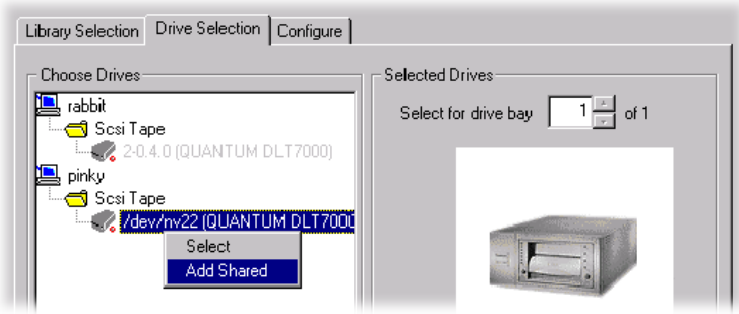
> **WARNING:** When adding multiple drives to a library, the drive order is critical. Make sure the correct drive bays are used for each added drive.

12. Add the same drive to the second client using one of the following methods:
    - **Manually add the drive as shared for an additional client -** Shared drives can be added to an additional client manually. See the procedure detailed in the section, *Manually Adding Shared Drives to Additional Clients* on page 52.
    - **Let NetVault add all shared drives automatically -** Have NetVault automatically scan for shared drives and add them as they are found (for complete details, see the section *Scanning for Shared Drives* on page 53).

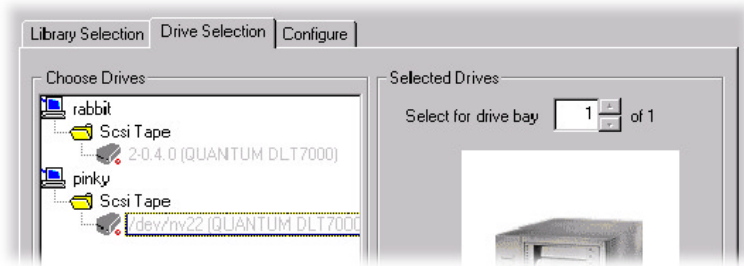
Manually Adding Shared Drives to Additional Clients

NOTE: The NetVault Client selected for this step must be physically connected to the drive via a shared-SCSI connection or SAN.

1. With the **Drive Selection** tab active, right-click on any additional NetVault Client. and choose **Open** from the pop-up menu. The available drive(s) will appear below the client.



2. Assign the appropriate drive bay number in the **Select for drive bay** box.
3. Select the drive, right-click and choose **Add Shared** (as shown in the figure above).
4. The drive will be added to the second client (see the figure at right).

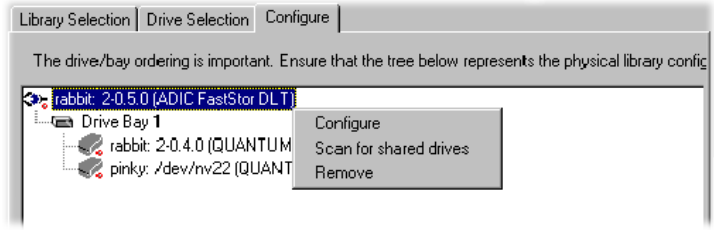


5. Repeat the process above in order to add the drive to any other availble NetVault Clients, as desired.

NOTES REGARDING MANUALLY ADDING SHARED DRIVES:

1. When manually selecting the drive to be added as shared, make sure that the proper drive is selected. This will be an issue regarding NetVault Clients that connected to multiple drives or a library containing multiple drives.
2. It is possible to manually add a drive to as many NetVault Clients as are connected to it.

6. Click the Configure tab. Right-click on the library (armchanger) and/ or drive(s) and choose **Configure** from the pop-up menu in order to change the configuration settings as required (as shown in the figure above).

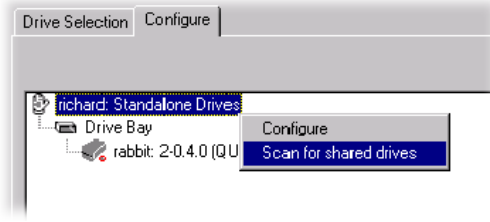


7. View the library and drive configurations, make any necessary modifications and click the **Save details** button to store the settings

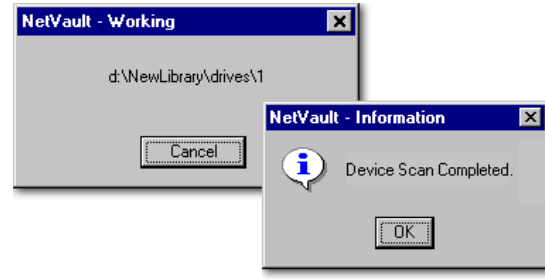
Scanning for Shared Drives

After a drive has been added, it is possible to have NetVault automatically find and add all shared drives for the library.

1. Right-click on the desired library and choose **Scan for shared drives** from the pop-up menu (as shown in the figure at right).



2. The **NetVault - Working** dialog box will appear stating that NetVault is scanning.
3. The scanning process may take a few moments based on the complexity of the network. When the scan is complete, a message will appear indicating that the scan is complete and displaying the shared drive(s) found.



4. Click **OK** to close the dialog box.
5. Click the **Configure** tab to access to view the clients that can control the drive(s). Right-click on the desired client and or drives and select **Configure** from the pop-up menu.
6. After viewing the configuration, and changing any options as necessary, save the settings by clicking the **Save details** button.

Creating Virtual Libraries

NetVault makes it possible to configure portions of a machine's hard drive to act as storage libraries. These devices are referred to as Virtual Libraries. Backed up data can be stored in these devices in lieu of a drive on an actual library. The Automatic Disk Device Generator is a NetVault process that makes creating virtual libraries a simple process. This type of configuration may be set up for evaluation, disk staging or just backing up to a hard disk.

Getting Set Up to Create a Virtual Library

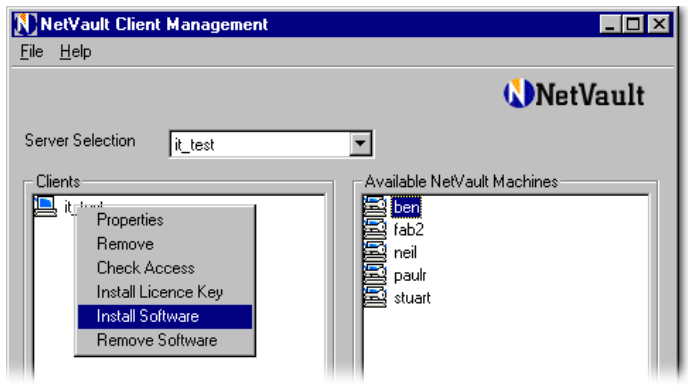
Your NetVault installation CD includes a package that allows you to automatically generate disk devices in a virtual library.

Installing the Virtual Library Software

1. Access the Client Management window by clicking the **Client Management** button on the toolbar (or by choosing **Client Management** from the **Administration** pull-down menu).
2. Right -click the desired client and choose **Install Software** (as shown in the figure at right).
3. Navigate to the directory where your NetVault software was installed and find the file:

   `packages/extra-npks/ddvxxxx.npk`

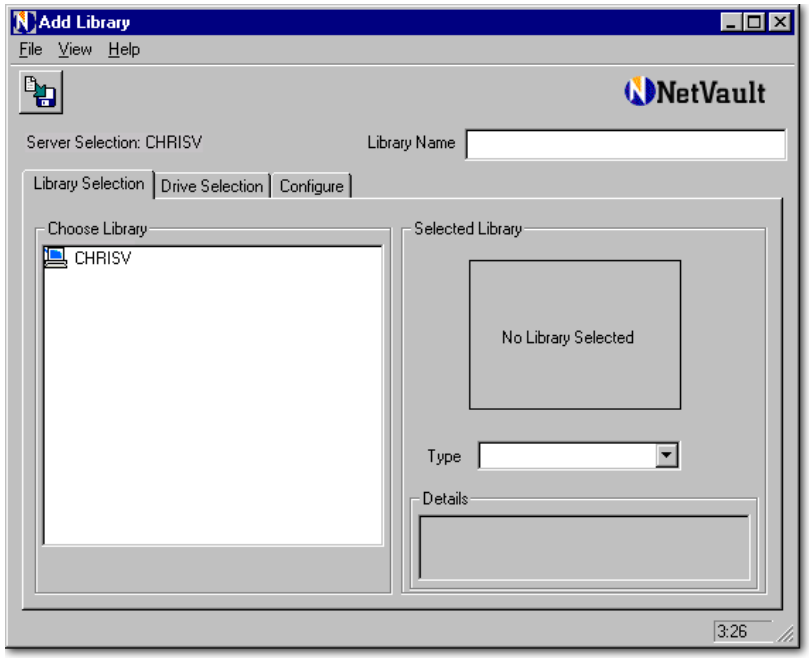
   (where "xxxx" is based on the operating system being used.

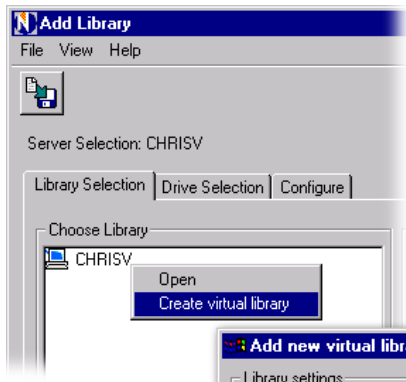


4. Double-click the file. The software will be loaded and upon completion, the following message will appear:
5. Click **OK** to exit the dialog box. It is now possible to generate any necessary disk devices.

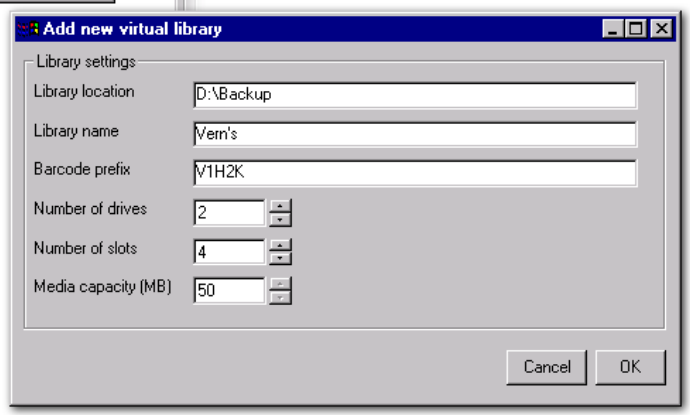
Generating Disk Devices

1. Open the Device Management window by clicking the **Device Management** button on the command toolbar or by choosing the **Administration Device Management** command.
2. Right-click the desired device and choose **Add Library** to open the Add Library window (see the figure on the following page).





3. Right-click the client in the **Choose Library** area and choose **Create Pseudo Library** to open the **Add new virtual library** dialog box (as shown in the figure below).

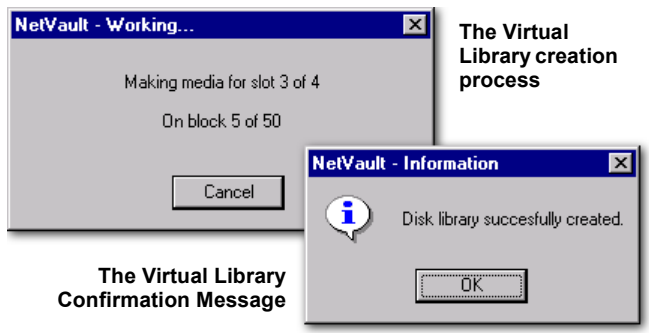


4. The **Add new virtual library** dialog box contains the following options:
   - **Library location:** The path to the location of the library.
   - **Library name:** The name of the library to be created.
   - **Barcode prefix:** The prefix for the barcodes to be assigned. NetVault generates a random code to help maintain the uniqueness of bar codes.
   - **Number of drives:** Select the number of drives desired.
   - **Number of slots:** Assign the number of slots in the library.
   - **Media capacity (MB):** The size of the media in each slot.

IMPORTANT NOTES:

1. The directory input in the **Library location** field must already exist before it can be set here. NetVault does not create new directories for this option and an error message will appear if the directory named does not exist.
2. The size set in the **Media capacity (MB)** field is the size of each slot in the library. The Virtual Library's total size is equal to this number times the number set in the **Number of slots** field (i.e. if four slots are selected with a media capacity of 50MB, the total space required will be 200 MB: 4 x 50 = 200). Ensure the proper amount of disk space is available in order to accommodate the settings made.

5. With the proper options set, click **OK** and the library construction process will begin. When finished a confirmation message will appear.
6. Click **OK** to close the dialog. Now the library can be added to the client by following the normal steps used to add libraries.



The Virtual Library creation process

The Virtual Library Confirmation Message

Please see *Manually Adding Libraries* on page 45 for complete instructions.

Chapter 4:

E-mail Notification

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- The Mail Server Tab 60

Setting Up E-Mail Notification in the NetVault GUI 60

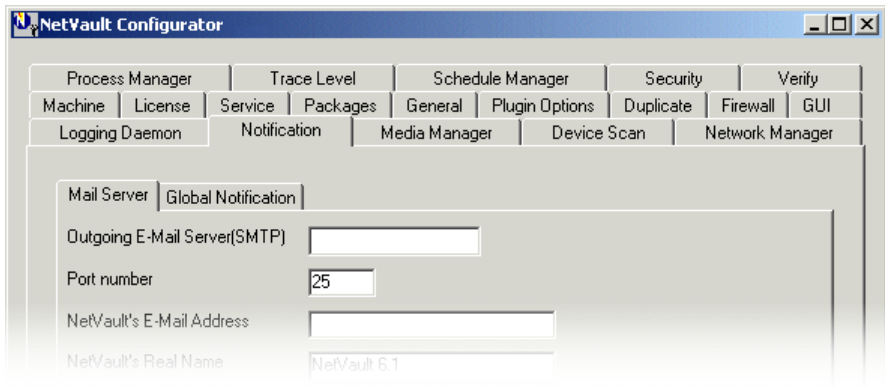
E-mail Notification Utility

NetVault 6.5.1 offers a utility that allows a user-defined list of recipients to receive an e-mail notification of the completion status of a NetVault job. This is controlled through a script provided with NetVault 6.5.1.

Setting Up E-mail Notification in Configurator

The E-mail Notification utility is customizable via the NetVault Configurator. To access the Configurator in order to setup this utility, follow the procedure below:

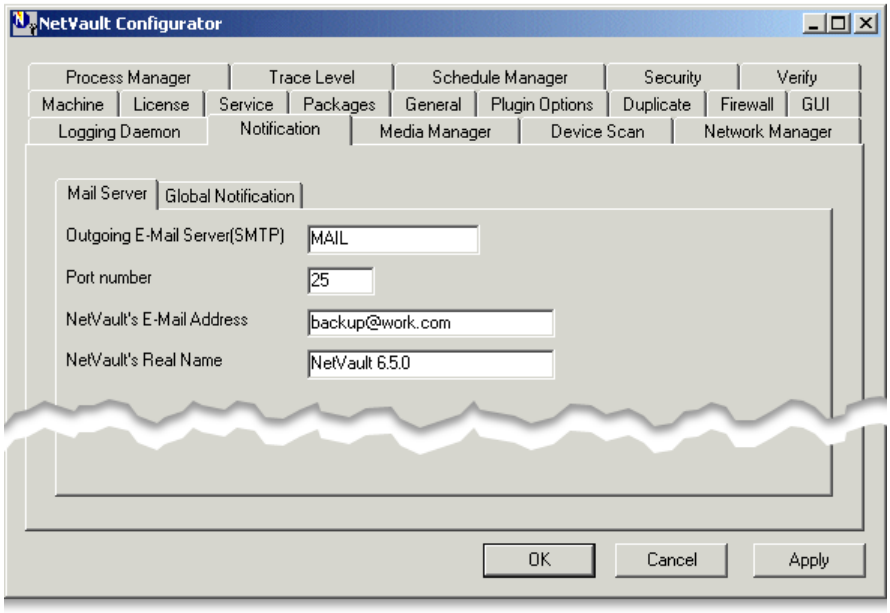
NOTE: NOTE: Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is recommended that NetVault be closed prior to accessing the Configurator.



1. Launch the **NetVault Configurator**.
2. Select the **Services Tab**.
3. Click on **Stop NetVault** in order to stop the NetVault services. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator.
4. Select the **Notification Tab**. The **Mail Server** tab is revealed with various areas for customization. Set the areas on this tab as required (see *The Mail Server Tab* section on the next page for detailed explanations of each field).
5. With the proper fields set, click on **Apply** to amend the changes and remain in the Configurator. Again, ***DO NOT*** click on **OK,** as it will exit the Configurator.
6. Select the **Services** tab again, and click on **Start NetVault**, in order to re-start the NetVault Services (for more details on starting and stopping NetVault Services, please see *Appendix F: Using the NetVault Configurator* in the *NetVault 6.03 Administrator's Guide*).
7. Click on **OK** to apply all changes and exit the Configurator.

The Mail Server Tab

Four definable fields are present on the **Mail Server Tab:**



- **Outgoing E-Mail Server (SMTP):** Enter the machine name on which the e-mail server resides in this field.
- **Port number (Default value of 25):**
- **NetVault's E-Mail Address:** Enter the e-mail address that NetVault will use to send e-mail ***from*** in this field. If a reply were sent to an e-mail sent by NetVault, this would be the recipient address.
- **NetVault's Real Name (Default is NetVault 6.5.1):** This is the alias that will appear in the "From" section of an e-mail sent by NetVault.

Setting Up E-Mail Notification in the NetVault GUI

Once the E-Mail Notification Utility is setup correctly in the Configurator, it is necessary to cue NetVault to send e-mail notifications by initiating a postscript. This is done as follows:

> **NOTE: PLEASE NOTE:** The operation listed below is the same regardless of the type of job being performed (backup or restore).

1. Launch NetVault.
2. Select the desired job type (Backup or Restore) from the NetVault GUI.
3. Select the **Advanced Options Tab.**

4. In the **Pre and Post Scripts** Frame of the **Advanced Options** Window, click on the check box to the left of **Use Post Script** in order to activate it for input.
5. Input one of the two pre-defined **Post Scripts** provided with NetVault 6.5.1 for this operation, in the field to the right of **Use Post Script**:
   - **psmail** - This Post Script will send a completion status e-mail for the selected job to all of the e-mail addresses input in the **User Parameter** fields.
   - **psmail_logs** - This Post Script will send a completion status e-mail *as well as* the log file for the selected job as an attachment to all of the e-mail addresses input in the **User Parameter** fields.

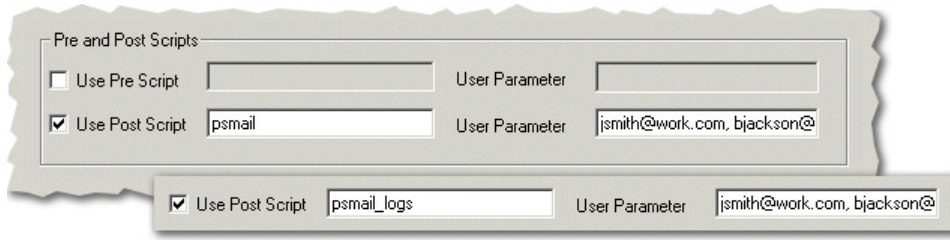


Figure 1: NetVault E-mail Post Scripts set in the Advanced Options Tab

NOTE: IMPORTANT NOTES REGARDING SCRIPTS:

1. In order to work properly, scripts should be located in the ..\NetVault6\scripts directory.
2. In NT platforms, be sure that all scripts are appended with the file extension ".bat".
3. In UNIX platforms, script titles are case sensitive. Be sure to input the exact script title in the Post Script field.
4. Scripts can be modified to meet user requirements, although it is recommended that NetVault scripts be left as is for optimum reliability.

6. In the **User Parameters Field**, input the e-mail address(es) of the desired recipient(s).

NOTE: NOTE: If sending to multiple addresses, separate each address with a comma **(,)**.

