Veritas Access 7.2.1 NetBackup Solutions Guide

Linux

7.2.1

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Veritas Access NetBackup Solutions Guide

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

Contents

Veritas Access integration with NetBackup

This chapter includes the following topics:

- About Veritas Access
- About Veritas Access as backup storage for NetBackup

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 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; it performs data deduplication and stores deduplicated data on Veritas Access over S3. NetBackup version 7.6.1 and above can perform deduplicated backups to Veritas Access.

Figure 1-1 shows how Veritas Access integrates with OpenDedup over S3 to store NetBackup backup streams as deduplicated data.

Figure 1-1
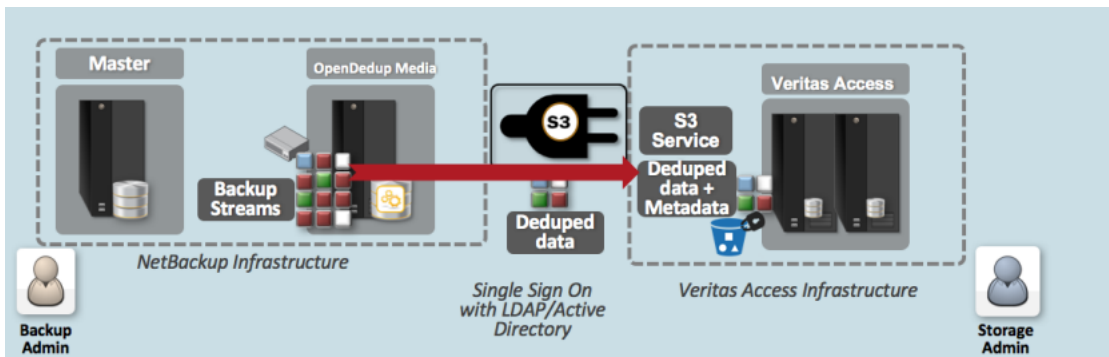
Configuring Veritas Access backup over S3 with OpenDedup and NetBackup

This chapter includes the following topics:

- Benefits of using Veritas Access with NetBackup and OpenDedup

- Workflow for OpenDedup

- System requirements for OpenDedup installation

- Backing up data using the S3 protocol with deduplication (OpenDedup and 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

Benefits of using Veritas Access with NetBackup and OpenDedup

- 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).

Figure 2-1   Veritas Access with NetBackup architecture
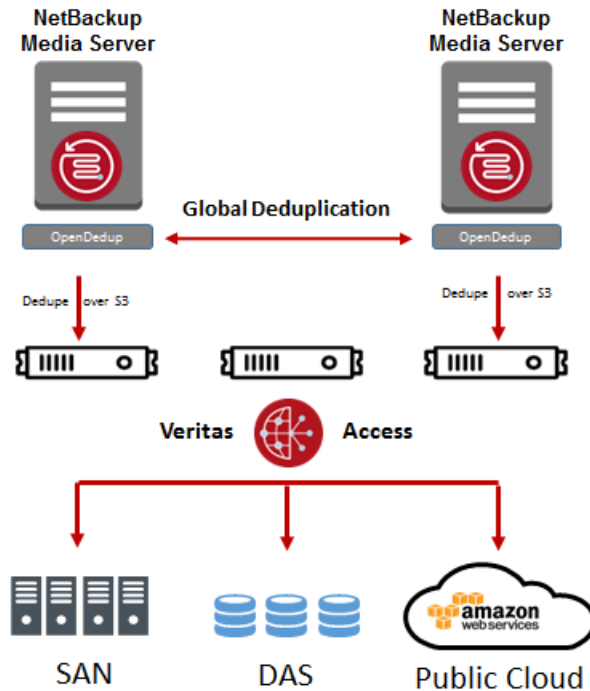
Workflow for OpenDedup

Figure 2-2 illustrates the workflow for installing and configuring OpenDedup for Veritas Access.

Figure 2-2   Workflow for OpenDedup
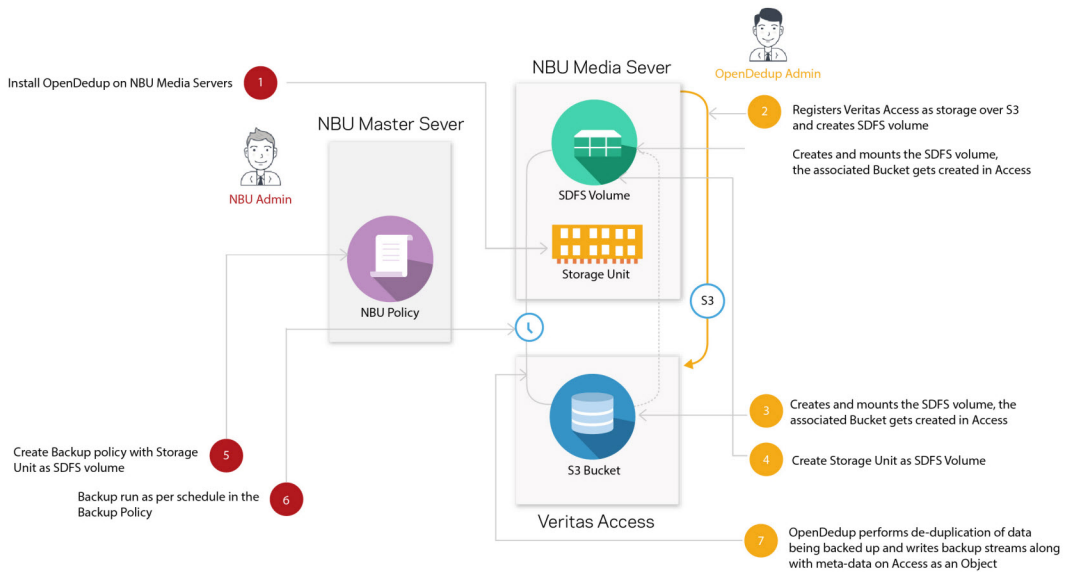
System requirements for OpenDedup installation

