Veritas Access NetBackup Solutions Guide

Linux

7.4



Veritas Access NetBackup Solutions Guide

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https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf

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Chapter

Veritas Access integration with NetBackup

This chapter includes the following topics:

- About Veritas Access
- About Veritas Access as a NetBackup client
- About Veritas Access as backup storage for NetBackup
- Use cases for long-term data retention
- Benefits of using Veritas Access with NetBackup and OpenDedup/CloudCatalyst

About Veritas Access

Veritas Access is a software-defined scale-out network-attached storage (NAS) solution for unstructured data that works on commodity hardware. Veritas Access provides resiliency, multi-protocol access, and data movement to and from the public and private cloud based on policies. You can reduce your storage costs by using low-cost disks and by storing infrequently accessed data in the cloud.

About Veritas Access as a NetBackup client

Veritas Access is integrated with Veritas NetBackup so that a NetBackup administrator can back up your Veritas Access file systems to NetBackup master or media servers and retain the data as per your company policy. Once data is backed up, a storage administrator can delete unwanted data from Veritas Access. The NetBackup master and media servers that run on separate computers from Veritas Access are licensed separately from Veritas Access. You configure NetBackup domain information using any one of the following Veritas Access interfaces:

CLISH

The Veritas Access CLISH has a dedicated Backup> menu. From the Backup> menu, register the NetBackup client with the NetBackup domain. Information is saved in the bp.conf file on Veritas Access.

GUI

Settings > NetBackup Configuration

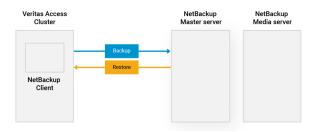
See the online Help for how to configure NetBackup using the GUI.

RESTful APIs

See the Veritas Access RESTful API Guide.

Consolidating storage reduces the administrative overhead of backing up and restoring many separate file systems. Critical file data can be backed up and restored through the NetBackup client on Veritas Access.

Figure 1-1 Backing up Veritas Access using NetBackup



If Veritas Access is configured with IPv6 addresses, you have to configure IPv6 support for the NetBackup host as well.

Perform the following steps to configure IPv6 support for the NetBackup host :

 Set the IP_ADDRESS_FAMILY option in the NetBackup bp.conf file for the host to AF_UNSPEC.

bpsetconfig IP_ADDRESS_FAMILY = AF_UNSPEC

• You can view the current setting by executing the <code>bpgetconfig</code> command.

```
# bpgetconfig
IP ADDRESS FAMILY = AF UNSPEC
```

Restart the services after making this change.

About Veritas Access as backup storage for NetBackup

This document describes how Veritas Access fulfills the needs of NetBackup customers looking for a cost-effective solution for moving away from tape backups, yet retain the backed-up data for the long term.

NetBackup is an enterprise-class heterogeneous backup and recovery application. It provides cross-platform backup functionality to a large variety of Windows, UNIX, and Linux operating systems.

Veritas Access is based on the rock-solid and industry-proven Veritas CFS stack. It offers an AWS-compatible S3 protocol as object storage for NetBackup.

Veritas Access is integrated with OpenDedup. OpenDedup is OpenSource software that lets you deduplicate your data to on-premises or cloud storage. OpenDedup installs on top of a NetBackup media server or Veritas Access; it performs data deduplication and stores deduplicated data on Veritas Access over S3.

Use cases for long-term data retention

The following are the use cases for long-term data retention (LTR) with OpenDedup:

Use Case 1: OpenStorage Technology (OST) and OpenDedup hosted on a NetBackup master and/or media server

 OST and OpenDedup hosted on a NetBackup master and/or media server sends deduplicated backup data to Veritas Access over the S3 protocol. Veritas Access can move this data to supported public or private clouds, based on the LTR policy configured.

See "Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access" on page 15.

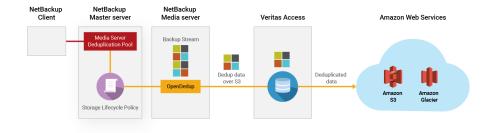


Figure 1-2

OST and OpenDedup hosted on a NetBackup master and/or media server

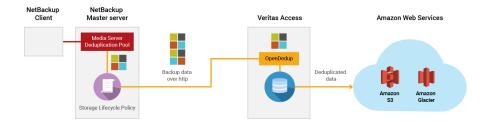
Use Case 2: OST hosted on a NetBackup master and/or media server

 OST hosted on a NetBackup master and/or media server sends backup data to OpenDedup hosted on Veritas Access, which deduplicates the data and sends this data over the S3 protocol to Veritas Access. Veritas Access moves this deduplicated data to AWS S3 or Glacier.

See "Use case 2: Backing up data (NetBackup) and deduplicating the data (OpenDedup) on Veritas Access" on page 16.



OST hosted on a NetBackup master and/or media server



Use Case 3: Veritas Access with CloudCatalyst

- Primary backup data is deduplicated by MSDP and stored on the NetBackup server.
- The same deduplicated data is moved to Veritas Access through SLP using CloudCatalyst.

See "Creating an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup" on page 45.

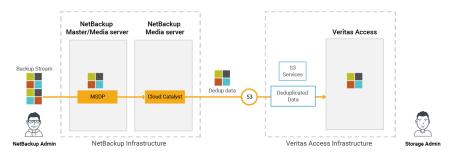


Figure 1-4 Primary backup data deduplicated by MSDP and stored on the NetBackup server

Use Case 4: Veritas Access as an S3 connector

 Backup data is stored in non-deduplicated format on the NetBackup server as primary backup. The same primary backup data is moved to Veritas Access through SLP over the Veritas Access S3 protocol.

Or

 Primary backup data is deduplicated by MSDP and stored on the NetBackup server. The deduplicated data is rehydrated and then moved to Veritas Access through SLP over the Veritas Access S3 protocol.

See "Configure Veritas Access as a cloud storage server on NetBackup server" on page 47.

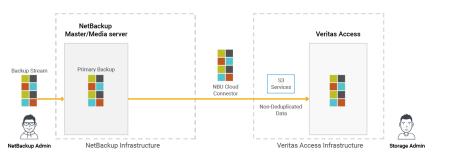


Figure 1-5

Backup data stored in non-deduplicated format on the NetBackup server as primary backup

Benefits of using Veritas Access with NetBackup and OpenDedup/CloudCatalyst

- Low-cost, flexible alternative for long-term data retention.
- Eliminate the need for cumbersome, time-consuming tape management.
- Cost-effective and resilient solution that is scale-out (linear performance) and elastic (grow/shrink on demand).

Chapter

System requirements

This chapter includes the following topics:

- System requirements for OpenDedup installation
- Supported configurations and versions for NetBackup with OpenDedup
- Supported configurations and versions for NetBackup with CloudCatalyst

System requirements for OpenDedup installation

The system requirements for OpenDedup installation are:

- 64GB of base memory + 256MB RAM per TB of unique storage
- 200 MB/s local disk speed
- 2K IOPS of disk (local or attached) for the /opt directory
- 0.2 % of local disk of logical storage
- 0.2% of local disk storage of unique data

Expected performance of the system based on the above parameters:

120 MB/s per CPU core

Supported configurations and versions for NetBackup with OpenDedup

Table 2-1	Supported ver	SIONS	
OpenDedup	Veritas Access	Veritas NetBackup servers	OST
7.4	7.4	7.7.3	2.2.9
		8.0	
		8.1	
		8.1.1	
		(Linux only)	

Table 2-1 Supported versions

Download links:

Veritas Access: Veritas Access 7.4 DVD

OpenDedup:

https://sort.veritas.com/public/patchcentral/Linux/7.4/access/ access-rhel7 x86 64-7.4sdfs.tar.gz

OpenStorage Technology (OST):

https://sort.veritas.com/public/patchcentral/Linux/7.4/access/ access-rhel7 x86 64-7.4ost.tar.gz

Supported configurations and versions for NetBackup with CloudCatalyst

Table 2-2	Supported ver	sions
Veritas Access		Veritas NetBackup servers
7.4		8.1
		8.1.1
		(Linux only)

Download links:

Veritas Access: Veritas Access 7.4 DVD

Cloudprovider.xml Version 2.3.1 supports Veritas Access.

https://www.veritas.com/support/en_US/article.000125094

Update the mappings file.

Unix/Linux: http://www.veritas.com/docs/000025759

Note: NetBackup 8.1 does not have the Veritas Access S3 Cloud provider support. Hence, the Cloud Configuration Package needs to be updated for listing the Veritas Access S3 server in the list of Cloud Storage providers. The details for updating the Cloud Configuration Package are present at"

https://www.veritas.com/support/en_US/article.000125094

https://www.veritas.com/support/en_US/article.100015983

Chapter

Configuring Veritas Access backup over S3 with OpenDedup and NetBackup

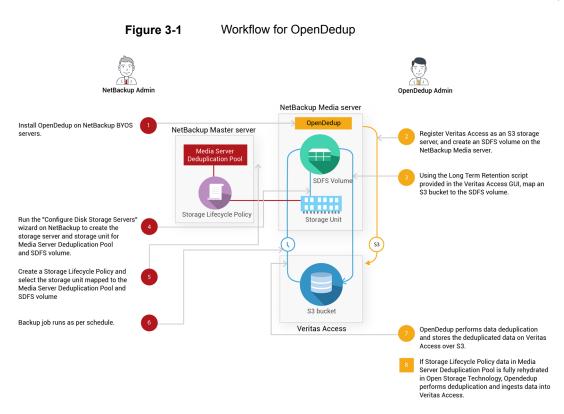
This chapter includes the following topics:

- Workflow for OpenDedup
- Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access
- Use case 2: Backing up data (NetBackup) and deduplicating the data (OpenDedup) on Veritas Access
- Creating an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup
- Creating a Media Server Deduplication Pool (MSDP) for primary backup using NetBackup
- Creating an OST disk pool and STU in the NetBackup console
- Setting up multiple NetBackup media servers in the same domain
- Setting up multiple SDFS volumes on a NetBackup media server

Workflow for OpenDedup

Figure 3-1 illustrates the workflow for OpenDedup for Veritas Access.

