

HP OpenStorage (OST) Plug-in for Symantec NetBackup using HP StoreOnce Backup Systems Setup Instructions

HP Part Number: Z7550-96079a
Published: April 2015



© Copyright 2013, 2015 Hewlett-Packard Development Company, L.P.

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Acknowledgements

Microsoft®, Windows®, Windows XP, ®and Windows NT® are U.S. registered trademarks of Microsoft Corporation.

Export Requirements

You may not export or re-export this document or any copy or adaptation in violation of export laws or regulations.

Without limiting the foregoing, this document may not be exported, re-exported, transferred or downloaded to or within (or to a national resident of) countries under U.S. economic embargo, including Cuba, Iran, North Korea, Sudan, and Syria. This list is subject to change.

This document may not be exported, re-exported, transferred, or downloaded to persons or entities listed on the U.S. Department of Commerce Denied Persons List, Entity List of proliferation concern or on any U.S. Treasury Department Designated Nationals exclusion list, or to parties directly or indirectly involved in the development or production of nuclear, chemical, biological weapons, or in missile technology programs as specified in the U.S. Export Administration Regulations (15 CFR 744).

Contents

| | | |
|----|---|----|
| 1 | Introduction..... | 4 |
| | Overview..... | 4 |
| | Terminology..... | 4 |
| 2 | Prerequisites for the OST plug-in..... | 6 |
| 3 | Installing, updating, and uninstalling the OST plug-in..... | 7 |
| | Downloading the OST plug-in..... | 7 |
| | Installing/Updating the OST plug-in with NetBackup..... | 7 |
| | Uninstalling the OST plug-in..... | 8 |
| 4 | Configuring the OST plug-in..... | 10 |
| | Configuring OST plug-in using IPv6 addressing..... | 11 |
| 5 | Setting up Auto Image Replication (A.I.R.) with NetBackup..... | 12 |
| | About A.I.R..... | 12 |
| | A.I.R. Prerequisites..... | 13 |
| | Setting up Un-targeted A.I.R..... | 13 |
| | Setting up Targeted A.I.R..... | 17 |
| 6 | Setting up other NetBackup functions..... | 22 |
| 7 | Setting up NetBackup with StoreOnce Catalyst Stores..... | 23 |
| | StoreOnce Catalyst Stores..... | 23 |
| | StoreOnce Federated Catalyst Stores..... | 23 |
| 8 | Setting up NetBackup with the StoreOnce Catalyst over Fibre Channel interface..... | 26 |
| | About the StoreOnce Catalyst over Fibre Channel interface..... | 26 |
| | StoreOnce Catalyst over Fibre Channel interface prerequisites..... | 26 |
| | Setting up StoreOnce Catalyst over Fibre Channel..... | 27 |
| 9 | Setting up NetBackup with Granular Recovery Technology (GRT)..... | 30 |
| 10 | Setting up Symantec NetBackup Accelerator with HP StoreOnce Catalyst..... | 31 |
| | Configuring Accelerator..... | 31 |
| | Verifying the Accelerator Configuration..... | 31 |
| | Accelerated Backups for File Systems using HP StoreOnce Open Storage Plug-in for NetBackup..... | 32 |
| | Accelerated Backups for VMware using HP StoreOnce Open Storage Plug-in for NetBackup..... | 33 |
| | Restoring VMware Accelerated Backups..... | 41 |
| 11 | Troubleshooting..... | 46 |
| | Index..... | 49 |

1 Introduction

This guide provides information on the HP OpenStorage (OST) plug-in version 3.1 for Symantec NetBackup and details instructions on installing, updating, and configuring the OST plug-in. Setup details are provided for other NetBackup functions in addition to instructions for setting up NetBackup with:

- Un-targeted and Targeted Auto Image Replication (A.I.R.) operations
- StoreOnce Catalyst over Fibre Channel interface operation
- StoreOnce Catalyst stores and Federated Catalyst stores
- Granular Recovery Technology (GRT)
- NetBackup Accelerator for File Systems and VMware

Troubleshooting and uninstallation information is also provided.

This chapter provides an overview of the OST plug-in and provides definitions for common terms used throughout this guide.

Overview

The OST plug-in is a Symantec backup interface that allows intelligent storage devices, like the HP StoreOnce Backup systems, to work with Symantec's NetBackup software. OST provides NetBackup administrators with advanced capabilities such as optimized duplication and A.I.R.

The OST plug-in is installed on NetBackup media servers. It uses a StoreOnce Catalyst interface to interact with the HP StoreOnce Backup systems.

NOTE: All OST plug-in operations supported on version 3.1 for physical StoreOnce appliances are also supported on Virtual StoreOnce Appliances (VSA). VSAs hosted on VMware ESX Servers, Microsoft Hyper-V, and Linux KVM are supported. For more information, see the *HP StoreOnce VSA Backup system user guide* for software version 3.12.0.

Terminology

Table 1 (page 4) describes commonly-used terms used throughout this guide.

Table 1 Terminology

| Terminology | Description |
|---------------------------------|---|
| Accelerator | A NetBackup feature that facilitates intelligent backups to disk at the cost and speed of an incremental backup using change detection techniques on the client |
| Auto Image Replication (A.I.R.) | A NetBackup feature that protects against site outages by replicating backups between NetBackup domains |
| Backup Image | User data represented with header and content files |
| Client | Systems that are to be protected through the use of the NetBackup backup software |
| Disk pool | A collection of disk volumes. It is the storage destination of a NetBackup storage unit. |
| Disk volume | StoreOnce Catalyst Store |
| Granular Recovery Technology | A feature that allows select items to be restored from database backups. |
| Logical Storage Unit (LSU) | StoreOnce Catalyst Store |
| Master server | A system with a NetBackup master server installed |
| Media server | A system with a NetBackup media server installed along with the OST plug-in |

Table 1 Terminology *(continued)*

| Terminology | Description |
|-----------------------|--|
| Optimized Duplication | A low bandwidth copy operation |
| OST | OpenStorage |
| OST storage server | An HP StoreOnce backup system appliance |
| Storage unit | A label that NetBackup is associated with physical storage |

2 Prerequisites for the OST plug-in

This section describes media server prerequisites that should be considered before installing the OST plug-in for Symantec NetBackup.

Operating systems

Table 2 OST support matrix for Operating Systems and Interfaces

| Operating Systems Supported | Ethernet network supported? | Fibre Channel network supported? |
|---|-----------------------------|----------------------------------|
| Microsoft Windows Server 2008 R2 (x64) | √ | √ |
| Microsoft Windows Server 2012 R2 (x64) | √ | √ |
| RedHat Enterprise Linux 5.x (x64) | √ | √ |
| RedHat Enterprise Linux 6.x (x64) | √ | √ |
| SuSE Linux Enterprise Server 10.x (x64) | √ | √ |
| SuSE Linux Enterprise Server 11.x (x64) | √ | √ |
| HP-UX 11.31 (IA-64) | √ | √ |
| AIX 6.1 (x64) | √ | – |
| AIX 7.1 (x64) | √ | – |
| Solaris 10 (SPARC 64) | √ | – |
| Solaris 11 (SPARC 64) | √ | – |

¹ StoreOnce Catalyst over Fibre Channel is only supported on SuSE 11 SP2 and lower.

Symantec NetBackup

The OST plug-in works with the following NetBackup versions:

- 7.5
- 7.6

NOTE: Be sure to observe the following notes:

- While installing NetBackup, be sure to take note of and appropriately resolve all warnings and errors encountered during pre-install checks. Failure to do so may impact backup operations later.
- You must install NetBackup first, and then install the OST plug-in.

3 Installing, updating, and uninstalling the OST plug-in

Downloading the OST plug-in

Download the OST plug-in installer zip or tar file onto NetBackup media servers. Find the files at <http://software.hp.com> and navigate to **HP Storage**→**Storage Software**→**StoreOnce Free Software**. (Refer to your sales contact for user ID and password information.)

Installing/Updating the OST plug-in with NetBackup

Before you begin the installation, make sure that Symantec NetBackup is installed. See the *NetBackup Installation Guide* for its installation instructions.

❗ **IMPORTANT:** If you are installing the OST plug-in version 3.1 on AIX, ensure that you use the appropriate .rpm file before completing installation instructions.

- For AIX v7.1: gcc-c++-4.8.1-1.aix7.1.ppc.rpm
- For AIX v6.1: gcc-c++-4.8.1-1.aix6.1.ppc.rpm

You must install the above AIX dependency packages before proceeding.

NOTE: On Unix platforms, the OST plug-in cannot be installed on an alternative path. You must use the paths provided.