The system requirements for installing OpenDedup are as follows:

- 4GB base memory + 256MB RAM per TB of unique storage

- 120 MB/s per CPU core

- 200 MB/s local disk speed

- 2K IOPS for local media server disk subsystem

- 0 .2 % local disk of logical storage on media server

- 0.2% local disk storage of unique data on media server

Backing up data using the S3 protocol with deduplication (OpenDedup and NetBackup)

Registering Veritas Access as an S3 storage server and creating configuration files for SDFS

To download and install the ost package

1   On a standard NetBackup media server, run the following commands:

```
wget https://sort.veritas.com/public/repo/access/721/ost-1.0.2.tar.gz
tar -xzvf ost-1.0.2.tar.gz
cd dist
./media-install.sh
/etc/init.d/netbackup stop
/etc/init.d/netbackup start
```

You can obtain the necessary binaries on the SORT site at:

https://sort.veritas.com/public/repo/access/721/ost-1.0.2.tar.gz

https://sort.veritas.com/public/repo/access/721/sdfs-latest.rpm

2   On the NetBackup master server, run the following commands:

```
./master-install.sh
/etc/init.d/netbackup stop
/etc/init.d/netbackup start
```

To create an SDFS volume

1   On Veritas Access S3 storage, run the following commands:

```
sudo mkfs.sdfs --volume-name=pool0 --volume-capacity=1TB --aws-enabled true --cloud-access-key
access-key --cloud-secret-key secret-key --cloud-bucket-name unique bucket name
--cloud-url <veritas-access-s3-url> --simple-s3 --cloud-disable-test=true
```

2   Mount the SDFS volume under `/opendedupe/volumes/`.

```
mkdir /opendedupe/volumes/pool0
```

```
mount -t sdfs pool0 /opendedupe/volumes/pool0
```

The `mount` command creates a bucket on the Veritas Access cluster. The mount process might time out with an error. If it does, wait two minutes and try again.

3   (Optional) Add the volume to `fstab` by adding the following line in: `/etc/fstab`.

```
pool0 /opendedupe/volumes/pool0 sdfs defaults 0 0
```
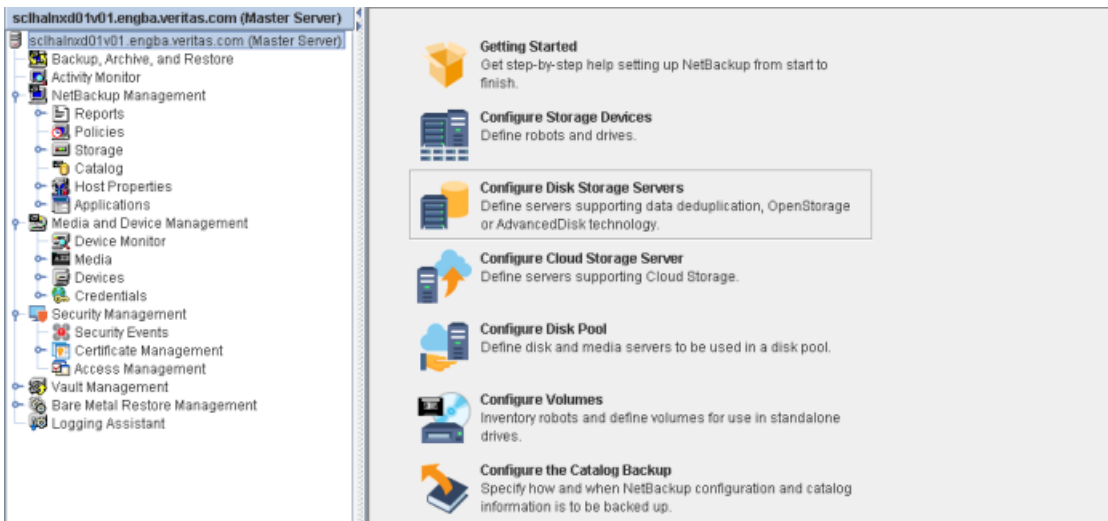
4   Edit `/etc/sdfs/ostconfig.xml` as follows.

