

NetVault Backup & Amazon Gateway-VTL

## Backing up to the Cloud with Amazon Web Services and Quest Software NetVault Backup



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### Legend

WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT, NOTE, TIP, MOBILE, or VIDEO: An information icon indicates supporting information.

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## Introduction

## Abstract

This document describes how to implement cloud data protection using Quest NetVault Backup and the Amazon Web Services (AWS) Gateway-Virtual Tape Library (Gateway-VTL). Using the Amazon Gateway-VTL in conjunction with NetVault Backup enables seamless data protection of on premise data to the cloud. Storing NetVault backups in the cloud provides an easy and inexpensive alternative to other offsite solutions. With this solution, you can store data in Amazon S3 and seamlessly archive to Glacier for as little as \$0.010 per GB.

## The Amazon Gateway-VTL

The Gateway-VTL is an on premise disk cache that provides a low-cost, scalable and resilient virtual tape infrastructure. This VTL combines the functionality of a traditional tape library with the low-cost, off-site disk available in Amazon S3 and Glacier. Frequently accessed data is stored locally on the Gateway-VTL and on S3 to provide simple offsite disaster recovery. As data ages and access demands decline, data is moved from S3 to the Virtual Tape Shelf, which is backed by Glacier. Here data can reside for long periods of time for as little as \$0.010 per GB/month.

The Gateway-VTL is a virtual machine that is deployed locally on either a VMware ESX or Microsoft Hyper-V server. The virtual machine is then configured with virtual disk space that is used as local cache and an upload buffer, allowing for fast access to active data and resilient uploads to the cloud.

## The combined NetVault Backup/Amazon Gateway-VTL solution

The Gateway-VTL is presented to the NetVault Backup server by emulating a STK-L700 media changer with Sony tape drives via iSCSI. Once presented via iSCSI, the STK-L700 can be configured within NetVault Backup as a normal tape library.

## **Solution System requirements**

Before using the NetVault Backup/Amazon Gateway-VTL solution, it is important to ensure compatibility in your environment. Below are the basic system requirements. More detailed system requirements and supported operating systems can be found in the NetVault Backup Compatibility Guide and AWS Storage Gateway Requirements.

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- NetVault Backup versions: 12.0, 11.4.5
- Supported iSCSI initiators: RHEL 5, RHEL 6, Windows 7, and Windows Server 2008, 2008R2, 2012, 2012R2 and 2016. Note that the VMware ESX initiator provides an alternative to using initiators in the guest operating systems of your VMs. Use this option if you want to use an operating system whose iSCSI initiator is not supported by the Amazon VTL.
- Supported hypervisors: VMware™ vSphere 4.1, 5.0 ,5.1, 5.5, 6.0, 6.5, 6.7 and Microsoft™ Hyper-V 2008R2, 2012, 2012R2, 2016
- · Amazon Gateway VTL version: Any release from 12-16-2014 and later
- Amazon Gateway emulation: STK-L700

### **Known solution limitations**

Testing of the NetVault Backup with the Amazon Gateway-VTL has uncovered a few limitations, which are currently under investigation and should be resolved in future releases of the products:

- Auto configuration of the Gateway-VTL within NetVault Backup does not work on Windows and Linux operating systems.
- The Gateway-VTL does not support the 10 GB vmxnet3 network adapter. Only the E1000 network adapter is
  officially supported at the release of this document.

# Planning, Installation and Initial Configuration

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Planning, installing and configuring the Amazon Gateway-VTL is a simple process. Planning begins with two key considerations:

- Decide whether the Gateway-VTL will be attached to the NetVault Backup server or to a server with the NetVault SmartClient installed.
- Ensure the operating system that will be used is compatible with both NetVault Backup and the Gateway-VTL.

### Sizing the cache and buffer

Local disk storage is a requirement for a Gateway-VTL. Local disk is used for the cache storage and the upload buffer to the cloud. Additionally, the cache storage provides low-latency access to protected data. The upload buffer is a staging area for data being uploaded to Amazon S3. This staging area is crucial for the creation of recovery points that are used for recovery of the Gateway-VTL.

Therefore, you need to determine how much data you want to back up to the Gateway-VTL, and then properly size the gateway storage cache and upload buffer to obtain optimal performance. For sizing guidance, please refer to <u>Managing the Upload Buffer and Cache Storage</u>.