Configuring Veritas Access backup over S3 with OpenDedup and NetBackup | 15 Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access



Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access

SDFS is an inline deduplication-based file system.

To download and install the OST and SDFS rpms

1 On a standard NetBackup master and/or media server, run the following commands to install OST:

```
# wget https://sort.veritas.com/public/patchcentral/Linux/7.4/access/
access-rhel7_x86_64-7.4ost.tar.gz
# tar -xzvf access-rhel-7.4ost.tar.gz
# cd rpms/
# tar -zxvf access-ost-7.4.tar.gz
# cd dist/
# ./media-install.sh
```

2 Run the following commands to replace the SDFS rpms with the latest rpms.

```
# rpm -e sdfs
# wget https://sort.veritas.com/public/patchcentral/Linux/7.4/access/
access-rhel7_x86_64-7.4sdfs.tar.gz
# tar -xvf access-rhel7_x86_64-7.4sdfs.tar.gz
# cd rpms/
# rpm -ivh sdfs-7.4.0.0-1.x86 64.rpm
```

3 Restart the NetBackup service on the NetBackup media server.

```
# /etc/init.d/netbackup stop
# /etc/init.d/netbackup start
```

Use case 2: Backing up data (NetBackup) and deduplicating the data (OpenDedup) on Veritas Access

SDFS is an inline deduplication-based file system.

To download and install the OST

 On a standard NetBackup master and/or media server, run the following commands to install the OST:

```
# wget https://sort.veritas.com/public/patchcentral/Linux/7.4/access
/access-rhel7_x86_64-Patch-7.4ost.tar.gz
# tar -zxvf access-rhel7_x86_64-Patch-7.4ost.tar.gz
# cd rpms/
# tar -zxvf access-ost-7.4.tar.gz
# cd dist/
# ./media-install.sh
```

Creating an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup

To create an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup

1 Log on to the Veritas Access GUI as the master user using the following URL:

https://Veritas Access Management console IP:14161/.

You can obtain the Veritas Access Management console IP by logging on to the CLISH using the su - master command on the Veritas Access cluster.

2 Create a storage pool for the S3 buckets.

Click NAS Infrastructure in the GUI navigation on the left.

Select the disks that you want to use for the S3 bucket, and click the **Add to Storage Pool** button to invoke the wizard for storage pool creation.

Follow the steps in the wizard for creating a new storage pool or adding the disks to an existing pool.

3 Click Settings > User Management > Configure Active Directory to configure AD.

Enter the required information, such as the DNS Domain, DNS Name Servers, AD Domain, AD Domain Controller, and the AD Admin and Password.

4 Click Settings > S3 Management to configure and enable the S3 server.

Edit the default parameters that are required for the S3 server, such as the storage pool name, underlying S3 bucket layout, and the default size of the bucket.

5 Double-click S3 Server Status to start the S3 server.

6 Log out from the GUI, and log in again as an AD user.

Note: Log in using the *domainname*\\username format.

Click on the **Create keys** button to generate the access key and the secret key for the Veritas Access S3 bucket.

Save the access key and secret key in a safe location, as Veritas Access does not allow retrieval of keys after initial creation.

- 7 Log out from the GUI, and log on again as the master user.
- 8 Registration of supported public cloud service is optional, and is only required in case you need to add an AWS cloud as a storage tier. Without this, backups are stored locally in Veritas Access S3 buckets.

Click **Settings > Cloud Storage Registration > Add Cloud Subscription** to register the supported public or private cloud service.

Enter information for the cloud service provider, name of subscription, access key, and secret key.

9 Activate the long-term data retention (LTR) policies.

Click Policies > LTR Policy.

Click **Activate** for either the **LTR On-Premises + Cloud** policy or the **LTR On-Premises** policy and provide the storage pool when prompted.

10 Provision the NetBackup bucket using the policy.

Under Quick Actions, click Provision Storage. Select S3 Storage for NetBackup and click Next.

Provide the bucket size, underlying layout of the bucket, the access key, and the secret key of the Veritas Access S3 server generated as the AD user in step 6.

If you selected the **LTR On-Premises + Cloud** policy, add information such as which data should be moved to the AWS cloud tier, AWS region, cloud tier type (S3/Glacier), and when the data movement to the cloud should occur.

11 Monitor the progress of the task under **Recent Activity**.

Make a note of the scale-out file system name that was used for the bucket creation.

12 Click File Systems.

For the scale-out file system that is created, ensure that the **S3 Bucket** column displays **Yes** to indicate that the S3 bucket is enabled.

You may need to wait for some time for this change to be reflected in the GUI.

- **13** Right-click the ellipses (additional options), and click **Configure LTR Script**.
- **14** A pop-up window appears with the following options:

Do you want to Run the LTR script?

Do you want to Download the LTR script?

Select the **Do you want to Run the LTR script?** option if OpenDedup is hosted on Veritas Access. You will be prompted to enter you access key. Enter the access key and click **Next**. Wait for the task to be completed. The rest of the configuration steps are done automatically. After the configuration is completed successfully, the output message shows the IP address and the port number on which the OpenDedup volume is mounted on Veritas Access. The IP address and port number are required later during OST configuration.

Note: This operation creates/expands a new file system named odd_cache_fs to store the OpenDedup cache data. The default size of this file system is 24 GB. Veritas recommends that you expand the file system to the required size. See the *OpenDedup documentation* for more details.

Name	Status	Start Time	End Time
+ Configuring LTR on Veritas Access cluster.	Success	2017-12-13 11:18:58	2017-12-13 11:21:06
+ Provision storage for long term retention	Success	2017-12-11 12:08:30	2017-12-11 12:10:25
+ Provision storage for long term retention	Success	2017-12-11 11:54:00	2017-12-11 11:55:55
+ Configuring LTR on Veritas Access cluster.	Success	2017-12-08 11:13:19	2017-12-08 11:15:23
 Provision storage for long term retention 	Success	2017-12-08 11:04:22	2017-12-08 11:06:58
+ Configuring LTR on Veritas Access cluster.	Success	2017-12-06 18:18:14	2017-12-06 18:20:18
 Provision storage for long term retention 	Success	2017-12-06 18:10:12	2017-12-06 18:12:07
Run full discovery	Success	2017-12-06 16:03:06	2017-12-06 16:05:00

Go to step 21.

Output:

ACCESS odd SUCCESS V-493-10-2820 S3fs1512711321 has been created successfully and mounted on 10.209.105.215.6442

Command executed: NAS_OUTPUT=json /opt/VRTSnas/clish/bin/clish-u master -c "opendedup volume create S3fs151271132110GB 0GFm2jFhVWQ5N2VkYWJ 4f97 ef4c-ee84-4fad-ba2d-cca73828c145s3bucket"

- Select the Do you want to Download the LTR script? option if OpenDedup is hosted on the NetBackup master and/or media server. Click Next. Wait for the task to be completed.
- **15** Copy the LTR script to the host where OpenDedup is installed. It can be the host where the NetBackup media server is installed.
- 16 Run the downloaded LTR script. The LTR script requires the Veritas Access S3 keys (access and secret key) as arguments that were generated as the AD user.

The LTR script creates the OpenDedup file system and prompts for the entry in the /etc/hosts file for the bucket to IP address mapping.

Output of LTR script execution:

```
[root@host1 ~]# sh LTRscript_<fsname/volname>_<bucketname>.sh
<Access key> <Secret Key>
Insert the below details in /etc/hosts file
10.100.100.1 4f459a2d-736e-4be5-9c5a-f821fbc198fds3bucket.s3.access
Attempting to create SDFS volume ...
Volume [S3fs1497356186] created with a capacity of [10.00GB]
check [/etc/sdfs/S3fs1497356186-volume-cfg.xml] for configuration
details if you need to change anything
```

Note: The volume name highlighted above and its equivalent .xml file are used to mount and update the SDFS volume parameters in later steps.

17 Add the IP associated with the virtual hosted-style bucket name (generated from the LTR script) in the /etc/hosts file on the media server.

18 Mount the SDFS volume under /opendedupe/volumes/ on the host where OpenDedup is installed.

```
# mkdir /opendedupe/volumes/filesystem name
```

```
# mount -t sdfs filesystem_name /opendedupe/volumes/filesystem_name
```

The mount command mounts a bucket on the Veritas Access cluster or the NetBackup media server.

Note: After mounting the SDFS volume, it will start listening on a specific port, usually starting from 6442.

Port information can be found using the mount command.