Tunable:

- I/O chunk-size=10240
- block-size=10MB
- allocation-size=53687091200
- average-chunk-size=8192

Creating an OST disk pool and STU in the NetBackup console

To create an OST disk pool and 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.

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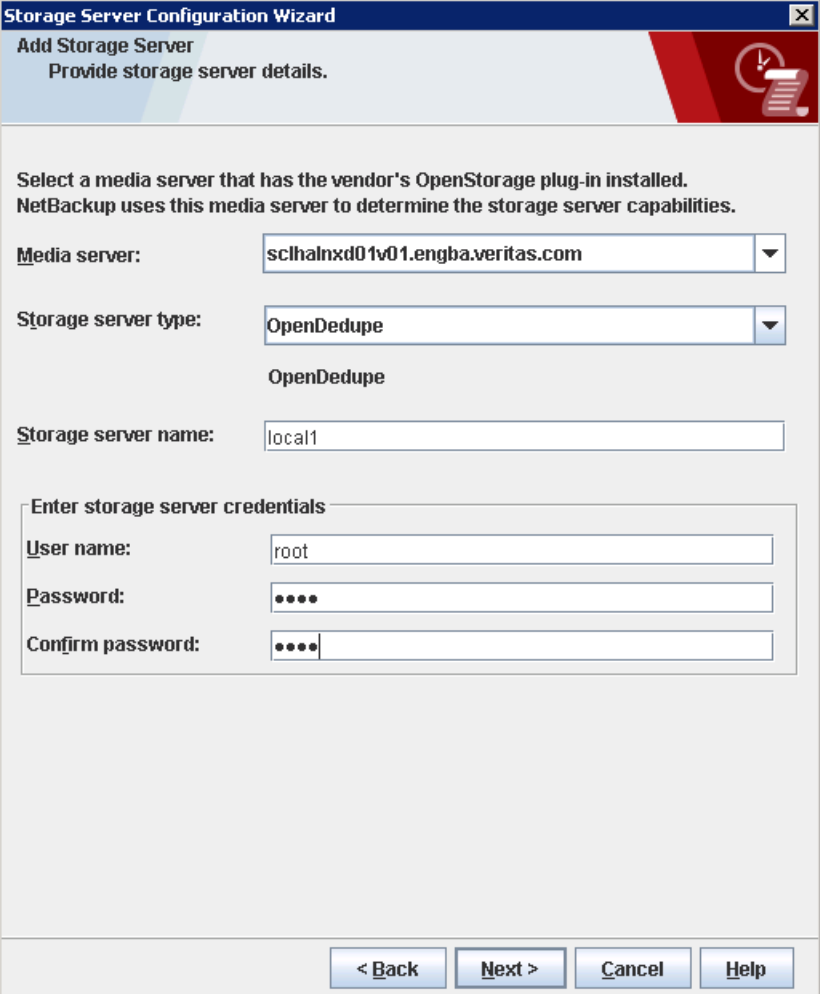
- **Storage server type**: OpenDedupe

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.

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.
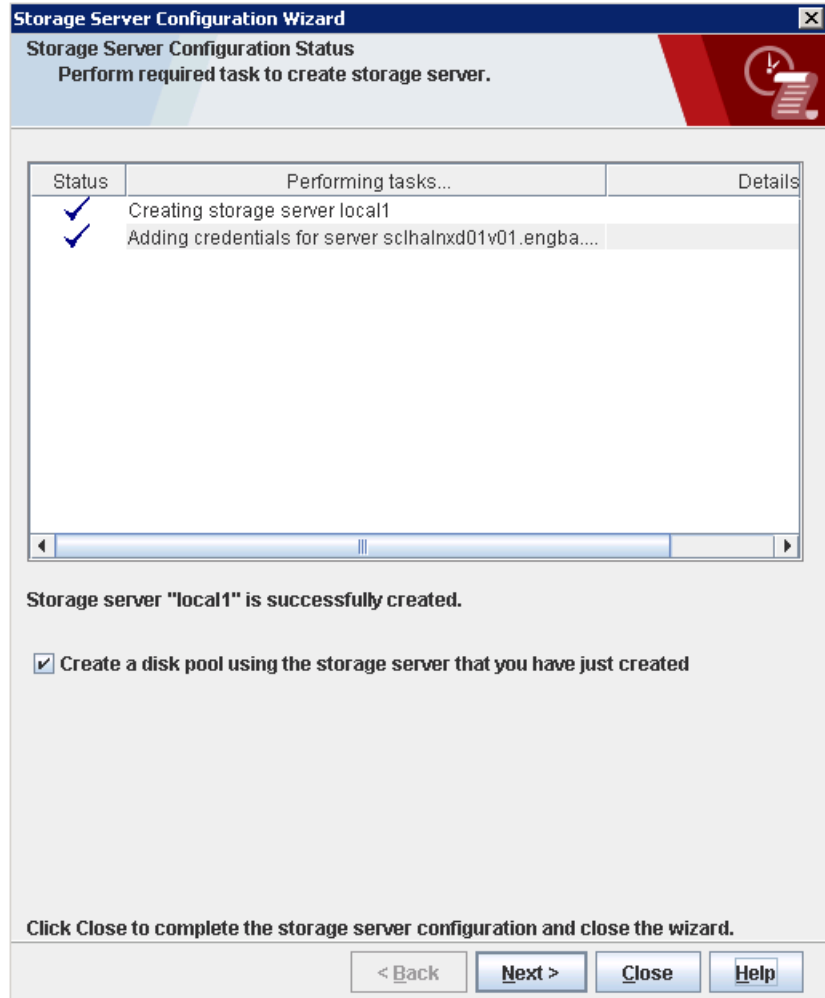
6 Select the storage pool that was just created.