NOTE: Before completing AIX installations, observe the following:

- On AIX media servers, where IPv6 is not configured, you must configure the `/etc/netsvc.conf` file as `hosts=local4,bind4`. Failure to do so causes NetBackup to mark disk volumes as down due to latencies introduced by AIX resolving storage server addresses.
- For AIX installations, typically, the page size setting is set to 512 MB. This setting must be change to 4 GB to allow for the seamless operation of NetBackup installations. Be sure to change this setting before completing the AIX installation process. Failure to do so causes slow or unresponsive operations on the AIX server.
- On AIX media servers, when the system reports the disk volume status to the master server, delays may occur, and the system may then mark disk volumes as being down and may also mark media servers as being not active. In this case, backup operations fail, and the NetBackup Administration Console may also show poor response and, in some cases, no response. To work around this issue, execute the following steps on each of the NetBackup Media servers, and then restart NetBackup services:

```
# touch /usr/openv/netbackup/db/config/DPS_PROXYNOEXPIRE
# echo "3600" > /usr/openv/netbackup/db/config/DPS_PROXYDEFAULTSENDTMO
# echo "3600" > /usr/openv/netbackup/db/config/DPS_PROXYDEFAULTTRECVTMO
```

1. Shut down all NetBackup services using the appropriate command.

- **Windows:**

Command: `bpdwn`

Execution Path: `C:\Program Files\Veritas\NetBackup\bin`

- **Linux, HP-UX, AIX, and Solaris:**

Command: `bp.kill_all`

Execution Path: `as/usr/openv/netbackup/bin/`

2. On Windows, close any open command prompts so that environment variable changes, which occur during the OST plug-in installation, are reflected in the command prompt.

3. Run the installer.

Windows

- To install the OST plug-in version 3.1, extract the contents of the zip file, double-click the executable file, and follow the instructions.
- To upgrade from older versions to the OST plug-in version 3.1, install version 3.1 as stated above. There is no need to uninstall the existing plug-in.

NOTE: If you installed NetBackup on a path other than the default, you must use the same path when installing the OST plug-in.

During the installation, files are copied to the following locations:

- OST plug-in: `libstspihp.dll`
- Located in: `C:\Program Files\Veritas\NetBackup\bin\ost-plugins`
- Configuration files: `C:\Program Files\Hewlett-Packard\OpenStorage\3.1\config`
- Log files: `C:\Program Files\Hewlett-Packard\OpenStorage\3.1\logs`

Linux, HP-UX, AIX, and Solaris

- To install the OST plug-in version 3.1, extract the version 3.1 `<gzip -d package_name and tar -xvf _tar_file>` (for Solaris, use `gunzip` instead of `gzip`) package, execute `bash install.sh`, and then follow the remaining installation instructions.
- To update from older versions to the OST plug-in version 3.1, uninstall the existing plug-in and then install version 3.1 as stated above. See the OST plug-in user guide for your version for version-specific uninstall instructions.

During the installation, files are copied to the following locations:

- OST plug-in: `libstspihpq.so` and `libstspihpqMT.so`
- Located in: `/usr/opensv/lib/ost-plugins`
- Configuration files: `/usr/opensv/hp/ost/3.1/config`
- Log files: `/usr/opensv/hp/ost/3.1/logs`

Uninstalling the OST plug-in

NOTE: Adhere to the following notes before uninstalling the OST plug-in:

- Be sure to uninstall the OST plug-in before uninstalling Symantec NetBackup.
 - In Windows 2012, if NetBackup is uninstalled before the OST plug-in is uninstalled, the OST plug-in uninstallation process fails.
-

To uninstall the OST plug-in, complete the following steps for the appropriate operating system.

Windows

1. Shut down all NetBackup services by using the `bpdown` command.
2. Click **Start**→**Control Panel**→**Add or Remove Programs**.
3. Select **HP OST Plugin for Symantec NetBackup**.
4. Click **Uninstall**.
5. Follow the on-screen instructions. The plug-in is uninstalled, and all related files are deleted from the system; no reboot is required.

Linux, HP-UX, AIX, and Solaris:

1. Shut down all NetBackup services by using the `bp.kill_all` command.
2. Remove the OST plug-in by executing `bash uninstall.sh` from the 3.1 package.
3. Follow the on-screen instructions.

4 Configuring the OST plug-in

The OST plug-in comes with two configuration files.

- `hpost.conf`—Controls plug-in behavior
- `hpostlog.conf`—Controls plug-in logging

These files can be found at the following locations:

- In Windows: `%SystemRoot%\Program Files\Hewlett-Packard\OpenStorage\3.1\config`
- In Linux: `/usr/opensv/hp/ost/3.1/config`
- In HP-UX: `/usr/opensv/hp/ost/3.1/config`
- In AIX: `/usr/opensv/hp/ost/3.1/config`
- In Solaris: `/usr/opensv/hp/ost/3.1/config`

Refer to [Table 3 \(page 10\)](#) for a description of configuration parameters. Add comments in the `.conf` file by using `#` at the beginning of each new line. The plug-in is installed with default configurations settings.

CAUTION: Change the configuration only if you are familiar with the use and outcome of these parameters. Improper configuration settings can cause the system to malfunction.

[Table 3 \(page 10\)](#) lists and describes parameters that can be used with the `hpostlog.conf` configuration file.

NOTE: Any changes to `hpostlog.conf` become effective without restarting NetBackup services.

Table 3 Parameters used with `hpostlog.conf` configuration file

| Parameter syntax | Description |
|---|--|
| <code>LOGLEVEL:<log level></code> | Specifies the level of logging for the OST plug-in. Default: <code>INFO</code> Valid Values: <code>VERBOSE/DEBUG/INFO/ERROR</code> Example: <code>LOGLEVEL:ERROR</code> NOTE: Note the following information when using valid values: <code>ERROR:</code> Logs only error messages <code>INFO:</code> Logs error and informational messages <code>DEBUG:</code> Provides adequate detail for troubleshooting issues <code>VERBOSE:</code> Provides the highest level of logging for tracing |
| <code>LOGFILE:<filename></code> | Specifies the user-specific log file name. Default: <code>hpOstLogFile.log</code> Example: <code>LOGFILE:hpOstLogFile.log</code> |
| <code>ROLLUPSIZE:<MB></code> | Sets the size of the log file in MBs before it is rolled over. Maximum: 50 (MB) Example: <code>ROLLUPSIZE:10</code> |
| <code>ROLLUPFILES:<count></code> | Specifies the number of rolled over log files to be kept in the filesystem. Maximum: 100 Example: <code>ROLLUPFILES:20</code> |

Configuring OST plug-in using IPv6 addressing

The OST plug-in version 3.1 supports configuring and addressing StoreOnce storage appliances using IPv6 addresses supporting all NetBackup operations that were supported with IPv4 addressing. To configure a storage server using IPv6, enter the IPv6 address in the “Storage server name” field as shown below.

Figure 1 Using IPv6 addresses

Storage Server Configuration Wizard

Add Storage Server
Provide details to create storage server

Storage server details

Storage server name: OST_server.hp.com

Storage server type: hp-StoreOnceCatalyst
hp-StoreOnceCatalyst

Select a media server that has the vendor's OpenStorage plug-in installed. NetBackup will query the storage server to determine its capabilities using this media server.

Media server: d2dblade03

Enter storage server credentials:

User name: FibreConnect

Password: xxxxxxxx

Confirm password: xxxxxxxx

< Back Next > Cancel Help

NOTE: To specify a storage server using IPv6, use an FQDN instead of an IP address. Using an IPv6 IP address will cause the storage server configuration in NetBackup to fail.

5 Setting up Auto Image Replication (A.I.R.) with NetBackup

Topics included in this section are as follows:

- [“About A.I.R.” \(page 12\)](#)
- [“A.I.R. Prerequisites” \(page 13\)](#)
- [“Setting up Un-targeted A.I.R.” \(page 13\)](#)
- [“Setting up Targeted A.I.R.” \(page 17\)](#)

About A.I.R.

The Auto Image Replication (A.I.R.) feature of NetBackup addresses the site-to-site replication challenge by allowing storage lifecycle policies to duplicate selected images between NetBackup Master Domains. The primary purpose of Auto Image Replication is to create off-site copies of mission critical backups to protect against site loss.

NetBackup A.I.R. relies on `tpman`, an HP proprietary tool, to create replication topologies between storage servers. The OST plug-in uses this information to initiate automatic replication of data. `Tpman` supports `m:n` NetBackup Domain replication topologies for A.I.R. operation.

A.I.R. comes in the following configurations:

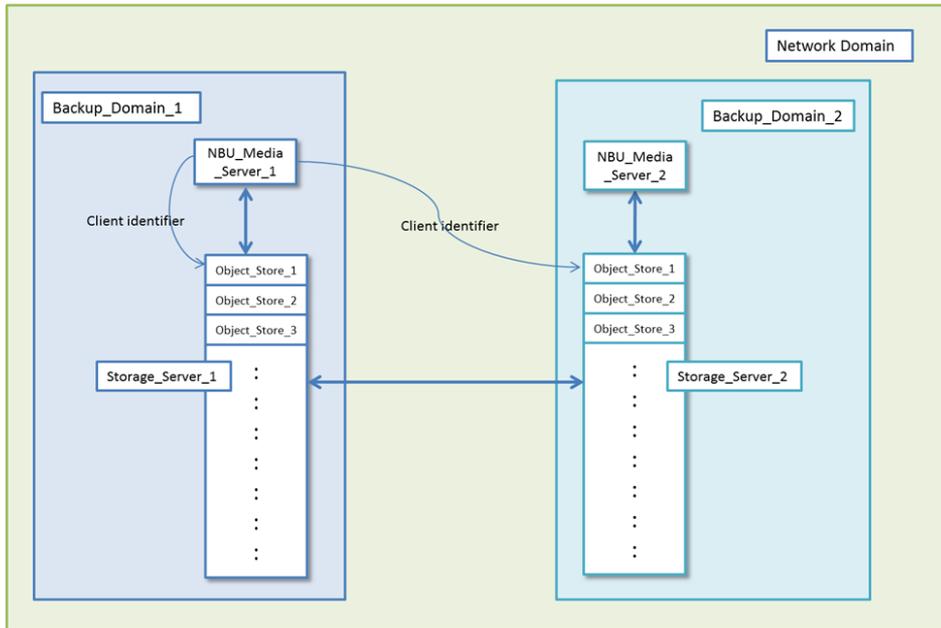
- **Untargeted A.I.R.:** The OST plug-in broadcasts the images based on the `m:n` topology and you cannot choose the replication targets.
- **Targeted A.I.R.:** Targeted A.I.R. presents the set of available targets for an A.I.R. operation. You can use the OST plug-in to send data to selective targets rather than a broadcast.