Example:

```
[root@host1 ~]# mount | grep opendedupe
sdfs:/etc/sdfs/S3fs1497346133-volume-cfg.xml:6443 on
/opendedupe/volumes/S3fs1497346133 type fuse
(rw,nosuid,nodev,allow_other,allow_other)
sdfs:/etc/sdfs/S3fs1497258807-volume-cfg.xml:6442 on
/opendedupe/volumes/pool1 type fuse
(rw,nosuid,nodev,allow other,allow other)
```

19 Update the /etc/rc.local script with the following:

```
/scripts/mount-opendedupe.sh || exit 1
exit 0
```

20 Create the mount-opendedupe.sh script and /scripts directory.

```
cat mount-opendedupe.sh
!/bin/sh
mount -t sdfs <volume name> /opendedupe/volumes/<volume name>
```

21 Execute the following commands:

```
chmod +x /scripts/mount-opendedupe.sh
chmod +x /etc/rc.d/rc.local
```

22 Update the URL tag in the /etc/sdfs/ostconfig.xml present on the NetBackup media server based on the following two cases:

Use case 1: OpenDedup on a NetBackup server

<URL> http://localhost:6442/ </URL>

Use case 2: OpenDedup on Veritas Access

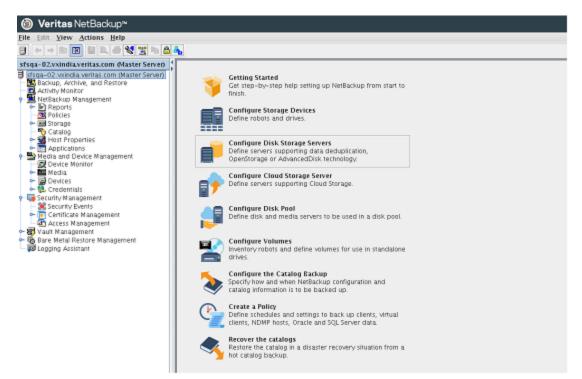
<URL> http://<IP address that was specified in step 14>:<port number that was specified in step 14>/

</URL>

Creating a Media Server Deduplication Pool (MSDP) for primary backup using NetBackup

To create an MSDP disk pool and storage unit (STU) in the NetBackup console

1 Log on to the NetBackup master server from the Java console.



2 Select Media Server Deduplication Pool.

Storage Server Co	nfiguration Wizard@sfsqa-02.vxindia.veritas.com	×
	 Welcome to the Storage Server Configuration Wizard! The wizard helps you create and configure a storage server and a disk pool. Before you begin the storage server configuration, ensure that the following prerequisites are met: The disk devices are deployed and configured as per the instructions by the storage system vendors. All necessary software plug-ins are installed on the NetBackup Media Servers. Details about the storage servers and credentials to access these servers are added in NetBackup. 	
	Select the type of disk storage that you want to configure. AdvancedDisk Media Server Deduplication Pool OpenStorage PureDisk Deduplication Pool	
	Note: The Media Server Deduplication Pool storage attached to th NetBackup medla server is used as a target for deduplicate backups. Select this option to initialize and setup an embedded deduplication on the media server.	
	Next > Cancel Help	,

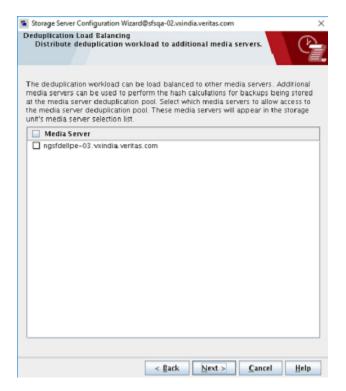
3 Enter the user name, password, and other required details.

Provide storage serv		
	that connects to the storage. The media server ication Engine components and functions as th	
edia server:	sfsqa-02.vxindia.veritas.com	
orage server type:	Media Server Deduplication Pool	
orage server name:	sfsqa-02.vxindia.veritas.com	
Define credentials		
lser name:	root	
assword:	••••	
Confirm password:	•••••	

4 Enter the storage path for MSDP.

Storage Server Configuration V	Vizard@sfsqa-02.vxindia.veritas.com	×
Storage Server Properties Provide storage server p	roperties.	C.
Storage path:	/MSDP/	
Note: The location on the s reside is called storage pat	torage server where the deduplicated backup i h.	
🔲 Use alternate path for d	eduplication database for performance optimiz	ation
Deduplication database	pathe	
resides is called deduplicat deduplication database pat	torage server where the deduplication metabas ion database path. By default, the storage path h are the same. But if you want an optimized the deduplication database on a faster disk st	and the
Interface:	enate	
default the Operating Syste connect through a specific that interface.	erver can have more than one network interfac m determines which one to use. To force NetB network interface, specify the network host na storage server details on this screen, you canno re information, click Help.	ackup to ume of
	< <u>B</u> ark <u>N</u> ext > <u>C</u> ancel	Help

5 Enter the load balancing options to distribute the workload.



6 Verify the storage server configuration summary.

orage Server Configuration S Verify the storage server co		C
		7
view the storage server conf nfiguration, if required.	iguration summary. You can change the	
torage server type:	Media Server Deduplication Pool	
torage server name:	sfsga-02.vxindia.veritas.com	
ledia server name:	sfsga-02.vxindia.veritas.com	
ser name:	root	
torage path:	/MSDP/	
atabase path:	Use Default	
etwork interface:	Use Default	

7 Verify that the storage unit is created for MSDP.

stsqa-02.vxindia.ventas.com (Master Server) 4	Storage Units	Change Storage Unit - MSDP_POOL-stu@sfsga-02.vvindia.veritas.com		
Rarkup Archive and Restore	Name	Storage unit name:	Density	On Demar
- 🖪 Activity Monitor	MSDP_POOL-ST	Storage unit name:		No
	local_Stu			No
E Reports	S3fs15015078			Yes
	S3fs15015942	Disk 🗸 🖉 On demand only		Yes
Storage Storage Units		Disk type:		
Storage Unit Groups		PureDisk 👻		
- 😼 Storage Lifecycle Policies		Properties and Server Selection		
- 🔁 SLP Windows		Select disk pool:		
- * Catalog Sector Properties		MSDP_POOL View Properties		
 Applications Media and Device Management 		Media server:		
🗌 👷 Device Monitor		Use any available media server		
🗢 🔤 Media		Only use the following media servers		
► Devices ► Scredentials				
- Security Management		Media Servers		
Security Events		✓ sfsqa-02, windia, veritas, com		
🗠 📅 Certificate Management				
🔄 🔁 Access Management				
► Stault Management				
 Bare Metal Restore Management Looping Assistant 				
- go Logging Assistant				
		Maximum concurrent jobs: Maximum fragment size:		
		10 51200 Megabytes		
		OK Cancel Help		
	L		1	

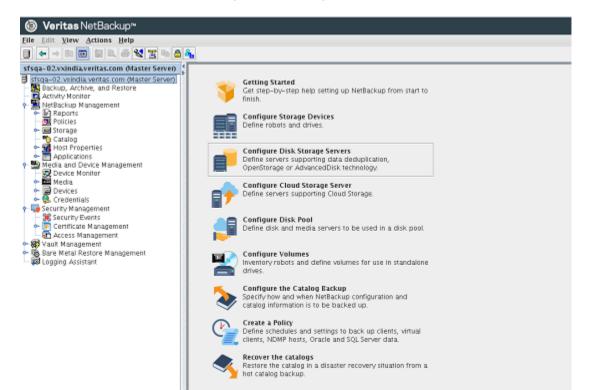
8 Verify that the disk pool is create for MSDP.

sfsqa-02/xxindia.veritas.com (Master Server)	1	역 역 표 22 A 년 8 대 30 명 문 동 2	×
sista usvalidaventas.com (Haster Server)	a Disk Pools (E selecte		
Backup, Archive, and Restore	Durra scor	Names	M Used Capacity Avai
- Activity Monitor	S3fs1501507821	MSDP, POOL	1 135.52 GB 1 9.65 GB
MetBackup Management Fill Reports	S3fs1501507821	Storage servers:	1 9.65 GB
 ■ Storage Units ■ Storage Units ● Storage Units 		@ureDisk) sfsqa=02.vsindia,veritas.com	
Storage Lifecycle Policies		Disk volumes:	
- % Catalog		Volume Name Available Space Raw Size Replication	
Applications Media and Device Management Sovice Monitor Media Media Media		PureDiskVolume 100.72 GB 236.24 GB None	
Portes Recess Server Groups Server Groups		Refresh Total raw size: 236.24 G8 Total available space: 100.72 G8 Targeted replication: No Comments:	
Security Events T Certificate Nanagement Access Nanagement Auragement Security Events Auragement Bare Meral Restore Management		Disk Volume Settings High water mark: 98 1 x 80 1 x	
ing care which resource management		Maximum I/O Streams Concurrent read and write jobs affect disk performance. Limit I/O streams to prevent disk overload.	Ĩ

Creating an OST disk pool and STU in the NetBackup console

To create an OpenStorage Technology (OST) disk pool and storage unit (STU) in the NetBackup console

- 1 Log on to the NetBackup master server from the Java console.
- 2 Select Configure Disk Storage Servers.



3 Select the **OpenStorage** option from the **Select the type of disk storage that** you want to configure section of the dialog.

a storige serie c	onfiguration Wizard@sfsqa=02.vxindia.veritas.com	;
	Welcome to the Storage Server Configuration Wizard!	
64	The wizard helps you create and configure a storage server and a disk pool. Before you begin the storage server configuration, ensure that the following prerequisites are met:	
	- The disk devices are deployed and configured as per the instructions by the storage system vendors.	
	 All necessary software plug-ins are installed on the NetBackup Media Servers. 	
	 Details about the storage servers and credentials to access these servers are added in NetBackup. 	
	Select the type of disk storage that you want to configure. O AdvancedDisk	
	Media Server Deduplication Pool	
	OpenStorage DefueDisk Deduplication Pool	
	Nore	
	OpenStorage is a Veritas technology that lets you use the intelligent disk appliances provided by a vendor, as disk storage.	

- 4 Add the following options to the Storage Server Details:
 - Storage server type: OpenDedupe

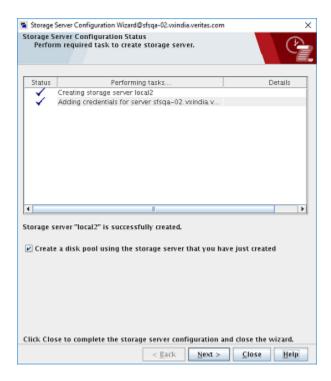
Note: The **Storage server type** field is case-sensitive. **OpenDedupe** has to be entered exactly as shown in the screen shot.