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**.

Storage Server Configuration Wizard   ☒

Storage Unit Creation
    Enter details to create storage unit.

Disk pool: nbuvoldisk2

Storage server type: OpenDedupe

Storage unit name: nbuvoldisk2-stu

┌─ Media Server ──┐
│   │
│   ○ Use any available media server to transport data   │
│   │
│   ◉ Only use the selected media servers: │
│   │
│   ┌──────────────────── Media Servers ──────────────────┐   │
│   │ ☑ sclhalnxd01v01.engba.veritas.com   │   │
│   │   │   │
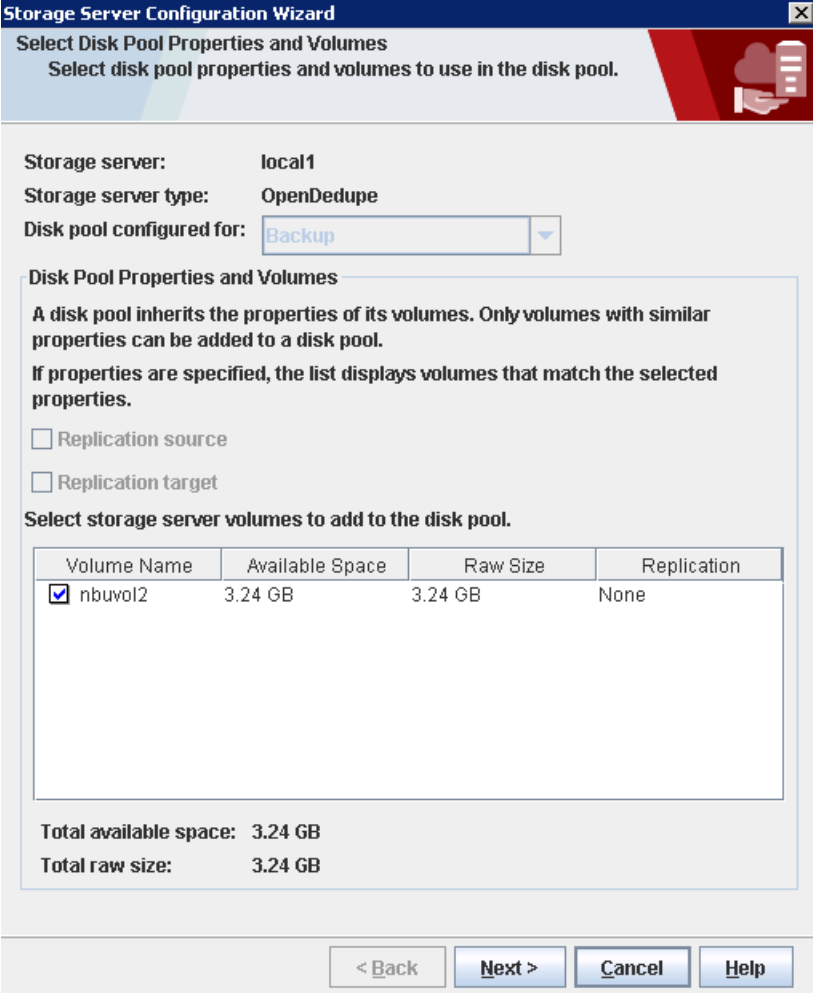│   │   │   │
│   │   │   │
│   └──┘   │
│   │
│   │
│   Ma_x_imum concurrent jobs: [1 ▲▼]   │
│   │
│   Maximum fragment size: [524288]   Megabytes   │
│   │
│   │
│   │
└──┘

                    [< _B_ack]   [_N_ext >]   [_C_ancel]   [_H_elp]

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 the section called "Registering Veritas Access as an S3 storage server and creating configuration files for SDFS" on page 10.

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 designated in the "Installing and configuring the OpenDedup OST connector on NetBackup" section.

See "Creating an OST disk pool and STU in the NetBackup console" on page 11.

See the section called "Registering Veritas Access as an S3 storage server and creating configuration files for SDFS" on page 10.