NOTE: The `tpman` tool is still necessary to create the replication topology.

[Figure 2 \(page 13\)](#) provides an overview of how A.I.R. needs to be set up with the OST plug-in versions 2.1 or later. It displays some of the prerequisites that need to be satisfied before setting up A.I.R. Please see the [“A.I.R. Prerequisites” \(page 13\)](#) for complete information.

NOTE: The OST plug-in versions 2.1 through 3.0.1 only support un-targeted A.I.R. operations. Versions 3.1 and later support both un-targeted and targeted A.I.R. on NetBackup v7.6.

Figure 2 A.I.R. setup between Object_Store_1 of Storage_Server_1 and Object_Store_1 of Storage_Server_2



A.I.R. Prerequisites

Before setting up A.I.R., make sure that:

- NetBackup source and target master domains are accessible over the network to each other.
- Both source and target stores use the same client identifier for the A.I.R. operation (in case client access permission checking is enabled).
- NetBackup does not have any provisions for setting up replication topologies for third-party storage vendors. To set up replication topologies for the HP StoreOnce Backup System, storage administrators must use the tpman tool that shipped with the OST plug-in.
- The source and target master domain, A.I.R. SLP names and data classification, are exactly the same (Un-targeted A.I.R. only).
- The date and time on source and target NetBackup domains should be set to their respective current time. NetBackup delays import of images at the target master if the time stamp on the replicated image is in the future.

Setting up Un-targeted A.I.R.

To set up un-targeted A.I.R.:

1. Create stores on the source and target HP StoreOnce Backup system. (Refer to HP StoreOnce Backup system documentation at www.hp.com/go/storage/docs for more information.)
2. Set up topology:
 - a. HP provides a CLI tool (tpman) to storage administrators for replication topology setup. The tool is installed automatically after the OST plug-in is installed. The tool is located at:
 - For Windows: %SystemRoot%\Program Files\Hewlett-Packard\OpenStorage\3.1\bin
 - For Linux: /usr/opensv/hp/ost/3.1/bin
 - For HP-UX: /usr/opensv/hp/ost/3.1/bin
 - For AIX: /usr/opensv/hp/ost/3.1/bin

- b. Use the tpman tool to setup replication topology. The OST plug-in versions 3.1 and later support replication topology setup between stores. Topology can scale in an m:n fashion. Tpm usage:
- For Windows: `tpman.exe -add -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman.exe -remove -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman.exe -showtopology -store <sts:lsu> [-clientid <id>]`
- c. For all other platforms (non-Windows platforms), use tpman as follows:
- `tpman -add -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman -remove -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman -showtopology -store <sts:lsu> [-clientid <id>]`
- d. Run the add command as shown below. In the example below, StoreOnce Catalyst Store, Air_Demo_62_1, of storage server 10.11.3.62 replicates to StoreOnce Catalyst Store, Air_Demo_64_1, of storage server 10.11.3.64.

Figure 3 Running the add command example

```

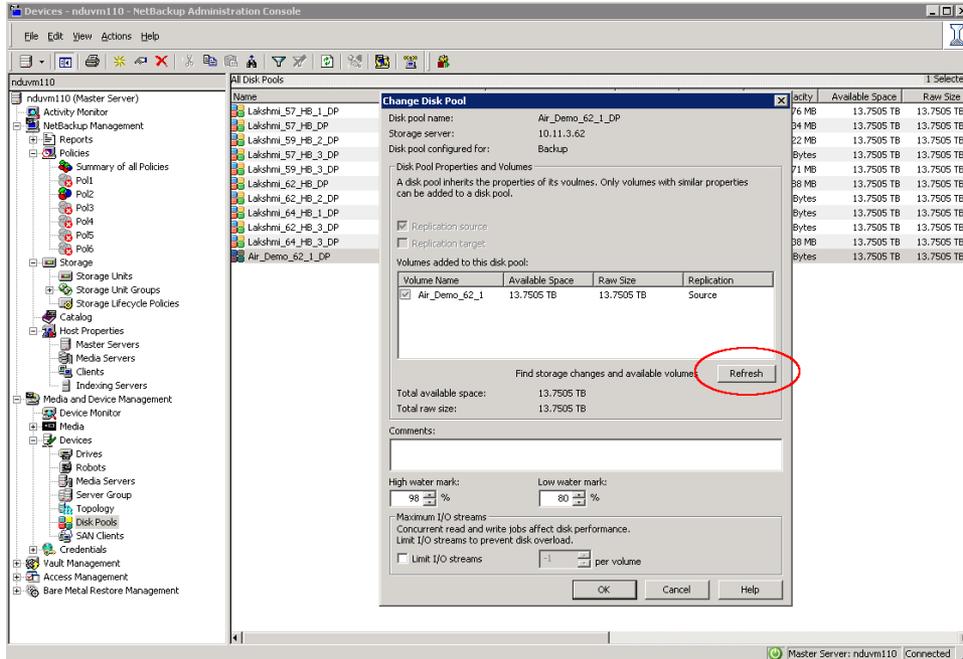
Administrator: C:\Windows\system32\cmd.exe
C:\Program Files\Hewlett-Packard\OpenStorage20\bin>tpman.exe -add -source 10.11.3.62:Air_Demo_62_1 -target 10.11.3.64:Air_Demo_64_1
Replication Topology - 10.11.3.62:Air_Demo_62_1
10.11.3.62:Air_Demo_62_1 --> 10.11.3.64:Air_Demo_64_1
C:\Program Files\Hewlett-Packard\OpenStorage20\bin>_
  
```

NOTE: Source StoreOnce Catalyst stores and target StoreOnce Catalyst stores should have same client identifiers.

3. Create storage units and disk pools out of these replication-enabled StoreOnce Catalyst stores, for use with A.I.R., and then restart NetBackup services.

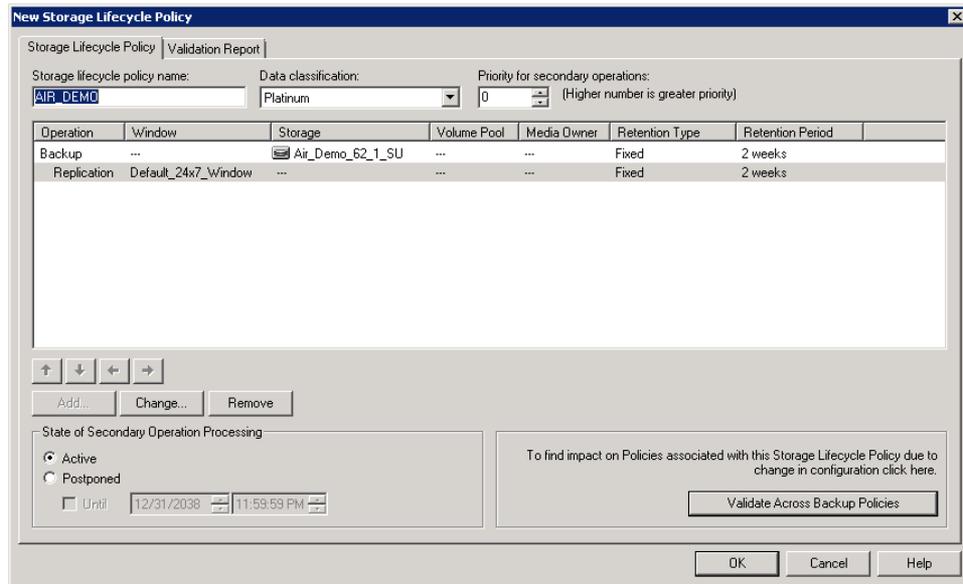
NOTE: You can change the topology of a StoreOnce Catalyst Store even after it has been added as a disk pool. If doing so, always remember to refresh the disk pool as shown below.