# Using multiple network interface cards (recommended)

To optimize backup and upload speeds, it is recommend to configure the Amazon Gateway-VTL with multiple network interface cards (NICs). Having at least two network interfaces allows for a primary interface to be used for uploading data to Amazon S3 and a secondary interface for iSCSI backup traffic. The procedure for configuring multiple interface cards can be found at <u>Configuring Your Gateway for Multiple NICs</u>.

# Amazon Gateway-VTL Installation and initial configuration

Installation and initial configuration is outside of the scope of this document. For detailed steps on how to install and configure the Gateway-VTL, please visit <u>Setting Up Your Gateway-VTL</u>. When deploying the Gateway-VTL, be sure to set the device type to **STK-L700** (see Figure 1).

Once the Gateway-VTL is installed, configured and attached via iSCSI to a Windows or Linux NetVault Backup server, proceed to the next section of this document.

VTL Tape Cartridges VTL Devices Gateway			
Tape Device ID	VTL Device	VTL Device Type	
sgw-9f06e4f6-mediachanger	Medium Changer	STK-L700	
sgw-9f06e4f6-tapedrive-01	Tape Drive	IBM-ULT3580-TD5	
sgw-9f06e4f6-tapedrive-02	Tape Drive	IBM-ULT3580-TD5	
sgw-9f06e4f6-tapedrive-03	Tape Drive	IBM-ULT3580-TD5	
sgw-9f06e4f6-tapedrive-04	Tape Drive	IBM-ULT3580-TD5	
sgw-9f06e4f6-tapedrive-05	Tape Drive	IBM-ULT3580-TD5	
item selected VTL Device: sgw-9f06e4f6-mediachanger Details ISCSI Target Info			
Tape Device ID:         sgw-9f06e4f6-mediachanger			
VTL Device: Medium Changer			

Figure 1. When deploying the Gateway-VTL be sure to set the device type to STK-L700.

# Configuring the Amazon Gateway-VTL when using Windows

This section only applies those who have attached the Gateway-VTL to the Windows operating system; if you are using Linux, skip this section and proceed to Adding the Amazon VTL to the NetVault Backup server.

If you are using Windows operating systems with the Gateway-VTL, before you add the Gateway-VTL to NetVault Backup as a VTL device you must modify three registry entries:

- MaxRequestHoldTime
- MaxRecvDataSegmentLength
- TimeoutValue

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Failure to do so may result in improper interoperability between the Gateway-VTL and NetVault Backup. Note that once you have modified the registry keys, you will need reboot the system for your changes to take effect.

#### Procedure

To modify the registry entries, take the following steps:

- 1. Start the Windows Registry Editor (Regedit.exe).
- 2. Navigate to the following globally unique identifier (GUID):

HK\_Local\_Machine\SYSTEM\CurrentControlSet\Control\Class\{4D36E97B-E325-11CE-BFC1-08002BE10318}

- 3. Find the subkey for the Microsoft iSCSI initiator. This will be a four-digit number such as 0000 or 0001. In the example shown in Figure 2, it is 0003.
- 4. Expand the subkey.
- 5. Click Parameters, as shown in Figure 3. Then modify the first two of the registry entries you need to change:
  - a. Right-click on the MaxRecvDataSegmentLength DWORD (32-bit) value and click Modify. Then set Base to decimal and set value to 262144.
  - b. Right-click MaxRequestHoldTime DWORD (32-bit) value and click Modify. Then set Base to decimal and set value to 600.

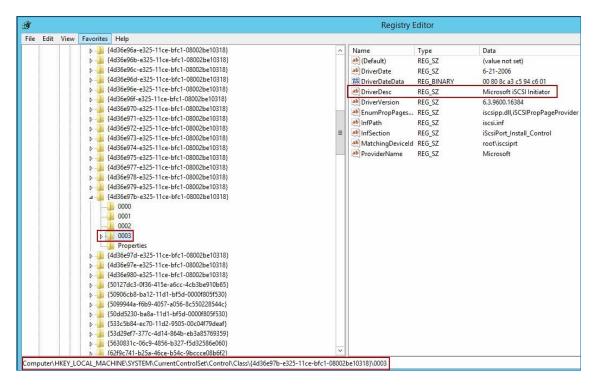


Figure 2. Finding the subkey for the Microsoft iSCSI initiator (in this example, it is 0003)

