

NetBackup Vault Extension

Pre-planning Checklist



Note: an asterisk (*) denotes a recommendation below

I. Desired Vault Configuration (select one)

Offsite original media _____

Offsite duplicate media _____

Offsite both original and duplicate media _____

II. NetBackup General

Hostname of master server: _____

Hardware platform of master server: _____

Operating system revision on master server: _____

Number of slave servers: _____

Types of robotic devices: _____

Server Host Name	No. Drives*	Robot No.	Robot Control Host	Storage Unit Name

NetBackup Classes to be processed:

Class Name	Schedule Name	Offsite original or duplicate	Storage Unit	Retention Period*	Appx. amt. of data (GB)

IV. ACSLS Robot Information (if applicable)

ACSLs server: _____

Rhosts access granted to master server?: _____

NBU robot #	ACS #	LSM #	CAP capacity	CAP numbers

V. Media Manager Configuration

Volume Pool (to be used for vaulting)	Duplicates, Originals or Offsite NBU DB copies	Media Type

VI. Network Configuration

Network printer name(s) to receive reports: _____

Network email address(es) to receive reports: _____

VII. General Offsite Considerations

Name of offsite vault vendor: _____

Schedule to pick up/return tapes: _____

Frequency of offsite vaulting: _____

Vault Configuration

Vault Identifier: _____

Vault Type: _____

Total Number of Drive Pairs (to be used for duplication): _____

Server Host Name	Storage Unit Name (to be used for duplication)	Number of Drive Pairs (to be used for duplication)

Media Manager/NetBackup Robot Type: _____

Media Manager/NetBackup Robot Number: _____

Robot Export Capacity: _____

If ACS robot type:

ACS No: _____ LSM No.: _____ No. CAPs: _____

Automatic Tape Ejection or Operator Intervention? _____

Robotic Volume Group Name: _____

Offsite Volume Group Name: _____

Volume Pool(s) to be used: _____

Offsite Vaulting Frequency (once every X days): _____

Backup NetBackup Databases in this vault? _____

If so, specify:

Server to backup NetBackup Databases: _____

Volume Pool to be used: _____

Number of offsite copies: _____

Retention period for media (days, weeks, etc.): _____

Offsite Vault Vendor Name: _____

Instructions

Please follow the instructions below when completing this checklist.

I. Desired Vault Configuration

Determine the type of offsite vaulting policies you require for your media. Will you be able to duplicate all of your data within a specific window, or will you need to send your original media offsite? Do you wish to duplicate a group of critical servers, and send the remainder of the original media offsite?

II. NetBackup General

Define as much information as possible from your current NetBackup configuration. Most of these items are self-explanatory. When specifying types of robotic devices, use the appropriate NetBackup terminology (e.g. TLD, ACS, TL8) or specify the actual hardware manufacturer and model names.

Please list each NetBackup server in your environment, including the master server if any tape devices are attached to it. A NetBackup server is defined as a host that has attached devices (i.e. tape) that are defined within the NetBackup environment and those hosts that have the NetBackup server software loaded. For servers with tape drives defined within a robotic unit, please specify the robot number as defined within Media Manager and the host name of the server which controls the robotic device. Also, please specify the NetBackup storage units that correspond to each server and their attached devices. This information can be found in the NetBackup Administration interface (xbpadmin or bpadm).

Also list all classes that are defined within your NetBackup environment that you wish to consider for offsite rotation. For "Offsite Original or Duplicate", please list either "Original" or "Duplicate" depending on your offsite policy. If this is a class with critical servers that you wish to duplicate, then list "Duplicate". If this is a class that contains a large amount of data that consume too many resources to duplicate, then specify "Original". If multiple schedules (e.g. full, incremental, etc.) exist within a class and you wish to include these schedules within the offsite policies, list each class/schedule separately. Thus, you may wish to duplicate your full backups but only send the original backups offsite for your incrementals. Be sure to list the retention period that is defined for each schedule so that you will have an idea of when to expect the offsite media to return from the vault. Lastly, try to estimate the amount of data that will be contained within each class and schedule.

If your NetBackup configuration does not exist at present, please specify as much information as possible regarding your proposed network configuration. That is, which servers will have tape drives attached, how many tape drives, planned robotic control hosts, etc..

III. Non-ACSL Robot Information

If your environment consists of robotics controlled by NetBackup (e.g. TLD, TL8, etc.), complete this section and skip section (IV).

Please list all hosts that control robotics including their host name, Media Manager robot number and total number of drives within the robot. Also include the density type of the tape drives (e.g. DLT, ½" cartridge, 8mm DAT, etc.). If the robotic unit contains a mechanism for moving tapes into and out of the robot (e.g. mailslot, Cartridge Access Port, export slots), please list the number of media this mechanism can support.

If there are media currently defined within the robot in Media Manager, a volume group should be associated with this media. This volume group name could either be the automatically generated name (e.g. 00_000_TLD) or a name which you have specified for the media.