Figure 4 Creating storage units and disk pools from replication-enabled StoreOnce Catalyst stores



4. Create a Storage Lifecycle Policy (SLP) on the source master server as shown below.

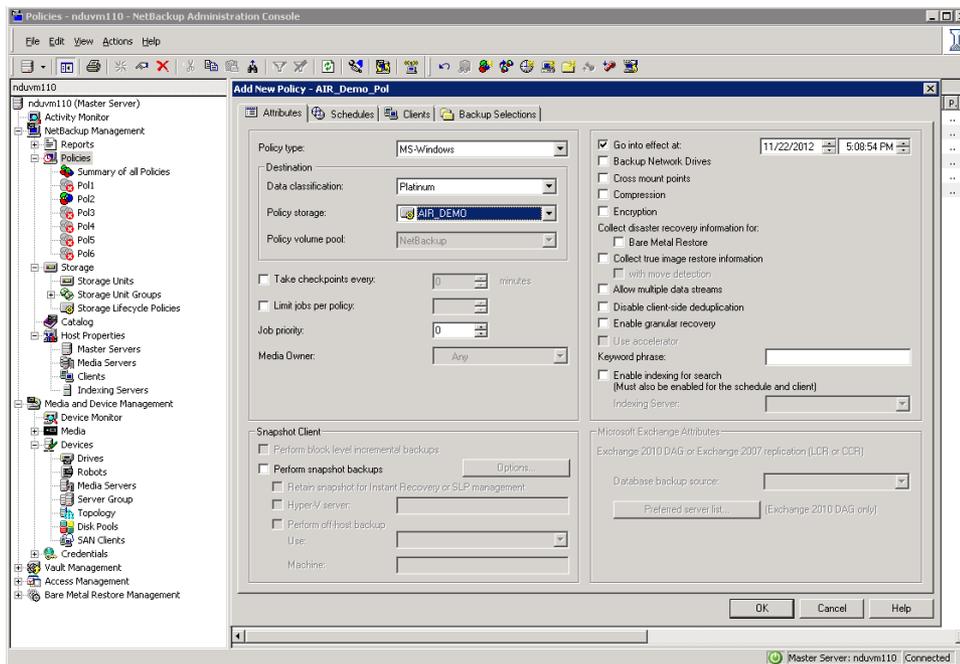
Figure 5 Creating a Storage Lifecycle Policy on the source master server



5. Create a policy that uses this SLP.

NOTE: The policy should start to backup and replicate selected backup sets to the replica as set up when using tpm.

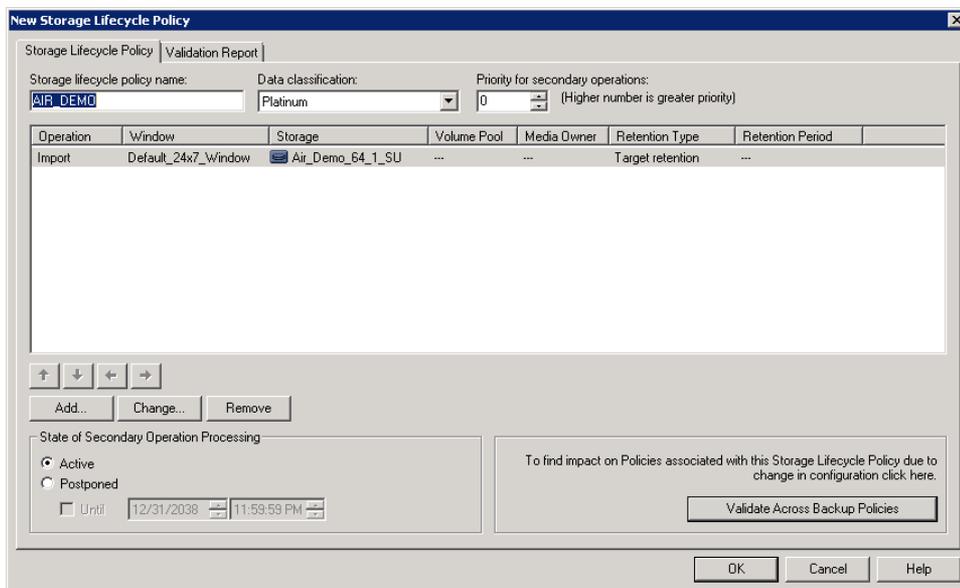
Figure 6 Creating a policy from the Storage Lifecycle Policy



6. Create an SLP on the target master server.

NOTE: Source SLP and target SLP names and their data classification must be exactly the same.

Figure 7 Creating a Storage Lifecycle Policy on the target master server



7. After the import operation for SLP is successfully created, note that the target starts polling for image replication events and starts to automatically import these images into the target domain.

NOTE: With default settings in place, it may take NetBackup up to 30 minutes until the image being imported is seen in the catalog of the other NetBackup domain. You can modify this behavior by changing configuration parameters at **host properties**→**Properties**→**SLP Parameters** in the **NetBackup Administration Console**. Please refer to the *NetBackup 7.x Administrator's Guide* for more details.

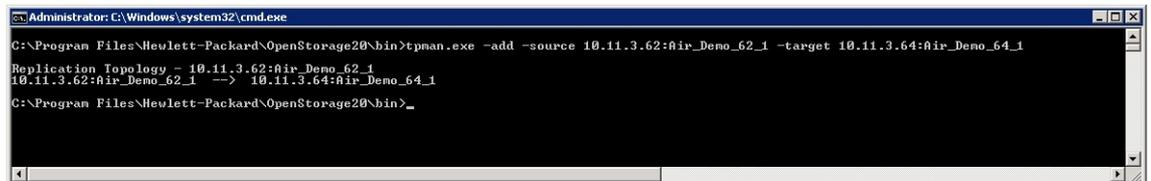
Setting up Targeted A.I.R.

Targeted A.I.R. helps replicate backup images from the source storage servers to selective storage servers in target domains. Because a trusted relationship is established between the source and target NetBackup domains with the exchange of information, the backup administrator now has a setup that ensures the replication topology will work even before any A.I.R operations are initiated.

NOTE: You must apply the device mappings file from Symantec to enable the Targeted A.I.R. feature. See “Configuring Accelerator” (page 31) to set up the device mapping file.

1. Create stores on the source and target HP StoreOnce Backup system. (Refer to HP StoreOnce Backup system documentation at www.hp.com/go/storage/docs for more information.)
2. Set up topology:
 - a. HP provides a CLI tool (tpman) to storage administrators for replication topology setup. The tool is installed automatically after the OST plug-in is installed. The tool is located at:
 - For Windows: %SystemRoot%\Program Files\Hewlett-Packard\OpenStorage\3.1\bin
 - For Linux: /usr/opensv/hp/ost/3.1/bin
 - For HP-UX: /usr/opensv/hp/ost/3.1/bin
 - For AIX: /usr/opensv/hp/ost/3.1/bin
 - b. Use the tpman tool to setup replication topology. The OST plug-in versions 3.1 and later support replication topology setup between stores. Topology can scale in an m:n fashion. Tpm usage:
 - For Windows: `tpman.exe -add -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman.exe -remove -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman.exe -showtopology -store <sts:lsu> [-clientid <id>]`
 - c. For all other platforms (non-Windows platforms), use tpman as follows:
 - `tpman -add -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman -remove -source <sts:lsu> -target <sts:lsu> [-clientid <id>]`
 - `tpman -showtopology -store <sts:lsu> [-clientid <id>]`
 - d. Run the add command as shown below. In the example below, StoreOnce Catalyst Store, Air_Demo_62_1, of storage server 10.11.3.62 replicates to StoreOnce Catalyst Store, Air_Demo_64_1, of storage server 10.11.3.64.

Figure 8 Running the add command example

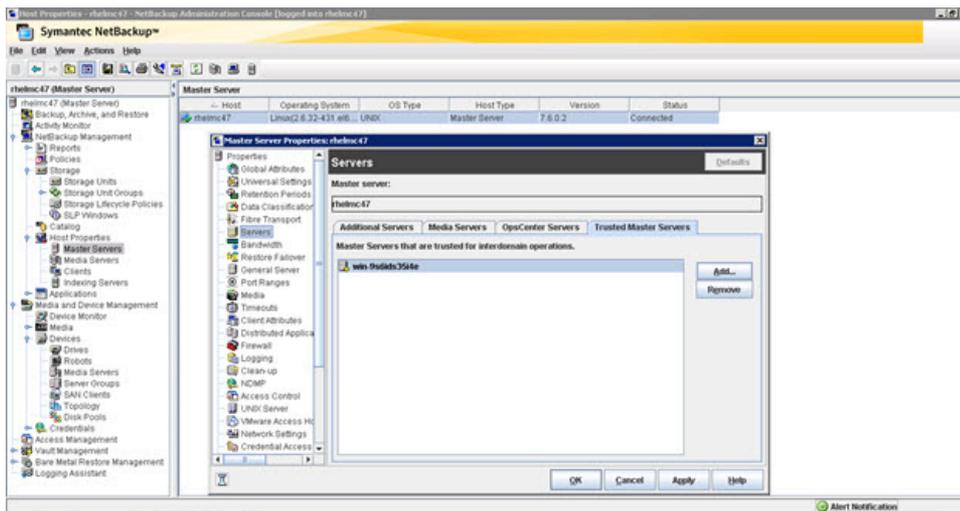


```
C:\Administrator: C:\Windows\system32\cmd.exe
C:\Program Files\Hewlett-Packard\OpenStorage20\bin>tpman.exe -add -source 10.11.3.62:Air_Demo_62_1 -target 10.11.3.64:Air_Demo_64_1
Replication Topology - 10.11.3.62:Air_Demo_62_1
10.11.3.62:Air_Demo_62_1 --> 10.11.3.64:Air_Demo_64_1
C:\Program Files\Hewlett-Packard\OpenStorage20\bin>
```