7. With all data input correctly and verified, it is recommended that an **Advanced Options Set** be created for future use. This way, the data set in the **Pre and Post Script Frame** (as well as any other settings made from the Advanced Options Tab) will be saved and it will not need to be re-input. For complete details on saving an **Advanced Options Set**, please see *Chapter 15: Using Policy (Set) Templates* of the *NetVault 6.03 Administrator's Guide.*

Chapter 5:

Bulk Media Handling

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Bulk Media Handling

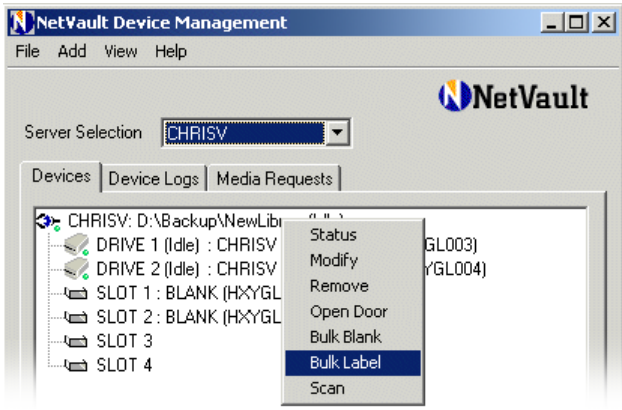
Bulk Media Handling is a process through NetVault that makes it possible to send a "bulk command" (e.g. blank or label) to all eligible media in a library. Eligible Media refers to any of four types:

- Blank Media
- Media marked for re-use
- Media marked as "Other"
- Media marked as "NetVault 5"

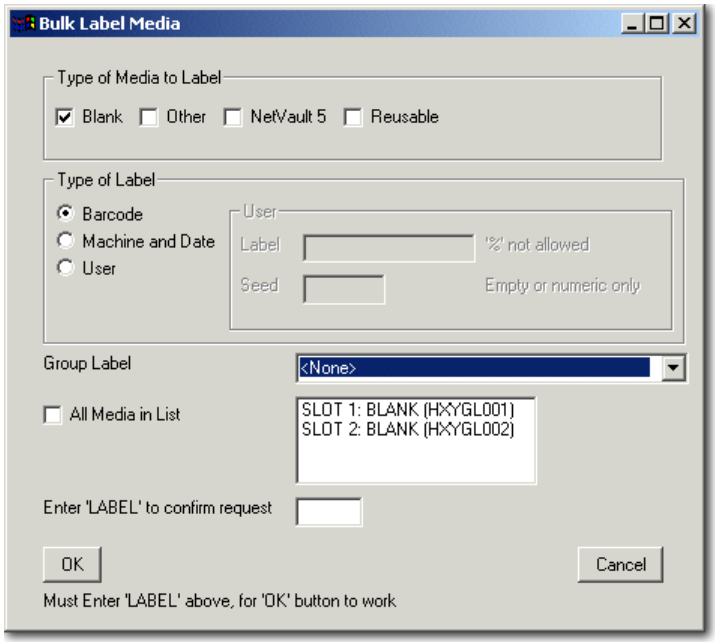
Bulk Media Handling is useful in that it allows a user to either label or blank multiple pieces of media with a single command, rather than having to individually blank or label them. The two types of Bulk Media Handling are detailed below

Bulk Labelling

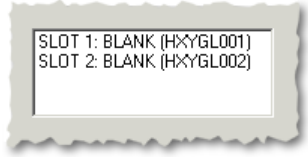
In order to Bulk Label Media, follow the process shown below:



1. With NetVault open, click on the **Device Management** button (or select Device Management from the Administration menu item).
2. With the **Devices Tab** active, right-click on a library displayed in the window, and select **Bulk Label** from the pop-up menu. The **Bulk Label Media Window** will open (see image on next page).



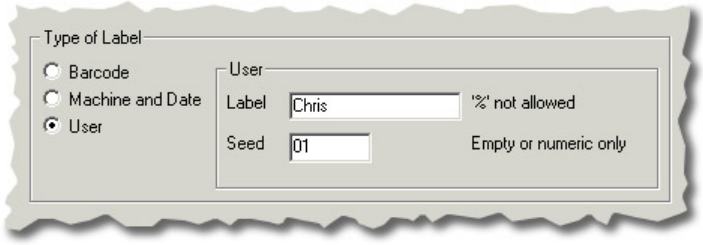
3. In the **Type of Media to Label** frame, the four eligible forms of media are displayed for selection. It is possible to select more than one form of media, and as each type is selected, the **eligible media window** (located in the lower portion of the **Bulk Label Media** Window) will be updated with that media type.



The eligible media window

   - **Blank (Default Selected):** Any blank, non-labelled media found in the library
   - **Other:**
   - **NetVault 5:** Any media labelled as NetVault 5 in the library.
   - **Reusable:** Any reusable media or media that has been previous labelled, found in the library.
4. In the **Type of Label** frame, it is possible to select from one of three different types:
   - **Barcode:** This will assign a unique barcode to each individual piece of media.
   - **Machine and Date:** This will label each piece of media with the specific NetVault machine it is located on as well as the date that it was labelled.

- **User:** By selecting this option, the User frame is activated, allowing user defined settings:



  - **Label:** Input a desired label title here.
  - **Seed:** Input a numeric value that will serve as a starting point for the first piece of media labelled. Each subsequent piece of media will be numbered in increments of one. It is also possible to leave this field blank and no number values will be assigned.

5. Select individual items in the **eligible media window** or click the check box to the left of **All Media in List** to select them all.
6. It is also possible to set a **Group Label**. See the **Group Label** procedure below for more details.

> **NOTE:** If a Group Label is desired, follow the Group Label section below before continuing with this procedure. Failure to do so will result in Bulk Labelling the selected media without assigning a Group Label.

7. At the **Enter 'LABEL' to confirm request** field, type the word **LABEL** (case sensitive, all-caps) in order to confirm the settings made and click on **OK** to apply the Bulk Labelling This field ***must*** be filled in appropriately or the **OK** button will not function.

Group Label

A group label is one that is assigned to multiple forms of media and is fully customizable. This label appears at the end of the media label, enclosed in "< >".

Setting Up a Group Label

1. The **Group Label** pull-down menu, at default is set to <NONE> and no other **Group Labels** are currently available for selection. To change this and assign one, double-click in the pull-down menu field and input a desired **Group Label**.
2. Select individual items in the **eligible media window** by clicking on them, or click the check box to the left of **All Media in List** to select all items.

> **NOTE:** If other types of labelling are desired, follow the procedure detailed above before continuing with this procedure. Failure to do so will result in Group Labelling the selected media only.

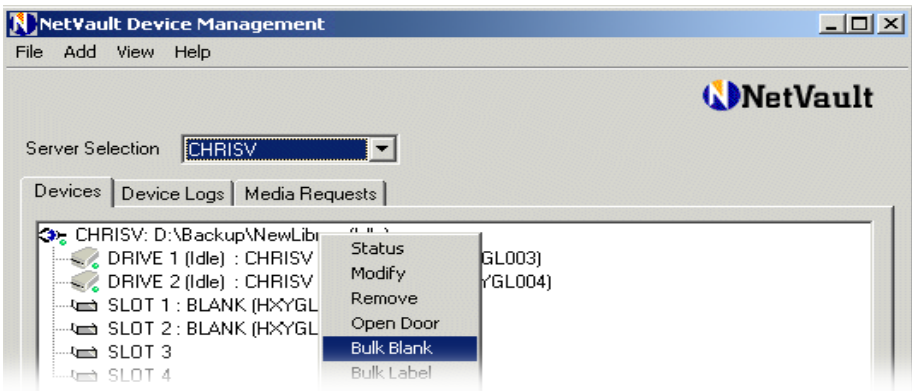
3. At the **Enter 'LABEL' to confirm request** field, type the word **LABEL** (case sensitive, all-caps) in order to confirm the settings made and click on **OK** to apply the Group Label. This field ***must*** be filled in appropriately or the **OK** button will not function.

Re-Using a Group Label

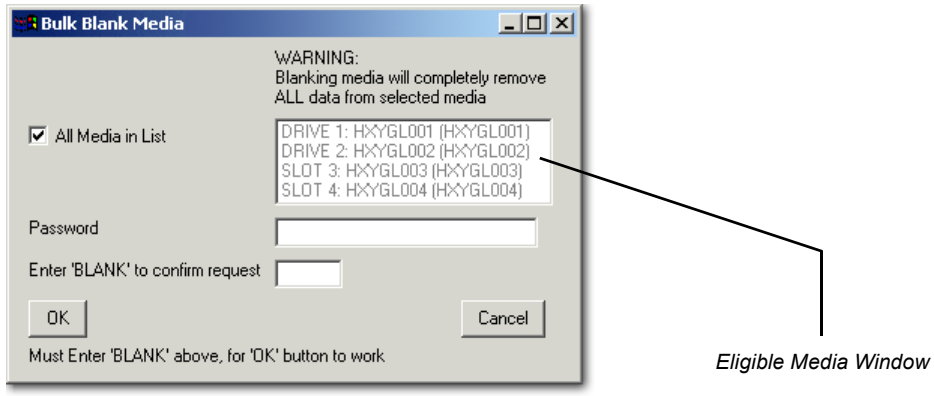
With the above process completed successfully, the **Group Label** is saved and can be accessed from the **Group Label** pull-down menu for future use.

Bulk Blanking

Once a group of media has been labelled, either individually or through **Bulk Labelling**, it is possible to **Bulk Blank** the media. This is done as follows:



1. With NetVault open, click on the **Device Management** button (or select Device Management from the Administration menu item).
2. With the **Devices Tab** active, right-click on a library displayed in the window, and select **Bulk Blank** from the pop-up menu. The **Bulk Blank Media Window** will open



3. The **All Media in List** check box is default checked upon opening this window and all media in the eligible media window is selected. To individually select specific pieces of media for blanking, click the check box to de-select it and then individually select items for blanking.
4. Input the NetVault Administrator password in the **Password** Field. Make sure that the correct password is used, otherwise the operation will fail.
5. At the **Enter 'BLANK' to confirm request** field, type the word **BLANK** (case sensitive, all-caps) in order to confirm the settings made and click on **OK** to Bulk Blank the selected media This field ***must*** be filled in appropriately or the **OK** button will not function.

IMPORTANT NOTE REGARDING BLANKING: Blanking Media completely removes ***ALL*** data from a selected piece of media, not just the labelling. Use caution when Blanking Media.

Chapter 6:
Command Line Interface

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Command Line Interface

NetVault 6.5.1 offers a new utility known as the Command Line Interface (CLI). The CLI is designed to allow a user to control various functions of NetVault through predefined scripts from a command line. These predefined scripts, when written in the correct syntax from the are capable of performing the following:

- **Start or stop a NetVault job**
- **Create new jobs** - This can be done using existing templates for schedule, options and advanced options.
- **Run a simple restore** - This is based on default values for options, schedule and advanced options.
- **Manage libraries or other devices** - This includes importing and exporting media, blanking media, getting drive and library status, listing the library (all slots, drives, etc.), marking media for re-use, and labelling media.
- **Generate user definable media reports** - An operator could create a script to automatically export duplicated media from the library for off-site storage and then update the NV media database to show the media as "off-site."
- **View the latest Operator Messages** - In order to determine if attention is required.

Preparing to Run Command Line Executables

Before running a NetVault script from the command line, it is first necessary to navigate to the proper directory that contains all NetVault CLI scripts. From the command line navigate to:

```
..\NetVault6\util
```

Command Line Executables

All NetVault CLI Scripts are ***non-blocking***. This means that a response to the script command is returned before the action has actually completed. This allows for continuous running of various scripts without NetVault stopping.

Below is a list of the predefined scripts, included with NetVault 6.5.1 that will run various actions from the command line. Each script is listed with a brief description of its capacity as well as the correct syntax for its use.

IMPORTANT NOTES REGARDING SCRIPT USAGE:

1. All scripts shown in syntax format are to be input as one line, unless otherwise noted.
2. Information enclosed in "[ ]" is a user input variable based on the command preceding the brackets (e.g. input 'servername [servername]' as 'servername server1').

Job Specific Command Line Executables

nvjobstart

Use this command to start a saved job using the proper NetVault job identification:

Syntax:

```
nvjobstart -jobid [job id] -servername [server name]
```

- **-jobid:** The NetVault Job ID of the Job being started.
- **-servername:** The name of the target server.

nvjobabort

This command allows a user to abort a job that is currently running. However, if the job is a scheduled one, it must actually be deleted from the NetVault GUI.

Syntax:

```
nvjobabort -jobid [job id] -instanceid [instance id] -servername
[server name]
```

- **-jobid:** The NetVault Job ID of the Job being aborted.
- **-instanceid:** The Instance of the job being aborted.
- **-servername:** The name of the target server.

> **NOTE:** Unless otherwise specified, the default for the instance is “1”.

nvjobcreate

Use this command to create a backup job. A job can be created to be later submitted. This is done by submitting a job title and using pre-defined selection sets (created from the NetVault GUI) within the command line:

- The name of a ***predefined backup selection set*** - This is required
- The name of a ***predefined target selection set*** - Optional
- The name of a ***predefined schedule selection set*** - Optional
- The name of a ***predefined advanced options selection set*** - Optional

Restrictions

Certain restrictions apply to the use of this script command:

- **Backup Options**: The backup options (dependent on the plugin being used) will always be set to their default values when utilizing this command. These options can only be custom configured through the NetVault GUI.

Syntax:

The syntax for this command must include certain tags (each with the proper variable information accompanying it) in order to run. These tags are labelled as 'required' below. The script also allows for various tags pertaining to other NetVault Savesets to be added as desired.

Required minimum syntax:

```
nvjobcreate -servername [servername]-jobtitle [jobtitle]
-selectionsetname [selectionsetname]
```

Optional tags that can be added (in any combination) to the syntax above:

```
-schedulesetname [schedulesetname]
-targetsetname [targetsetname]
-advoptssetname [advoptssetname]
```

- **-servername (Required):** The name of the target server.
- **-jobtitle (Required)**: the new title to be assigned to this NetVault job.
- **-selectionsetname (Required):** The name of the predefined selection set to be used with this job.
- **-schedulesetname:** The name of the predefined schedule set to be used with the job.
- **-targetsetname:** The name of the predefined target set to be used with the job.
- **-advoptssetname:** The name of the predefined advanced options set to be used with the job.
- **returnjob:** This is the job ID that will be returned for the newly created job. This Job ID can be submitted with another command line script (e.g. nvstartjob) in order to run the job.

NOTES:

1. Once a backup utilizing a job created with this script is completed, details will be returned to the user. These details will show the Job ID, the Instance and Phase Values of the completed job.
2. If any of the necessary selection sets are not specified, then NetVault default settings will be used.

nvopendoor

Use this command in order to open the door of a library managed by the specified server.

Syntax:

```
nvopendoor -server [servername] -library [libraryname]
```

- **-servername:** The name of the target server.
- **-libraryname:** The target library.

nvclosedoor

Use this command in order to close the door of a library managed by the specified server.

Syntax:

```
nvclosedoor -servername [servername] -library [libraryname]
```

- **-servername:** The name of the target server.
- **-libraryname:** The target library.

Viewing Logs with the Command Line Interface

nvreadlog

NetVault log information can be reviewed through the use of this command.

Syntax:

```
nvreadlog [<machine>]
```

- **<machine>**: The NetVault name of the machine whose logs are to be viewed.

Optional tags that can be added (before the [<machine>] tag):

- **[-h]:** Adding this tag will exit after outputting historic logs.
- **[-d <delimiter string>]:** Adding this tag accompanied by specific character(s) (input for the <delimiter string> variable) alerts the interface on how to separate displayed data (e.g. -d followed by < > (two spaces) would separate each displayed item of data with two spaces).
- **[-b <days>]:** This tag followed by a number value (input for the <days> variable) determines the number of days prior, from which a dump is to begin.
- **[-o <messages>]:** Including this tag will reveal operator messages only, where the parameter <messages> is a variable input for the desired type of message (e.g. -o <failed> would display only operator messages that included the word “failed”). Multiple items can be included for this variable, separated by a comma.

Media Specific Command Line Executables

Media can be identified by its barcode (if one exists), its media label, or its slot position within a library.

The 'mediaspec' Switch

mediaspec is a switch that when used along with various media-specific scripts, allows the user to specify media based on:

- **A Media Barcode Number** - Represented with **[*barcode]** in the CLI.
- **A Media Label** - Represented with **[medianame]** in the CLI.
- **A Library Slot Number** - Represented with **[lib::slot]** in the CLI.

NOTE: When specifying media type through the use of the ***mediaspec switch***, it is only possible to assign ***one*** tag to it (by barcode, media label or library slot).

Scripts Utilizing the 'mediaspec' Switch

nvblankmedia

Use this script to blank various media.

IMPORTANT NOTE REGARDING BLANKING: Blanking Media completely removes ***ALL*** data from a selected piece of media. Use caution when blanking media.

Syntax:

```
nvblankmedia-servername [servername]-mediaspec [*barcode] or
                                    -mediaspec [medianame] or
                                    -mediaspec [lib::slot]
```

- **-servername:** The name of the target server.
- **-mediaspec [*barcode]:** The mediaspec switch followed by the barcode number of the desired media. The barcode is to be preceded by an "*" (use only when searching by barcode).
- **-mediaspec [medianame]:** The mediaspec switch followed by the media label of the desired media (use only when searching by media label).
- **-mediaspec [lib::slot]:** The mediaspec switch followed by the library slot number of the desired media (use only when searching by library slot).

nvscanmedia

Use this command to scan for and locate media of the selected type.

Syntax:

```
nvscanmedia -servername [servername]-mediaspec [*barcode] or
                                    -mediaspec [medianame] or
                                    -mediaspec [lib::slot]
```

- **-servername:** The name of the target server.
- **-mediaspec [*barcode]:** The mediaspec switch followed by the barcode number of the desired media. The barcode is to be preceded by an "*" (use only when searching by barcode).
- **-mediaspec [medianame]:** The mediaspec switch followed by the media label of the desired media (use only when searching by media label).
- **-mediaspec [lib::slot]:** The mediaspec switch followed by the library slot number of the desired media (use only when searching by library slot).

nvexportmedia

Use this command to export a piece of media from within a tape library to it's exit/entry (EE) port.

Syntax:

```
nvexportmedia-servername [servername]-mediaspec [*barcode] or
                                    -mediaspec [medianame] or
                                    -mediaspec [lib::slot]
```

- **-servername:** The name of the target server.
- **-mediaspec [*barcode]:** The mediaspec switch followed by the barcode number of the desired media. The barcode is to be preceded by an "*" (use only when searching by barcode).
- **-mediaspec [medianame]:** The mediaspec switch followed by the media label of the desired media (use only when searching by media label).
- **-mediaspec [lib::slot]:** The mediaspec switch followed by the library slot number of the desired media (use only when searching by library slot).

nvreusemedia

Use this command in order to set specific media as reusable.

Syntax:

```
nvreusemedia -servername [servername]-mediaspec [*barcode] or
                                     -mediaspec [medianame] or
                                     -mediaspec [lib::slot]
```

- **-servername:** The name of the target server.
- **-mediaspec [*barcode]:** The mediaspec switch followed by the barcode number of the desired media. The barcode is to be preceded by an "*" (use only when searching by barcode).
- **-mediaspec [medianame]:** The mediaspec switch followed by the media label of the desired media (use only when searching by media label).
- **-mediaspec [lib::slot]:** The mediaspec switch followed by the library slot number of the desired media (use only when searching by library slot).

nvlabelmedia

Use this command to label selected new media or re-label existing. This command uses the traditional **mediaspec** switch along with one of its various tags for sorting (e.g. barcode, media label and library slot), but also requires one of three additinonal switches be placed at the end of the command line in order to label it:

- **newlabelname**: Defines the label name to be applied to the specified media.
- **newgroupname:** Defines the group name to be assigned to the specified media.
- **newoffsitelocation:** Defines the offsite location for the specified media and marks it as offsite to avoid future use or overwriting.

Syntax:

The syntax below is an example of how to use the nvlabelmedia script to assign a new label name to all barcoded media. Use other combinations as desired.

```
nvlabelmedia -servername [servername] -mediaspec [*barcode]
-newlabelname [newlabelname]
```

Other Media Specific Scripts

nvopeneeport

Use this command in order to open the entry/exit port for access to it.

Syntax:

```
nvopeneeport-servername [servername] -libraryname [libraryname]
```

- **-servername:** The name of the target server.
- **-libraryname:** The name of the target library.

nvcloseeeport

Use this command in order to close the entry/exit port.

Syntax:

```
nvcloseeeport -servername [servername] -libraryname [libraryname]
```

- **-servername:** The name of the target server.
- **-libraryname:** The name of the target library.

nvcloseeeportcleaning

Use this command in order to close the entry/exit cleaning port.

Syntax:

```
nvcloseeeportcleaning -servername [servername] -libraryname
[libraryname]
```

- **-servername:** The name of the target server.
- **-libraryname:** The name of the target library.

nvdeviceeject

Use this command to remove any media from a specified standalone drive.

Syntax:

```
nvdeviceeject -servername [servername] -devicename [devicename]
```

- **-servername:** The name of the target server.
- **devicename:** The name of the standalone device that is to eject any loaded media.

Device Status

The status of a device (its drive(s) and media) can be determined by running the NetVault **nvreport** script with various options.