Storage Server name: The name in the <NAME></NAME> tag in the /etc/sdfs/ostconfig.xml file. This is local by default.

- Username: Anything can go in this field. It is not used.
- Password/Confirm Password: Anything can go in this field as well.

🕤 Storage Server Configurat	ion Wizard@sfsqa-02.vxindia.veritas.com	;
Add Storage Server Provide storage serve	er details.	Ċ
	at has the vendor's OpenStorage plug-in installed dia server to determine the storage server capabil	
Media server:	sfsqa-02.vxindia.veritas.com	-
S <u>t</u> orage server type:	OpenDedupe	-
	OpenDedupe	
<u>S</u> torage server name:	local2	
Enter storage server cr	edentials	
<u>U</u> ser name:	root	
Password:	•••••	
Confirm password:	•••••	
	< Back Next > Cancel	Help

5 Finish supplying entries for the storage configuration wizard and make sure **Create a disk pool using the storage server that you just created** is selected.



6 Select the storage pool that was just created.

Storage Server Configuration	in Wizard@sfsqa-02.vxi	india.veritas.com	
elect Disk Pool Propertie Select disk pool prope		to use in the disk	pool.
Storage server:	local2		
itorage server type:	OpenDedupe		
Disk pool configured for	Backup	*	
Disk Pool Properties and	d Volumes		
A disk pool inherits the properties can be added		olumes. Only volu	mes with similar
If properties are specifi properties.	ed, the list displays	volumes that ma	tch the selected
Replication source			
Replication tarnet			
Replication target Select storage server vol	umes to add to the	disk nonl.	
select storage server vol			B er Bertier
Select storage server vol Volume Name	Available Space	Raw Size	Replication
Select storage server vol			Replication
Select storage server vol Volume Name	Available Space	Raw Size	
Select storage server vol Volume Name	Available Space	Raw Size	
Select storage server vol Volume Name	Available Space	Raw Size	
Select storage server vol Volume Name	Available Space	Raw Size	
Volume Name S3fs1501673281	Available Space 200.0 CB	Raw Size	
Select storage server vol Volume Name S3fs1501673281	Available Space 200.0 GB 200.00 GB	Raw Size	
Select storage server vol Volume Name S3fs1501673281	Available Space 200.0 CB	Raw Size	
Select storage server vol Volume Name S3fs1501673281	Available Space 200.0 GB 200.00 GB	Raw Size	

- 7 Add a disk pool name.
- 8 Finish the wizard entries and select **Create a storage unit using the disk** pool that you just created.

9 In the **Storage Unit Creation** page, select **Only use the selected media servers** and select the media server that the storage was created on. For maximum concurrent jobs select **8**.

Note: If you plan to run concurrent jobs for this STU, increase the **Maximum concurrent jobs** count to the desired value.

🖀 Storage Server Configuration Wizard@sfsqa-02.vxindia.veritas.com 🛛 🗙				
Disk Pool Configuration Status Perform disk pool creation task.				
Status	Performing tasks			
	NetBackup Disk Pool created			
	501673281" is successfully created. Ige unit using the disk pool that you have just created			
Click 'Close' to o	omplete the disk pool configuration and close the wizard.			
	< <u>Eack</u> <u>Next</u> > <u>Close</u> <u>Help</u>			

Configuring Veritas Access backup over S3 with OpenDedup and NetBackup 37 Creating an OST disk pool and STU in the NetBackup console

Storage Server Configur	ation Wizard@sfsqa-02.vxindia.veritas.com	×
Storage Unit Creation Enter details to crea	ite storage unit.	
Disk pool:	\$3fs1501673281	
Storage server type:	OpenDedupe	
Storage unit name:	53fs1501673281-stu	
Media Server		
⊖ <u>U</u> se any av	ailable media server to transport data	
Only use the	e selected media servers:	
	Media Servers	- I
🗹 sfsqa-	02.vxindia.veritas.com	
Maximum concurrent Maximum fragment s		
	< Back Next > Cancel	Help

Ø Veritas NetBackup™		
<u>File Edit View Actions Help</u>		
	↓ ▼ # # X ≥ Ø Ø ② ≦	
	Change Storage Unit - S3fs1501673281-stu@sfsqa-02.voindia.veritas.com	
		X Type Robot Nu Densky

10 Verify that the storage unit is added.

11 Verify that the disk pool is added.

Ø Veritas NetBackup™		
Elle Edit View Actions Help		
	* X 4 4 4 具 22 A 田 2 体 鉄 課 計 服 团	
	Change Disk Pool@sfsqa-02.vvindia.veritas.com	<
ststar-02.xxindia.veritas.com (Master Server) 4 Disk Po ststar-02.xxindia.veritas.com (Master Server) MSOP.P Backup, Archive, and Restore MSOP.P Activity Menitor MSOP.P Rescup, Archive, and Restore MSOP.P Restup, Archive, and Restore Straspe Units Storage Units Storage Trevelocies Storage Units Storage Units Storage Checke Management Device Monitor Device Monitor Storage Croups Stare Croups Stare Croups Stare Croups Stare Croups Stare Croups Stare Croups Stare Croetentiais Cocets Management <	Disk Pool name: \$3fs1501673281 Storage server: local2 Disk pool Configured for: Eackup Disk Pool Properties and Volumes A disk pool A disk pool Inherits the properties of its volumes. Only volumes with similar properties can be added to a disk pool. Replication source Replication source Replication target Volumes added to this disk pool. Volume Name Available Space Raw Size Replication S3fs1501673 200.0 GB None None Find storage changes and available volumes Refresh Total raw size: 200.00 GB Comments: S3fs1501673281 Disk Volume Settings Nigh water mark: J98 © % 80 © % Maximum I/O Streams	<
	Concurrent read and write jobs affect disk performance. Limit I/O streams to prevent disk overload. Limit I/O streams: 2 per volume	
	<u>OK</u> Cancel <u>Help</u>	1

Setting up multiple NetBackup media servers in the same domain

To set up the OST connector on multiple NetBackup media servers in the same domain, additional steps must be taken on each NetBackup media server before adding the storage pools in NetBackup.

To set up multiple NetBackup media servers in the same domain

1 Follow the instructions for setting up the OST connector on each media server that uses the OST connector.

See "Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access" on page 15.

2 Edit /etc/sdfs/ostconfig.xml and change the <name> tag to something unique in the NetBackup domain, such as the host name with an incremented number, for example:

<NAME>hostname-0</NAME>

3 Follow the instructions in the "Creating an OST disk pool and STU in the NetBackup console" section and use the name in the <NAME> tag as the Storage Server name.

See "Creating an OST disk pool and STU in the NetBackup console" on page 31.

See "Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access" on page 15.

Setting up multiple SDFS volumes on a NetBackup media server

The OST connector supports multiple SDFS volumes on the same media server but additional steps are required to support this configuration.

To set up multiple SDFS volumes on a NetBackup media server

1 Follow the instructions for setting up the OST connector on each NetBackup media server that uses the OST connector.

See "Use case 1: Backing up deduplicated data (OpenDedup and NetBackup) using the S3 protocol to Veritas Access" on page 15.

2 Edit the /etc/sdfs/ostconfig.xml and add a new <CONNECTION> tag inside of the <CONNECTIONS> tag for the new volume.

Add a name that is unique to the <NAME> tag and specify the new volume name in the <LSU_NAME> tag (pool1).

In the new <CONNECTION> tag, add the port number identified by running the mount command to the <URL> tag (http://localhost:6443/) as shown in the example output.

[root@host1 ~]# mount | grep opendedupe sdfs:/etc/sdfs/S3fs1497346133-volume-cfg.xml:6443 on /opendedupe/volumes/S3fs1497346133 type fuse (rw,nosuid,nodev,allow_other,allow_other) sdfs:/etc/sdfs/S3fs1497258807-volume-cfg.xml:6442 on /opendedupe/volumes/pool1 type fuse (rw,nosuid,nodev,allow_other,allow_other)

The following is a complete example of an ostconfig.xml file with two volumes.

```
<!-- This is the config file for the OST connector for opendedup and Netbackup -->
<CONNECTIONS>
<CONNECTION>
<!--NAME is the local server name that you will reference within Netbackup -->
<NAME>
local
</NAME>
<LSU NAME>
svol4
</LSU NAME>
<URL>
http://localhost:6442/
</URL>
<!--PASSWD - The password of the volume if one is required for this sdfs volume -->
<PASSWD>admin</PASSWD>
<!-
<SERVER SHARE PATH>
A SUBDIRECTORY UNDER THE MOUNT PATH
</SERVER SHARE PATH>
-->
</CONNECTION>
<!-- Below is the new volume-->
<CONNECTION>
<!--NAME is the local server name that you will reference within Netbackup -->
<NAME>
```

hostname0 </NAME> <LSU NAME> svol10 </lsu name> <URL> http://localhost:6443/ </URL> <!--PASSWD - The password of the volume if one is required for this sdfs volume --> <PASSWD>admin</PASSWD> <!--<SERVER_SHARE_PATH> A SUBDIRECTORY UNDER THE MOUNT PATH </server share path> --> </CONNECTION> </CONNECTIONS>

Chapter

Configuring Veritas Access as a cloud storage server with NetBackup CloudCatalyst

This chapter includes the following topics:

- Creating an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup
- Configure Veritas Access as a cloud storage server on NetBackup server

Creating an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup

To create an S3 bucket on Veritas Access for storing deduplicated backup data from NetBackup

1 Log on to the Veritas Access GUI as the master user using the following URL:

https://Veritas Access Management console IP:14161/.

You can obtain the Veritas Access Management console IP by logging on to the CLISH using the su - master command on the Veritas Access cluster.

2 Create a storage pool for the S3 buckets.

Click NAS Infrastructure in the GUI navigation on the left.