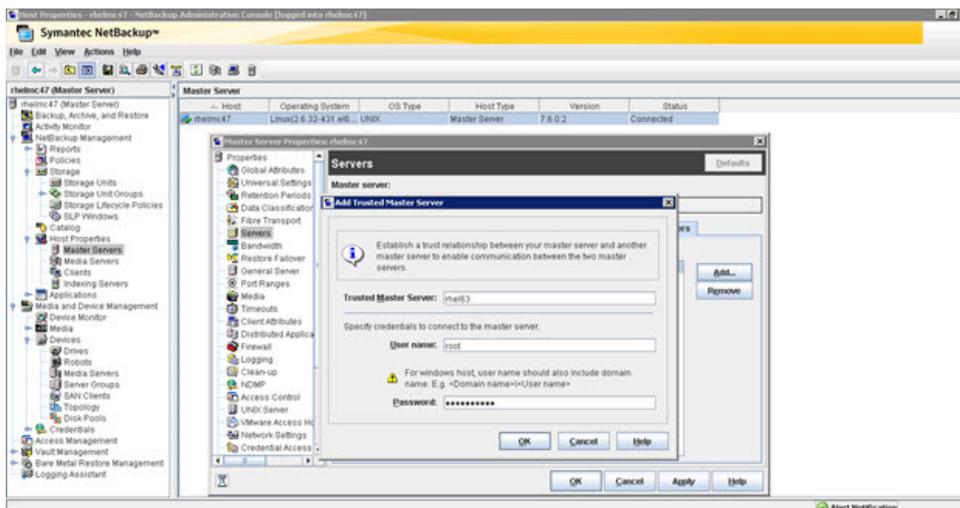
NOTE: Source StoreOnce Catalyst stores and target StoreOnce Catalyst stores should have same client identifiers.

3. You must establish a trusted master relationship between the source and target NetBackup domains in the order shown in the remaining steps.

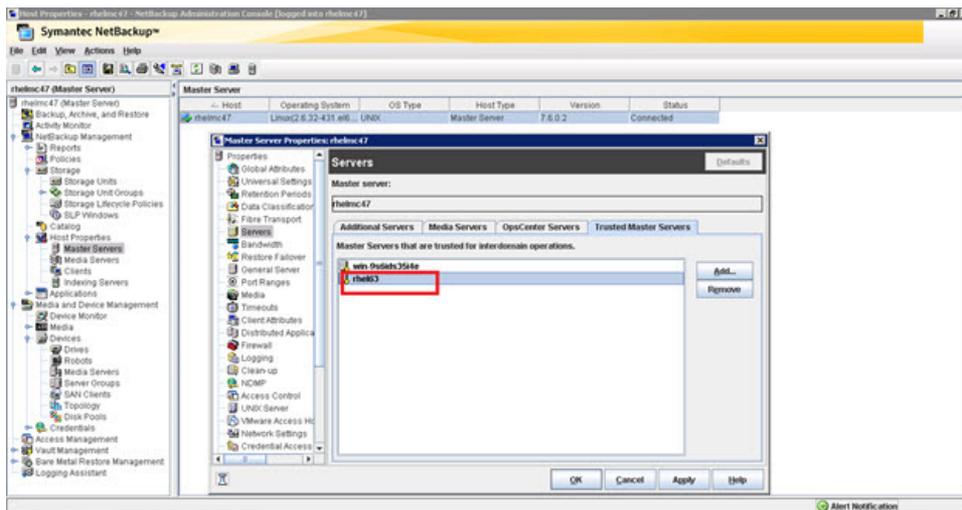
On the source NetBackup Domain (Master), navigate to **Host Properties**→**Master Servers**→**Servers**→**Trusted Master Servers**.



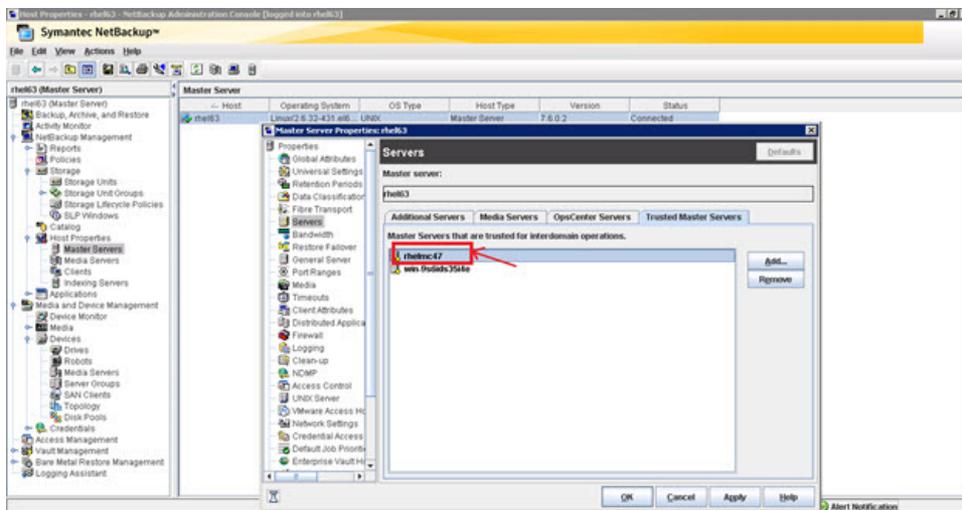
4. Click **Add**.
5. Specify the target master server and access credentials. These credentials are the same that you would use to connect to NetBackup Domain.



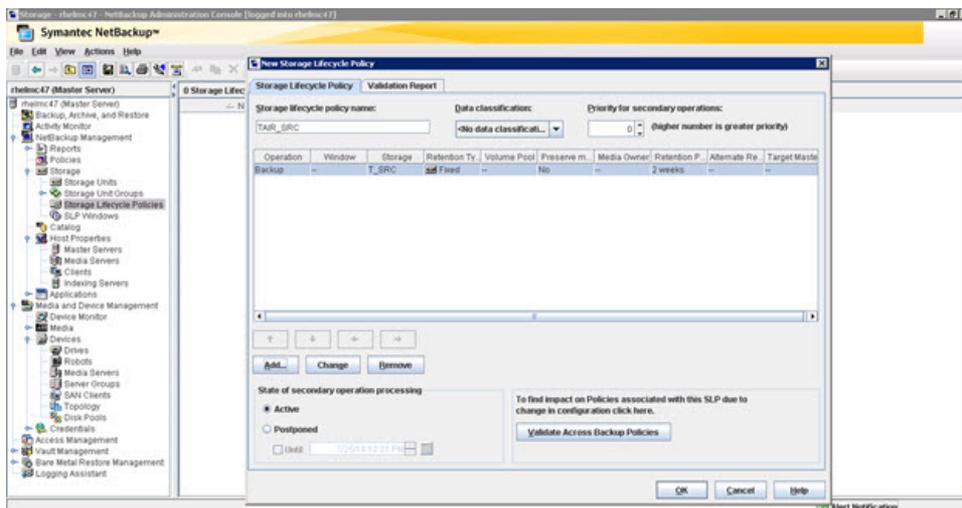
On successful completion of the operation the target master is listed under trusted master servers.