Finally, bpvault supports the ability to control injects from the robot's mailslots. This option can either be executed locally from the robot control host or remotely from the NetBackup master server. If you wish to execute the inject remotely, it is required that the NetBackup master server be allowed to execute a command on the robot control host as root. Therefore, an "rhosts" entry is required on the robot control host. Place a "yes" in the "Rhost access from master for injects" field if this is currently configured, or "no" if it is not. If you wish to execute the inject locally, the "rhosts" entry is not required, but a script will need to be loaded on the robot control host.

IV. ACSLS Robot Information

If your environment consists of robotics controlled by StorageTek's ACSLS software (NetBackup robot type ACS), complete this section and skip section (III).

Please list the hostname of the ACSLS server, and answer "yes" or "no" to the rhosts question. In order for bpvault to process media ejects on an ACSLS server, it is required that the NetBackup master server have access to the ACSLS server as user "acsss". Therefore, it is required that the ACSLS server contain an "rhosts" entry for the NetBackup master server in the home directory of the user "acsss". If this access is not properly configured, any eject commands generated by bpvault will fail as well as any robotic inventory commands.

Bpvault also requires information pertaining to the ACSLS configuration. Please list all robots configured on the ACSLS server including their Media Manager/NetBackup robot number and the corresponding ACS and LSM number for the robot. This information can be found within the Media Manager Device Configuration (xdevadm or tpconfig). You can also obtain this information directly from the ACSLS console by using ACSLS commands such as "query acs all" and "query lsm all". You also need to inform bpvault of the capacity of the Cartridge Access Port and their respective identifiers. This information can be obtained by using the ACSLS command "query cap all". Please refer to the StorageTek ACSLS reference manuals for further information on ACSLS commands.

V. Media Manager Configuration

All media within Media Manager and NetBackup must be defined within a volume pool. If you choose to duplicate your backup images, then a unique volume pool should be defined for the media that will contain the duplicated images. You should list the volume pool names and their respective media density/type (e.g. DLT, ½" cartridge, etc.) that will be used by bpvault.

Under the "Duplicates, Originals or Offsite NBU DB copies" column, you should define the purpose for each pool listed. Specify "Duplicates" for media that will be allocated for duplicated images and "Originals" for media that contain the actual backup images. Bpvault also allows you to define a pool of tapes that will be used for backing up the NetBackup databases and then sending them offsite. If you wish to use this feature, define a separate pool of tapes that will only store these offsite copies of the NetBackup databases, and list them as "Offsite NBU DB copies".

VI. Network Configuration

Bpvault generates various reports that are used to track the vaulted media. These reports are generated each time bpvault is executed. Examples of these reports are pick lists of tapes coming out of the robotic library, pick lists of tapes returning from the offsite vault and detailed inventory lists. These reports should automatically be sent to an email address and/or to a network printer. Please list the email addresses you wish these reports to be sent to and/or a network printer that should receive the hard copies of the reports.

It is important to note that all reports will be sent from the NetBackup master server, so the email addresses and network printers listed should be defined prior to the installation of bpvault.

VII. General Offsite Considerations

If you currently have an offsite policy defined, please list the appropriate information in this section. This includes the name of your vault vendor (e.g. Arcus, Iron Mountain, DataBase, regional vendor, etc.) and their pickup and delivery schedule.

Normally, the schedule that is defined between your site and your offsite vendor will determine how often you will execute a vault session. Some site vault their media once a day, while others send media offsite once per week. Therefore, you can determine the frequency you will be vaulting based on this information.

If you do not currently have an offsite policy defined, please list your desired offsite configuration including the frequency that you would like to send media offsite (e.g. once per day, once per week, etc.).

Vault Configuration

After completing steps (I) through (VII), you can begin to define how each of your vaults will be configured. This section is used as a cross-reference for each of the sections completed above. Depending on your hardware configuration (e.g. number of robots), you may need multiple vault configurations. Please feel free to make copies of the Vault Configuration worksheet during this planning phase.

A “logical” vault will now be defined for each physical robotic device. For example, if your NetBackup configuration contains three distinct TLD robots (not connected with pass-thru devices), then you would define three “logical” vaults. After completing this section, it will be a simple task to configure bpvault within your environment.

First, decide on a name for the logical vault. A recommended naming convention is “V1” for the first vault, “V2” for the second and so forth. Due to software limitations, the vault identifier must be less than five characters.

Next, identify what type of vaulting will be performed by this vault. If you wish to mix duplicates and originals within a single robotic device, you will need to define two different configurations; one for the vaulting of originals and one for the vaulting of duplicates. You may define as many configurations for a given vault identifier as you wish, but it is unlikely that you will need to define more than two configurations (e.g. one for originals and one for duplicates). For “Vault Type”, specify either “Originals” or “Duplicates” (which can also be obtained from section I).