Select the disks that you want to use for the S3 bucket, and click the **Add to Storage Pool** button to invoke the wizard for storage pool creation.

Follow the steps in the wizard for creating a new storage pool or adding the disks to an existing pool.

3 Click Settings > User Management > Configure Active Directory to configure AD.

Enter the required information, such as the DNS Domain, DNS Name Servers, AD Domain, AD Domain Controller, and the AD Admin and Password.

4 Click Settings > S3 Management to configure and enable the S3 server.

Edit the default parameters that are required for the S3 server, such as the storage pool name, underlying S3 bucket layout, and the default size of the bucket.

- 5 Click the button in front of S3 Server Status to start the S3 server.
- 6 Log out from the GUI, and log in again as an AD user.

Click on the **Create keys** button to generate the access key and the secret key for the Veritas Access S3 bucket.

Save the access key and secret key in a safe location, as Veritas Access does not allow retrieval of keys after initial creation.

Note: Log in using the *domainname*\\username format.

7 Log out from the GUI, and log in again as the master user.

8 Registration of supported public cloud service is optional, and is only required in case you need to add an AWS cloud as a storage tier. Without this, backups are stored locally in Veritas Access S3 buckets.

Click **Settings > Cloud Storage Registration > Add Cloud Subscription** to register the supported public cloud service.

Enter information for the cloud service provider, name of subscription, access key, and secret key.

9 Activate the long-term data retention (LTR) policies.

Click Policies > LTR Policy.

Click **Activate** for either the **LTR On-Premises + Cloud** policy or the **LTR On-Premises** policy and provide the storage pool when prompted.

10 Provision the NetBackup bucket using the policy.

Under Quick Actions, click Provision Storage. Select S3 Storage for NetBackup and click Next.

Provide the bucket size, underlying layout of the bucket, the access key, and the secret key of the Veritas Access S3 server generated as the AD user in step 6.

If you selected the **LTR On-Premises + Cloud** policy, add information such as which data should be moved to the AWS cloud tier, AWS region, cloud tier type (S3/Glacier), and when the data movement to the cloud should occur.

11 Monitor the progress of the task under **Recent Activity**.

Make a note of the scale-out file system name that was used for the bucket creation.

12 Click File Systems.

For the scale-out file system that is created, ensure that the **S3 Bucket** column displays **Yes** to indicate that the S3 bucket is enabled.

You may need to wait for some time for this change to be reflected in the GUI.

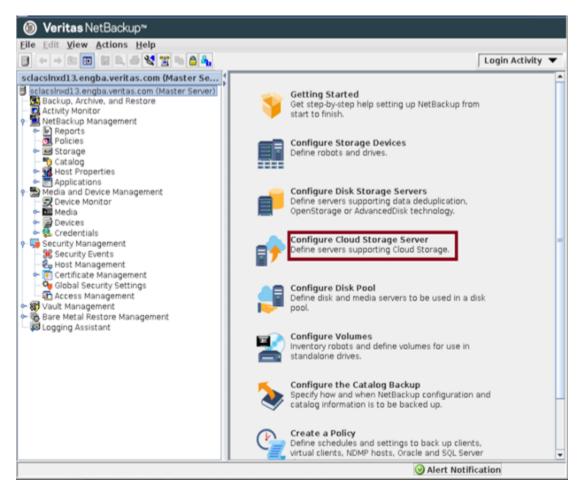
Creating a Media Server Deduplication Pool (MSDP) for primary backup using NetBackup

To create a Media Server Deduplication Pool (MSDP) for primary backup using NetBackup, See "Creating a Media Server Deduplication Pool (MSDP) for primary backup using NetBackup" on page 23.

Configure Veritas Access as a cloud storage server on NetBackup server

To configure Veritas Access cluster as a cloud storage server and create an OpenStorage Technology (OST) disk pool and storage unit (STU) from the NetBackup console

- 1 Log on to the NetBackup master server from the Java console.
- 2 Select Configure Cloud Storage Servers.



3 The Welcome to cloud storage server configuration wizard appears. Click Next.

Cloud Storage Server Confi	iguration Wizard - NetBackup@sclacsInxd13.engba.veritas.com
	Welcome to the Cloud Storage Server Configuration Wizard
	This wizard helps you to create a cloud storage server and a disk pool.
= 17	The storage server and disk pool you create will enable NetBackup to send your data to your cloud storage provider.
	Note the following points before you configure the cloud storage server:
	 You must have deployed the security certificate to the media server in order for the media server to be available for cloud deployment. Click Help or refer to the NetBackup Cloud Administrator's Guide for instructions to deploy the security certificate.
	 You need to provide the credentials to access your cloud storage account when prompted. If you do not have an account, you can select a cloud storage provider and create an account using the wizard.
	 If your existing cloud storage provider is not listed in the wizard screen, click Help or refer to the NetBackup Cloud Administrator's Guide.
	To begin, click Next. For assistance, click Help.
	< Back Next > Cancel Help

4 Select Veritas Access in the cloud provider list. Click Next.

	Select cloud provider
	Storage API type: All cloud storage provider types
= 77	Cloud storage providers
	Type here to search
	Rackspace (Swift) Cloud Files
	Red Hat Ceph Storage (S3) Software-Defined Storage, On-Premises and in the Cloud
	Scality RING - LAN (S3) Scality S3 On-Premises Object & Cloud storage, optimized for LAN
	Scality RING - WAN (53) Scality S3 Multi-Cloud storage, optimized for multi-site
	StorReduce (S3) Deduplicate Cloud Storage
	SUSE Enterprise Storage (S3) Software-defined Storage Solution
	SwiftStack (53) SwiftStack S3 Object Storage
	SwiftStack (Swift) SwiftStack Swift Object Storage
	Telefonica (S3) Telefonica Cloud Storage
	Veritas Access (S3) Veritas Access Scale-out software-defined storage
	To continue, click Next.

5 On the Add storage server form, click on Add Cloud Storage.

Cloud Storage Server Confi	iguration Wizard - NetBackup@sclacsInxd13.engba.veritas.com
	Add Storage Server Select a media server and provide cloud storage service credentials. To be listed below in the media server drop-down list a security certificate must be deployed and NetBackup must be running including the NetBackup CloudStore Service Container (nbcssc).
	Cloud storage provider - Veritas Access
	Service host:
	Storage server name:
	Add Cloud <u>S</u> torage
	Media server name: sclacsInxd13.engba.veritas.com
	Deduplication Enable NetBackup CloudCatalyst Local cache directory: Browse
	Access details for Veritas Access account Access key ID: Secret access key:
	If you do not have Veritas Access account Create an account with Veritas Access.
	To continue, click Next.
	< <u>Back</u> Next > <u>Cancel</u> <u>Help</u>

- 6 In the Add cloud storage wizard, enter the required information.
 - Service host: s3.<veritas_access_cluster_name>
 - HTTP port: 8143
 - Https Port: 8143
 - Storage server Name: Any string or any auto-generated name.

For example, my-s3.<veritas_access_cluster_name>

Click Ok.

Cloud Storage Server Configuration Wizard - NetBackup@sclacsInxd13.engba.veritas.com	×
Add Storage Server Select a media server and provide cloud storage service credentials. To be below in the media server drop-down list a security certificate must be de and NetBackup must be running including the NetBackup CloudStore Servi Container (nbcssc). Cloud storage provider - Veritas Access	ployed
Service host	-
🚡 Add Cloud Storage@sclacsInxd13.engba.veritas.com	
General Settings Region Settings Provider type: Veritas Access Service host: \$3.accesscluster Sgrvice endpoint:	•
Ok Cancel Help - Create an account with ventas Access. Advanced Setting To continue, click Next.	
< <u>Back</u> <u>N</u> ext > <u>Cancel</u>	Help

7 Select Media server from the Media server name drop-down box. Select the Enable NetBackup CloudCatalyst check box if you want to store the deduplicated MSDP backup data on Veritas Access's ObjectAccess bucket. Specify the path of local cache directory for CloudCatalyst. Enter the access key and secret key using which the bucket is created on Veritas Access. For SSL-related settings, click on Advance Setting.

Cloud Storage Server Confi	guration Wizard - NetBackup@	isclacsInxd13.engba.veritas.com	×	
	Add Storage Server Select a media server and provide cloud storage service credentials. To be listed below in the media server drop-down list a security certificate must be deployed and NetBackup must be running including the NetBackup CloudStore Service Container (nbcssc).			
	Cloud storage provide		_	
	Service h <u>o</u> st:	s3.accesscluster	•	
	Storage server name:	my-s3.accesscluster	-	
		Add Cloud <u>S</u> torag	е	
	<u>M</u> edia server name:	sclacsInxd13.engba.veritas.com	•	
Deduolication Enable NetBackup CloudCatalyst Local cache directory: /ESFS/ Browse				
	Access details for Veritas Access account			
	Access key ID:	NmU2NTgyZGM1MDZkYTZ		
	Secret access key:			
	If you do not have Veritas Access account Create an account with Veritas Access.			
		Advanced Setting	s	
	To continue, click Next	t.		
		< Back Next > Cancel	Help	

8 If the Veritas Access ObjectAccess server is configured with **No SSL**, then clear the **Use SSL** check box and click **Ok**.