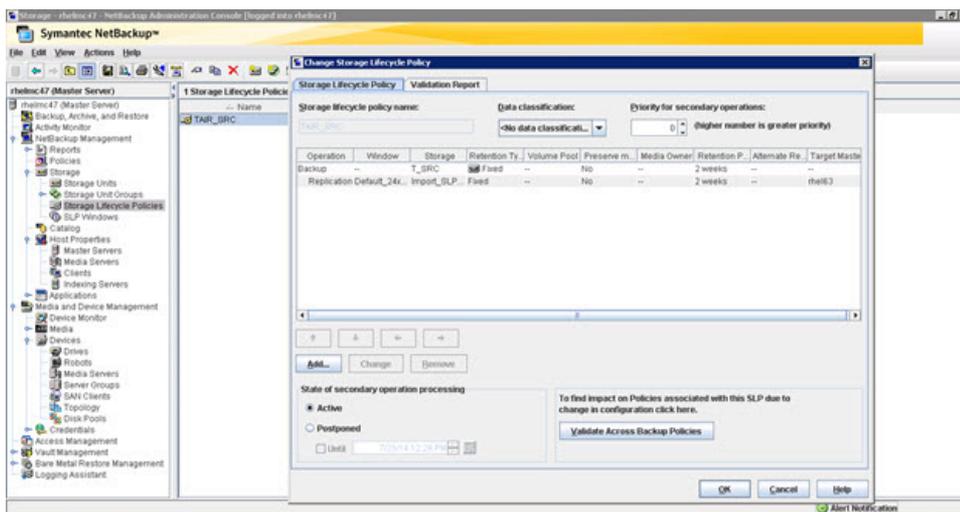
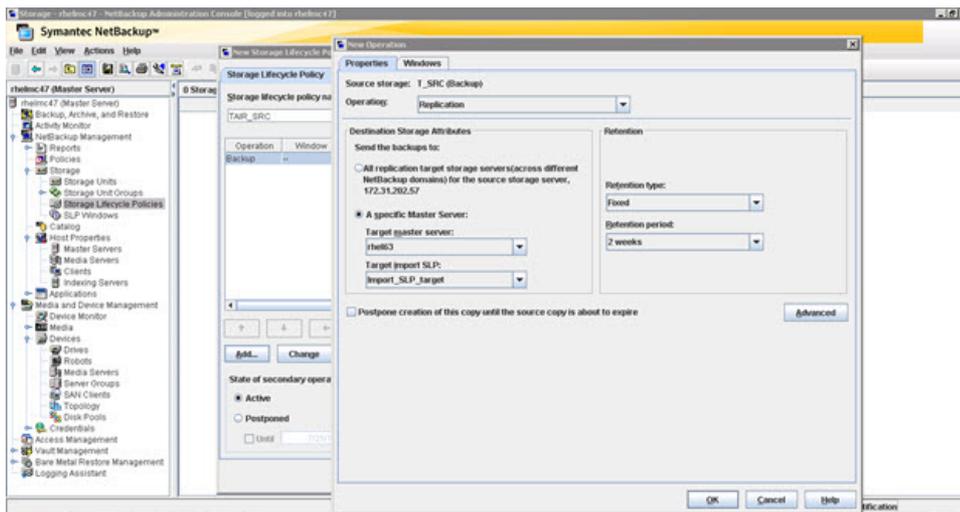


On the target master, the “trusted master servers” relationship is established automatically.



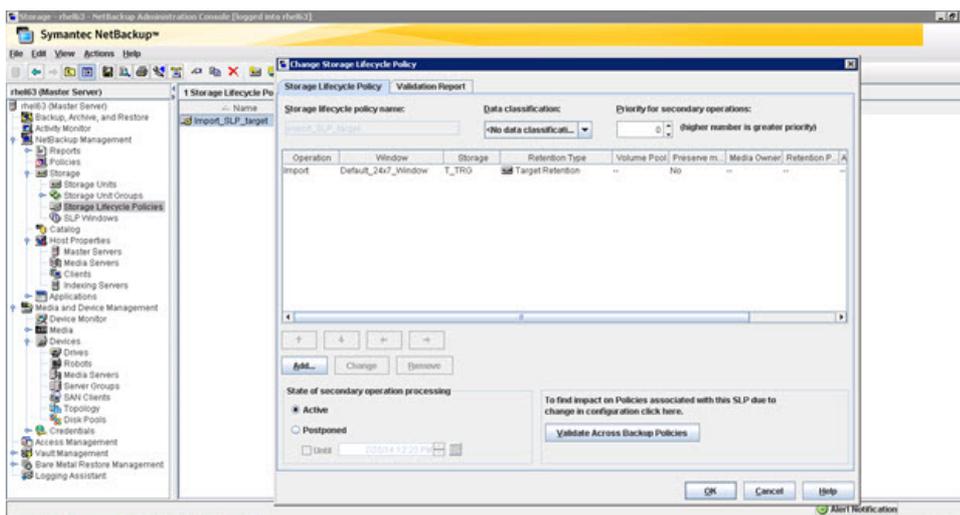
- On the source master, create an Import Storage Lifecycle Policy consisting of a Backup followed by a Replication.



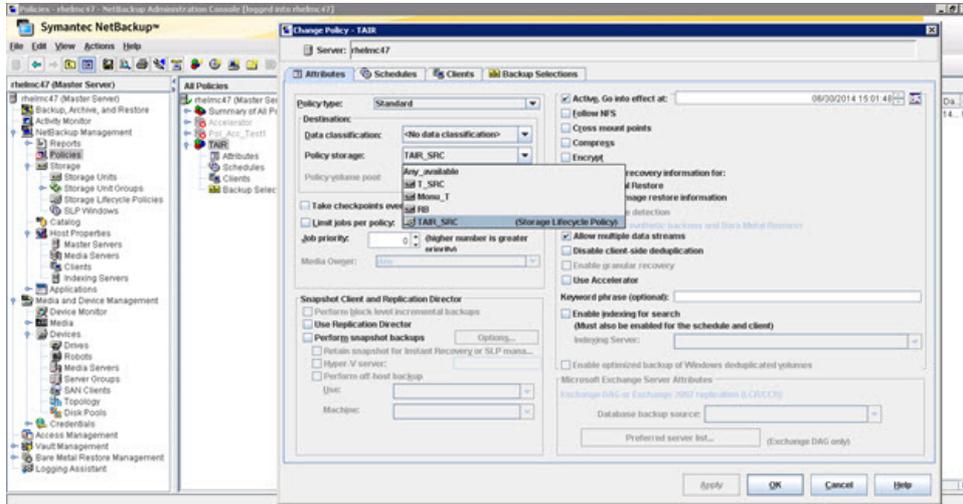


7. On the target master, create an Import Storage Lifecycle Policy.

NOTE: The source and target Storage Lifecycle Policies do not need to have the same name.



- On the source master, create a policy for triggering the targeted auto-image replication operation.



6 Setting up other NetBackup functions

Please refer to the applicable NetBackup v7.x administrator guide at <http://www.symantec.com/business/support/index?page=content&id=DOC5334> on the web to:

- Set up a disk storage server (server type is hp-StoreOnceCatalyst)
- Set up a disk pool

NOTE: The NetBackup LSU spanning feature is not supported or recommended.

- Set up a storage unit
- Set up a backup policy
- Start a backup operation
- Restore a backup file
- Set up an optimized duplication
- Set up a Storage Lifecycle Policy (SLP)
- Set up Auto Image Replication (A.I.R.)

For information on creating a StoreOnce Catalyst Store, see the *HP StoreOnce Backup System user guide* for your system available on the HP Enterprise Information Library page of the HP website: www.hp.com/go/storage/docs

Select **HP StoreOnce Backup** and then select your product.

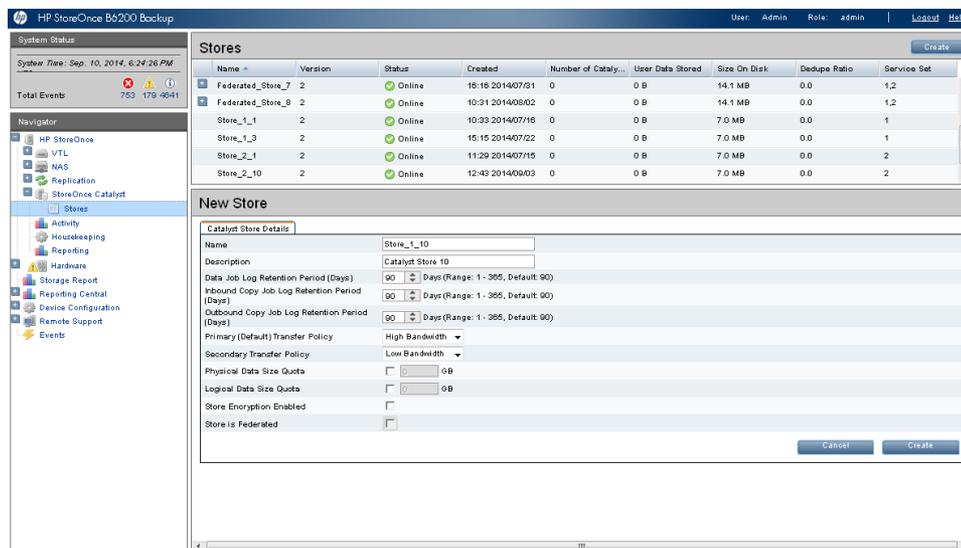
7 Setting up NetBackup with StoreOnce Catalyst Stores

The OST plug-in version 3.1 supports the use of StoreOnce Catalyst and Federated Catalyst stores.

StoreOnce Catalyst Stores

StoreOnce Catalyst store support (non-Federated) was first introduced with the OST plug-in version 2.0 and continues to be supported. To create a StoreOnce Catalyst store, navigate to **HPStoreOnce**→**Stores** and click **Create**. Provide the necessary information to create the StoreOnce Catalyst store. On a HP StoreOnce 6500 or B6200, you will first select a service set for the new store. If you intend to use data encryption and have applied the proper license, select Encryption Enabled at this time. You can also assign a client identifier and password to protect access to the StoreOnce Catalyst Store if client access permissions are enabled. After the setup, backup applications can connect to the Storage Server and view/access the StoreOnce Catalyst stores. For more information on StoreOnce Catalyst Store options, see the *HP StoreOnce Backup system user guide* for your model.