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 the section called "Registering Veritas Access as an S3 storage server and creating configuration files for SDFS" on page 10.

2   Run the `mkfs.sdfs` command for each additional SDFS volume.

```
sudo mkfs.sdfs --volume-name=pool1 --volume-capacity=1TB --aws-enabled true --cloud-access-key
access-key --cloud-secret-key secret-key --cloud-bucket-name
unique bucket name
```

3   Create a mount point for each additional volume under `/opendedupe/volumes/`.

```
mkdir /opendedupe/volumes/pool1
mount -t sdfs pool1 /opendedupe/volumes/pool1
```

4 Mount the new volume and get the control port number of the additional volume.

The port number is appended to the file system column when running `df -h`.

In the example below, `pool0` has a tcp control port of `6442` and `pool1` has a control port of `6443`.

```
[root@ngsfdellpe-03 /]# df -h
Filesystem              Size  Used Avail Use% Mounted on
/dev/sde1               229G   50G  167G  24% /
tmpfs                   3.9G   72K  3.9G  ·1% /dev/shm
/dev/sda1               190M   44M  136M  25% /boot
sdfs:/etc/sdfs/svol4-volume-cfg.xml:6442
                        201G  2.1G  199G   2% /opendedupe/volumes/svol4
sdfs:/etc/sdfs/svol10-volume-cfg.xml:6443
                         51G   12G   39G  23% /opendedupe/volumes/svol10
[root@ngsfdellpe-03 /]# █
```

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

In the new <CONNECTION> tag, add the port identified in Step 4 to the <URL> tag (https://localhost:6443/).

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

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>
pool0
</LSU_NAME>
<URL>
https://localhost:6442/
</URL>
<!--PASSWD - The password of the volume if one is required for this sdfs volume -->
<PASSWD>passwd</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>
pool1
</LSU_NAME>
<URL>
https://localhost:6443/
</URL>
<!--PASSWD - The password of the volume if one is required for this sdfs volume -->
```