The number of drive pairs within the vault must also be defined. For duplications, a minimum of two drives (or one pair) is required so as to avoid network duplication. If this vault type is defined for duplications, then list the total number of drive pairs within the robot that will be used for duplication. This number may not be the actual number of drive pairs that are physically attached to servers; it specifies the number of drive pairs within the robot that are to be used for duplication. For example, two servers may share drives within a robot. Each server is connected to four drives, which means the robot houses eight drives. If you only wish to use two drives on each server for duplication (so that other operations such as restores can utilize the remaining drives), then the total number of drives that would be used for duplication is four, or two pairs. This information can be found in section II.

Each server that is attached to drives within this robot should be listed next. This server should also be bound to a storage unit within the NetBackup configuration. Most sites will define all drives (of a given media type) that are attached to a server as one storage unit, since this is recommended during the installation of NetBackup. The number of drive pairs that are to be used for duplication should also be listed here. Returning to our example, we would then list each server and their storage unit names, and “one” under “Drive Pairs”. You can also use the information in section II.

Obtain the robot type for this robotic unit from the Media Manager database (using either xdevadm or tpconfig). Examples of valid robot types are TLD, ACS, TL8 and such. A unique number should have been assigned to this robot during the NetBackup installation. Obtain this robot number from NetBackup (e.g. xbpadm or bpadm) or Media Manager (e.g. xdevadm or tpconfig), or from section III or section IV.

Vault Configuration (continued)

Next the export capacity of the robot should be listed. There are different ways to obtain this information since each robot is different. For ACSLS, you can execute the “query cap all” command from the ACSLS interface. For TLD robots, a visual inspection will suffice, or you can reference the manual provided by the manufacturer. This information should also be listed in section III or section IV.

If this robot is being controlled by ACSLS, the ACS number, LSM number and number of CAPs should be transferred from section IV.

Bpvault can be configured to automatically eject all tapes upon completion or rely on operator intervention. Depending on the export capacity of this robot, you may wish to allow an operator to process the tape ejects. For example, if a robot only has one export slot and multiple tapes will be ejected, operator intervention is required. For this option, list “Automatic” or “Manual”.

Each logical vault will be tied to a Media Manager Volume Group name. This will allow the administrators to quickly determine the physical location of any media. For “Robotic Volume Group”, the volume group listed for this robot in section III or section IV should be listed. For “Offsite Volume Group”, a name should be created that will uniquely describe the group of tapes that will be ejected from this robot. An example of an offsite volume group for tapes that were ejected from vault V1 could be “Offsite-V1”.

The volume pools that were listed in section V should be transferred here. If this vault is creating duplicates, only one volume pool should be listed here. Otherwise, multiple volume pools could be listed depending on the NetBackup class configuration.

The frequency of vaulting should be obtained from section VII. This frequency is usually express in terms of a given number of times per day/week/month. Therefore, if you wish to vault once every day, the number 1 should be listed here.

If you wish to send a copy of the NetBackup databases offsite during a vaulting process, you need to decide which vault will create this offsite copy. Only one vault should be responsible for creating an offsite copy of the NetBackup databases. Normally, the robot which is attached to the master server is the choice for creating a copy of the NetBackup databases, since the master server is usually used for creating an onsite copy of the NetBackup databases (see the discussion of NetBackup database backups in the NetBackup System Administration Guide). The host name of the server responsible for these backups should be listed, along with the volume pool that is reserved for offsite NetBackup database backups (from section V). Multiple copies of the NetBackup database backups can be created, but most sites make one offsite copy. Since NetBackup does not track the NetBackup database backups within the catalog, you must specify how long these copies are retained offsite. Few sites retain these backups longer than 10 or 20 days, as the data becomes obsolete quickly.

Vault Configuration (continued)

Next, obtain the offsite vault vendor name from section VII.

Finally, a list of classes and schedules that correspond to this robot (or logical vault) should be compiled. These classes and schedules can be obtained from section II based on the storage unit that is used for their backups. Since the storage unit is related to a specific robot number (section II), the classes and schedules will become grouped by the robotic device.

Notes and Recommendations

- At least two drives should be attached to any NetBackup server to prevent network duplication; recommendation of at least three drives attached to any NetBackup server to allow restores during duplication.
- Duplicated images will expire at the same time as the original images (VERITAS NetBackup 3.1.1 and prior).
- For ACSLS robots, rhosts access is required from the NetBackup master server to the ACSLS server to allow for proper tape ejection.
- For TLD robots, it is recommended that rhosts access be granted from the NetBackup master server to any servers controlling a robot to allow for
- One logical vault will be defined for each TLD robot.
- Should run multiple “vaults” simultaneously (i.e. multiple TLD robots).
A “vault” would be known as a single robotically controlled device.
Currently, multiple TLD robots require the definition of multiple vaults, since each is referred to as a separate robot within Media Manager.
- Monitoring of NetBackup Vault Edition processes should be done using third party software (log file monitoring, process monitoring, etc.), or system administrators can manually monitor log files.
- It is imperative to maintain an adequate supply of duplication media so that vaulting processes can complete successfully.