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▷-🌽 {4d36e96a-e325-11ce-bfc1-08002be10318}	^	Name	Туре	Data
4d36e96b-e325-11ce-bfc1-08002be10318}		(Default)	REG_SZ	(value not set)
4d36e96c-e325-11ce-bfc1-08002be10318		100 DelayBetweenReconnect	REG_DWORD	0x00000005 (5)
> - 📙 {4d36e96d-e325-11ce-bfc1-08002be10318}		100 EnableNOPOut	REG_DWORD	0x00000000 (0)
- 📙 {4d36e96e-e325-11ce-bfc1-08002be10318}		RecoveryLevel	REG DWORD	0x00000002 (2)
> 🕌 {4d36e96f-e325-11ce-bfc1-08002be10318}		RistBurstLength	REG DWORD	0x00010000 (65536)
> 🍌 {4d36e970-e325-11ce-bfc1-08002be10318}		100 ImmediateData	REG DWORD	0x00000001 (1)
- 🕌 {4d36e971-e325-11ce-bfc1-08002be10318}		🗱 InitialR2T	REG DWORD	0x00000000 (0)
- 🍌 {4d36e972-e325-11ce-bfc1-08002be10318}	=	10 IPSecConfigTimeout	REG DWORD	0x0000003c (60)
- 📙 {4d36e973-e325-11ce-bfc1-08002be10318}		10 LinkDownTime	REG DWORD	0x0000000f (15)
4d36e974-e325-11ce-bfc1-08002be10318}		100 MaxBurstLength	REG DWORD	0x00040000 (262144)
- 📙 {4d36e975-e325-11ce-bfc1-08002be10318}		MaxConnectionRetries	REG_DWORD	0xffffffff (429496729)
> 🦺 {4d36e977-e325-11ce-bfc1-08002be10318}		MaxPendingRequests	REG_DWORD	0x000000ff (255)
		MaxRecvDataSegmentLeng		0x00010000 (65536)
- 🕌 {4d36e979-e325-11ce-bfc1-08002be10318}				
4- 📙 {4d36e97b-e325-11ce-bfc1-08002be10318}		MaxRequestHoldTime	REG_DWORD	0x0000003c (60)
		100 MaxTransferLength	REG_DWORD	0x00040000 (262144)
		100 NetworkReadyRetryCount	REG_DWORD	0x0000000a (10)
		80 PortalRetryCount	REG_DWORD	0x0000005 (5)
⊿ - 🍌 0003		300 SrbTimeoutDelta	REG_DWORD	0x0000000f (15)
Parameters		100 TCPConnectTime	REG_DWORD	0x000000f (15)
PersistentTargets		10 TCPDisconnectTime	REG_DWORD	0x0000000f (15)
Properties		188 WMIRequestTimeout	REG_DWORD	0x0000001e (30)
//d36e07d_e325_11ce_bfc1_08002be103181			and a second a star sheet of	1997 - 19

Figure 3. Modifying the registry entries for MaxRequestHoldTime and MaxRecvDataSegmentLength

6. Navigate to the disk subkey located at:

HK\_Local\_Machine\SYSTEM\CurrentControlSet\Services\Disk

7. Right-click on the **TlmeoutValue** DWORD (32-bit) value (see Figure 4) and click **Modify**. Then set **Base** to **decimal** and set **value** to **600**.