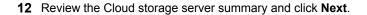
Cloud Storage Server Confi	guration Wizard - NetBackup@sclacsInxd13.engba.veritas.com	×
	Add Storage Server Select a media server and provide cloud storage service cre below in the media server drop-down list a security certific and NetBackup must be running including the NetBackup Cl Container (nbcssc). Cloud storage provider - Veritas Access Service host: s3.accesscluster	ate must be deployed
3		X
	General Settings Proxy Settings	-
	Use SSL Authentication Only Data Transfer HTTP Headers: Header Value	Cloud <u>Storage</u>
/		
	<u>Q</u> K <u>C</u> ancel <u>H</u> elp	
	Create an account with Veritas Access.	
	Ac	wanced Settings
	To continue, click Next.	
	< Back Next >	<u>C</u> ancel <u>H</u> elp

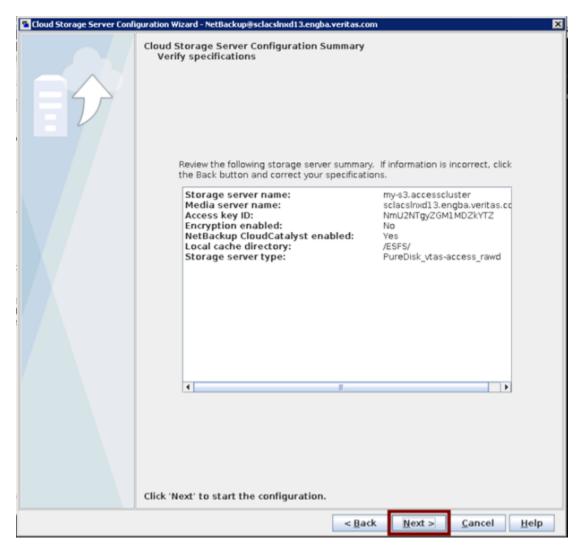
9 Click Next

Cloud Storage Server Config	guration Wizard - NetBackup@	sclacsInxd13.engba.verita	is.com		×
	below in the media		t a security ce	rtificate must be dep	loyed
	Service h <u>o</u> st:	s3.accesscluster			•
	<u>S</u> torage server name:	my-s3.accesscluster			-
				Add Cloud <u>S</u> torage	
	<u>M</u> edia server name:	sclacsInxd13.engba.	veritas.com		•
	Deduplication Finable NetBackup (Local cache directory:			Bro <u>w</u> se	
	Access details for Veritas Access account				
	Access key ID:	NmU2NTgyZGM1MDZkY	πz		
	Secret access key:	••••••		••••	
	If you do not have Veritas Access account Create an account with Veritas Access.				
				Advanced Settings	
	To continue, click Next				
		<	<u>B</u> ack <u>N</u> ext	t > <u>C</u> ancel <u>F</u>	lelp

10	On the Specify	/ Deduplication	setting form,	click Next
----	----------------	-----------------	---------------	------------

11 Messages related to setting the encryption appear. Click **Yes**.





13 Check the status of the tasks in the storage server creation process. Click Next

Stora	Vizard – NetBackup@sclacslnxd13.engba.veritas.com je Server Creation Status nitor storage server creation or the status of the tasks in the storage server	creation	process.	X
			process. Details	
	< Back	<u>N</u> ext >	<u>C</u> ancel	Help

14 Verify that the storage server is successfully created and click Next.

15 The **Volume selection to use in disk pool** form lists all the buckets that are created by a user on the Veritas Access cluster as a volume. If the bucket is not created from Veritas Access, then click on **Add volume** and specify the bucket name. After bucket creation, the bucket is listed as a volume. Select a bucket and click **Next**.

Select volumes to use in the	e aisk pool.		
torage server type: PureDisk	vtas-access_r	awd	
elect storage server volumes	to add to the d	lisk pool.	
Volume Name Available Space	Raw Size	Replication	Region
🖌 testappbkt 🔤		None	Default
tests3		None	Default
Add new volume on the Disk Pool Size	selected storaç	ge server{s}	dd New Volume
)isk Pool Size	selected storaç	ge server(s)	dd New Volume
Add new volume on the Disk Pool Size Total available space: Total raw size:	selected storaç	ge server(s)	dd New Volume

16 In the **Additional disk pool information** form, enter the disk pool name and click **Next**.

Disk Pool Configuration Wizard@sclacsInxd13.engba.veritas.com
Additional Disk Pool Information Provide additional disk pool information.
Storage server type: PureDisk_vtas-access_rawd
Disk Pool Size
Total available space:
Total raw size:
Disk Pool name: accessbkt_pool
Comments:
High <u>w</u> ater mark: 98 🗘 %
Low water mark: 80 ° %
The High water mark and Low water mark values are not applicable for this disk group.
Maximum I/O Streams
Oncurrent read and write jobs affect disk performance.
Limit I/O streams to prevent disk overload.
Limit I/ <u>O</u> streams: -1 🗘 per volume
< <u>Back</u> <u>N</u> ext > <u>C</u> ancel <u>H</u> elp

17 Review the disk pool configuration summary and click **Next**.

🖺 Disk Pool Configuration Wizard@scla		ritas.com		×
Disk Pool Configuration Summa Verify the disk pool configur				
Review the disk pool configura configuration, if required.	tion summary.	You can cha	nge the	
Storage server:	my-s3.a	ccesscluster		
Storage server type:	PureDis	k_vtas-access	rawd	
Volumes:	testapp	bkt	_	
Disk Pool Details:				
Disk Pool name:	access	bkt_pool		
High water mark:				
Low water mark:				
Maximum IO Streams:	Unlimite	ed		
Comments:				
	- Dack	Next >	Concel	Uele
	< <u>B</u> ack	Next >	<u>C</u> ancel	Help

18 In the Disk pool creation status form, verify that the disk pool is created successfully. Make sure that the Create storage unit using disk pool which you have just created check box is selected.

Disk Pool Configurat Disk Pool Configu Perform disk p			tas.com		×
Status	NetBackup Disk Po		ning tasks		
	bkt_pool" is succe	-		just create	d
Click 'Close' to co	mplete the disk p	ool configur	ation and clo	se the wiz	ard.
		< <u>B</u> ack	<u>N</u> ext >	<u>C</u> lose	<u>H</u> elp

19 In the **Storage unit creation** wizard, enter the storage unit name. Click **Only use selected media servers**. Select the media server in the list and click **Next**.

	ard@sclacsInxd13.engba.veritas.com	×
Storage Unit Creation Enter details to crea	te storage unit.	
Disk pool: Storage server type: Storage unit name: Media Server <u>U</u> se any av	accessbkt_pool PureDisk_vtas-access_rawd accessbkt_pool-stu vailable media server to transport data	
	the selected media servers: Media Servers Inxd13.engba.veritas.com	
Maximum concurrent ja Maximum fragment siz	ze: 51200 Megabytes	
	< <u>Back</u> <u>Next</u> > <u>Cancel</u>	Help

20 Verify that the disk pool creation wizard is completed successfully. Click Finish.

🖀 Disk Pool Configuration Wizard@sclacsIn:	xd13.engba.ver	itas.com		×
Finished.				
You have successfully completed Configuration Wizard.	the NetBack	up Disk Pool		
computation wizard.				
You may view or change the curre Device Management or Storage U	nt configura nit Managen	tion setting nent.	s within	
	< <u>B</u> ack	Einish	<u>C</u> ancel	<u>H</u> elp

Chapter

Configuring backup and restore using NetBackup policies

This chapter includes the following topics:

- Storage Lifecycle Policies
- Backup and restore
- Running a backup policy manually
- Restoring backed up files

Storage Lifecycle Policies

You can create Storage Lifecycle Policies (SLP).

To create Storage Lifecycle Policies

1 Click Storage -> Storage Lifecycle Policies on the NetBackup console. Select New Storage Lifecycle Policy.

	Storage Lifecycle Policies (O selecte	¢		
Activity Holitor NetBackup Management Pir Reports Oticies	Name MSOD test1		Data Classification	
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Security Management Security Management Certificate Management Certificate Management Access Management	Columns Columns Sgrt	Ctrl-C		
- 😰 Vault Nanagement - 🗞 Bare Metal Restore Management - 🔯 Logging Assistant	ya pinu ▼ Filter ≫ Clear Filter	Ctrl-T Ctrl-U		

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ga-02.vxindia.veritas.com (Mast	er Serveo 1 2 Storage Lifervile Policies	@ selecteds		
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Storage	SLP1	<no classific="" data="" td="" 💌<=""><td>0 🗯 thigher number is greater prior</td><td>ty)</td></no>	0 🗯 thigher number is greater prior	ty)
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	Add Change Remove]		
	State of secondary operation processing	19		
	Active	To find impa	act on Policies associated with this SLP due configuration click here.	
	O Postponed		Across Backup Policies	
			QK Cancel	Help

2 Enter a unique policy name for the policy. Click on the **Add** button.

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Backup, Archive, and Restore		
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P Reports	Operation: Backup	-
- Rolicies Storage inte	11	
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Storage Unit Groups		
Storage Lifecycle Policies Operation	MSDP_POOL-stu	
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Devices Gredentials		
Security Management		
- 🧱 Security Events		
Certificate Management Access Management		
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- 🙀 Logping Assistant 🕆	1	
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		OK Cancel Help

3 Select **Operation** as **Backup**, and set the destination pool to the MSDP pool that was created. Choose the **Retention type** based on your requirement.

2.vvindia.veritas.com (Mast -02.vvindia.veritas.com (Mast ckup, Archive, and Restore	sto 🐴 New Stora									
ckup, Archive, and Restore		ige Linecycle Po	licy@sfsga-02.v							1
ackup, Archive, and Restore ctivity Monitor										
etBackup Management	Storage Life	ecycle Policy	Validation	Report						
Policies Storage	Storage life	cycle policy r	ame	Data	classificati	ionc	Priority for se	condary opera	ations:	
	SLP1			- No	data classi		0	chigher numb	oer is greater	priority)
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4 A new entry for Backup gets added. Click on the **Add** button again.

5 Select **Operation** as **Deduplication** and set the destination tier to the OST storage unit that was created. Choose the **Retention type** based on your requirement.