Drive Status

Using the **nvreport** script, input as follows to determine the status all eligible drives:

Syntax:

```
nvreport -r dr
```

Example output:

```
C:\>nvreport -r dr
Name            Product       Vendor   Status   Machine   MB Written   MB Read

e:\mydrive      Pseudo Drive  Willow   Online   Server1   0            0
e:\NewLibrary   Pseudo Drive  Willow   Online   Server1   0            0
e:\OldLibrary   Pseudo Drive  Willow   Online   Server1   0            0
```

Media Status

Using the **nvreport** script, input as follows to determine the status all eligible media:

Syntax:

```
nvreport -r me
```

Example output:

```
C:\>nvreport -r me
Media Name  Group    MB Left  MB Used  Format  Need Imprt  Need Rcvry  Unusable

tape1       <none>   7        56       MTF     no          no          no
tape5       <none>   17       0        MTF     no          no          no
```

Library Status

The **nvreport** script can be used to determine library configuration and status. The following information can be displayed (utilizing the appropraiate switches along with the nvreport script):

- **Slot Status** - whether slots are empty or occupied
- **Bay Information**
- **Media Information** - Display the media type and its current location within a library.
- **Library/Library Drive Status**

Library Slots Report

Use this command to display a library's slot information as well as information on any media present in the drive(s).

Syntax:

```
nvreport -r libraryslots
```

Example output:

```
C:\>nvreport -r libraryslots
Library         Slot    Media       Barcode      Library Status

mylibrary       1       UNKNOWN     yyxyk110z4   online
mylibrary       2       EMPTY       n/a          online
```

Library Drives Report

Use this command to display a library's drive and drive bay status.

Syntax:

```
nvreport -r librarydrives
```

Example output:

```
C:\>nvreport -r librarydrives
Library     Bay       Drive                    Media     Barcode     Status

mylibrary   DRIVE 1   e:\NewLibrary\Drives\1   monday    yyxyk110z1  online
mylibrary   DRIVE 2   e:\NewLibrary\Drives\2   EMPTY     n/a         online
mylibrary   DRIVE 3   e:\NewLibrary\Drives\3   EMPTY     n/a         online
```

Library Entry/Exit Ports Report

Use this command in order to show any of the following:

- The status of an entry/exit port number.
- The library that the entry/exit port belongs to.
- Information about media contained in the entry/exit port.

Syntax:

```
nvreport -r entryexitports
```

Example output:

```
C:\>nvreport -r entryexitports
Library     Entry/Exit Port   Status    Media     Barcode

mylibrary   port1             closed    EMPTY     n/a
mylibrary   port2             closed    monday    tkzzk004
mylibrary   port3             closed    UNKNOWN   n/a
```

NETVAULT v6.5.2

administrator's guide addendum

SECTION 3:

Enhancements

Chapter 7:
Backup Enhancements

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Backup Enhancements in NetVault 6.5.1

Enhancements have been made to NetVault 6.5.1's **File System Plugin**, making it more efficient during data transfer and therefore improvements in performance should be noticeable in high throughput environments. This will also result in less CPU usage during a backup.

As well, a new plugin feature, known as the **Open File Management APM** has been implemented with 6.5.1.

File System Plugin Enhancements

The main enhancements made to the NetVault File System Plugin include:

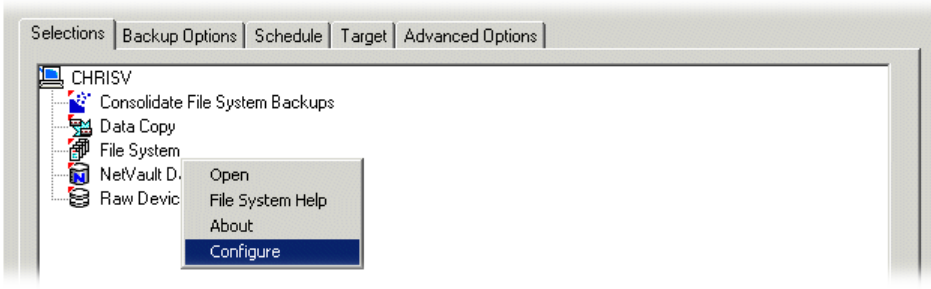
- Exclusion Lists
- Inclusion Lists
- Backup/Restore Summary Enhancements

Exclusion Lists

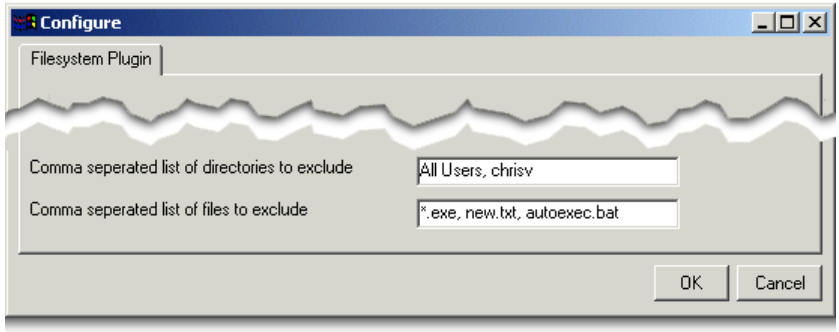
Exclusion lists are sets of specific files that have been selected to be excluded from a backup. Exclusion lists are supported *per NetVault Client*, that is each list is setup on an individual client where it is kept. When a backup of that specific client occurs, the files saved in the exclusion list will be left out. ***There are no default exclusion items***.

Follow the procedure detailed below to setup an exclusion list on a specific client:

1. Launch NetVault.
2. Select **Backup** from the NetVault GUI.
3. With the **Selection Tab** active, double-click on the desired client to open it and display the available NetVault plugins.



4. Right-click on the **File System** plugin and select **Configure** from the pop-menu.



5. From the **Configure Window** that appears, two fields are available for setting up exclusion lists:
   - **Comma separated list of directories to exclude:** Input a comma separated list of directories that NetVault should exclude from a backup.
   - **Comma separated list of files to exclude:** Input a comma separated list of individual files that NetVault should exclude from a backup.

NOTES REGARDING EXCLUSIONS:

- It is possible to use wildcards (e.g. *.exe, t*.txt, note.*, etc.) when entering files or directories for exclusion.
- If typing in the name of a file or directory, be sure to enter it exactly as it is titled, otherwise it will not be added to the exclusion list.
- When entering a specific file for exclusion, it is necessary to include the file's complete extension (e.g. .exe, .bat, etc.).

6. Click on **OK** to apply these items to the specific Client's **Exclusion List**.
7. On running a backup, if a file or directory matches an item in the exclusion list, it will be skipped. In the case of a directory, all sub-directories and files contained within it will be excluded.

PLEASE NOTE: This list will be saved on the specific Client and will be active at each launching of NetVault. If a backup is performed of the selected client in the future, the directories and files set for exclusion will be excluded unless the list is cleared.

Clearing an Exclusion List

Follow the instructions below in order to clear an exclusion list:

1. With the Selection Tab of the NetVault Backup Window active, double-click on the desired client.
2. Right-click on the File System plugin and select Configure from the pop-up menu.
3. The **Configure Window** will appear, showing the previously input exclusion items. Highlight all items in the exclude window(s) and delete the data.
4. Click on **OK** to apply the change.

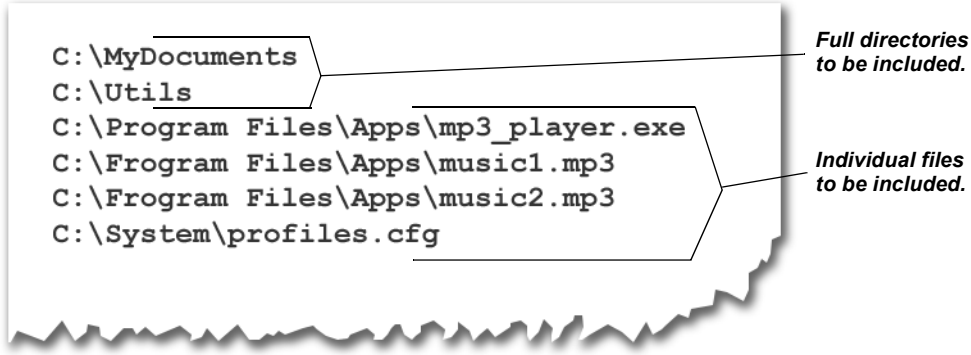
Inclusion Lists

An inclusion list is a list of complete directories or individual files that have been selected from a group to be backed up. These lists are initially setup outside NetVault and then saved in an Inclusion file. These files are then selected in NetVault on a per job basis. They can be useful when selected files need to be included with every backup or when using the Command Line Interface (or CLI). For more information on using the CLI please see *Chapter 6: Command Line Interface* on page 73.

Generating an Inclusion List and Saving it as an Inclusion File

Inclusion lists need to be generated in an external text editing application and then saved to the local client's hard drive as an **Inclusion File**. Below is a list of rules that apply to the setup of an **Inclusion List**.

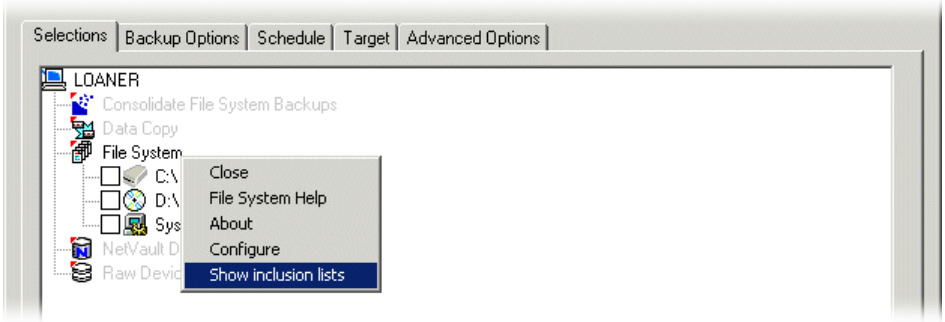
- Any external text editing application may be used.
- One inclusion per line.
- When including a directory, the full directory path must be given.
- When a specific file is included, the full path to, as well as the exact file name must be input (i.e. no wildcards can be used)..



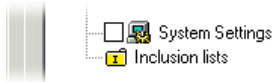
The Layout of a Sample Inclusion List

Selecting an Inclusion File in NetVault

1. Launch NetVault
2. Select **Backup** from the NetVault GUI.
3. With the **Selection Tab** active, double-click on the desired client to open it and display the available NetVault plugins.
4. Double-click on the **File System** plugin in order to open it.
5. Once open, a list of items available for backup will appear. With this list displayed, right-click on the **File System** plugin and select **Show inclusion lists** from the pop-up menu



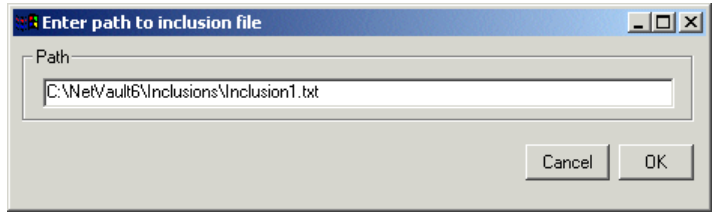
6. An **Inclusion lists** item will be added to the list of items available for backup.
7. Double-click on the **Inclusion lists** item in order to access the two available search options for Inclusion files:



- **Browse for inclusion files** - Right-click and select **Open** from the pop-up menu on this folder item (or double-click on it) to open it in order to access a folder/subfolder directory. All supported file types will be shown with a checkbox to their left. Locate the appropriate file and click in the checkbox to the left of it to select it. All selected files should contain a green check. To de-select the file, click in the checkbox to remove the check.

An Inclusion file selected

- **Specify inclusion files** - Right-click on this item to reveal a pop-up menu with the following options:
  - **Show inclusion files** - Once an Inclusion file has been added, selecting this item will open this folder to reveal the selected files. Note that if this item is selected, the pop-up menu item will be changed to ***Hide inclusion files***.



  - **Add inclusion file** - A window that allows the user to input a direct path to the inclusion file will be revealed. Type in the appropriate path and select OK to submit the inclusion list or click on Cancel to abort this process. Once input properly, the added Inclusion file will appear below the Specify inclusion files folder with a green check occupying the box to the left of it. To remove an added Inclusion file, click in the checkbox to remove the green check and close the Specify inclusion files folder (by double-clicking on it). This will delete the selection.

> **NOTE:** Verify that the path is correct. NetVault will assign the input path to an Inclusion file regardless if it is valid. If a job is run with an invalid path to an Inclusion file, no warnings will be issued. The only way to view an error involving an incorrect inclusion file is to view the job's log file. For more information on viewing logs, see *Chapter 14: Using Logs* on page 249 of the *NetVault 6.03 Administrator's Guide.*

Expanded Log Content

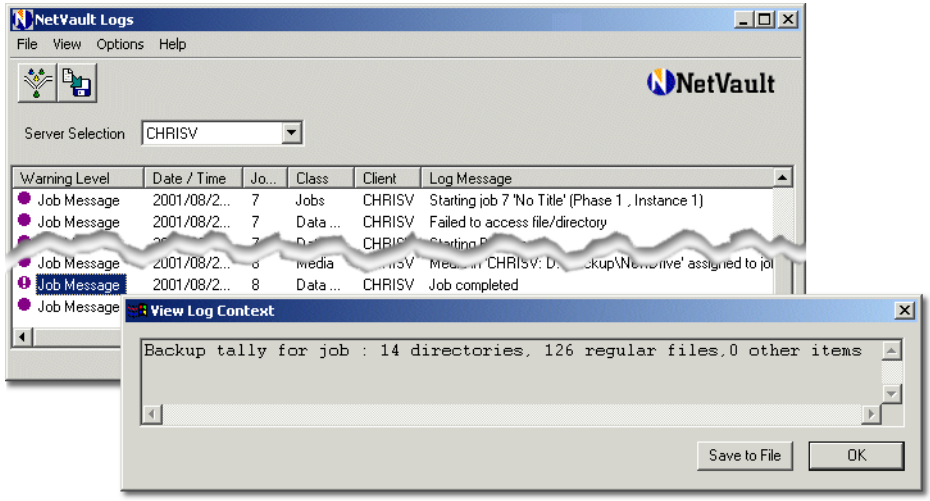
The log files of jobs performed with the File System Plugin have been enhanced to show more detail for both a backup and a restore. When accessed, the job completed log message now displays the following:

- **Number of Directories** (backed up or restored)
- **Number of Regular Files** (backed up or restored)
- **Number of Other Items** (backed up or restored)

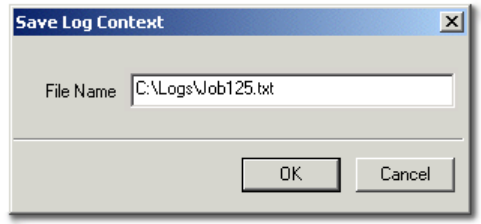
In order to access this information, complete the following:

1. Once a job has been successfully completed (backup or restore), select the **Logs** option from the NetVault GUI.

2. Scroll down the list of **Job Messages** until the correct one is located (look in the Log Messages column for a “Job completed” message that corresponds to the correct Date / Time listing).
3. Double-click on the circled exclamation point to the left of the **Job Message**. The following window will appear:



4. It is also possible to save this information by selecting **Save to File**. Input the exact path to the location the log file is to be saved as well as the file name desired and the appropriate file extension (for the desired file type) in the dialog box.



NOTE: Prior to saving this log file information, make sure that the directory input in this field exists, otherwise the file will not be saved.

Duplication and Verification Targeting

The Duplicate and Verify features (accessed via the Advanced Options tab) are two features that are performed by separate processes once the backup job they are associated with has completed.

In previous versions of NetVault, both of these functions were physically performed exclusively through the NetVault server itself. With NetVault 6.5.x, they can now be set to perform on either the NetVault server or client machine(s).

Establishing local verification and/or duplication on a NetVault client machine creates a great advantage when using NetVault ***SmartClients***. A ***SmartClient*** is the NetVault term for a client machine to which a library or device is directly attached. These procedures can now be run from a client machine acting as a ***SmartClient*** in order to minimize network traffic and increase process speed.

For more details on the **Duplicate** and **Verify** procedures, please see *Chapter 16, Using Advanced Feature*s on page 275 of the *NetVault 6.03 Administrator's Guide*.

Configuring Duplication and Verification Targeting

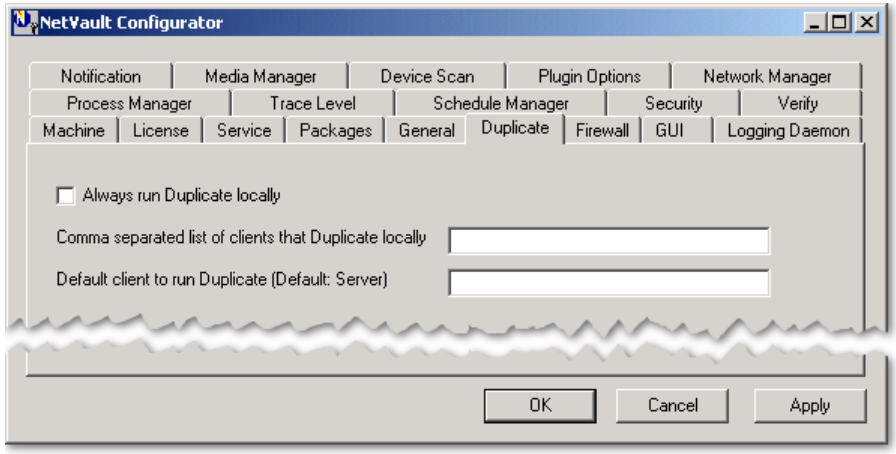
These options can be configured to run from either the NetVault server or a client. Each option is configured separately via tabs in the NetVault Configurator. Various options are available for each and are detailed below.

Duplication Targeting

1. Launch the **NetVault Configurator**.

   NOTE: Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is recommended that NetVault be closed prior to accessing the Configurator.

2. NetVault Services can remain running for this procedure. It is not necessary to Stop and Restart them in order for these settings to take effect.
3. Select the **Duplicate Tab**. Input data in each field as required. The following fields are available as shown in the figure on the following page:



- **Always Run Duplicate Locally** - The duplication of a backup will actually take place on the machine being backed up, rather than on the NetVault server (Note that if the server itself is being backed up, it will still perform this function).
- **Comma Separated List of Clients That Duplicate Locally** - This field allows a user to define a known list of clients on which a local duplication will be performed. Input a comma separated list of clients in this field (e.g. client1, client2, client9, etc.).
- **Default Client to Run Duplicate (Default: Server)** - As noted, when left unchanged, the default setting for this is the NetVault server. When a NetVault client is input into this field, it will then act as the default in order to complete duplications of backups.

IMPORTANT NOTES REGARDING THESE FIELDS:

1. If the **Always Run Duplicate Locally** item is selected, NetVault will ignore all other options set from this window.
2. In order for this process to work efficiently, the client named in the **Default Client to Run Duplicate** field must have some sort of device configured for use (e.g. A **Virtual Device** on the client machine, the client is a **SmartClient**, that is, the machine has a device attached locally, etc.). The process will still run without a device directly attached, but it will run inneficiently, as data will have to be transferred over the network twice.
3. All applicable settings required for use in regards to the **Duplicate** option (e.g the prior setting of Target and Schedule Sets, Backup Life, etc.) apply. For more details on the **Duplicate** option, please see *Chapter 16, Using Advanced Feature*s on page 275 of the *NetVault 6.03 Administrator's Guide*.

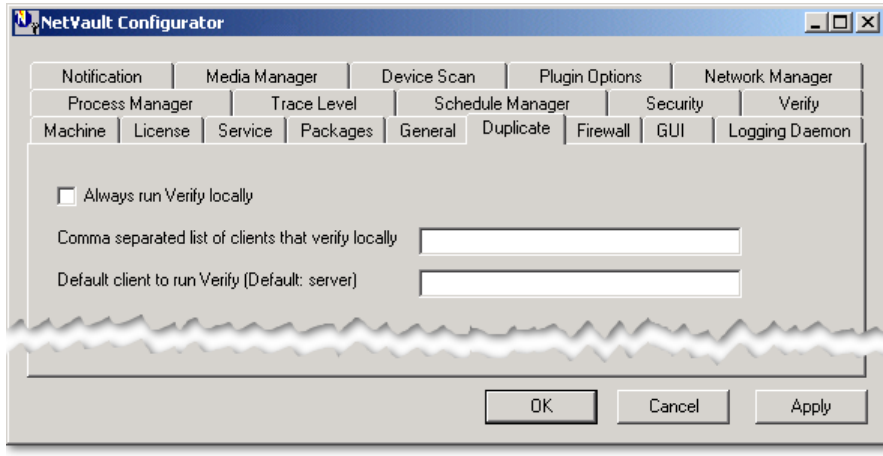
4. With the proper fields set, click on **OK** to apply all changes and exit the Configurator.

Verification Targeting

1. Launch the **NetVault Configurator**.

> **NOTE:** Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is recommended that NetVault be closed prior to accessing the Configurator.