ġ **Registry Editor** File Edit View Favorites Help DCLocator Name ^ Type Data DcomLaunch (Default) REG\_SZ (value not set) 👂 🍌 defragsvc ab AutoRunAlwaysDisable REG MULTI SZ Brother RemovableDisk(U) DellDRLogSvc ab DisplayName REG\_SZ @disk.inf,%disk\_ServiceDesc%;Disk Driver DeviceAssociationSe BrrorControl REG\_DWORD 0x00000001 (1) DeviceInstall ab Group REG SZ Dfsc ab ImagePath REG\_EXPAND\_SZ System32\drivers\disk.sys Dhcp ab Owners REG\_MULTI\_SZ disk.inf 🖂 🌙 disk 18 Start REG\_DWORD 0x00000000 (0) - dmvsc 1월 Tim REG DWORD 0x00000258 (600) Dnscache 🚻 Type REG\_DWORD 0x00000001 (1) b dot3svc D- DPS DsmSvc DXGKrnl Eaphost þ 🌗 ebdrv D- EFS elxfcoe elxstor D- ErrDev D - 📔 ESENT EventLog EventSystem 📗 exfat 💧 fastfat b - b fcvsc 🔒 fdc 🔒 fdPHost 🛛 🍌 FDResPub ⊳ - ]] FileInfo > - Filetrace 📕 FltMgr >-> FontCache Fs\_Rec F-D. Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\disk

8. Reboot the system so your changes will take effect.

Figure 4. Modifying the registry entries for TimeoutValue

# Adding the Amazon VTL to the NetVault Backup server

The steps in this section apply to both Windows and Linux NetVault Backup servers. These steps add the Gateway-VTL to a NetVault Backup server as a storage device, allowing for backups directly to the AWS cloud.

- 1. Open the NetVault Backup web console and go to Guided Configuration.
- 2. From the Guided Configuration screen, click Add Storage Devices, as illustrated in Figure 5.

Quest NetVault Backup	🗗 🕅 - 🥀 🕹 admin -
NetVault Configuration Wizard	
The witcord will guide you drough the steps that are needed to set up a new backup server. To be guided through the complete se left, You can jump to any of the individual steps in the set-up sequence, by clicking the buttors below.	sup sequence, click on the Beglie button. You can return to this wicard at any time by following the Geldeed Configuration link in the novigation tree on the
23	Add Clients
<del>ن</del> ک	Install Plugins
	Install Licenses
	Add Storage Devices
	Create backup jobs
	Begin

Figure 5. Clicking Add Storage Devices on the Guided Configuration screen

3. Select Tape library / media changer and then click Next (see Figure 6).

■ Quest NetVault Backup	<b>⊡</b> - 4≱- 0	💄 admin 🗸
NetVault Storage Configuration Wizard - Add Storage Devices		
Select the type of device that you wish to add from the set below. If you select one of the 'virtual' device types you must also specify whether you want to create a new virtual device or whether you want to re-add one that has been created but ha	s been removed from NetVoo	ult Brokup.
<ul> <li>Single virtual disk device</li> <li>Virtual tape library / media changer</li> <li>Shared virtual tape library</li> <li>Single physical tape device</li> <li>Tape library / media changer</li> <li>NetWauk SmartDisk</li> <li>Quest RDA Device</li> <li>Data Domain Boost Device</li> <li>Snapshot Array Manager</li> <li>Re-add previously generated virtual device</li> </ul>	K Back	▶ Next

Figure 6. Selecting **Tape library / media changer** 

4. Select the client that has the Amazon Gateway-VTL attached to it via iSCSI and click **Next**. In the example shown in Figure 7, the client is pune-tape-01.

	Quest NetVault Backup				🛐 - 🎲 - 🚯 💄 admi
NetVau	ult Configuration Wizard - Add Tape	e Library (1/3)			
	he machine that is physically attached to the library that you wish device is always controlled by a single machine, although each a		a SAN configuration), choose which of these machines that you wis	h to nominate as the controlle	: of the library itself. In NetVault a library
c	Choose machine:			م	search
	Status ~	Client 🔺 🗸 🗸	Version ~	Description	~
		pune-tape-01	12.0.0.34	NetVault Server	
	[4 4 Þ Þ]				0 🗹 🏷 1 - 1 of 1 items
					K Back Next

Figure 7. Selecting the client that has the Amazon Gateway-VTL attached to it via iSCSI

5. Select the STK-L700 device and click **Next** (see Figure 8).

Quest NetVault Backup		💷 - 👋 - 🚯 💄 admin -
NetVault Configuration Wizard - Add Tape Library (2/3)		
The following library units were found when scanning the selected client. Please select the unit that you wish to add to NetYouk Backup.		
Tape Library Display Name:         Custom name for this device		
Device	Serial Number	
3-0.0.0 (STK L700)	AMZN_SGW-4C06E425_MC_00001	
(a		1 - 1 of 1 items
		Back     Next