Figure 9 Creating StoreOnce Catalyst stores



StoreOnce Federated Catalyst Stores

The OST plug-in version 3.1 or later supports StoreOnce Federated Catalyst stores which enable HP StoreOnce Catalyst stores to span across multiple service sets; thereby, enabling StoreOnce Catalyst Store capacities larger than the physical capacity of an HP StoreOnce appliance. StoreOnce Federated Catalyst stores also simplify the management of large backup targets. The use of an HP StoreOnce Federated Catalyst Store is transparent to NetBackup. The backup user must connect to one or any storage server (that is part of the StoreOnce Federated Catalyst Store), and configure NetBackup. For details on creating and managing StoreOnce Federated Catalyst stores, see the *HP StoreOnce Backup System user guide* for your product.

NOTE: StoreOnce Federated Catalyst stores are only supported on StoreOnce 6500 and B6200 appliances.

Figure 10 Creating StoreOnce Federated Catalyst stores selecting service sets

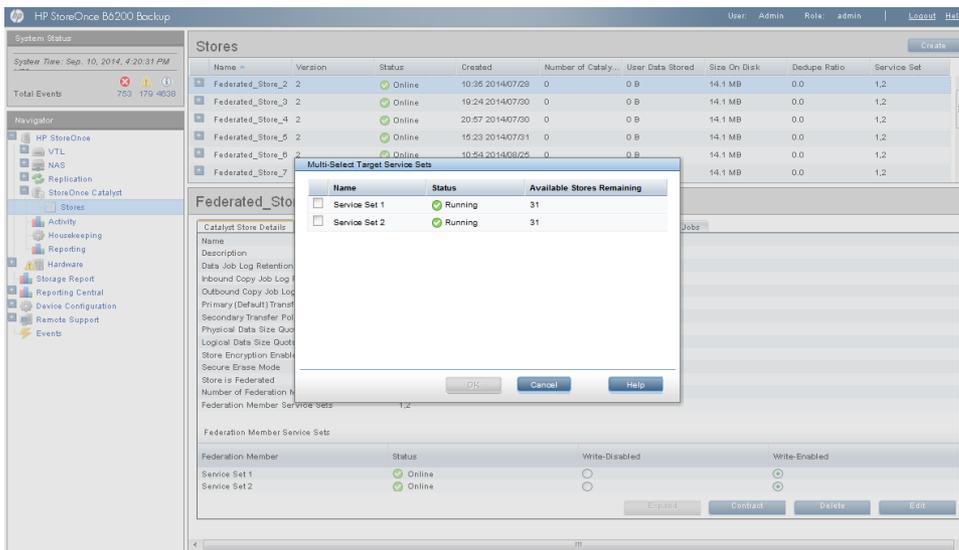


Figure 11 StoreOnce Federated Catalyst stores instantiation with default parameters

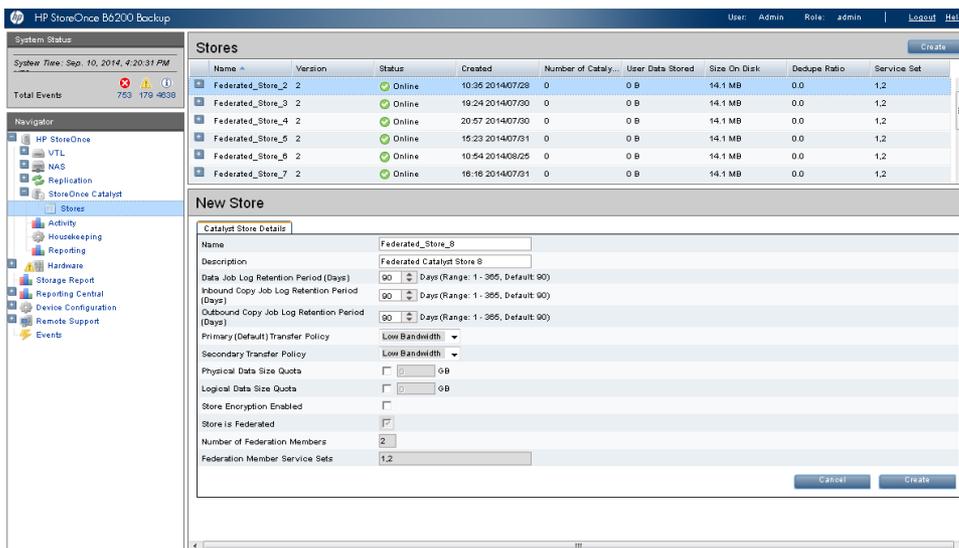


Figure 12 Federated_Store_8 online and ready to use

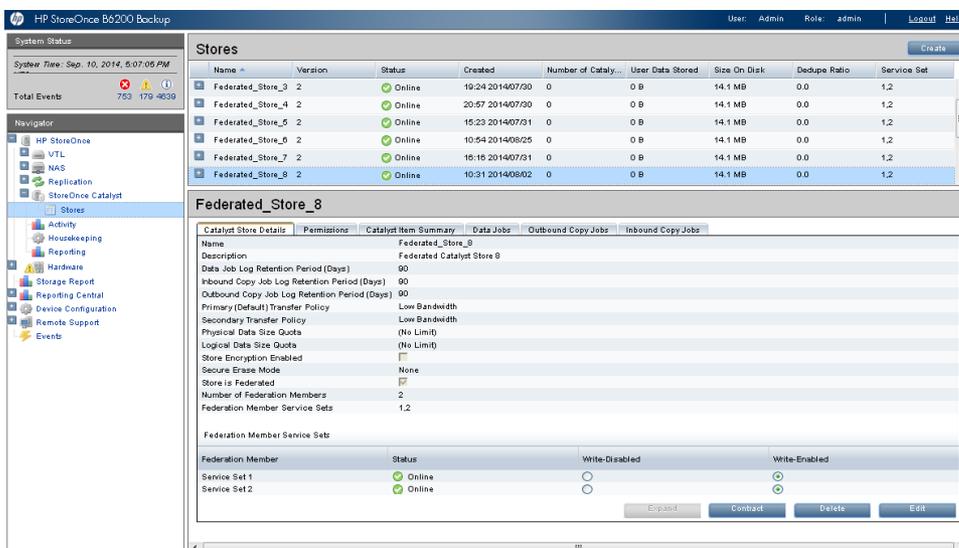
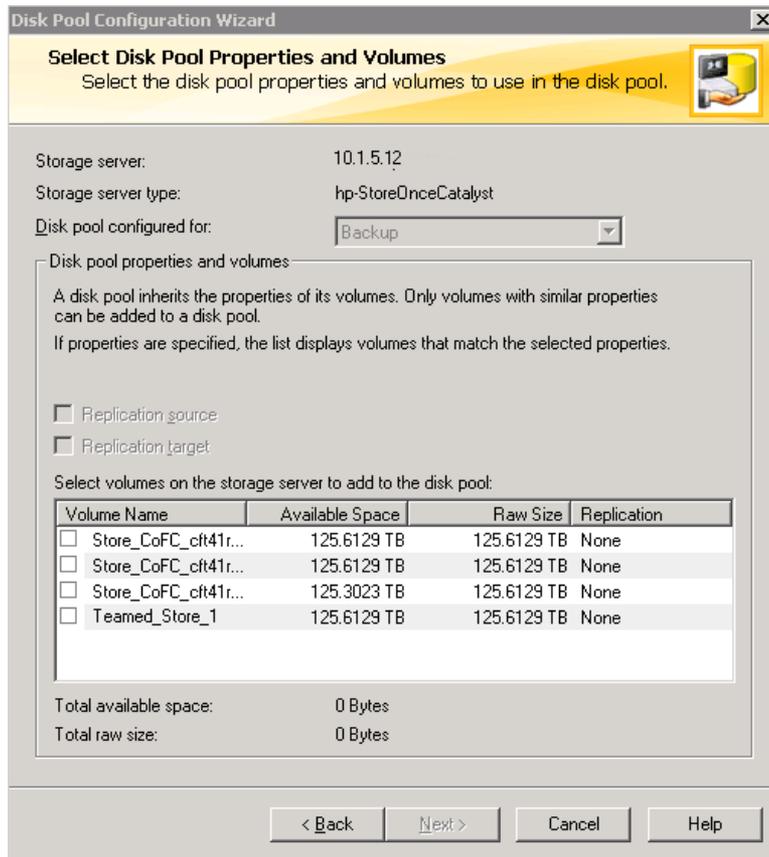


Figure 13 NetBackup Disk Pool creation listing available StoreOnce Catalyst and Federated Catalyst stores



8 Setting up NetBackup with the StoreOnce Catalyst over Fibre Channel interface

About the StoreOnce Catalyst over Fibre Channel interface

The OST plug-in versions 3.1 and later allow Symantec NetBackup and HP OpenStorage media servers to access HP StoreOnce Catalyst stores over a Fibre Channel network.

NOTE: StoreOnce Catalyst over Fibre Channel is supported on all HP StoreOnce Backup system models that support Fibre Channel.