2. NetVault Services can remain running for this procedure. It is not necessary to Stop and Restart them in order for these settings to take effect.
3. Select the **Duplicate Tab**. Input data in each field as required. The following fields are available:



- **Always Run Verify Locally** - When checked, the verification process will take place on the machine being backed up, rather than on the NetVault server. (Note that if the server itself is being backed up, it will still perform this function).
- **Comma Separated List of Clients That Duplicate Locally** - This field allows a user to define a known list of clients on which a local verification will be performed. Input a comma separated list of clients in this field (e.g. client1, client2, client9, etc.).
- **Default Client to Run Duplicate (Default: Server)** - As noted, when left unchanged, the default setting for this is the NetVault server. When a NetVault client is input into this field, it will then act as the default in order to complete verifications of backups.

IMPORTANT NOTES REGARDING THESE FIELDS:

1. If the **Always Run Duplicate Locally** item is selected, NetVault will ignore all other options set from this window and only run the Duplication locally.
2. In order for this process to work properly the client named in the **Default Client to Run Duplicate** field must have some sort of device configured for use (e.g. A Virtual Device on the client machine, the client is a **SmartClient**, that is, the machine has a device attached locally, etc.)
3. All applicable settings required for use in regards to the Duplicate option (e.g the prior setting of Target and Schedule Sets, Backup Life, etc.) apply. For more details on the Duplicate option, please see *Chapter 16, Using Advanced Feature*s on page 275 of the *NetVault 6.03 Administrator's Guide*.

4. With the proper fields set, click on **OK** to apply all changes and exit the Configurator.

Chapter 8:

Device Management Enhancements

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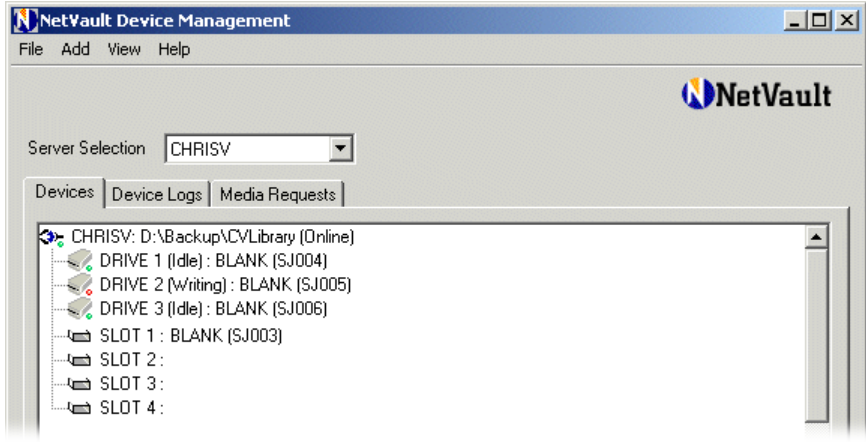
Enhancements to the Device Management Window

The Device Management Window has been enhanced with new options and a more detailed display. The following items have been enhanced with NetVault 6.5.1:

- **Device Information Enhancements**
- **Device Status Consolidation**
- **Disk Device (Virtual Library & Virtual Drive) Enhancements**
- **Selectable View in the Devices Tab**

Device Information Enhancements

All devices listed in the **Devices** tab of the **Device Management Window** of NetVault 6.5.x have been improved to list their current state. This information is enclosed in parenthesis to the right of the Library/Drive name. The current state of the device is based on whether it is a Library or a Drive. The possible states are as follows:



Library States

- **Online** - The Library is currently not in use and is ready to receive a command.
- **Offline** - The Library is not in use, and is currently not available to NetVault.
- **Moving** - The library is currently moving media.
- **Checking Status -** The Library will conduct a read element status in which the inventory of the Library is determined.
- **Door Open** - In this state, the door of the selected library is currently open.

Drive States

- **Idle** - The Drive is currently not in use and is ready to receive a command.
- **Initializing** - The Drive is currently scanning the media in order to assign a start point for writing.
- **Loading** - The Drive is in the process of loading a piece of media.
- **Unloading** - The Drive is in the process of unloading a piece of media.
- **Reading** - The Drive is currently reading a piece of media.
- **Writing** - The Drive is currently writing to a piece of media.
- **Positioning** - The Drive is in the process of scanning the media to determine a specific position in order begin reading or writing to tape.

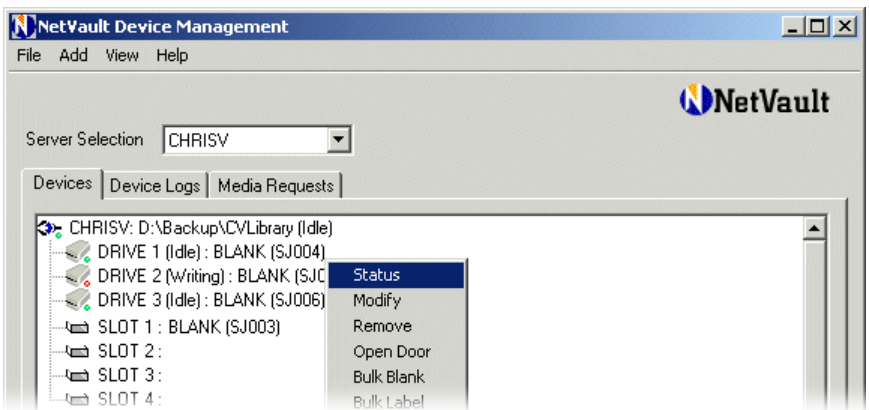
Other States

- **Read Only -** If a Drive contains a piece of media that is “Read Only,” meaning the media cannot be written to it, it will be identified as such.

Device Status Consolidation

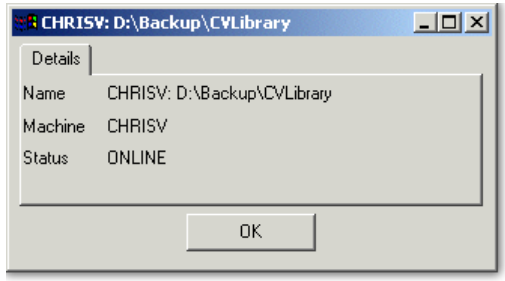
With the previous release of NetVault, Status was broken down into two categories: *Device Status* and *Media Status*. In order to determine status, it was necessary to individually select these items from a pop-up menu. With NetVault 6.5.1, these two items have been consolidated into one menu item and are displayed jointly in a single window when this menu item is selected.

Viewing Status from the Device Management Window

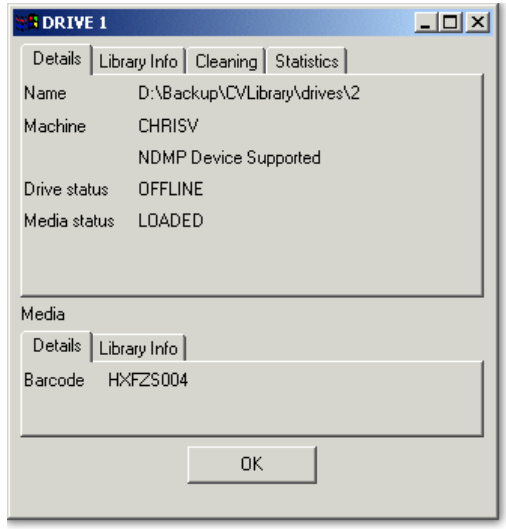


1. From the **Device Management** window, with the **Devices** tab active, right-click on a selected device and select **Status** from the pop-up menu.

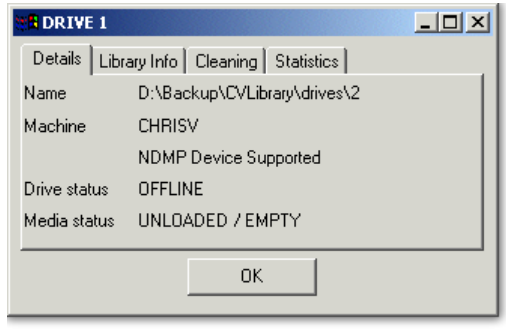
2. The status window will appear. The contents of this window are dependent on the selected device.



- **Library** - This window displays details on the status of the library (e.g. Library name, machine name and online status).



- **Drive Containing Media** - The window will display two sections (with selectable tabs containing more information) for both the Drive and the Media contained within.



- **Drive Without Media** - The window will display details (with selectable tabs, containing more information) for the selected drive.

NOTE: For more detailed information on each of the Status tabs in these windows, see *Chapter 4: Device and Library Management* on page 67 of the *NetVault 6.03 Administrator Guide.*

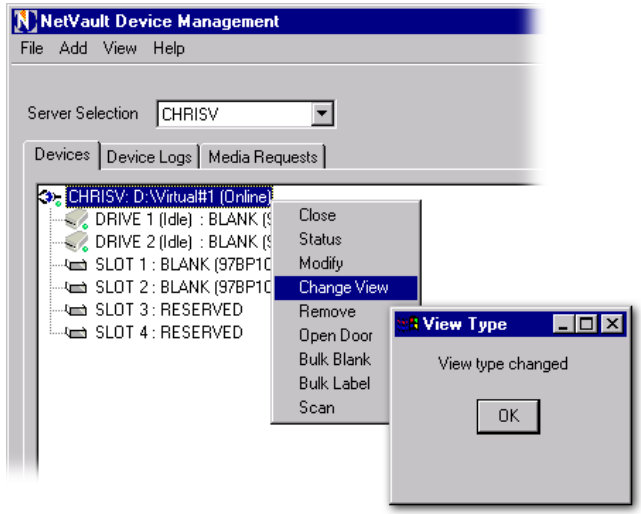
Device View

Libraries listed in the Devices tab of the Device Management Window can now be viewed in one of two different methods:

- **Physical View (Default)** - Traditional NetVault view - lists all devices (including slots, drives, etc.)
- **Logical View -** Allows for a collapsable view of devices and minimizes the devices listed.

To change the view type:

1. From the Device tab, right-click on the desired Library and select **Change View** from the pop-up menu. A dialog box will appear stating that the view has successfully been changed (as shown at right).



Operating in Logical View

Physical view allows a user to collapse and open devices in a tree-structure for viewing. The example below shows how this is accomplished.

Figure 1.
Physical view with at the root level.

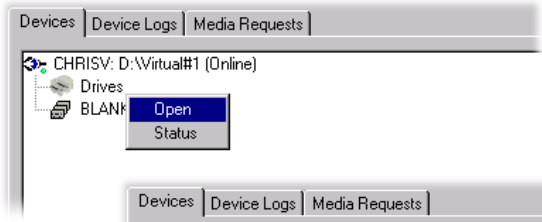


Figure 2.
Physical view - The Open command in the pop-up menu used to open a device to view its contents (accessed by right-

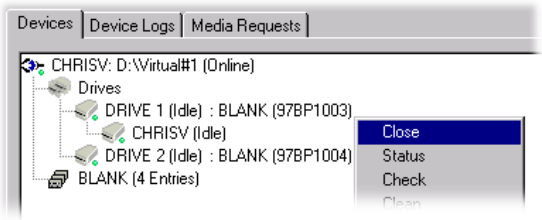


Figure 3.
Physical view - The Close command in the pop-up menu used to close a device

Disk Device Enhancements

Virtual Devices (e.g. *Virtual Libraries* and *Virtual Drives*) are mock devices that utilize a portion of a Client's hard drive in order to emulate a certain storage device. The set up procedure for these devices remains the same as previous releases of NetVault, but the devices themselves have some new features:

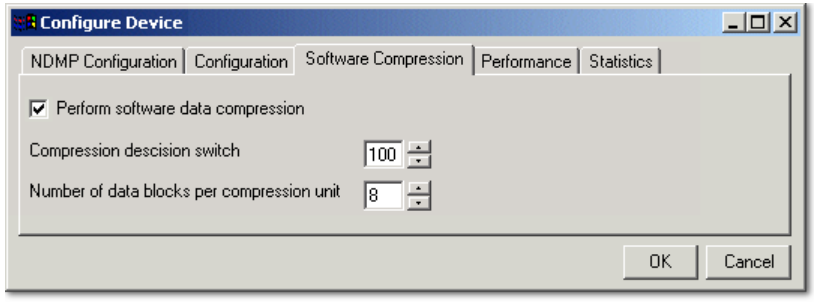
- **Disk Devices No Longer Compress by Default**
- **Disk Device Media Size has Increased**

NOTE: For complete details on setting up a Disk Device, please see the section *Creating Virtual Libraries* of *Chapter 3: Installation of NetVault 6.5.0* on page 54.

Disk Device Compression

In NetVault 6.03, the **Disk Compression** setting for a Virtual Drive (Standalone or as a Drive in a Virtual Library) was default selected. As compression has a high impact on processor usage during a backup, this item is now de-selected by default. If compression is desired, follow the procedure below in order to activate it.

1. Launch NetVault
2. Select **Device Management** from the NetVault GUI.
3. If selecting a **Library**, from the **Device Management** window, complete the following:
   a. Right-click on the desired **Library** and select **Modify** from the pop-up menu.
   b. The **Modify Library** window will appear. Click on the **Configure** tab in order to access the configuration options.
   c. In the **Configure** tab, right-click on the desired drive and select **Configure** from the pop-up menu.
   d. The **Configure Device** window will appear. Select the **Software Compression** tab.



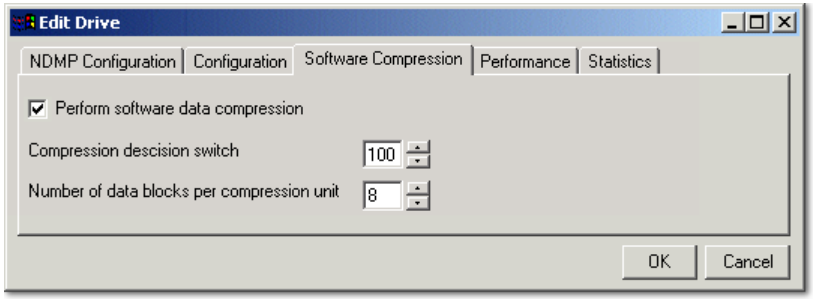
e. To activate **Compression**, click in the box to the left of **Perform software data compression**. With this item checked, when data is transferred to this device, it will be compressed during a backup. Other definable options from this window include:

- **Desired Data Compression Percentage** - At times, compressing data for a backup results in a compressed file that is actually *larger* than the original, uncompressed file. The percentage value set in this field tells NetVault whether or not to compress the data during a backup. For example, a value of 90% is input in this field. During backup, NetVault will attempt compression on the data. If the end result of the backup is ***less than*** 90% compression, NetVault will ***not*** compress the file and complete a normal backup (at 100% file size).
- **Number of data blocks per compression unit** - This field defines the number of data blocks that will be contained in a single compression unit. Block size is default 32 Kb. This can be changed from the **Configuration** tab, **Media Block Size (Kb)** setting (this tab is also in the **Edit Drive** window).

4. If selecting a **Standalone Drive**, complete the following:

a. Right-click on the desired **Standalone Drive** and select **Configure** from the pop-up menu.

b. The **Edit Drive** window will appear. Select the **Software Compression** tab.



c. To activate **Compression**, click in the box to the left of **Perform software data compression**. With this item checked, when data is transferred to this device, compression will be attempted during a backup (see *Desired Data Compression Percentage*, above). Other definable options from this window include:

- **Desired Data Compression Percentage** - This field defines the amount of compression that will occur to data as it is transferred. For example, setting this value to 75 will compress the data to 75% of its original size prior to transfer.
- **Number of data blocks per compression unit** - This field defines the number of data blocks that will be contained in a single compression unit. Block size is default 32 Kb. This can be changed from the **Configuration** tab, **Media Block Size (Kb)** setting (this tab is also in the **Edit Drive** window).

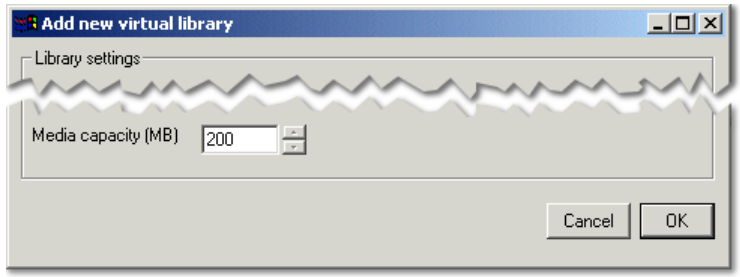
Disk Device Media Size

The disk device autogenerator with NetVault 6.5.1 is now capable of generating media up to 200 Gigabytes in size. This can be set when creating a disk device (virtual library or virtual drive).

NOTE: For complete details on setting up a Disk Device, please see the section *Creating Virtual Libraries* of *Chapter 3: Installation of NetVault 6.5.0* on page 54.

Setting Disk Device Media Size - Library

1. Follow the steps as detailed in the *NetVault 6.03 Administrator's Guide* in order to set up a **Library**.



2. With the **Add New Virtual Library** window accessed, it is possible to set the value in the **Media Capacity (MB)** box to a value up to 200 MB (Default is 50MB).

Setting Disk Device Media Size - Standalone Drive

1. Follow the steps as detailed in the *NetVault 6.03 Administrator's Guide* in order to set up a **Standalone Drive**.

2. With the **Add New Virtual Drive** window accessed, it is possible to set the value in the **Media Capacity (MB)** box to a value up to 200 MB (Default is 50MB).

Chapter 9:

Job Management Enhancements

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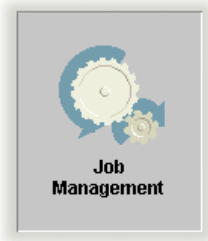
Job Management Window Enhancements



The **Job Management** window displays information about all submitted jobs by the selected **NetVault Server**. It shows completed jobs, currently running ones and scheduled ones. This window has been enhanced for both performance as well as functionality with NetVault 6.5.1. The following features have been added to the NetVault 6.5.1 **Job Management** window:

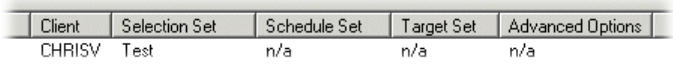
- **Enhanced Performance**
- **Extra Information Available**
- **Filters**
- **Column Display Customization**

Enhanced Performance

In previous releases of NetVault, when managing a large number of jobs, initially launching this window might have taken a considerable amount of time. Previous versions of NetVault would load the data for all three tabs simultaneously, prior to launching this window. With NetVault 6.5.1, data is loaded as each tab is accessed making load times much faster.

Extra Information Available

The three tabs accessible from the Job Management window (Status, Jobs and History) are now equipped with extra columns that give additional information on each job:



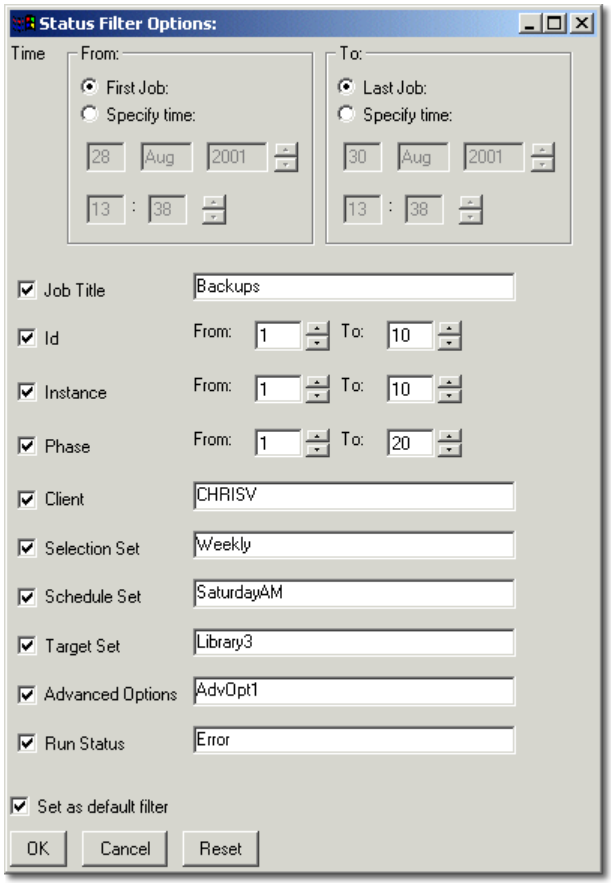
- **Client** - The NetVault Client that the Job was run from (if applicable).
- **Selection Set** - Shows the Selection Set used with the particular job (if applicable). If no Selection Set was used with a particular job, this column will be occupied with "n/a" (not applicable).
- **Target Set** - The same as Selection Set, but for the particular Target Set used.
- **Schedule Set** - The same as Selection Set, but for the particular Schedule Set used.
- **Advanced Options Set** - The same as Selection Set, but for the particular Advanced Options Set used.

Filters

Each of the three tabs (**Status**, **Jobs** and **History**) now comes equipped with a **Filter** button which allows a user to customize the data that appears in each column of that particular window. The filter process for each window is detailed below.