Figure 8. Selecting the STK-L700 device

6. If the drives cannot be configured automatically, click Add drives manually... (see Figure 9).

≡ Ques	t NetVault	Backup	EN -	47 · (	🗿 💄 admin 🗸
NetVault Con	figuration Wiza	rd - Add Tape Library (3/3)			
NetVault Backup has	found the following library o	levice. Please confirm that the details shown are those that you expect.			
Name: Vendor: Product: Drives: Slots: Ports:	3-0.0.0 (STK-L700) STK L700 10 1600 1600				
This type of librory is	unable to be configured enti	rely automatically, since it is not able to provide the serial numbers of its drives. When you press the 'Add drives manually." button you will be asked to select the controlling client and drive for eac	ı drive bay in	the library.	
		Add drives manually Add more devices	Cr	eate bac	kup jobs

Figure 9. Adding drives manually

7. Select the server that has the Amazon Gateway-VTL attached to it and click Next (see Figure 10).

Vault Configuration Wizard	l - Add Tape Drives to Bays			
	drive in this bay. If the device is physically connected to multipli	e hasts (far example a SAN configuration) then just choose one of the	machines here. You will be prompted for the names of the other connected systems la	ter on.
Choose machine:			<b>Q</b> search	
Status	✓ Client ▲	~ Version	<ul> <li>Description</li> </ul>	~
<b>Z</b>	pune-tape-01	12.0.0.34	NetVault Server	
14 4 Þ H			<b>6 🗹 玲</b> 1.1 of 1	tems

Figure 10. Selecting the server that has the Amazon Gateway-VTL attached to it

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8. Select the drive number that corresponds to the bay that you are configuring (see Figure 11). That is, if you are adding a drive to drive bay 1, select drive 1; if you are adding to bay 2, select drive 2; and so on. Then click **Next**.

■ Quest NetVault Backup	🕮 - 🌾 - 🚹 💄 adr
letVault Configuration Wizard - Add Tape Library Drives to Bays	
1 of 10	
The following drive devices were found attached to the selected machine. Please select the one that you wish to add t	s the suscent debacket and then every liker. 'In account
NOTE: Some drives may not be selectable. This is because for some devices it is possible for the software to identify th result in an invalid configuration.	e correct bay location for a drive by cross referencing the serial numbers. NetVault Backup will not allow the wrong serial number to be added in this case, since it will
Choose drive for bay:	
Device	Serial Number
	AM2N SGW4C06E425_TD_00004
3-0.4.0(IBM ULT3580-TD5)	
3-0.6.0(IBM ULT3580-TD5)	AMZN_SGW-4C06E425_TD_00006
3-0.7.0(IBM ULT3580-TD5)	AMZN_SGW-4C06E425_TD_00007
3-0.8.0(IBM ULT3580-TD5)	AMZN_SGW-4C06E425_TD_00008
3-0.9.0(IBM ULT3580-TD5)	AMZN_SGW-4C06E425_TD_00009
3-0.10.0(IBM ULT3580-TD5)	AMZN_5GW-4C06E425_TD_00010
3-0.1.0(IBM ULT3580-TD5)	AMZN_SGW-4C06E425_TD_00001
3-0.2.0(IBM ULT3580-TD5)	AMZN_5GW-4C06E425_TD_00002
	AMZN_SGW-4C06E425_TD_00003
3-0.3.0(IBM ULT3580-TD5)	
3.0.3.0(BM.ULT9580-TD5) 14 4 16 14	1 - 9 of 9 items
	1 - 9 of 9 items
	1 - 9 of 9 items

Figure 11. Selecting the drive number

9. If the Gateway-VTL is not shared with multiple NetVault Backup servers, do not select anything on the next screen in the wizard (see Figure 12). Instead, simply click **Next**.