```
<PASSWD>passwd</PASSWD>
<!--
<SERVER_SHARE_PATH>
A_SUBDIRECTORY_UNDER_THE_MOUNT_PATH
</SERVER_SHARE_PATH>
-->
</CONNECTION>
</CONNECTIONS>
```

Configuring backup and restore using NetBackup policies

This chapter includes the following topics:

- Backup and restore

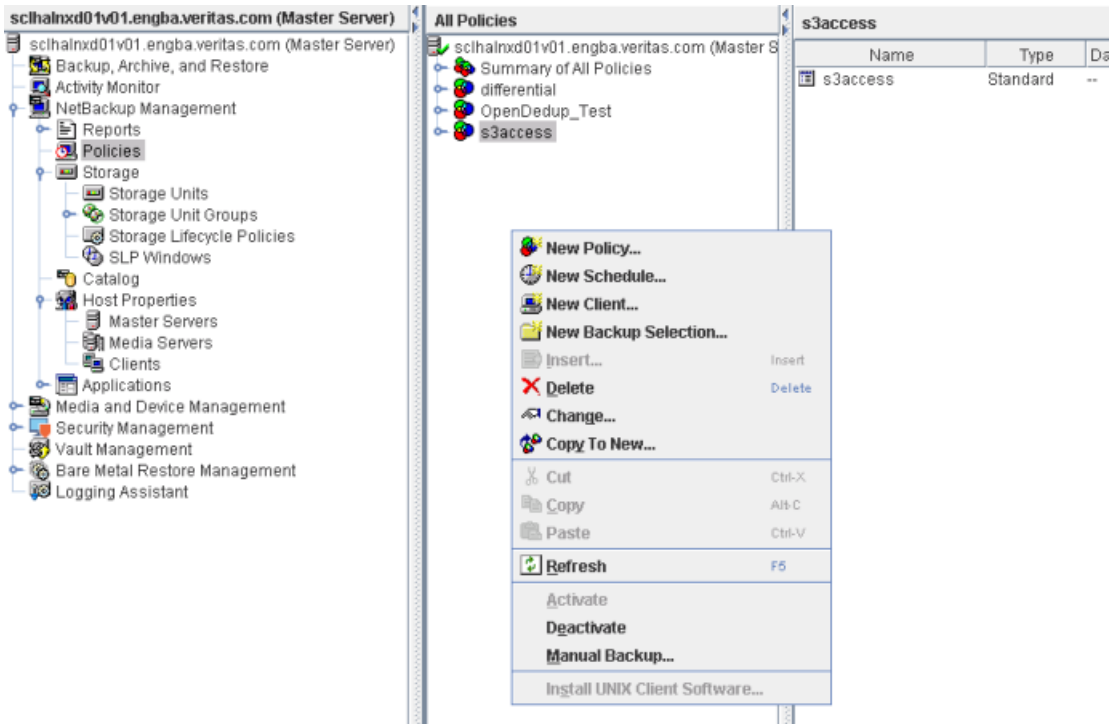- Running a backup policy manually

- Restoring backed up files

Backup and restore

After completing the configurations, the following are the backup and restore steps.
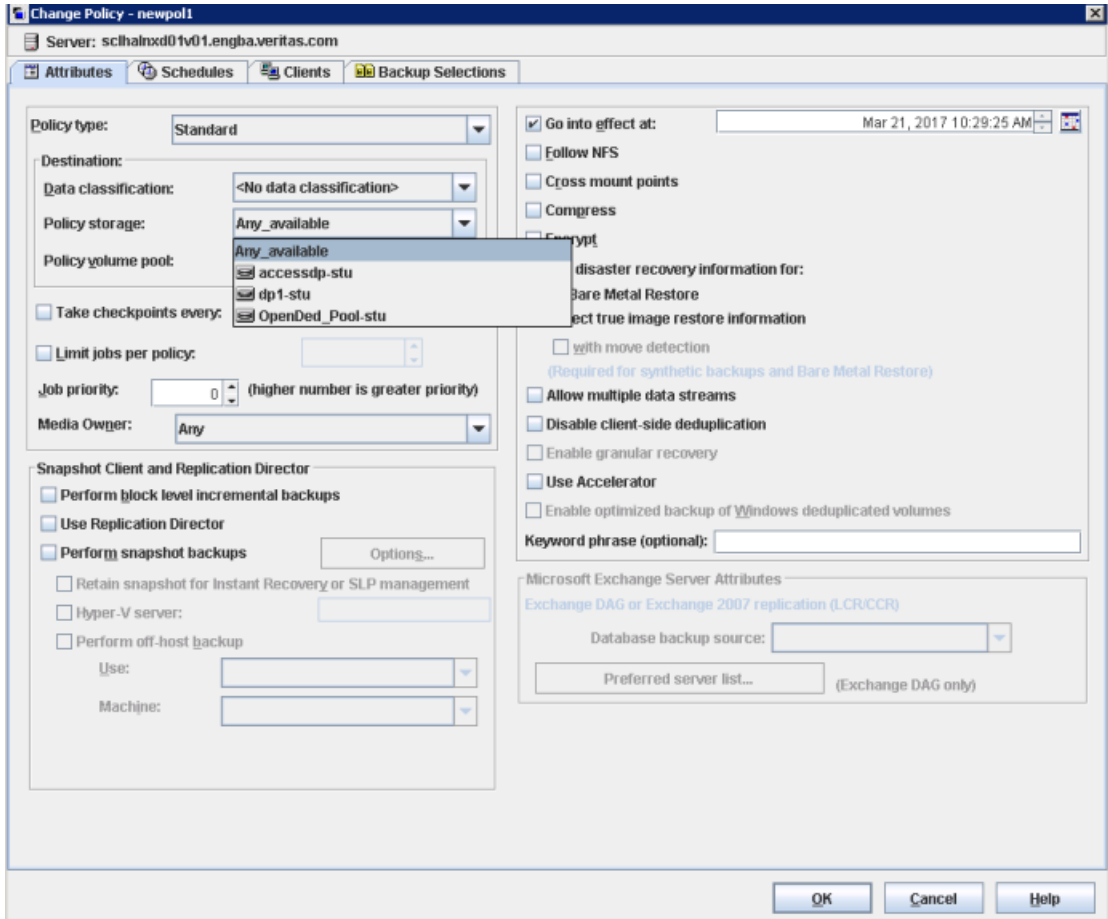
Policy creation

To create policies

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

2 Provide the following information for policy creation.

- Policy name

- From the **Attributes** tab, select the appropriate storage unit under **Policy storage**.

Note: The **Policy Storage** selection should be the storage unit created for OpenDedup earlier.

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

4 Provide client information under the **Clients** tab.