The Status Tab

1. With the **Status** tab selected, click on the **Filter** button at the top left of the **Job Management** window.
2. The **Status Filter Options** window will open revealing the following options:



- **Time** - Broken down into two frames, **From** and **To**, this allows a user to specify a range of time in which a job was performed. The default settings for this option, **First Job** and **Last Job** encompass *all* jobs performed. In order to change this setting, click on the radial button to the left of **Specify Time** and input a date and time value for both the **To** and **From** frames. If a job was performed in this time frame, it will appear in the **Status** tab. All other jobs will be omitted.
- **Job Title** - Click in the checkbox to the left of this option to activate it and input the specific *Job Title* of a previously performed job. Only jobs with this *Job Title* will be displayed in the Status tab.
- **Id** - Click in the checkbox to the left of this option to activate it and input a range in the **From:** and **To:** fields pertaining to the various Job ID's desired. Only Jobs whose ID's fall within this range will be displayed in the Status tab.

- **Instance** - Click in the checkbox to the left of this option to activate it and input a range in the **From:** and **To:** fields pertaining to the desired *Job Instance*. Only Jobs with a *Job Instance* in this range will be displayed in the Status tab
- **Phase** - Click in the checkbox to the left of this option to activate it and input a range in the **From:** and **To:** fields pertaining to a desired *Job Phase*. Only Jobs with a *Job Phase* within this range will be displayed in the Status tab.
- **Client** - Click in the checkbox to the left of this option to activate it and input the name of a specific *Client* used in a job. Only jobs performed from the specified *Client* will be displayed in the Status tab.
- **Selection Set** - Click in the checkbox to the left of this option to activate it and input the name of a specific *Selection Set*. Only jobs that used the specified *Selection Set* will be displayed in the Status tab.
- **Schedule Set** - Click in the checkbox to the left of this option to activate it and input the name of a specific *Schedule Set*. Only jobs that used the specified *Schedule Set* will be displayed in the Status tab.
- **Target Set** - Click in the checkbox to the left of this option to activate it and input the name of a specific *Target Set*. Only jobs that used the specified *Target Set* will be displayed in the Status tab.
- **Advanced Options Set** - Click in the checkbox to the left of this option to activate it and input the name of a specific *Advanced Options Set*. Only jobs that used the specified *Advanced Options Set* will be displayed in the Status tab.
- **Run Status** - Click in the checkbox to the left of this option to activate it and input a various NetVault Run Status result (e.g. Error, Backup Completed, etc.). Only jobs run that resulted in this specific run status will be displayed in the Status tab.
- **Set as Default Filter** - All selections made in this window are only active as long as the current session of NetVault is running. Once NetVault is closed, these settings are returned to their defaults (none set). Click this check box in order to save the filter selections made as the default.

IMPORTANT NOTES REGARDING FILTERS (ALL TABS):

1. If an incorrect value (e.g. one that doesn't exist) is input in any of the fields on the filter screen, no records will appear in the Job Management window (regardless of the tab selected).
2. Wildcards (e.g. C*, backup*. etc.) may be used in any text input field (not including date fields or numeric input fields like "Instance").
3. Comma separated lists of data can be input in to any text input field to accommodate for multiple values (e.g. Backup*, *Failed*).

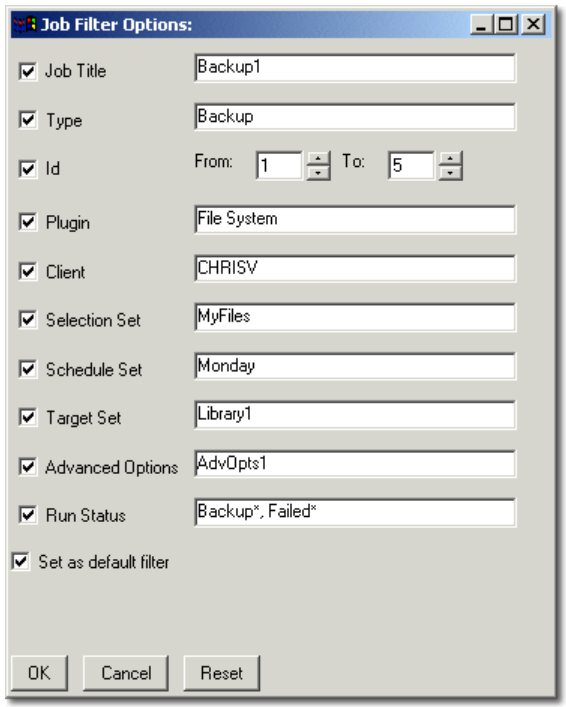
4. Once these filters have been set (and marked as default by checking the **Set as default filter** checkbox in order to save them), they are saved to the individual Client that they were set on. This allows for customized Job Management filtering per Client.

3. With all **Status Filter Options** set as desired, click on **OK** to apply them and exit the window. To clear all entries and return to the default settings, click on the **Reset** button. To exit this window without applying any changes, click on **Cancel**.

The Jobs Tab

1. With the **Jobs** tab selected, click on the **Filter** button at the top left of the Job Management window.
2. The **Job Filter Options** window will open revealing the following options:

NOTE: Many of these fields have the same parameters as those listed under the **Status** tab and are noted as such.



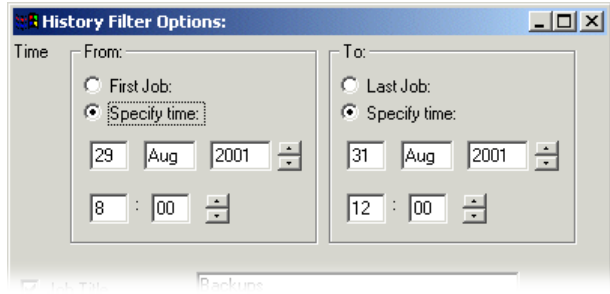
- **Job Title** - Complete details on this option are located under the *Status Tab Section* on page 112.
- **Type** - Click in the checkbox to the left of this option to activate it and input the type of NetVault Job desired (e.g. Backup or Restore). Only jobs of this type will be displayed in the Jobs tab.
- **Id** - Complete details on this option are located under the *Status Tab Section* on page 112.
- **Plugin** - Click in the checkbox to the left of this option to activate it and input the type of NetVault plugin used in a specific job. Only jobs utilizing this plugin will be displayed in the Jobs tab.

- **Client** - Complete details on this option are located under the *Status Tab Section* on page 113.
- **Selection Set** - Complete details on this option are located under the *Status Tab Section* on page 113.
- **Schedule Set** - Complete details on this option are located under the *Status Tab Section* on page 113.
- **Target Set** - Complete details on this option are located under the *Status Tab Section* on page 113.
- **Advanced Options Set** - Complete details on this option are located under the *Status Tab Section* on page 113.
- **Run Status** - Complete details on this option are located under the *Status Tab Section* on page 113.
- **Set as default filter** - Complete details on this option are located under the *Status Tab Section* on page 113.

3. With all **Job Filter Options** set as desired, click on **OK** to apply them and exit the window. To clear all entries and return to the default settings, click on the **Reset** button. To exit this window without applying any changes, click on **Cancel**.

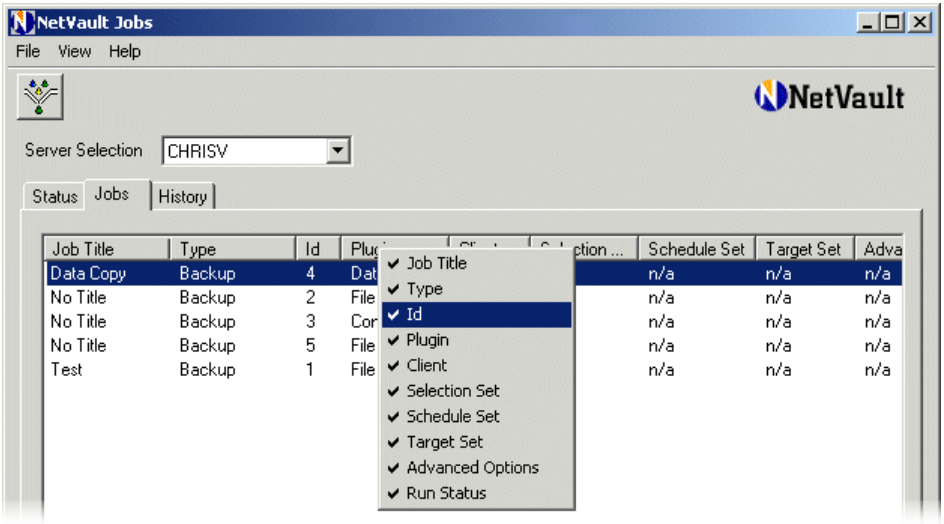
The History Tab

1. With the **History** tab selected, click on the **Filter** button at the top left of the Job Management window.
2. The **History Filter Options** window will open.
3. The **History Filter Options** are exactly the same as those shown under the *Status Tab Section*. For detailed information on each individual option setting, please see page 112.



Column Display Customization

With NetVault 6.5.1, individual information columns can be shown or hidden in each of the Job Management tab windows. At default, all information columns are displayed. In order to customize which of these will be displayed, follow the procedure detailed below.



1. From the **Job Management** window, with any tab selected (**Status, Jobs** or **History**), right-click on the title bar of any column.
2. From the pop-up menu that appears, de-select an item by clicking on it. The menu will close and the selected column will be removed from the display.
3. Right-clicking on any item in the title bar will again reveal the pop-up menu. Note that the previously selected item is now un-checked. To add it back, simply click on it again and it will be displayed again.
4. Pull up the pop-up menu as necessary to remove (or replace) more items from the display.

> **NOTE:** In order to customize the column layout for a specific tab, information must be present in the tab's window. That is, at least one job must have been run and details must be displayed, otherwise the column display pop-up menu is not accessible.

Chapter 10:

Miscellaneous Enhancements

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Miscellaneous Enhancements in NetVault 6.5.1

Other enhancements have been made to this release of NetVault that are not specific to any one area of the software. These enhancements, as well as their operation within the software, are detailed below.

NetVault Alternate IP Failover In A Cluster Environment

NetVault can now operate in a cluster environment thru the use of alternate, or fallback IP address support. This section will describe how to define an alternate IP fallback addresses. Please contact a NetVault representative for additional information on configuring a NetVault cluster environment.

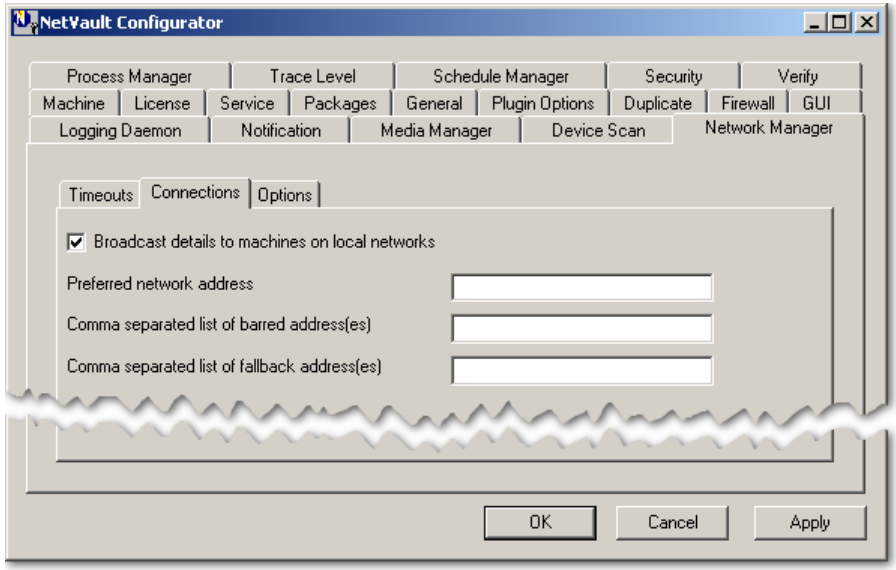
Configuring Cluster Support

The configuration of **Cluster Support** is controlled through the NetVault Configurator. Follow the procedure below in order to setup this support.

1. Launch the **NetVault Configurator**.

   NOTE: Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is recommended that NetVault be closed prior to accessing the Configurator.

2. NetVault Services must be stopped prior to customizing **Cluster Support**. In order to do this, first select the **Services** tab.
3. Click on **Stop NetVault** in order to stop the NetVault services. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator.
4. Select the **Network Manager Tab**.
5. From the Network Manager window, select the **Connections** tab. The following options regarding clustering are available:



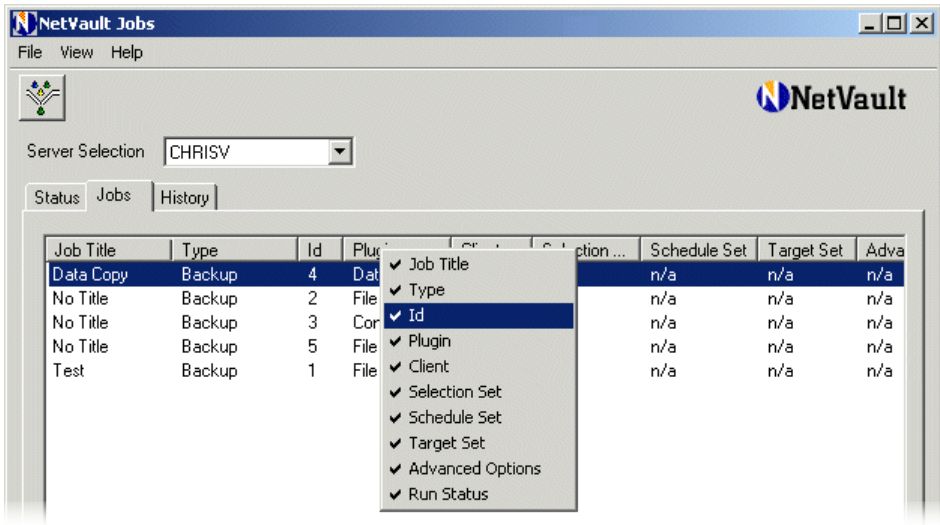
- **Comma Separated List of Fallback Address(es)** - Enter a comma separated list of IP Addresses (e.g. 10.27.23.21, 10.27.24.21, etc.) for machines that are to act as Fallbacks in the event of an inability to contact the Active machine.

> **NOTE:** The other options shown in this window do not apply to clustering. For details on these options and their use, please see *Appendix F: Using the NetVault Configurator* on page 354 of the *NetVault 6.03 Administrator's Guide*.

6. With the proper values set, click on **Apply** to amend the changes and remain in the Configurator. Again, ***DO NOT*** click on **OK,** as it will exit the Configurator.
7. Select the **Services Tab** again, and click on **Start NetVault**, in order to re-start the NetVault Services. For more details on Starting and Stopping NetVault Services, see the *NetVault 6.03 Administrator's Guide*).
8. Click on **OK** to apply all changes and exit the Configurator.

Column Hiding on Lists

With NetVault 6.5.1, individual information columns can be shown or hidden in various windows. At default, all information columns will be displayed. In order to customize which of these will be displayed, follow the procedure detailed below.



1. From a given window that displays lists of data in a column format (as shown in the example above), right-click on the title bar of any column.
2. From the pop-up menu that appears, de-select an item by clicking on it. The menu will close and the selected column will be removed from the display.
3. Right-clicking on any item in the title bar will again reveal the pop-up menu. Note that the previously selected item is now un-checked. To add it back, simply click on the item again and it will be returned to the display.
4. Access the pop-up menu as necessary to remove (or replace) more items from the display.

> **NOTE:** In order to customize the column layout for a specific tab, information must be present in the tab's window. That is, at least one job must have been run and details must be displayed, otherwise the column display pop-up menu is not accessible.

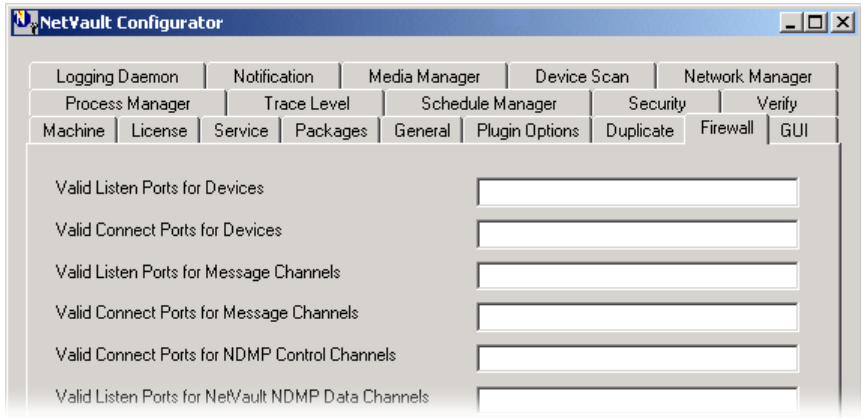
Extended Firewall Support in NetVault 6.5.1

NetVault 6.5.1 makes it possible to limit what ports it uses for all types of inter-machine communication, rather than just the data channels that are affiliated with devices.

Configuring Firewall Support

NOTE: Configuration of Firewall Support needs to be completed on both the NetVault server and all NetVault clients.

The Firewall Configuration utility is customizable via the NetVault Configurator. To access the Configurator in order to setup this utility, follow the procedure below:

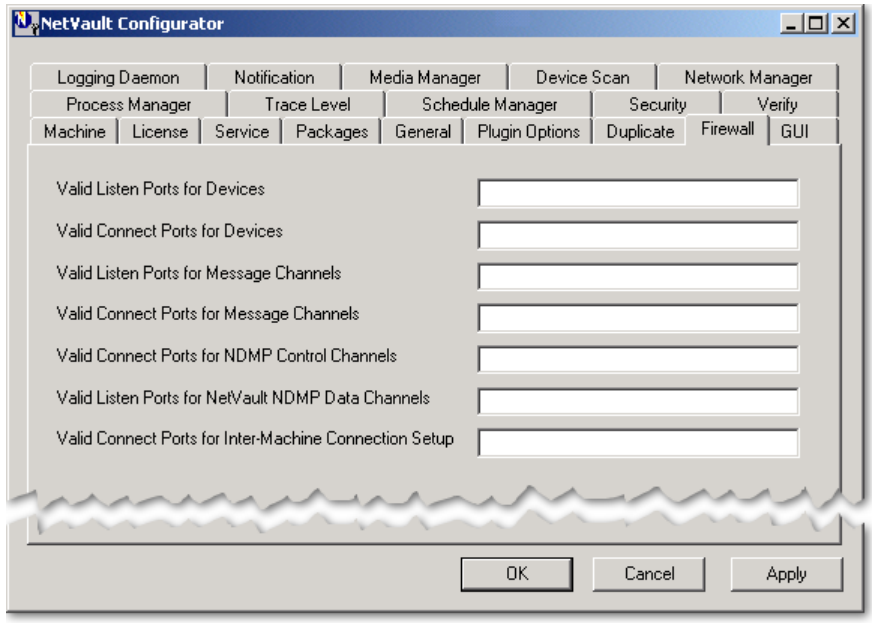


1. Launch the **NetVault Configurator**.

   NOTE: Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is recommended that NetVault be closed prior to accessing the Configurator.

2. NetVault Services must be stopped prior to customizing **Firewall Support**. In order to do this, first select the **Services** tab.
3. Click on **Stop NetVault** in order to stop the NetVault services. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator.

4. Select the **Firewall Tab**. Input data in each field as required. The following fields are available:.



- **Valid Listen Ports for Devices**
- **Valid Connect Ports for Devices**
- **Valid Listen Ports for Message Channels**
- **Valid Connect Ports for Message Channels**
- **Valid Connect Ports for NDMP Connect Channels** - These ports are used by a device manager acting as a Data Mover Agent (DMA)
- **Valid Listen Ports for NetVault NDMP Data Channels**
- **Valid Connect Ports for Inter-Machine Connection Setup**

All ports designated as **listen ports** are used by NetVault devices during an NDMP transfer. Ports designated as **connect ports** are used by a device manager acting as a Data Mover Agent (DMA).

NOTES REGARDING ENTRIES IN THESE FIELDS:

1. Valid entries for each of these fields are comma separated values or ranges of values (e.g. 20040, 20050-20070, 20080).
2. For ease of use, it is recommended that the same range of ports be input in each field.

5. With the proper fields set, click on **Apply** to amend the changes and remain in the Configurator. Again, ***DO NOT*** click on **OK,** as it will exit the Configurator.
6. Select the **Services Tab** again, and click on **Start NetVault**, in order to re-start the NetVault Services. For more details on Starting and Stopping NetVault Services, see the *NetVault 6.03 Administrator's Guide*).
7. Click on **OK** to apply all changes and exit the Configurator.

Example of Firewall Configuration

As an example for properly configuring **Firewall Support**, use the instance of a server with a device connected as well as a single client.