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sfsqa-02,vxindia.veritas.com Master Serven	A March and A M		×
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Backup, Archive, and Restore	Former standard, MEDD 0001, sto disclosed		juorn
Storage Storage	u		
Policies Storage	Operation: Duplication	-	
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- 2 Device Monitor	Any	Duplication	
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e- 5 Security Management			
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	r Serveo 5 2 Storage Lifervile Policies									
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• MetBackup Management • M Reports										
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• Storage — Storage Units	SLP1	<no classific="" data="" td="" 🔻<=""><td colspan="4">(higher number is greater priority)</td></no>		(higher number is greater priority)						
Storage Unit Groups										
Storage Lifecycle Policies	Operation Window Target Mas		ne Pool Media Ov	wher Retention T		Alternate R				
- SLP Windows - SLP Windows	Backup	MSDP_P		Expire afte			No			
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- Media										
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	Add., Change Remove									
	State of secondary operation process	ing	To find impac	t on Policies ass	ociated with	this SLP due				
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	Until 8/2/17 12:18 PM		Tannare		and a					
					<u>Q</u> K	Cancel	Help			
	11									
	13									

6 Both entries for SLP appear in the **Storage Lifecycle Policy** tab. The first operation is for Backup and the second operation is for Duplication.

Backup and restore

After you complete the configurations, perform the following steps for backup and restore.

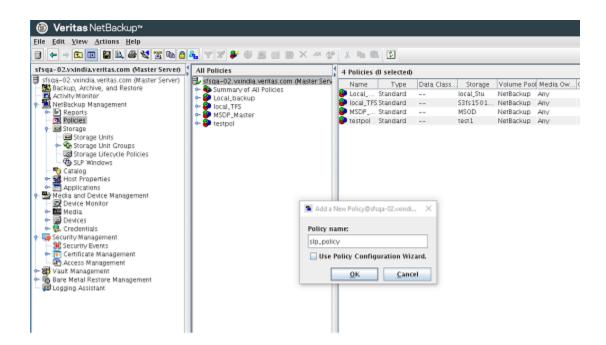
Policy creation

To create policies

1 Right-click on **Policies** within the NetBackup console and click on **New Policy**.

store Black from the second test of the		-						
sfsqa-02.vxindiaveritas.com (Master Server) sfsqa-02.vxindiaveritas.com (Master Server) Backup, Archie, and Restore Activity Montor Metaskup Management Beports Beports Biorage Units Bi	Summary of Al Policies Summary of Al Policies Sormary of Al Po	4 Policies (0 Name Local Visual Visual	Type Standard Standard Standard	Data Class	Storage local.Stu S3fris501 MSOD text1	Volume Pao NetBackup NetBackup NetBackup	Atty Atty Atty	Checkpoir

- **2** Provide the following information for policy creation.
 - Policy name
 - From the **Attributes** tab, select the appropriate storage unit under **Policy storage**.



3 Under **Policy storage**, enter the name of the **Storage Lifecycle Policy** that was created.

See "Storage Lifecycle Policies" on page 64.

Change Pol	cy - slp_policy@sfsqa-02.vvindia.veritas.com		×
🔒 Server: sf	sqa-02.vxindia.veritas.com		
Attribute:	s 🕲 Schedules 📲 Clients 🖬 Backup Selections		
Sun +	Add Schedule - Policy s/p_policy@s/sqa-02.vxindia.veritas.com	10 14 16 10 00 X	24
Tue Tue	Server: sfsqa-02.vxindia.veritas.com		:::
Wed +	Attributes 🕲 Start Window 🕲 Exclude Dates		• •
Fri 🗍	Name:	Destination:	: :
Sat	fullbackup	Multiple copies Configure	
Name	Type of backup:	Override policy storage selection:	w Accelera
	Full Backup 👻	▼	
	Synthetic backup	Override policy volume poot:	
	Accelerator forced rescan	NetBackup 👻	
	Schedule type:	Override media owner:	
	○ Calendar		
	Retries allowed after runday	Retention:	
	Frequency:	Determined by SLP	
	1 🕽 weeks 💌	Media multiplexing:	
		1	
		Instant Recovery:	
		Snapshots and copy snapshots to a storage unit	
		O Snapshots only	
		Add QK Cancel Help	
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		× New × Delete	Changg
			Inter
		<u>QK</u> <u>Cancel</u>	Help

4 Enter the attribute information as per your requirement.

5 Under the **Schedule** tab, enter the name of the schedule. For example, **fullbackup**.

a genten anad	a-02.vxindia.ver	itas.com				
Attributes	🕲 Schedules	🖏 Clients	Backup Selections			
	Client Name		Hardware	Operat	ng System	Resiliency
			Add Client - Policy slp_policy@sfs	qa-02.vxindia.veritas.cor	n ×	
			Server: sfsqa-02.vxindia.ver	itas.com		
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		ete	qa-02.vxindia veritas.com		QK	
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			Detect client operating syste		Teib	
			rdware and operating system >-UX-1A64, HP-UX11.31		1	
					I	
(
			× New	× Delete	All Change-	
			an Meridia			

6 Enter the client information under the **Clients** tab.

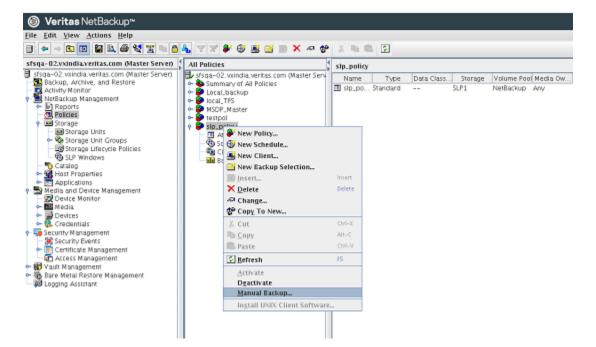
	- slp_policy@sfsqa a-02.vxindia.ver			
~	Schedules		Backup Selections	
				ap Selection List
		Add Backup	Selection - Policy slp_policy@sfs	qa-02.vxindia.veritas.com X
		🗐 Server: sfs	qa-02.vxindia.veritas.com	
		Construct a li	st of pathnames (and directi	ives, if applicable) to add to the selection list.
		Pathname or o	lizective	
			metore.	▼ Browse Add
		List of pathna /Backup/	mes and directives to add t	o the selection list:
		(Backap)		Ē
		•		
				QK <u>Cancel</u> <u>H</u> elp
•				1
				★ New >> <
				QK Cancel Help

7 Select the folders that need to be backed up under **Backup Selections**.

Running a backup policy manually

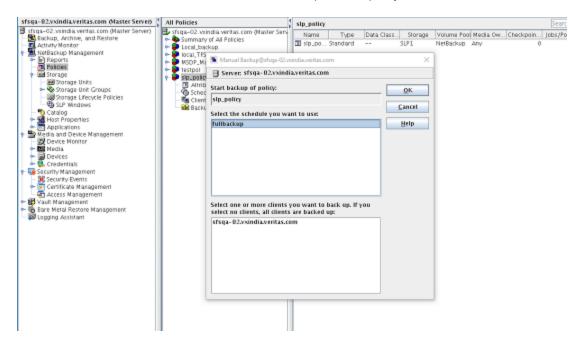
To run a backup policy manually

1 Once the policy is created, right-click on the name of the policy that you want to run under **Summary of All Policies**, and click on **Manual Backup**.



2 Select the schedule that you want to use and click **OK**.

This starts the manual backup with the policy.



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dia veritas com (Haster Server)		State		Status Job Policy		Client	Media Ser	Start Time Baps	ad Ti., End T
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	26 Image Cleanup	Done		1		27.75pz - 556	1000	Aug 2, 20 00:30	
\$	25 Image Cleanup	Done		0				Aug 1, 20 00:00	
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tions	10 Image Cleanup	Done		0				Jul 31, 20 00:00	
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tistant X	7 Backup	Done		0 local_TFS	Full,Sch	sfsqa-02	sfsqa-02	Jul 31, 20 00:00	18 Jul 31,
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÷	1 Image Cleanup	Done		1				Jul 31, 20 00:00	:01 M 31.

3	To verify the status of the backup	, go to Activity Monitor.
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4	Select the appropriate job from the displayed jobs and click on the Detailed
	status tab in the new window to check on the status of the backup.

🔬 Job Details: 280	sfsqa-02.vxindia.verit	tas.com					-		\times
Job ID:	28 Detailed Status	Job Hierarchy	Job State:	D	one Successfub				
Attempt: Job PID: Storage Unit: Media Server: Transport Type: Status:	31260 MSDP_POOL-stu sfsqa-02.vxindia				Attempt Started: Attempt Elapsed: Attempt Ended: KE/Sec				
Aug 2, 2017 12 Aug 2, 2017 12	34:15 PM - Info b 34:15 PM - Info b 34:18 PM - begin 44:43 PM - Info b 44:43 PM - Info b 44:48 PM - Info b 44:48 PM - Info b 44:48 PM - Info b	ptm (pid = 31279) ptm (pid = 31279) ptm (pid = 31279) writing pbkar (pid = 3127) ptm (pid = 3127) ptm (pid = 3127) fsqa-02. vsindia. pbrm (pid = 3127) pbkar (pid = 3127) miting: write time:	using 262144 data buffer using 30 data buffers (start backup) 0) bpbkar waited 519 time: waited for full buffer 1619 (B0TING with status 0 < veritas.com (pid=31279) St 0) validating image for clier 0) done. status: 0: the requ 0.01326	for empty buffe 6 times, delayed orageServer=Purv at sfsqa=02.voind	22006 times Disk:sfsqa=02.vxindia Sia.veritas.com	.veritas.com;	Report	:-P0D0	
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- Relicies	X	27 Restore	Done		0			sfsqq-02	. sfsqa-02	. Aug 2, 20.	01:52:44	Aug 2, 20.	
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	N N	a mage creanup	0.436							Int 2.7, 601	AN104104	JA 3 4, 64.	