=	Quest	NetVault Backup							ĘN -	<b>∜</b> ⊁ 6		admin ·
NetV	ault Configur	ration Wizard - Add Tape	Drives to Bays									
Bay 1 of 10	1											
if the	device is attached to m	ultiple hosts (for example in a SAN configurati	ian) then select all hosts that you wis	sh to be able to control the dev	ice directly from the list below.	<i>.</i>						
	Choose machine	:						<b>Q</b> searce	h			
	Status	~	Client 🔺	v	Version		<ul> <li>Description</li> </ul>				~	
	<b>V</b>		pune-tape-01		12.0.0.34		NetVault Server					
	H 4 P H							0 2	\$	1 - 1 of 1 iter	ms	
								C	lear Sele	ection	Ne	ext

Figure 12. If the Gateway-VTL is not shared with multiple NetVault Backup servers, simply click **Next** on this screen.

10. Repeat steps 7-9 for all 10 drive bays.

### Confirming the tape library configuration

When you have completed this procedure, you should see the screen shown in Figure 13.

Note - Be sure to click on one of the two options presented at the bottom right of this screen either 'Add more devices' or 'Create backup jobs' to successfully complete adding the library and drives.

	t NetVaul	t Backup	I	₽-∜-0	💄 admin 🗸
NetVault Con	figuration Wiza	rd - Add Tape Library Drives to Bays			
The following tape is	brary has now been fully con	figured and added to NetYault Backup:			
Name: Vendor: Product: Drives: Slots: Ports:	3-0.0.0 (STK-L700) STK L700 10 1600 1600				
The drives have been	n manually assigned to their :	boys and the controlling machines have been set. Please use the buttans below to either add further storage devices or move onto the next configuration step.			
			Add more devices	Create backu	o jobs

Figure 13. Confirming that the Gateway-VTL has been added to NetVault Backup as a storage device

# Managing Amazon Gateway-VTL tapes in NetVault Backup

For detailed information on how to create, manage and delete Gateway-VTL tapes, please visit <u>Managing Tapes in</u> the VTL.

Once you have created tapes via the Amazon console, they will automatically appear in the NetVault Backup console. The steps in this section explain how to label and export the Gateway-VTL tapes.

### Labeling Gateway-VTL tapes

1. Click Manage Devices and then click the gear next to the Amazon Gateway-VTL, as illustrated in Figure 14.



Figure 14. Clicking the gear next to the Amazon Gateway-VTL

2. Click Media Label, as shown in Figure 15.

ape Lit	brary Management							
Name	pune-tape-01: 3-0.0.0 (STK L700)		Drives:					
/endor			Status ~	Bay 🔺 🗸 🗸	Name ~	Status ~	Activity ~	Contents ~
			٠	DRIVE 1	3-0.1.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
			۲	DRIVE 2	3-0.2.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
Slots	1600 pune-tape-01		۲	DRIVE 3	3-0.3.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
Status	Online			DRIVE 4	3-0.4.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
ctivity				DRIVE 5	3-0.5.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
				DRIVE 6	3-0.6.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
				DRIVE 7	3-0.7.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
				DRIVE 8	3-0.8.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
				DRIVE 9	3-0.9.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
				DRIVE 10	3-0.10.0(IBM ULT3580-TD5)	Online	Idle	Unloaded
			4 4 4					2 🎲 1 - 10 of 10 items

Figure 15. Clicking Media Label

2. When naming Amazon Gateway-VTL tapes, use **Barcode** as the label type. Give the media a group label, and then confirm the request by clicking **Ok** (see Figure 16).

Type of Media	
🕑 Blank 🔲 Other 📄 NetVault 5 📄 Reusi	able
Type of Label	
Barcode	Label Label string - % not allowed
Machine and Date	
User-Defined	Seed Seed value - numeric or blan.
Group Label	
AmazonVTL	~
All Media in List  Media to Label	
SLOT 1: BLANK (AMZN704AD5)	
SLOT 2: BLANK (AMZN7D4AD8)	
SLOT 3: BLANK (AMZN724AD7)	
SLOT 4: BLANK (AMZN774AD2)	
SLOT 5: BLANK (AMZN764AD3)	
SLOT 6: BLANK (AMZN734AD6)	
I4 4 P PI	1 - 6 of 1600 items
	🗙 Cancel 🗸 Ok

### **Exporting Gateway-VTL tapes**

Tapes that are present in the Gateway-VTL reside on your local Gateway-VTL's storage and Amazon S3. Exporting these tapes within NetVault Backup automatically sends the tapes to the Amazon virtual tape shelf (VTS) which is backed by Amazon Glacier. Amazon Glacier is a slower, inexpensive storage tier that is ideal for long-term archival, but requires up to 24 hours to bring tapes back to the VTL from the VTS. Data that needs to be accessed quickly should be stored in the VTL and not exported to the VTS. Additionally, once tapes have been exported to the VTS they are no longer writeable and become read only when brought back to the VTL. Therefore, if your recovery time objectives (RTOs) are less than 24 hours, it is a good idea to keep data on your VTL and not export it to the VTS.