1. The ***NetVault Server*** will need to be configured as follows:
   - **Valid Listen Ports for Message Channels** - Two ports per drive in the device.
   - **Valid Connection Ports for Message Channels** - Two per active job running at the same time, as well as one additional.
   - **Valid Ports for Inter-Machine Connection Setup** - Two ports.
2. Each of these individual values can be input in the appropriate fields, while the remaining fields are left blank (see **Figure A.**, below). As well, a range of values encompassing the necessary ports can be input in all of the fields (see **Figure B.**, below.

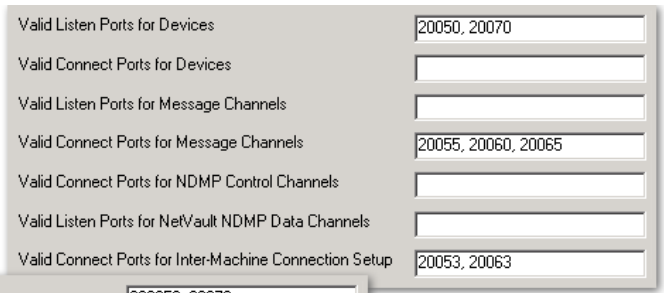


Figure A:
Valid ports input in specific fields as required for configuration of the NetVault server.

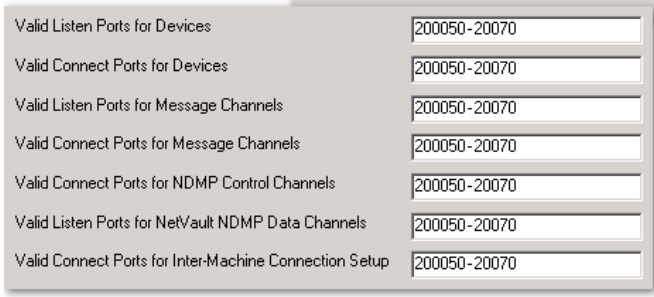


Figure B:
A range, encompassing all valid ports, is input in all fields for configuration of the NetVault server.

3. The ***NetVault Client*** will need to be configured as follows:
   - **Valid Connect Ports for Message Channels** - Two ports per drive in the device.
   - **Valid Listen Ports for Message Channels** - Two per active job running at the same time, as well as one additional.
   - **Valid Ports for Inter-Machine Connection Setup** - Two ports.
4. Each of these individual values can be input in the appropriate fields, while the remaining fields are left blank (see **Figure C.**, below). As well, a range of values encompassing the necessary ports can be input in all of the fields (see **Figure D.**, below.

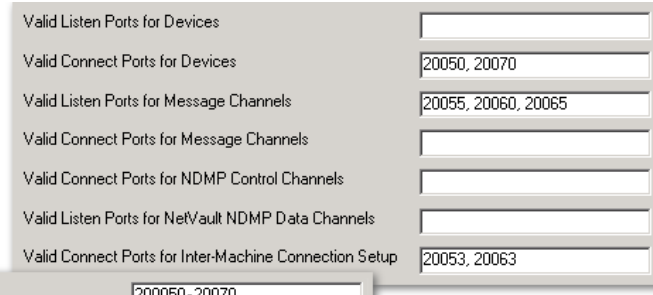


Figure C:
Valid ports input in specific fields as required for configuration of the NetVault client

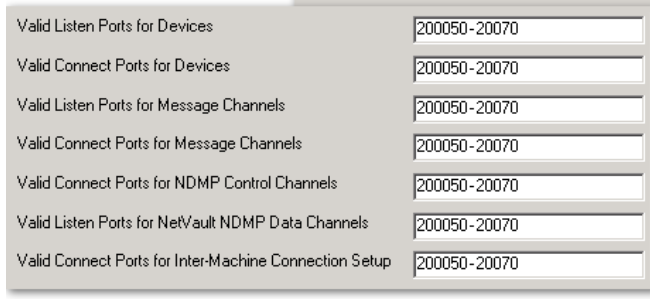


Figure D:
A range, encompassing all valid ports, is input in all fields for configuration of the NetVault client.

NOTE: The port values configured on the NetVault server do not need to match those on the NetVault client, although it is possible to do so. Although, in order to limit the number of open ports in a firewall, it is recommended that a minimum number of ports be used.

NETVAULT v6.5.2

administrator's guide addendum

SECTION 4:

Appendix

Appendix A:

VaultShare APM

A Brief Overview of NetVault and ACSLS 131

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- The ACSLS Client System (The NetVault ACSLS Manager) 132
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  - StorageTek's LibAttach and SSI Software 133
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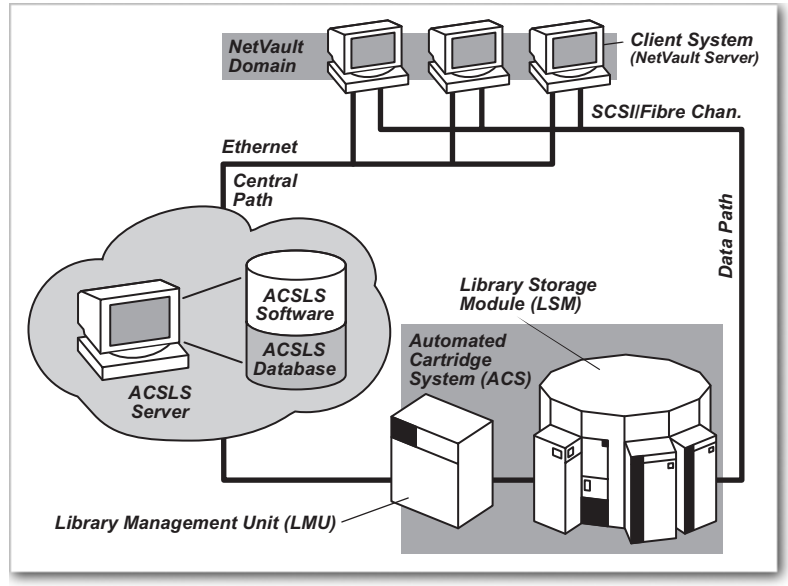
- Configuring NetVault for Use with the VaultShare APM 135

A Brief Overview of NetVault and ACSLS



A registered trademark and software manufactured by StorageTek, **Automated Cartridge System Library Software (ACSLS)**, is a software platform designed to fully control all media sharing and robotic functions of an **ACS - Automated Cartridge System** (also referred to as a Library). ACSLS accesses and manages information stored in an ACS through command processing across a network. The figure at right shows an example of a basic ACSLS system. The general concept being that a central Library Storage Module (or LSM - also referred to as a silo) can be configured for use with multiple forms of management software. NetVault's VaultShare APM makes this possible.

System Architecture

An ACSLS environment is composed of these basic components:

- **The ACSLS Server** - Where the ACSLS software and database reside.
- **The Client System** - Contains NetVault, the Vault Share APM and the ACSLS Client System Component (CSC). This component allows interaction between NetVault's VaultShare APM and ACSLS or LibStation.
- **Library Management Facilities** - The Library Management Unit and the Library Storage Module.

The ACSLS Server

The ACSLS software (or equivalent) resides on this server. It is attached to a library (or in the case of ACSLS, the Automated Cartridge System (ACS)) via a SCSI, Fibre Channel or Ethernet connection. ACSLS is designed to give a system administrator the ability to logically divide the Library Management Unit and assign specific media, thereby limiting access to it. NetVault can then use this assigned media as it's own for

backup and restore. This could be beneficial in a case in which multiple software packages are to share the same hardware, allowing for storage centralization.

The ACSLS Client System (The NetVault ACSLS Manager)

This system contains a Client System Component (CSC), which acts as an interface between NetVault and ACSLS via a TCP/IP connection. Acting as the NetVault ACSLS Manager, this machine is connected to the central ACSLS Server via an ethernet network. Initial requests for media requirements are sent via the NetVault ACSLS Manager to the ACSLS server. These requests are read and the specific, predefined library is then accessed by the ACSLS server. With the library and drives ready as required, data for a backup then travels via a SCSI or Fibre Channel connection directly to the assigned drive in the library.

The Library Management Facilities

The Library Management Facilities (also referred to as the Automated Cartridge System (ACS)) consist of the following:

- **Library Management Unit** - a firmware portion of the ACS that manages Library Storage Modules (LSM), allocates their resources, and communicates with ACSLS.
- **Library Storage Module** - a structure that provides the storage area for media, drives, and the robot necessary for moving them.

Installation and Configuration of the VaultShare APM

NetVault's VaultShare APM requires that the components listed below have the following software installed, *prior* to the installation of the APM:

- **ACSLS Server** - ACSLS Software (or equivalent - see the section <Emphasis>Pre-installation Requirements on page 133)
- **NetVault ACSLS Manager** - NetVault 6.5.1 Server/Client Software and LibAttach (Windows NT/2000 Systems)/SSI (UNIX Systems) Software
- **NetVault Client(s)** - NetVault 6.5.1 Server/Client Software (These machines are to be added to the NetVault Server via the Client Management Window. They will be accessed via the NetVault Server).
- **ACSLS Server License** - A license is required in order to run the software.
- **ACSLS Drive Plugin License** - One license per drive used by NetVault is required.
- **Dynamically Shared Device License (optional)** - In the case of sharing the drives of an ACSLS library between machines (e.g. having a pre-configured ACSLS library act as a NetVault SmartClient that is shared between multiple machines), it is necessary to obtain individual Dynamically Shared Device Licenses for each machine using the library in this manner.

NOTE: For complete details on obtaining license keys, please see the section entitled *Requesting a NetVault 6.5.1 License Key* on page 25 of the *NetVault 6.5.1 Administrator's Guide Addendum*.

Pre-installation Requirements

StorageTek's ACSLS and LibStation Software

ACSLS Software must be installed on the ACSLS server (LibStation software on IBM (or compatible) Mainframe machines acting as the ACSLS Server). Follow the relevant StorageTek documentation in regards to installing this software.

IMPORTANT NOTES:

1. Either software must be installed on the **ACSLS Server *before*** installing ***any*** other components.
2. Either software is required to enable NetVault's VaultShare APM. Without it, ACSLS interactivity will not function. Contact StorageTek for details on obtaining each software as necessary.

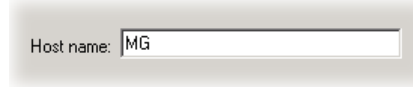
StorageTek's LibAttach and SSI Software

Registered trademarks and softwares manufactured by StorageTek, **LibAttach** (on Windows NT/2000 systems) or **SSI** (Linux, MP-RAS and Solaris systems) act as the CSC explained in the previous section. Either works in tandem with the NetVault ACSLS Manager, allowing it to communicate with the ACSLS Server. These components should also be provided with the ACSLS software.

IMPORTANT NOTES:

1. LibAttach or SSI software **MUST** be installed on the Client ***before*** the VaultShare APM is installed.
2. Either software is required to enable NetVault's VaultShare APM. Without it, ACSLS interactivity will not function. Contact StorageTek for details on obtaining each software as necessary.
3. The LibAttach software can be installed on any NetVault Server or Client. It is not necessary to install it on all machines in the NetVault Domain.

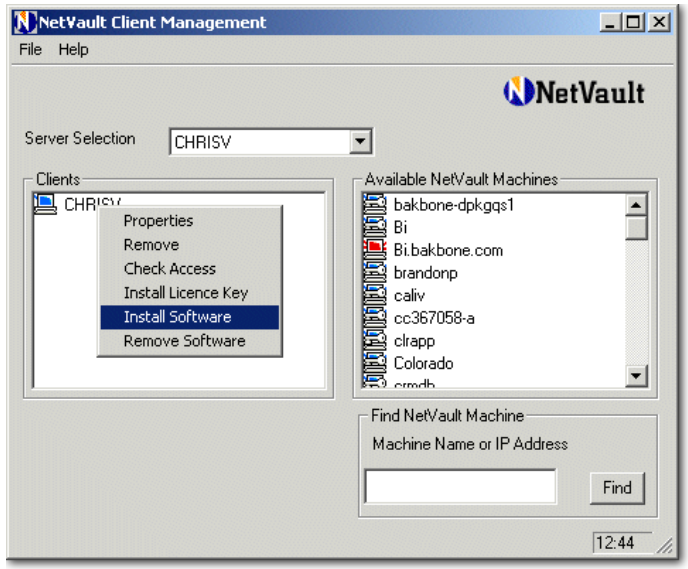
1. For detailed information on the installation of either of these softwares, follow the appropriate StorageTek documentation.
2. During installation of either software, when confronted with the **Host Name** field, input the name of the ACSLS Server.



3. Follow any remaining steps, inputting information as necessary in order to complete the installation procedure.

Installation Procedure

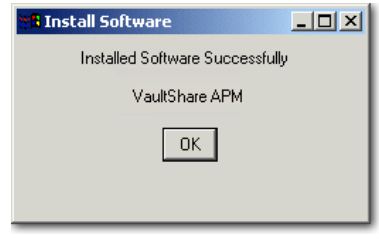
1. Open the NetVault Client Management window by clicking the **Client Management** button on the NetVault GUI (or select **Client Management** from the **Administration** pull-down menu).
2. Right-click on the NetVault server in the **Clients** list.
3. Choose **Install Software** from the pop-up menu, as shown in the following figure:



4. Navigate to the directory. Open the directory containing the **acsxxxx.npk** plugin file.

> **NOTE:** Based on the operating system being used, the directory path for this software may vary, but the file required for installation should be entitled "**acsxxxx.npk**" (where "xxxx" represents various software platforms and version numbers).

5. Click **Open** and the software installation process will begin.
6. When the installation has completed, a successful installation message will appear in the **Install Software** dialog box, shown at right:

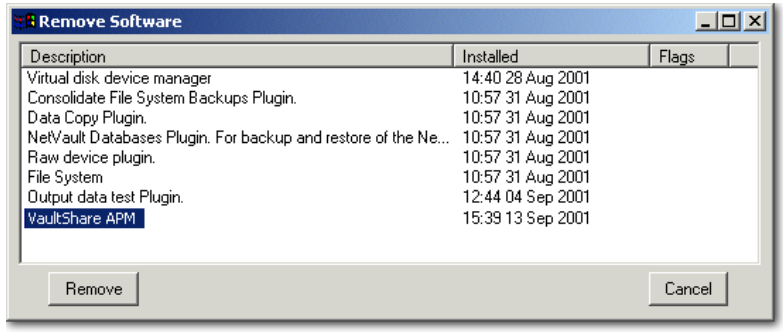


7. Close NetVault (and any other open applications) and reboot the machine.

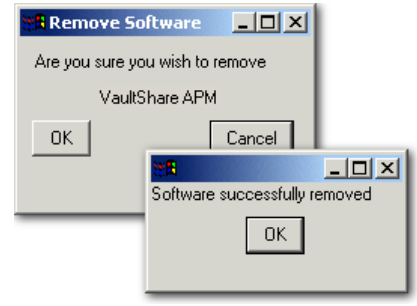
Removing the VaultShare APM

1. Access the Client Management window (as described in the installation procedure).

2. Right-click on the NetVault server in the **Clients** list to reveal the pop-up menu and select **Remove Software**.



3. Select the **VaultShare APM** item from the displayed list and click the **Remove** button.
4. A dialog box will appear asking for confirmation of the remove command. Click on **OK** to proceed (or **Cancel** to abort). Clicking **OK** results in the removal of the software and a confirmation message will appear. Click **OK** to close this dialog box and return to the **Client Management** window.

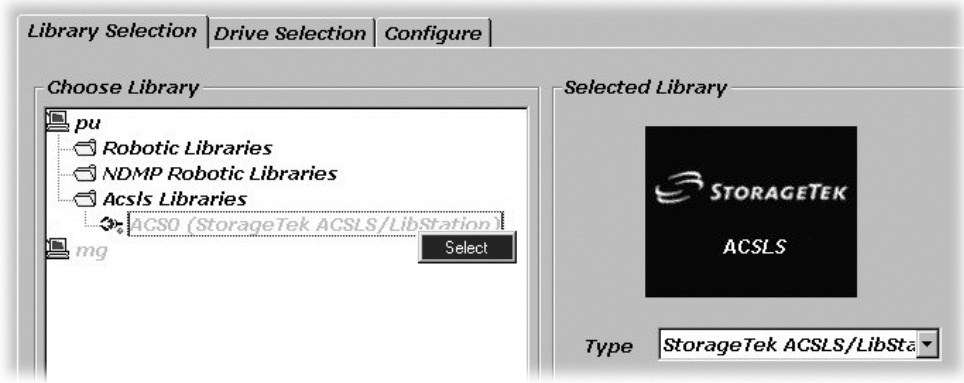


Configuring NetVault for Use with the VaultShare APM

NOTE: Prior to configuring NetVault for use with the VaultShare APM, the LibAttach or SSI software must be installed and configured properly (as explained in the section <Emphasis>StorageTek's LibAttach and SSI Software (page 133)). Failure to do so will result in the need to uninstall and reinstall the NetVault software.

1. Launch NetVault.
2. Click on the **Device Management** button (or select **Device Management** from the **Administration** menu item).
3. It is first necessary to add the library to be used. From the **Add** menu item, select **Add Library**.
4. With the Library Selection tab active, right-click on the NetVault Client acting as the ACSLS Manager and select **Open** from the pop-up menu (or double-click on it). The available libraries for the client will be displayed in the **Choose Device** frame.

5. Select the ACSLS library from the list, right-click and choose **Select from the pop-up menu**. The **StorageTek logo art will appear** in the **Selected Library** frame.



6. With the library selected, click the **Drive Selection** tab.
7. Right-click on the NetVault Client(s) and select **Open** from the pop-up menu. A list of available drives will be displayed.
8. Right-click on the desired drive and choose **Select** from the pop-up menu.
9. If the library has more than one drive, the appropriate number must be set for each drive in the **Select for drive bay** box (see the figure below).

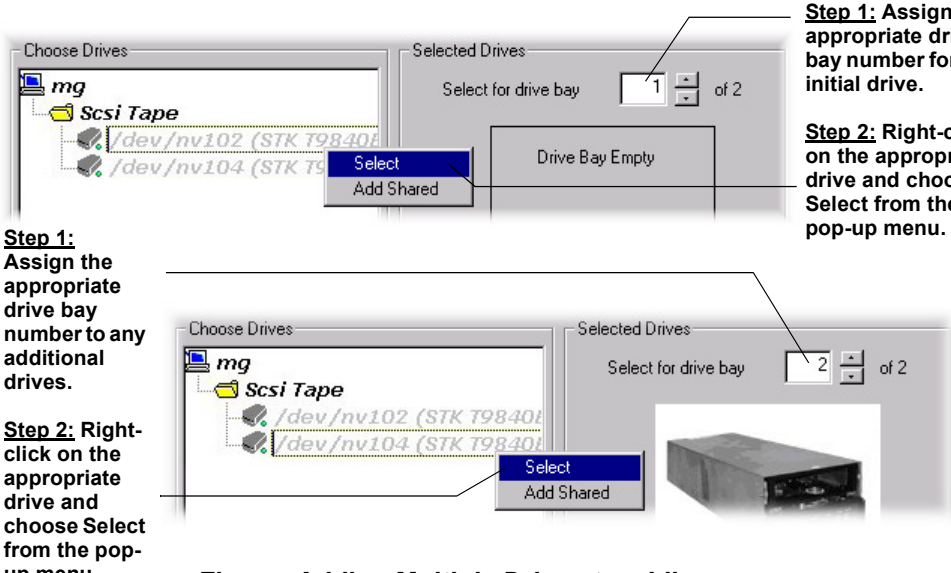
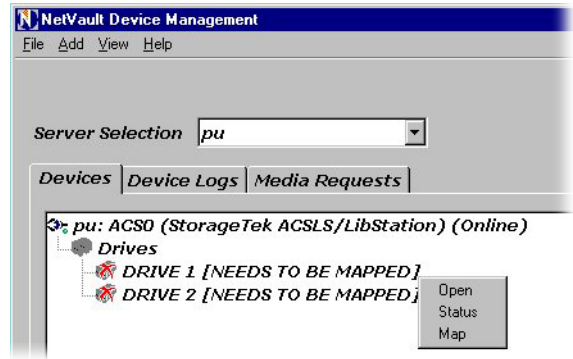


Figure: Adding Multiple Drives to a Library

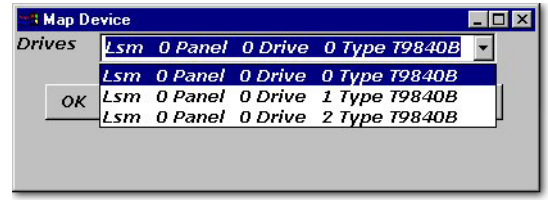
10. Once the drives have been added, click the **Save** button in order to save the library configuration.

11. Close the **Add Library Window** and return to the **Devices** tab of the **Device Management Window**.

12. Each drive contained within the newly added library will appear as *"Needs to be Mapped"* (see the figure at right). Right-click on the first drive and select Map from the pop-up menu.