5 Provide the folders that need to be backed up under **Backup Selections**.

Running a backup policy manually

To run a backup policy manually

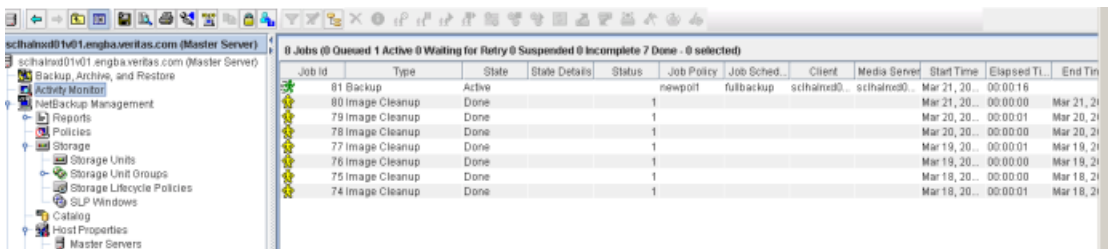1   Once the policy is created, right-click under **All Policies**, and click on **manual backup**.
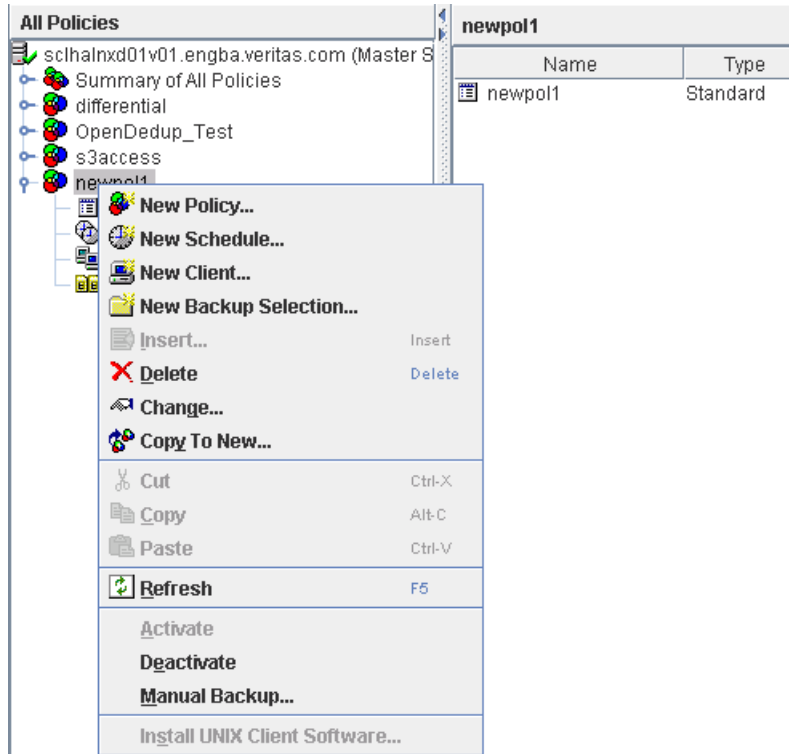
2 Select the schedule that you want to use and click **OK**.
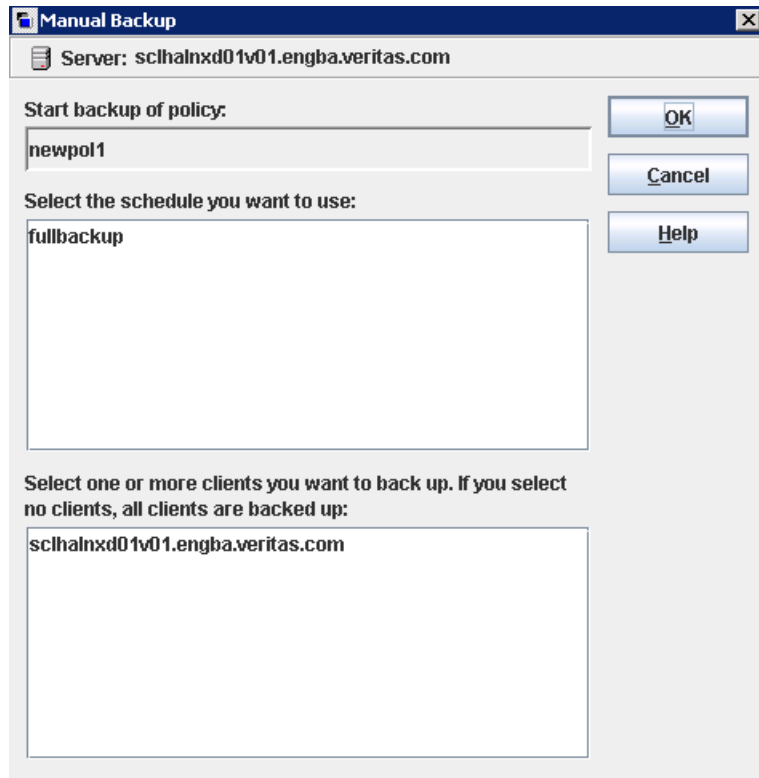
This starts the manual backup with the policy.

3 To verify the status of the backup, go to **Activity Monitor**.

4 Select the appropriate job from the displayed jobs.

5 Click on the **Detailed Status** tab in the new window to check on the status of the backup.

Job ID:	81	Job State:	Done (Successful)

Job Overview | **Detailed Status** | Job Hierarchy

Attempt:	1		Attempt Started:	Mar 21, 2017 10:36:56 AM
Job PID:	11321		Attempt Elapsed:	00:00:18
Storage Unit:	accessdp-stu		Attempt Ended:	Mar 21, 2017 10:37:14 AM
Media Server:	sclhalnxd01v01.engba.veritas.com		KB/Sec:	2470
Transport Type:	LAN			

Status:

```
Mar 21, 2017 10:36:56 AM - Info bptm (pid=11348) using 262144 data buffer size
Mar 21, 2017 10:36:56 AM - Info bptm (pid=11348) using 30 data buffers
Mar 21, 2017 10:36:58 AM - Info bptm (pid=11348) start backup
Mar 21, 2017 10:36:58 AM - begin writing
Mar 21, 2017 10:37:12 AM - Info bpbkar (pid=11327) bpbkar waited 0 times for empty buffer, delayed 0 times
Mar 21, 2017 10:37:12 AM - Info bptm (pid=11348) waited for full buffer 78 times, delayed 929 times
Mar 21, 2017 10:37:13 AM - Info bptm (pid=11348) EXITING with status 0 <----------
Mar 21, 2017 10:37:13 AM - Info bpbrm (pid=11321) validating image for client sclhalnxd01v01.engba.veritas.com
Mar 21, 2017 10:37:14 AM - Info bpbkar (pid=11327) done. status: 0: the requested operation was successfully completed
Mar 21, 2017 10:37:14 AM - end writing; write time: 0:00:16
the requested operation was successfully completed  (0)
```

Current Kilobytes Written:	34976	Estimated Kilobytes:	0
Current Files Written:	3228	Estimated Files:	0
Current File:			

Troubleshooter...

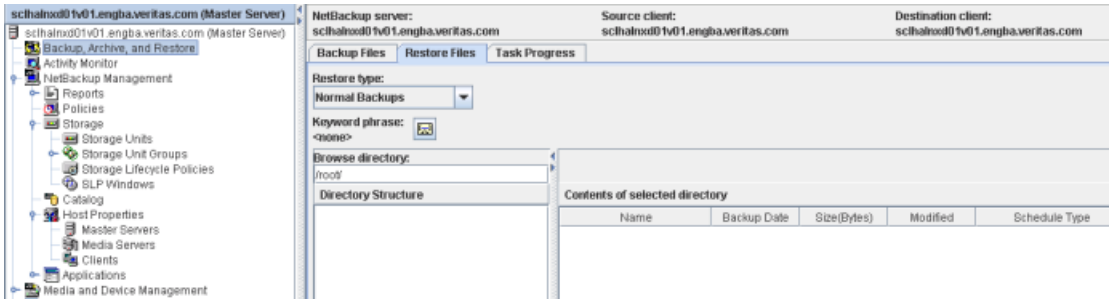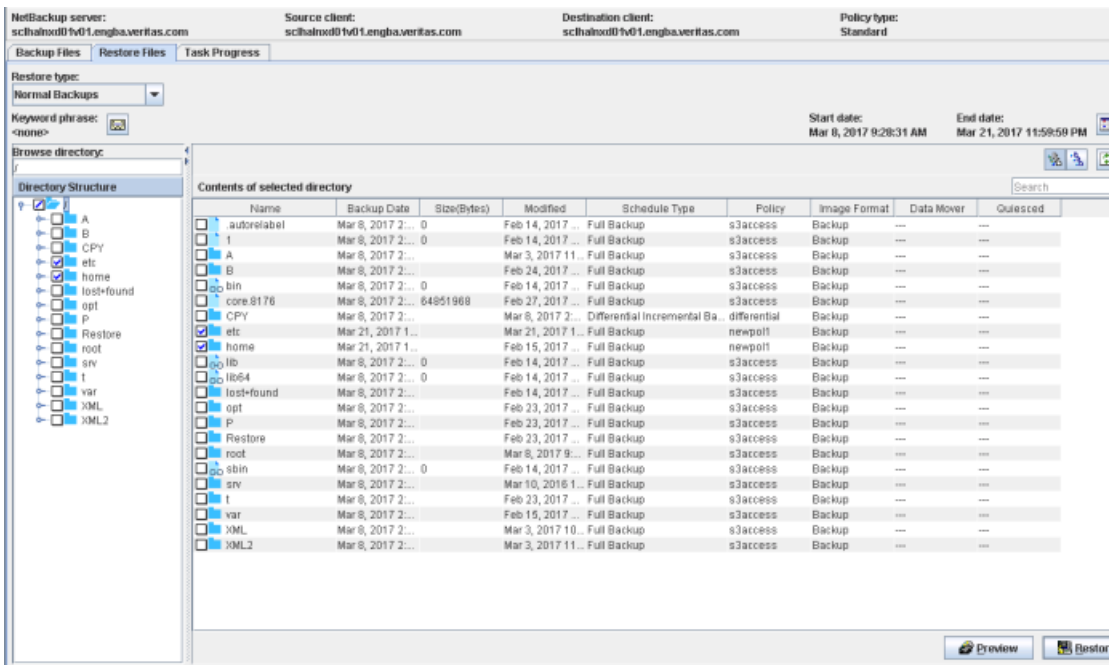Percent Complete: 100%

Refresh | Close | Help

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**.

3 Go to the browse directory and select the appropriate files to restore and click **Restore**.

4 Provide the location where the files should be restored.

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

Troubleshooting

This chapter includes the following topics:

- Log locations for troubleshooting
- Additional resources

Log locations for troubleshooting

Veritas Access S3 logs

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

SDFS logs

SDFS creates its logs under
`/var/logs/sdfs/<volume-name>-volume-cfg.xml.log`. Errors can be identified in this log file.

OST plug-in logs

The OpenDedup OST plug-in log can be found in `/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
```

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.

- *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.