Follow these steps to send data to the virtual tape shelf with NetVault Backup:

1. Open the NetVault Backup console and go to **Manage Devices.** Then expand the Gateway-VTL and click the cog next to **Slots** (see Figure 17).

ge Devices	<ul> <li>Table View</li> <li>Tree View</li> <li>Remember this</li> </ul>	selection				
▼Tape Library: pu	ne-tape-01: 3-0.0.0 (STK L700) Drives: 10 Slots: 160	0 Ports: 1600 (Online)				0 🍫 🛛
DRIVE 1	3-0.1.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>1</b> 0 <b>•</b>
DRIVE 2	3-0.2.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	49 <b>e</b>
DRIVE 3	3-0.3.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*</b> 2 •
DRIVE 4	3-0.4.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>V</b> •
DRIVE 5	3-0.5.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*&gt;</b> •
DRIVE 6	3-0.6.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*0</b>
DRIVE 7	3-0.7.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*?</b> •
DRIVE 8	3-0.8.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*</b> •
DRIVE 9	3-0.9.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*</b> 2 •
DRIVE 10	3-0.10.0(IBM ULT3580-TD5)	pune-tape-01	Online	(Idle)	Unloaded	<b>*\$</b>
Slots	Total: 1600 (10 Populated, 1590 Empty), 0	Blank				\$
Ports	Total: 1600 (0 Populated, 0 Empty)					Ŷ

Figure 17. Expanding the Gateway-VTL and clicking the cog next to Slots

 You will now see a list of all tapes in the Gateway-VTL. Select one or more tapes and click Export to automatically start the process of moving the tapes from S3 to Glacier (see Figure 18).

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Figure 18. Exporting a tape from VTL to VTS

Once the tapes have been exported, they will appear offline in NetVault, as shown in Figure 19.

÷.	Label	Group	Barcode	Library	Record Count	Saveset Count	Space Used	Space Available	Online
Ш	AMZN704AD5	AmazonVTL	AMZN704AD5	N/A	0	0	0.00 KiB	392.00 GiB	•
III	AMZN7D4AD8	AmazonVTL	AMZN7D4AD8	N/A		0	0.00 KiB	392.00 GiB	•

Figure 19. Virtual tape offline after being exported

In order to make the tapes appear online again, you must manually retrieve them from the Amazon VTS (see Figure 20). You can do this using the AWS console. More information on how to manage the VTS can be found <u>here</u>.

Virtual Tape Shelf			
💥 Delete Tape 🏾 🎭 Retrieve Tape		Status: ALL	▼ Search
Barcode	Archived	Capacity	Status
AMZN5854FD	March 30, 2015 2:47:43 PM UTC	400 GiB	ARCHIVED

Figure 20. The Amazon virtual tape shelf

## Conclusion

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The combined NetVault Backup/Amazon Gateway-VTL solution enables seamless, cost-effective data protection of on-premise data to the cloud. As this guide has explained, the solution is quick and easy to implement: simply present the Gateway-VTL to the NetVault Backup server by emulating a STK-L700 media changer with Sony tape drives via iSCSI and configuring it as a normal tape library. Then you can store data in Amazon S3 or Glacier for as little as \$0.010 per GB.

### For more information

Please use the following resources:

- More guides like this The Resources tab at quest.com/products/netvault-backup/
- NetVault Backup user guides -- support.guest.com/netvault-backup/technical-document

# About us

## We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build communitydriven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to join the Innovation.

## Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece — you — to the community, to the new Quest.

## **Contacting Quest**

For sales or other inquiries, visit https://www.quest.com/company/contact-us.aspx or call 1-949-754-8000.

## **Technical support resources**

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at https://support.quest.com.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product.