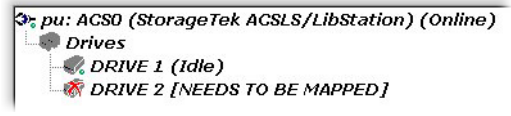


13. The **Map Device** window will appear. From the pull-down window, select appropriate drive location.

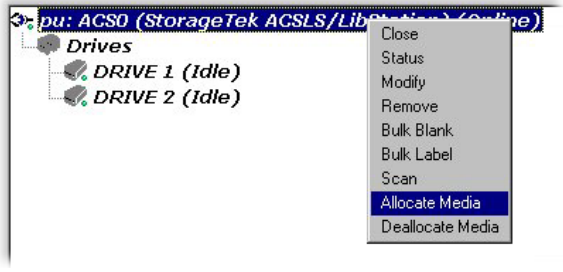


NOTE: This pull down window will display the device locations as the ACSLS Server sees them. It is ***critical*** that these devices are mapped correctly.

14. Once mapped, the library will appear as online and the drive will appear as idle. Repeat this process with all subsequent drives..

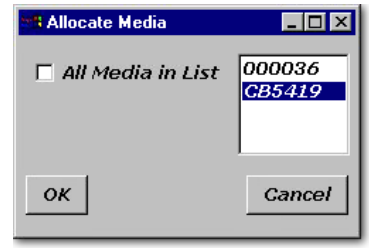


NOTE: It is necessary to obtain the SCSI address for ***each*** drive prior to mapping them (consult the ACSLS administrator if necessary). Without this information, the mapping process will not be possible.



15. With the library added and the drive(s) properly mapped, it is now necessary to allocate media in the ACS that has been reserved for use by NetVault. Right-click on the library and select **Allocate Media** from the pop-up menu.

16. The **Allocate Media Window** will appear. This window will display a list of all available media within the selected library. Individually select the media to be used ***exclusively*** by NetVault by clicking on its name in the window to highlight it. If all of the media within the library is to be used by NetVault, click the box marked **All Media in List**.



IMPORTANT NOTES REGARDING ALLOCATING MEDIA:

1. ACSLS requires that ALL media have a barcode.
2. Media allocated as described above is selected for **exclusive** use with NetVault. Be sure to allocate ***only*** media desired to be used by NetVault.
3. If this process has previously been performed and new media is imported, it must be mapped as new. Selecting the “All Media in List” option does not automatically recognize newly added media.

17. The library will now function exactly as any other library added to NetVault (e.g. Functions such as Bulk Blanking and Bulk Label are available).

IMPORTANT NOTES:

1. Once NetVault is fully configured for use with the ACSLS, the library used will only be displayed in **Logical View** (for complete details on Logical view setup, please see the section entitled *Device View* on page 100 of the *NetVault 6.5.1 Administrator’s Guide Addendum*).
2. NetVault does not allow for the importing or exporting of ACSLS media. This functionality is considered to be an ACSLS Administrative function and therefore must be controlled through ACSLS utilities.
3. NetVault ***does not*** manage Cleaning Media in this process.

Appendix B:

Setting Trace Levels

Setting Trace Levels from the Configurator 141

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- The Trace Level Tab 141
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- Restarting NetVault Services 145

Tracing and Trace Levels

NOTE: Tracing and setting Trace Levels are functions that may be requested from a user by NetVault Technical Support when a potential problem has occurred. It is strongly recommended that these settings be left at default unless a change is requested by a NetVault representative.

Tracing is a NetVault utility that allows a user to capture and store a history of events pertaining to one or multiple jobs. This history is stored in a file that can be provided to NetVault Technical Support in order to diagnose a problem and arrive at the appropriate solution. **Trace Levels** are set to determine the amount of information contained in the aforementioned file.

For more information on *NetVault Technical Support,* please see page 4 of this Addendum.

Setting Trace Levels from the Configurator

NetVault 6.5.1 now makes it possible for the user to set Trace Levels via the NetVault Configurator. This process can be done by doing the following:

NOTE: Any changes made in the Configurator will not take place in NetVault until it is closed and re-opened. It is necessary to close NetVault prior to accessing the Configurator.

Stopping NetVault Services in the Configurator

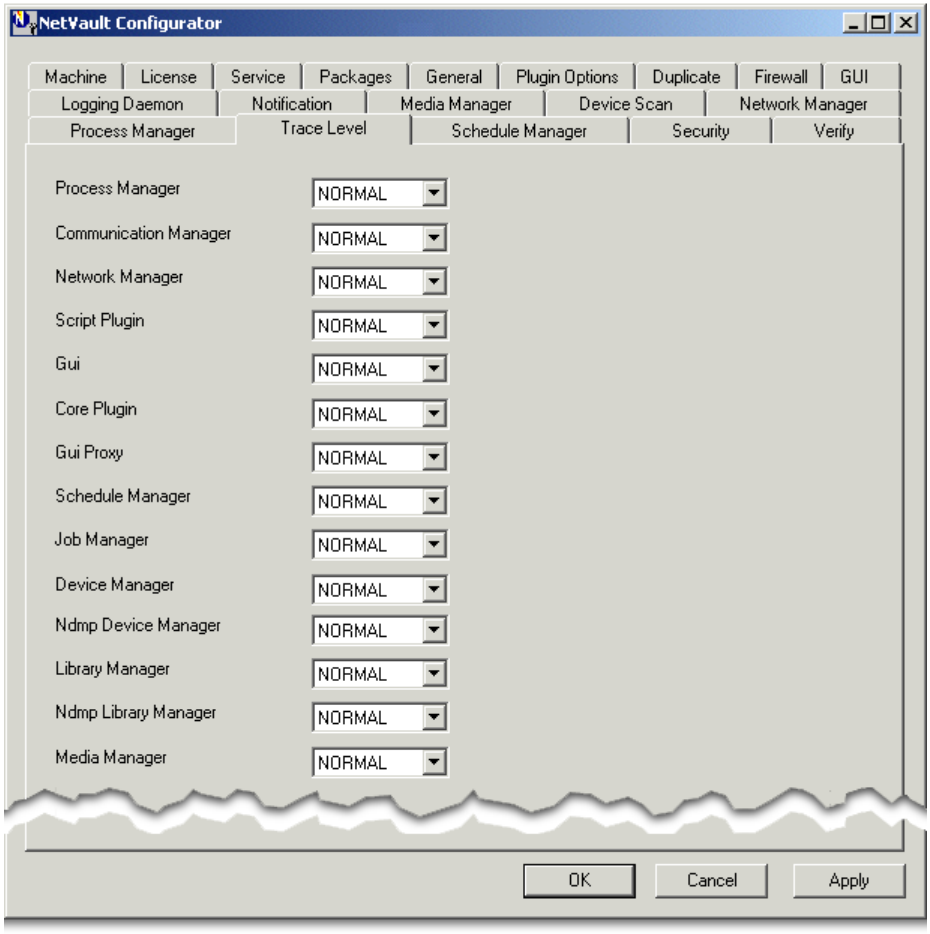
NetVault Services must be stopped prior to making any changes in the configurator, and then restarted again once necessary settings have been changed. To stop NetVault service, follow the procedures explained below.

1. Launch the **NetVault Configurator.**
2. Select the **Service Tab**.
3. Click on **Stop NetVault** in order to stop the NetVault services. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator.
4. Select the desired Tab(s) in the Configurator to make changes as required.

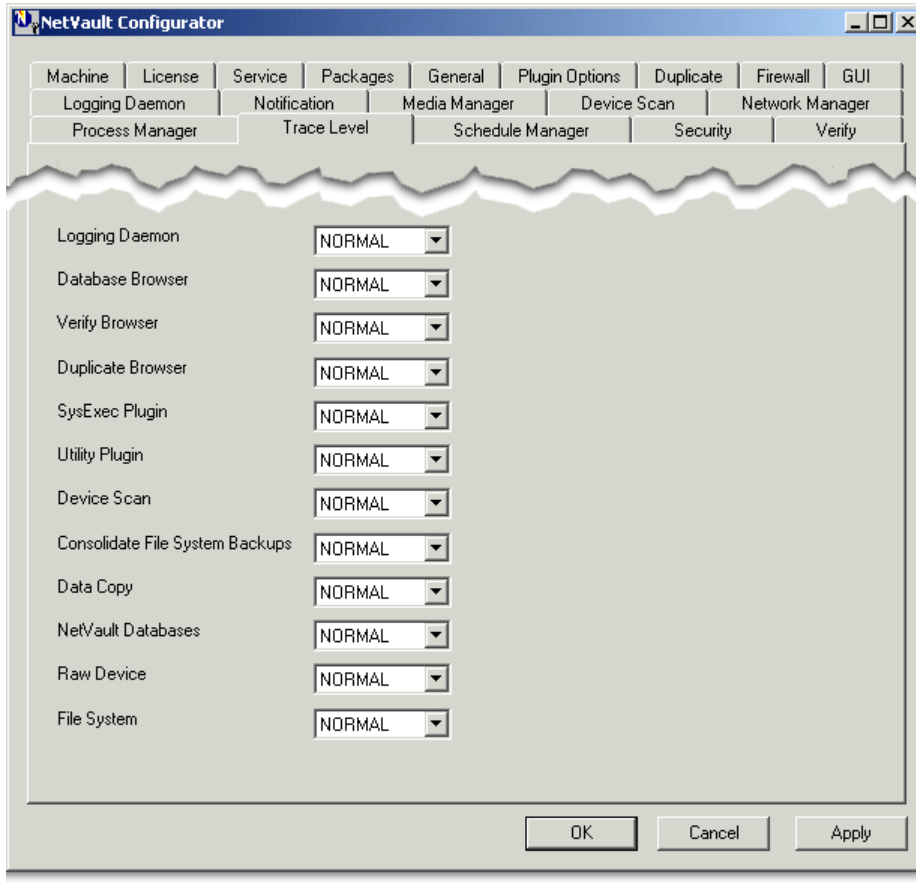
The Trace Level Tab

1. Select the **Trace Level Tab**.
2. At the request of a NetVault Technical Support representative, set the Trace Level for any or all of the following:

NOTE: It is possible to set Trace Levels for numerous aspects of NetVault. For the sake of space in this Addendum Guide, the Trace Levels Window has been broken down into two parts.



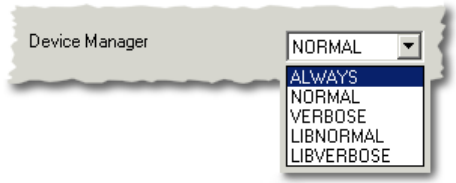
- **Process Manager**
- **Communication Manager**
- **Network Manager**
- **Script Plugin**
- **GUI**
- **Core Plugin**
- **GUI Proxy**
- **Schedule Manager**
- **Job Manager**
- **Device Manager**
- **NDMP Device Manager**
- **Library Manager**
- **Media Manager**
- **NDMP Library Manager**



- **Logging Daemon**
- **Database Browser**
- **Verify Browser**
- **Duplicate Browser**
- **SysExec Plugin**
- **Utility Plugin**
- **Device Scan**
- **Consolidate File System Backups**
- **Data Copy**
- **NetVault Databases**
- **Raw Device**
- **File System**

NOTE: The fields represented in the above examples do not account for all of the possible fields available. As a plugin or APM is added to NetVault, it will be added to this tab as well.

3. Each specific item is accompanied by a pull-down menu that allows for the selection of various **Trace Level** settings.
   - **Normal (Default)**
   - **Always**
   - **Verbose**
   - **Libnormal**
   - **Libverbose**

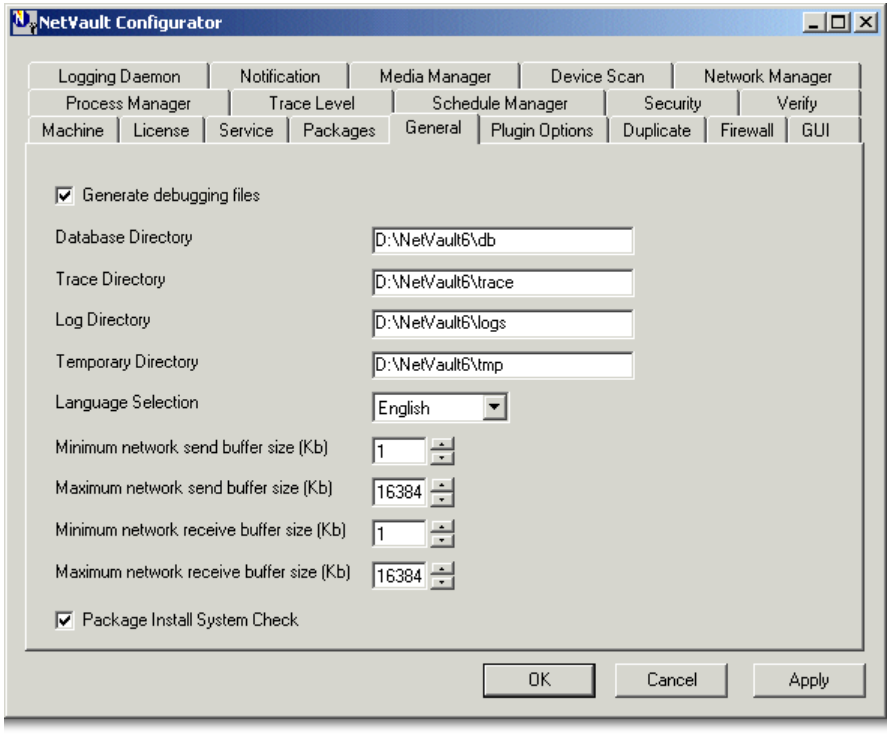


> **IMPORTANT NOTE:** These items should be left at their default settings unless a NetVault Technical Support Representative has advised otherwise.

4. With each function set to the appropriate **Trace Level**, click on Apply in order to amend the changes. Click on **Apply**. ***DO NOT*** click on **OK**. Doing so will exit from the Configurator without this process being completed.

The General Tab

1. With all settings changed appropriately on the **Trace Level** tab it is then necessary to select the **General Tab**.



2. Click the **Generate debugging files** checkbox to prompt NetVault to generate Trace Files when a job is run.
3. Note the **Trace Directory** dialog box. This is where NetVault will save Trace Files. The default value should be ..\NetVault\trace (where ".." represents the drive letter/ directory where NetVault is installed). Change this path if desired.

> **NOTE:** If the Trace Directory path is changed, make sure that the directory described in this field does exist, otherwise errors will occur when NetVault attempts to create Trace Files.

4. All other values from the General Tab can remain as they are.
5. Select **Apply** to amend the changes. Again, ***DO NOT*** click on **OK**, as this will exit the Configurator.

Restarting NetVault Services

1. Select the **Services Tab** and click on **Start NetVault** in order to re-start the NetVault Services (for more details on Starting and Stopping NetVault Services, see the *NetVault 6.03 Administrator's Guide*).
2. Click on **OK** to apply all changes and exit the Configurator.

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administrator's guide addendum

Glossary

NetVault 6.5.2 Glossary of Terms

Below is a list of NetVault specific terms as well as other, industry related terminology.

A	
Advanced Options Set	From the Advanced Options Tab of either the Backup or Restore section of NetVault, it is possible to select various options and then save these selections by selecting the Save As button at the bottom of the window. This set is then accessible in the future by clicking the load button and then selecting the appropriate item from the window that is displayed.
APM (Application Plugin Module)	APM is an acronym for Application Plugin Module. An APM provides a bridge between NetVault and another application. This allows for the NetVault GUI to control and manage backup and restore operations in other databases. APMs are sold separately; contact a BakBone representative for more information on a specific APM.
Archive Bit	The archive bit is a flag that is set on a file. This archive bit is used by NetVault to determine when the last backup was done on a that file.
Automated Cartridge System (ACS)	The library subsystem consisting of one LMU (see *Library Management Unit*), and one to 24 LSM's (see *Library Storage Module*) connected to that LMU.
Audit	A physical inventory of the contents of all or part of a library.
Automated Cartridge System Event Logger (ACSEL)	The software component that receives messages from other ACSLS components and writes them to an Event Log
Automated Cartridge System Identificaton (ACS ID)	A unique identifier for an ACS (see Automated Cartridge System).
Automated Cartridge System Library	A library composed of one or more ACS's, the attached tape drives, and the cartridges residing within the ACS's.

Automated Cartridge System Library Manager (ACSLM)	The software component that validates and routes library requests and responses.
Automated Cartridge System Library Software (ACSLS)	The software that manages ACS (see *Automated Cartridge System*) library contents and controls ACS library hardware to mount and dismount cartridges on ACS cartridge drives.
Automated Cartridge System Library Software Database (ACSLS Database)	Refers to the database containing information about the location and status of the tape cartridges. This information includes cell location, scratch status, etc. Also used by ACSLS to track the library configuration, locations and IDs of all tape cartridges in the library.
Automated Cartridge System Library Software Platform (ACSLS Platform)	The server hardware and software that provide the proper environment for ACSLS.
Automated Cartridge System Library Software Server System	The location in a library where ACSLS resides. Also referred to as the Library Control System. The Library Control System acts as an interface between a library and the client systems.
Automated Cartridge System Library Software Client Applications	Software applications that manage tape cartridge contents. They access tape cartridges by interacting with ACSLS. Any number of client applications can be resident on a client system.
B	
Backup	A NetVault Backup is the saving of computer data onto media, under the control of a NetVault Server. Using NetVault, many forms of data can be backed up utilizing a NetVault Plugin (see **Plugin**).
Backup Life	Backup life refers to the actual period of time that a backup will exist. Settings can be made via the Advanced Options Tab. For example, a backup can either be saved for a certain amount of time, or after a certain number of backups have occured before it is discarded

Backup Options	Backup Options are variables that can be set prior to a backup via the Backup Options Tab of any given NetVault Plugin.
Backup Saveset	A Backup Saveset is the complete set of data from a previous NetVault backup. This item is viewable from the NetVault Restore Selections Window, where it can be expanded to view its content. A single Backup Saveset can be contained on a single piece of media (tape) or spanned over multiple ones.
Backup Selection Set	From the NetVault Backup Selections Window, it is possible to select various items for a backup. This selection criteria can be saved in a Backup Selections Set so that it can be accessed for future backups, without repeating the initial selection process.
Backup Set	From the NetVault Restore Selections Window, under Selection Method it is possible to select Backup Set. This allows a user to view previously backed up data based on the specific Backup Selection Set used.
Backup Window	When selecting Backup from the NetVault GUI, this window is accessed. Scheduling and file selection for a backup is controlled through this window. It also allows access to the Backup Selections Tab, Backup Options Tab, Schedule Tab, Target Tab and Advanced Options Tab.
Backup, Differential	This is a form of backup in which a copy of all data that has changed since the Last Full Backup is created. As an example, a Full backup is generated, then a differential backup of the same data is performed at a later date. This Differential Backup will ONLY contain data that has changed since the original Full Backup. Future Differential Backups will perform the same operation, looking back to the Full Backup. So, a future Differential Backup will contain all of the changes in the first Differential as well as any new ones that have occurred.
Backup, Full	This is a form of backup in which all selected data will be copied to media.

Backup, Incremental	This is a form of backup in which a copy of all data that has changed since the Last Full or Incremental Backup is created, based on which occurred last. For example, a Full backup is generated, then an Incremental Backup of the same data is performed at a later date. This Incremental Backup will ONLY contain data that has changed since the original Full Backup. When a second Incremental Backup is performed, only the data that has changed since the previous Incremental Backup will be created.
Barcode	An alphanumeric label on the outside edge of a cartridge used to identify a physical tape volume. It may consist of uppercase letters A through Z, numerals 0 through 9, and blanks.
Bare Metal	Bare Metal refers to the base level recovery of a system, to include the hard disk(s)' partitions, partition tables and master boot record as well as the operating system. This procedure is completed while the system being recovered is under the influence of a minimal, disk-related operating system (e.g. The recovered machine is booted with a floppy disk containing a minimal operating system).
Beginning of Tape (BOT)	The location on a tape where written data begins.
C	
Cartridge	A plastic housing containing a length of data recording tape. The tape is threaded automatically when loaded in a transport. A plastic leader block is attached to the tape for automatic threading. The spine of the cartridge can contain an OCR/Bar Code label listing the volume ID.
Cartridge Access Port (CAP)	In an ACSLS environment, this refers to a bi-directional port built into the door panel of an LSM (see *Library Storage Module*), which provides for the manual entry or automatic ejection of tape cartridges.
Cartridge Access Port Identification (CAP ID)	A unique identifier for the location of a CAP. A CAP ID consists of the Automated Cartridge System ID, the LSM number, and the CAP number.