5 Once the above backup job is complete, a new duplication job is automatically triggered.

6 Click on that job and then select detailed status to check the status of the duplication job.

🔬 Job Details 300	Psfsqa-02.vvindia.verit	as.com					_		х
Job ID:	30			Job State:	Active				
Job Overview	Detailed Status	Job Hierarchy]						
Attempt:	1 20				Attempt Start	ed: Aug 2, 2017 1	2:49:	56 PM	
Job PID:	32426				Attempt Elaps	ed: 00:48:51			
Storage Unit	\$3f\$1501673281	- stu			Attempt Ende	£.			
Media Server:	sfsqa-02.vxindia	veritas.com -> s	sfsqa-02.vxindia.ve	ritas.com	KB/Sec				
Transport Type:	LAN								
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Current Kilobyt	rs Written:	306032	264	Estimated Kilobytes:	6326	8768		_	<u>}</u>
Current Files Wi Current File:	itten:			Estimated Files:					
Current ring					I	oubleshooter			
Percent Comple	rte: 48%								
				\$	• <u>B</u>	efresh <u>C</u> lose	•	Hel	p

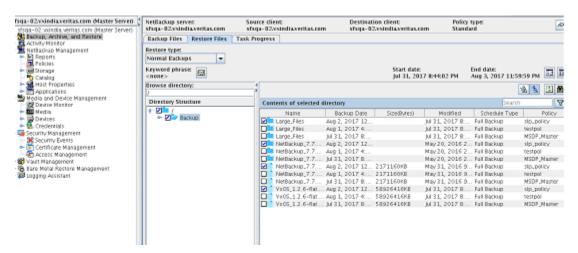
Restoring backed up files

To restore backed up files

- 1 Create a directory where you want to restore the backed-up files.
- 2 Go to the **Restore Files** tab under **Backup**, **Archive**, **Restore**.

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File Edit Yew Actions Help							_
8 • - 6 1 8 1 4 4 7 1 6	N					Lagin Act	ivity
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3 Go to the browse directory and select the appropriate files to restore and click Restore. The backup to be restored can reside either on NetBackup or on Veritas Access depending on the Storage Lifecycle Policy that is set. Hence, the restore location changes accordingly.



4 Enter the location where the files should be restored, and click on the **Start Restore** button.

	ginal location.		
	erent location (maintaining existing	structure).	
Destination: /Restore/			
	s and files to different locations.		
nestore mannaul ancetore	s and mes to unreferre focultorist		
Source	Destination	Backup Date	Modified
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C <u>h</u> ange Selected	I Destination(s)	Change Al	I Destinations
	I Destination(s)		l <u>D</u> estinations (ted Destination(\$)
	tination		
<u>A</u> dd Des	tination		
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Add Desi Create and restore to a ne ptions Overwrite existing files Restore directories without o	tination w virtual hard disk file. crossing mount points	<u>R</u> emove Selec Media Server (Default)	cted Destination(s) Setting

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stuga-02.xxindia.veritas.com (Master Server) Backup, Archive, and Rastore	Job I	d	Type	2:44	2:#e Detabi	Status	Jab Policy	Job Sched.	Cleff	Media Ser.	2 art Time	Elipsed TL.	End Time	_
C Activity Monitor	2	3.4 Poister	W.	Active					stsga-02	stsga-02	Aug 3, 20	00:00:03		
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Reports	12	32 Intace		Done		0					Aug 2, 20		Aug 2, 20.	
- 💁 Policies	- Ö	31 maps	Cleanup	Dane		1					Aug 2, 20		Aug 2, 20.	
Storage	12	30 Dupli		secO		0	SLP.SLP1	Default 2	sfsqa=02.	sfsqa=02	Aug 2, 20		Aug 2, 20.	
- 👧 Catalog	18	29 mage		Date		1					Aug 2, 20		Aug 2, 20.	
- 🙀 Hast Properties	19	28 Barlos		Done		0	slppolity	fullbackup	dista-02	<5sta=02	Aug 2, 20		Aug 2, 20.	
- Applications	1 	27 Resta		Dane		0		ron a a stropp			Aug 2, 20		Aug 2, 20.	
Media and Device Management	8	26 intage		Done		1					Aug 2, 20		Aug 2, 20.	
Media	14	25 Image		Done		0					Aug 1, 20		Aug 1, 20.	
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Security Events	1 -	218adou		Done		0	testpol	D.E	dista_02	diama=02	Aug 1, 20		Aug 1, 20.	
Certificate Management	12	20 Image		Date		1	CALIFICATION 1	1.08	310-68-V&	and a carrier	Aug 1, 20		Aug 1, 20.	
Access Naragement	1 4	19 Recta		Done		0			dista-02	dian-02	Asg 1, 20		Aug 1, 20.	
Vault Management	4	15 maps	-	Dane		0			21268-VA	212068-VA	Jul 31, 20		jul 31, 20.	
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Logging Assistant	4	16 Dupli		Dane			OF MOOD	Dotwell 2	stone-02	dias-02	Jul 31, 20		Jul 31, 20.	
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				0.0015							pa 54, 69	44.54.61	1mm (5-3), 200.	

5 To view the progress of the restore operation, click **Yes** on the **Restore Initiated** window.

6 You can view the progress of the restore operation under the **Detailed Status** tab.

🔬 Job Details: 340	Osfsqa-02.vvindia.veritas.co		-		×				
Job ID:	34		Job State:	Active					
Job Overview	Detailed Status Jo	b Hierarchy							
Attempt	1		Attempt Started: Aug 3, 2017 10:28:39 AM						
Job PID:	26673		Attempt Elapsed: 00:05:00						
Storage Unit:		Attempt Ended:							
Media Server:	sfsqa-02.vxindia.veri	tas.com	KE/Sec 5151						
Transport Type:	LAN								
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Chapter

Troubleshooting

This chapter includes the following topics:

- Unmounting the SDFS volume before restarting Veritas Access or the NetBackup media server
- Log locations for troubleshooting
- Additional resources
- Generating Veritas Access S3 server keys using the helper script

Unmounting the SDFS volume before restarting Veritas Access or the NetBackup media server

Before restarting Veritas Access or the NetBackup media server, create a backup copy of the SDFS volume and unmount the SDFS volume.

To perform a clean unmount of the SDFS volume

- 1 Create a backup copy of the SDFS volume .xml file in the /etc/sdfs directory.
- 2 Unmount the SDFS volume and wait for the jsvc process to exit before restarting Veritas Access.
- **3** In case of OpenDedup on Veritas Access, use the following command to offline the OpenDedup volume:

opendedup volume offline <vol_name>

Where vol_name is the OpenDepdup volume.

Log locations for troubleshooting

OpenDedup logs

- /opt/VRTSnas/log/odd.log
- /opt/VRTSnas/log/odd-vcs.log

Veritas Access S3 logs

- /opt/VRTSnas/log/portald.log
- /opt/VRTSnas/log/portald_access.log

SDFS logs

SDFS creates its logs under

OST plug-in logs

The OpenDedup OST plug-in log can be found in $/\mbox{tmp/logs/opendedup.log}.$

NetBackup logs

Pertinent OST-related errors and logging are trapped in the bptm log. NetBackup logging for bptm can be enabled by creating the bptm logging directory:

mkdir /usr/openv/netbackup/logs/bptm

Veritas Access support debug information upload command

CLISH> support debuginfo upload path

Additional resources

See the following documentation for more information on Veritas Access, OpenDedup, and Veritas NetBackup:

- Veritas Access Installation Guide for the supported NetBackup clients and the OpenDedup ports.
- Veritas Access Troubleshooting Guide for setting the NetBackup client log levels and debugging options.
- Veritas NetBackup product documentation on the SORT website.
- OpenDedup product documentation on the OpenDedup website.

Generating Veritas Access S3 server keys using the helper script

Create the access and the secret keys using the Veritas Access helper script in case you do not want to use the Active directory Domain user to create and own the buckets. This is an alternative way to get the Veritas Access S3 server credential keys.

- Location of the helper script: /opt/VRTSnas/scripts/utils/objectaccess/objectaccess client.py
- The Veritas Access helper script can be used from any client system that has Python installed.
- To run the script, your S3 client needs to have the <code>argparse</code> and <code>requests</code> Python modules.

If these modules are missing, install both these modules using $\tt pip$ or <code>easy_install</code>.

- Add the ADMIN_URL name in your /etc/hosts file.
 where the ADMIN_URL is admin.<cluster_name> and the port is 8144. This url should point to the Veritas Access management console IP address.
- Create the access and the secret key using the Veritas Access helper script by
 providing the user name, password, and ADMIN_URL (check the online Help
 of the Veritas Access helper script for all of the provided operations like list
 key and delete key).

Create a secret key:

```
clus_01:~ # ./objectaccess_client.py --create_key

--server admin.clus:8144 --username localuser1 --password root123

--insecure

UserName : localuser1

AccessKeyId : Y2FkODU2NTU2MjVhYzV

Status : Active

SecretAccessKey : ODk0YzQxMDhkMmRjM2M5OTUzNjI5OWIzMDgyNzY
```

The *<localuser1>* is the local user created on both the Veritas Access cluster nodes with same unique ID.

List a secret key for the specified user:

```
clus_01:~ # ./objectaccess_client.py --list_key --server
admin.clus:8144 --username localuser2 --password root123 --insecure
```

Delete a secret key for the specified user:

```
clus_01:~ # ./objectaccess_client.py --delete_key
ZTkyNDdjZTViM2EyMWZ --server admin.clus:8144 --username localuser2
--password root123 --insecure
```

 If the object server is enabled without the SSL option, you need to add the --insecure option.

```
clus_01 ~# ./objectaccess_client.py --server
admin.clus:8144 --username <uname> --create_key --insecure
```

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