Cartridge Drive	A device containing two or four cartridge transports and their associated power and pneumatic supplies.
Cartridge Tape I/O Driver	In an ACSLS environment, this refers to an operating system software which issues commands (e.g., read, write, and rewind) to cartridge subsystems.
Cartridge Transport	An electromechanical device that moves tape from a cartridge over a head that writes and reads data from the tape. A transport is distinct from the power and pneumatic sources that supply the electricity and air it needs to function. See cartridge drive.
Cell	In an ACSLS system, this refers to a receptacle in an LSM (see Library Storage Module) in which a cartridge is stored.
Channel	A device that connects the host and main storage with the input and output control units.
Cleaning Drive	A Cleaning Drive is one with designated slots used to clean tapes.
Client Management Window	Accessed via the NetVault GUI, this window displays client information for the selected NetVault Server. The first window shown displays the NetVault Server itself as well as other machines on the Domain that have been added as clients. The second window shows available clients that can be added and lastly, a window is provided for searching the Domain for a specific client.
Client System Component (CSC)	In an ACSLS system, this refers to the software which provides an interface between the client computing system's operating system and ACSLS.
Client System Interface (CSI)	The software component that translates and routes messages between the ACS Library Manager and the Client System Component.
Cold Backup and Restore	A Cold Backup and Restore process is one in which a machine’s native operating system is disabled and through the use of an external operating system (e.g. a disk-based one), the machine is rebooted. The system can then be backed up and restored via another machine on the same network.

Control Unit (CU)	In an ACSLS system, this refers to a microprocessor-based unit logically situated between a channel and up to sixteen cartridge transports. The CU translates channel commands into transport commands and sends transport status to the channel.
Cycle Error Messages	Messages that indicate a library or ACSLS failure.
Clustering	A Clustered Environment (or Cluster) is one in which multiple machines, each with their own operating system installed on their own local hard drives also share an additional hard drive. One of these machines is considered the Active, while all of the others are Passive. The Passive machines are constantly (through a separate software) mirroring the Active machine on the shared drive.
CLI (Command Line Interface)	CLI is an acronym for Command Line Interface. The CLI is NetVault utility designed to allow a user to control various functions of NetVault through predefined scripts from a command line (e.g. a DOS prompt in Windows).
Configurator	The NetVault Configurator is a standard tool included with the NetVault installation. Normally the Configurator is used to start and stop NetVault services. It also provides information about the machine, the license(s) purchased for the machine, the software installed on the machine and a variety of other options such as security management, interface appearance and logging. For complete information on the NetVault Configurator see *Using the NetVault Configurator* in the **NetVault Administrator's Guide**.
D	
Database	A collection of interrelated data records.
Data Path	In an ACSLS System, the data path refers to the network path that allows read/write access to tape cartridges.

Device	A NetVault device is any piece of equipment which can hold NetVault media (e.g. simple tape drives, tape libraries, pseudo disk libraries, optical drives, etc.). NetVault devices are only controlled by a NetVault Server, regardless of the computer they may be physically connected to (e.g. a tape drive attached to a local or remote NetVault Client, is controlled by the NetVault Server).
Device Logs	The Device Logs Tab is accessed via the Device Management Window. It allows a NetVault user to view logs specific to the Devices used for backup or restore. Errors occurring related to specific devices can be viewed here for troubleshooting purposes.
Device Management Window	Accessed via the NetVault GUI, this window displays Device information for the selected NetVault Server. Devices attached to the Domain containing the NetVault Server (that are also accessible) will be displayed here. This window also offers various Tabs that allow for different control or viewing of various functions (see **Device Logs** and **Media Management**)
Disk Staging	Disk Staging is similar to a Copy backup in that data is copied to a local drive (a Virtual Library for example) where it is then written to media. This creates a constant through-put of data and results in a faster backup process.
Distributed Devices	Distributed Devices are devices that are connected to any NetVault node (NetVault Server or Client). These devices can be used by the NetVault Server to perform backups and restores.
Domain	A NetVault Domain is the term used to describe a group of computers containing the NetVault Server and any number of NetVault Clients. These can be contained on a LAN, Gateway, via the Internet, etc.
Drive	A Drive is a portion of a library in which media is actually being written to or read from. Various libraries can have multiple Drives allowing for data to be written to multiple pieces of media simultaneously.

Dynamically Shared Drive	A Dynamically Shared Drive (or "DSD") is a device that is attached to more than one NetVault machine (Server or Client). This enables the drive to be shared for the pooling of system resources.
E	
End of Tape (EOT)	The location on a tape where written data ends.
Exclusion Lists	Exclusion lists are sets of specific files that have been selected to be excluded from a backup. Exclusion lists are supported *per NetVault Client*, that is each list is setup on an individual client where it is kept. When a backup of that specific client occurs, the files saved in the exclusion list will be left out.
Extended Partition	This is the space on the hard disk not allocated to the Primary Partition(s)
F	
Filter Options	From the NetVault Restore Selections Window, it is possible to set specific Filter Options. This allows a user to set a specific date range in which to restore from, rather than recovering and entire backup item.
Firewall	A firewall is a system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or through a combination of both.
G	
Group Label	A group label is applied to a specific number of media items (e.g. tapes) in order to flag them for a specific job operation. For example, it is possible to group label five specific pieces of media in a drive in order to conduct a File System Backup of a Client's D:\ drive.

GUI	GUI is an acronym for Graphic User Interface. A GUI is used to access specific windows and functions in NetVault in order to manage hardware and software configurations and data storage. The GUI contains the menu bar, command toolbars and a status line in order to aid in choosing a desired function.
H	
Home Location	In an ACSLS system, this term refers to the cell associated with a given cartridge.
I	
ID	Abbreviation for Identifier or identification.
Inclusion Lists	An inclusion list is a list of files that have been selected from a group to be backed up. These lists are initially setup outside NetVault and then saved in an Inclusion file. These files are then selected in NetVault on a per job basis. They are especially useful when using the Command Line Interface (or CLI).
Instance	An instance is a specific number that represents the number of times a specific job has been submitted. The first time a job is submitted is obviously instance number 1, the second time is two, etc. This number is relative to the Job Title assigned to a specific job, therefore changing the name of a specific job will reset the instance number back to number one.
In-transit Cartridges	In an ACSLS enviroment, this term refers to cartridges between their source and destination locations. Cartridges are considered in-transit if they are in the pass-thru ports, robot hands, or the playground.
I/O	Abbreviation for Input/Output.

J	
Job Management Window	Accessed via the NetVault GUI, the Job Management Window offers Tabs that allow the user to monitor job progress. These tabs allow for viewing of the status of backup or restore jobs that are currently running; the history of previously completed jobs; and the type, date and time of previously completed jobs.
Job Title	A Job Title is a user defined title for a job (backup or restore) that is input prior to conducting the action in order to specifically label the job.
L	
Library	A library is a combination of media and media devices (e.g. tapes, multi-drive tape jukeboxes, autochangers, sequential devices, disks, etc.) within a domain. NetVault controls all of the items within a library and these libraries can be shared between clients.
Large Cartridge Access Port (LCAP)	In an ACSLS environment, this refers to a 40-cartridge CAP (see *Cartridge Access Port*) with the storage cells arranged in four removable magazines of ten cells each. The magazines appear as a single column of 40 cells to the host software.
Library Errors	Errors that occur because the library is offline, has suffered hardware failure, is unavailable, etc.
Library Control Unit	In an ACSLS environment, this refers to the portion of the LSM (see *Library Storage Module*) that controls the picking, mounting, dismounting, and replacing of tape cartridges.
Library Management Unit (LMU)	In an ACSLS environment, this refers to the portion of an ACS (see *Automated Cartridge System*) that manages LSM's (see Library Storage Module), allocates their resources, and communicates with ACSLS.

Library Storage Module (LSM)	In an ACSLS environment, this refers to an ACS (see *Automated Cartridge System*) structure that provides the storage area for cartridges, cartridge drives, CAP's (see *Cartridge Access Ports*), and the robot necessary for moving them.
Library Storage Module Identification (LSM ID)	In an ACSLS environment, this refers to a unique identifier for an LSM (see Library Storage Module). This ID consists of the ACS ID and the LSM number.
Light Emitting Diode (LED)	A light emitting device that uses little energy and is used mainly to indicate on/off conditions.
License Key	A License Key is an authorization code for a specific Bakbone product (e.g. NetVault, NetVault APMs, etc.) that allows for legal use of the product.
Logs Window	Accessed via the NetVault GUI, the Logs Window displays log entries for jobs and processes completed through the selected NetVault Server. Each log is preceded by a color-coded dot, which signifies the message's level of importance. Log messages preceded by a colored dot containing an exclamation mark can be double-clicked to view more information on that specific log event.
M	
Master Boot Record (MBR)	The master boot record is the the first sector in the first partition of a hard disk. It reads the Partition Table in order to determine which partition is active (contains the operating system).
Media Label	A Media Label is a specific title assigned to a single piece of media. For example, a single tape in a drive is assigned the media label of Backup_1, in order to label it as the first tape used in the backup.
Media List	The Media List command is accessed by right-clicking on a backup saveset from the Restore Selections Window. This command displays a list of media required in order to complete a restore of the selected backup saveset.

Media Management Window	Accessed via the NetVault GUI, the Media Management Window media to be examined. The media examined, must be contained within a device within the domain of the selected NetVault Server. This window contains various Tabs that allow for viewing different aspects of the media itself, or the saveset(s) contained on it.
Media Requests	Through the Device Management Window, it is possible to access the Media Requests Tab. Accessing this tab and then selecting a specific piece of media in the window and right-clicking on it allows a user to request specific data about that media. It is possible to view the Status of the media, Diagnose a potential problem with it or Put it on Hold, which makes the media unavailable until taken off of hold.
Mount Points	A mount point is the place in the directory tree to which a device is grafted. In unix, there are no drive letters - instead, Unix uses a unified directory tree. For a partition to be accessible, the partition must be mounted into this directory tree. The place it gets mounted is known as the mount point
N	
NAS	NAS is an acronym for Network Attached Storage. This refers to devices used for storage management that are directly attached to a network and are accessible by all clients within that network.
NDMP	NDMP is an acronym for Network Data Management Protocol. This protocol is used by various NetVault plugins in the transfer of data. It allows for the creation of a common agent used by NetVault to back up different file servers running different platforms and platform versions.
NetVault Database	The NetVault Database contains all of the details for the installation of NetVault itself on the NetVault Server. This includes all information pertaining to NetVault's configuration, license keys, logs, media and schedules. This information is critical to keeping NetVault operations available and recoverable in the event that NetVault itself is damaged.

NetVault Client	A NetVault Client is a machine within a network (e.g. LAN, Dial-up, etc.) on which the NetVault Software is installed (Server or Client version). This machine is accessed via a NetVault Server in order to conduct Backups and/or Restores via the NetVault GUI.
NetVault Server	A NetVault Server is a machine within a network (e.g. LAN, Dial-up, etc.) on which the NetVault Server Software is installed. This machine acts as a hub for accessing other machines (NetVault Clients) in order to conduct Backups and/or Restores via the NetVault GUI.
Network Adapter	Equipment that provides an electrical and logical interface between a network and specific attached equipment.
Network Compression	Network Compression is used in order to reduce the bandwidth used on a network when files are being transferred, but it can take up CPU time. The data is first compressed on a NetVault Client containing the backup selection, transmitted over the network, then decompressed on the machine with the selected device attached.
Network Interface (NI)	An interface between the server system and the client systems that maintains network connections and controls the exchange of messages. The NI is resident on the server system and each client system.
Node	A NetVault Node is any networked computer with the NetVault software installed (Server or Client). Note that in NetVault terminology, a machine termed just simply a Node is considered such.
Non-blocking	Non-blocking refers to scripts in which a response to the script command is returned before the action has actually completed. This allows for continuous running of various scripts without NetVault stopping.
P	
Partition Table	A piece of data located in a system's master boot record that describes how a hard disk is partitioned.

Pass-Thru Port (PTP)	In an ACSLS environment, this refers to a mechanism that allows a cartridge to be passed from one LSM (see Library Storage Module) to another in a multiple LSM ACS (see Automated Cartridge System).
Phase	When the Duplicate option is selected from the Advanced Options Tab prior to a NetVault Backup, the operation is broken down into phases. The first phase is the backup of the data, while the second phase is the duplicate of that backup. The Job Status Window (found in the Status Window, accessed via the NetVault GUI) will display this information
Playground	In an ACSLS environment, this refers to a reserved area of special cells (within an LSM - see *Library Storage Module*) used for storing diagnostic cartridges and cartridges found in-transit upon power-on and before initialization of the LSM is completed
Plugins	Plugins are program modules within NetVault that are designed to add functionality to NetVault's core features. Plugins are different from APMs (Application Plugin Modules) in the fact that they are included with the NetVault core software. These Plugins are the Data Copy, Consolidate File System Backups, File System, Raw Device and NetVault Databases
Policy Management Window	The Policy Management Window is accessed through the Administration menu item. This window allows the user to save frequently used settings within the various Restore and Backup Tabs (e.g. Selections, Schedule, Target and Advanced Options Tabs) for future use as sets, in order to avoid the need to re-select these settings with each job. These sets can be viewed as well as modified from the Policy Management Window.

Policy Set	A Policy Set is a specific selection of options defined for a job that are saved for future re-use. A Policy Set is generated by accessing the Policy Management Window and selecting a specific tab. Specific selections are then made from the tab and saved as a set (i.e. Selected Advanced Options Tab options saved to an Advanced Options Set). This Policy Set can also be accessed and changed as necessary, therefore automatically applying the changes to any jobs using this Policy Set.
Pool	This term refers to a collection of tape cartridges having one or more similar features or attributes, such as a pool of scratch tapes.
Post-scripts	Post-scripts are external executable scripts (written by the user) that will run at the conclusion of a job (backup or restore). A Post-script may be used to restart certain processes or even launch a program. All scripts must reside in the ..\NetVault6\scripts directory in order to run properly. Scripts can be set to execute via the Advanced Options Tab (of either backup or restore)
Pre-scripts	Pre-scripts are external executable scripts (written by the user) that will run prior to a job (backup or restore). A Pre-script may be used to shut down a database to ensure that no changes occur to it during a backup. All scripts must reside in the ..\NetVault6\scripts directory in order to run properly. Scripts can be set to execute via the Advanced Options Tab (of either backup or restore)
Primary Partition	The first division of a hard disk drive. The primary partition is often the only one on the disk. In this instance, it occupies the entire disk volume. If there are multiple partitions, the primary partition is the one that holds the operating system and has to be made "active" in order to do so.
Priorities	A priority is the order in which a specific job is run. By selecting the Media Requests option of the Device Management Window and then right-clicking on a specific media request, a pop-up menu is revealed allowing the user to select the Set Priorities option. Priorities can be set between 1 and 30, with 1 being the highest priority

Priority Cartridge Access Port (PCAP)	In an ACSLS environment, this refers to a single-cartridge Cartridge Access Port used for priority entry and ejection of cartridges.
Processing Errors	Errors that result from processing or network communication failures.
Pseudo Drive (a.k.a. Virtual Library, Drive)	A Pseudo Drive is a a portion of a hard disk set up to mimic a media device (e.g. a tape drive). A Pseudo Drive can be set up with varying numbers of slots and drives in order to mimic a specific media device. Data can then be backed up to the Pseudo Drive and later restored from it as well. A Pseudo Library is also used to perform disk staging and tape cleaning
R	
Redo Log Files	A term used to refer to backed up files that are used to restore an ACSLS (see Automated Cartridge System Library Software) database.
Relational Database	A database that is organized and accessed according to relationships between data items. These relationships are represented by tables.
Restore	A NetVault restore is the restoration of computer data from media, under the control of a NetVault Server. With NetVault, many types of data may be restored using the appropriate plugin (e.g. NetVault Database plugin, NT File System plugin, etc.). Data may be restored to a different Target client, Location or Name, from that of the original backup.
Restore Selection Set	From the NetVault Restore Selections Window, it is possible to select various items for a restore. This selection criteria can be saved in a Restore Selections Set so that it can be accessed for future restores, without repeating the initial selection process.

Restore Window	When selecting Restore from the NetVault GUI, this window is accessed. The NetVault Restore Window controls the scheduling of a restore for the selected server and Job Title. It also allows access to the Restore Selections Tab, Restore Options Tab, Schedule Tab, Target Tab and Advanced Options Tab.
S	
SAN	SAN is an acronym for Storage Area Network. This type of network provides the ability to attach devices to clients with high-speed connections in order to create centralized tape storage and drive sharing.
Saveset	See **Backup Saveset**
Schedule Set	From the Schedule Tab of either the Backup or Restore section of NetVault, it is possible to select various items for scheduling a job. This selection criteria can be saved in a Schedule Set so that it can be accessed for future jobs, without repeating the initial selection process.
Scratch	The term used to refer to an attribute of a tape cartridge, indicating that it is blank or contains no useful data.
SCSI	The acronym for Small Computer Serial Interface.
Second Disk Journaling	A process in which a databases' journal records are written to a second disk device, instead of to the primary disk. This enhances the possibility of recovery from a disk failure.
Selection Method	The Selection Method pull-down menu (in the Selections Tab of the Restore section of NetVault) makes it possible to view previously backed up jobs in one of three formats: by the Plugin (or APM) used, by Job title, or by Backup Set used.
Selection Sets	Selection Sets allow often used selections in several tabs of both the Backup and Restore portions of NetVault to be saved and used for later jobs. See also, **Advanced Options Set**, **Backup Selection Set**, **Restore Selections Set**, **Target Set** and **Schedule Set**.

Selections Area	The Selections Area (aka Selections Window) is the area of both the Restore and Backup Selections Tabs that shows the available NetVault Servers and/or Clients and the data contained within, available for a backup or restore.
Serialization	Serialization is an ability a library possesses in which the library has the capacity for telling a user which drives are in which drive bays.
Server	A NetVault Server is a machine within a network (e.g. LAN, Dial-up, etc.) in which the Server version of the NetVault Software is installed. The Server controls all backup and restores for all NetVault Clients in a NetVault Domain, including the server machine itself acting as a client. NetVault devices are only controlled by a NetVault Server, wherever they may be physically connected (e.g. to a remote NetVault client, as well as locally).
Server Selection	If multiple NetVault Servers exist on a network, the Server Selection pull-down menu allows the user to select any of these Servers.
Server Status Window	The NetVault Server Status window displays status information for the selected server. The window contains individual, re-sizeable areas to display each type of information
Shared Devices	A Shared Device is one that is being used by two or more machines through a shared-SCSI connection or a SAN (Storage Area Network). A shared drive can be used by NetVault as a local drive when backing up the client, increasing the efficiency of data transfer across the network.
Silo	An industry-related term for an LSM (see Library Storage Module).
Slot	A Slot is a portion of a library that acts a s a form of "holding area" for a piece of media (e.g. tape) that is not being used. Libraries deliver media from a slot to a drive in order to read from or write to the tape.
SmartClient	A SmartClient is any NetVault Client with a device directly attached to it.

Standalone Drive	A Standalone Drive is a self-contained device that is not located in a library (e.g. A simple tape backup drive located on a desktop computer)
Status Window	Accessed via the NetVault GUI, the Status Window is broken down into four areas that allow for the viewing of Device Status, Client Status, Media Status and Operator Messages
Standard Cartridge Access Port (SCAP)	In an ACSLS environment, this refers to a 21-cartridge CAP (see *Cartridge Access Port*) with the storage cells arranged in three rows of seven fixed cells.
Storage Server Interface (SSI)	In an ACSLS environment, this refers to a software component, resident on a client system, that translates and routes messages between client applications and the CSI (see Client System Interface).
Structured Query Language (SQL)	A language used to define, access, and update data in a database.
T	
TCP	The acronym for Transmission Control Protocol.
Target Set	From the Target Tab of either the Backup or Restore section of NetVault, it is possible to select various items for targeting a job. This selection criteria can be saved in a Target Set so that it can be accessed for future jobs, without repeating the initial selection process.
Template	A Template is a block or pattern used as a basis to build a new function (e.g. customized reports).
Tracing	Tracing is a NetVault utility that allows the user to capture and store a history of events. With this file it is possible to provide Technical Support with enough information to diagnose a problem.
Tree	A tree is another name for the hierarchy list used for displaying data in both the NetVault Back and Restore Windows. This structure's content varies based on the Plugin or APM being used.

Triggered Job	A Triggered Job is a NetVault Backup or Restore job that has been prepared to execute based on a specific Trigger. From the Schedule Tab, it is possible to select Triggered, and then assign a title for the trigger in the Trigger Name window. Through the use of the nvtrigger.exe program (via Command Line) it is possible to execute this trigger in order to run the job. This makes it possible to remotely run a job or to add the trigger name to a script file in order to run it under various conditions.
V	
Virtual Label	In an ACSLS environment, this refers to a logical label that can be assigned to a cartridge when its physical label is missing or unreadable.
Volume Identifier	In an ACSLS environment, this refers to a six-character string that uniquely identifies a tape cartridge to the database.

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