StoreOnce Catalyst over Fibre Channel interface prerequisites

Before setting up the StoreOnce Catalyst over Fibre Channel interface, ensure that:

- Media servers and the HP StoreOnce appliance are connected to the Fibre Channel network.
 - NetBackup media servers can communicate with the HP StoreOnce appliance over a Fibre Channel network. To do so, the storage administrator must ensure that any network segregation, such as zoning, is set up to handle required connectivity between the server and appliance.
-

NOTE:

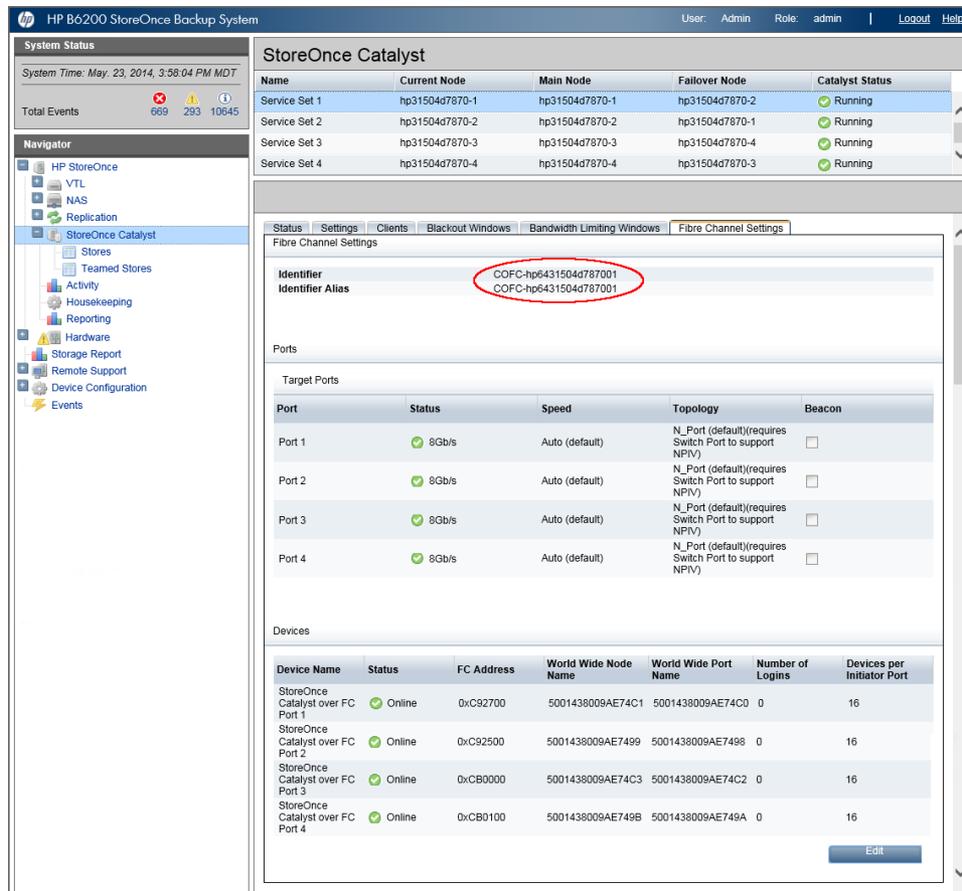
- Backups are supported on StoreOnce Catalyst over Fibre Channel interface, as well as over Ethernet networks. Optimized copies continue to run over an Ethernet interface.
 - Primary and secondary storage servers should be connected through an Ethernet network to enable DR copies to be made using the HP StoreOnce Catalyst copy function.
 - Administrator privileges are required to run StoreOnce Catalyst over Fibre Channel because it accesses OS-specific device files associated with StoreOnce Catalyst over Fibre Channel devices.
-

Setting up StoreOnce Catalyst over Fibre Channel

To configure Symantec NetBackup to work with the StoreOnce Catalyst over Fibre Channel interface:

1. Use a StoreOnce Catalyst over Fibre Channel interface identifier (or alias) instead of a storage server name/IP address:

Figure 14 Using a StoreOnce Catalyst over Fibre Channel interface identifier

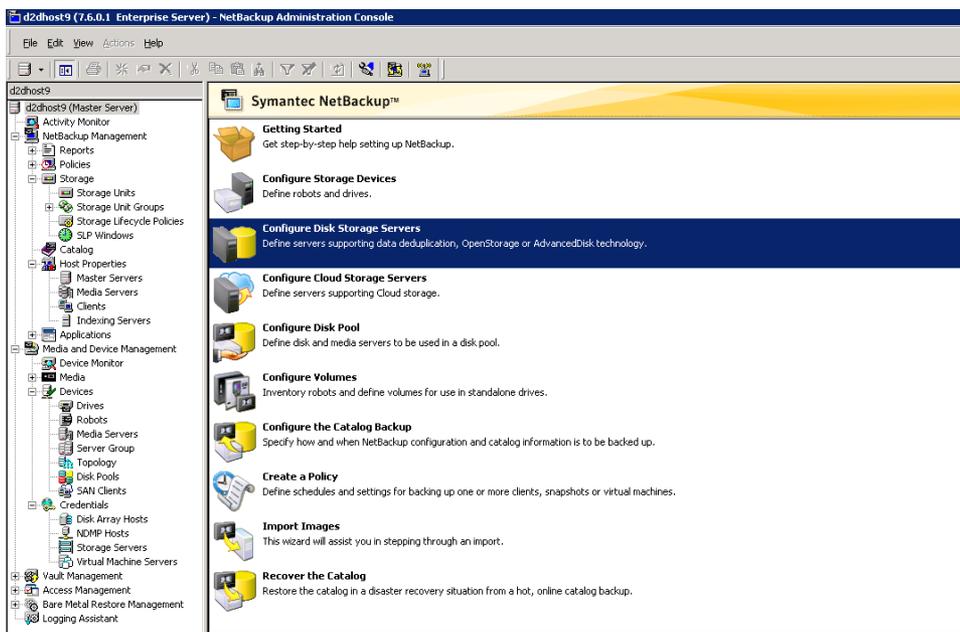


- a. Open a session to the HP StoreOnce appliance GUI.
- b. Navigate to **HP StoreOnce**→**StoreOnce Catalyst**→**FibreChannel Settings**.
- c. Copy the StoreOnce Catalyst over Fibre Channel interface identifier marked as Identifier (or Identifier Alias) in the HP StoreOnce appliance GUI.

NOTE: StoreOnce Catalyst over Fibre Channel interface identifiers are case sensitive.

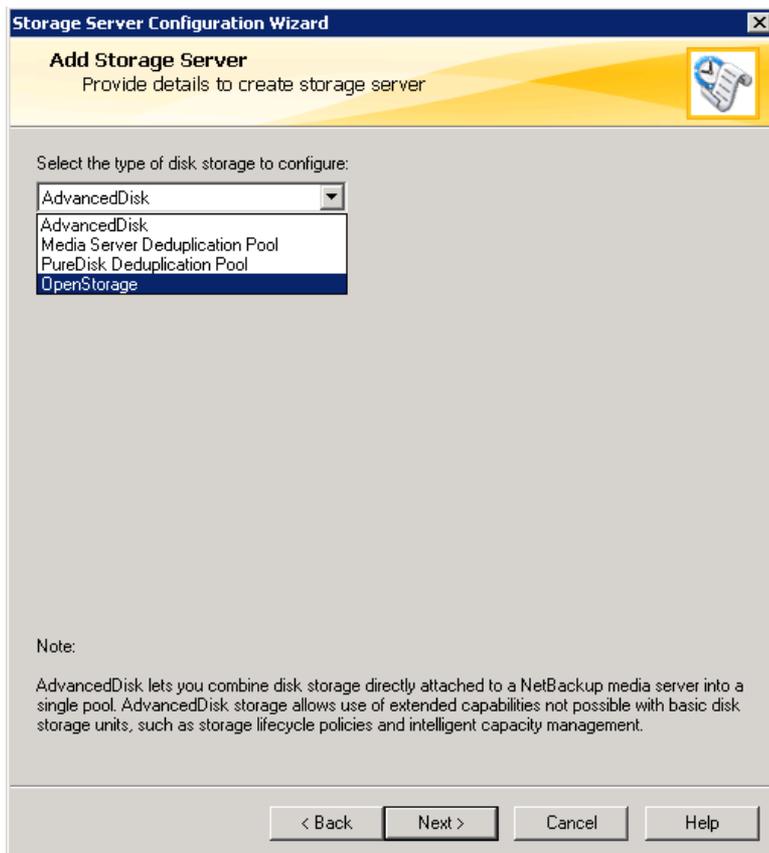
2. Launch the **Symantec NetBackup Administrative Console**.
3. Select **Configure Disk Storage Servers**.

Figure 15 Selecting the Configure Disk Storage Servers option



4. Navigate to the **Add Storage Server** screen after entering the appropriate detail in the previous screens.

Figure 16 Selecting the disk storage type



5. Input the StoreOnce Catalyst over Fibre Channel interface identifier (or alias) in the Storage server name field on the Symantec NetBackup GUI. These identifiers are case sensitive.

Figure 17 Inputting the StoreOnce Catalyst over Fibre Channel interface identifier in the Storage server name field

The screenshot shows a window titled "Storage Server Configuration Wizard" with a sub-header "Add Storage Server" and the instruction "Provide details to create storage server". The window is divided into two main sections: "Storage server details" and "Enter storage server credentials".

In the "Storage server details" section:

- Storage server name:** A text input field containing "COFC-hp6431504d787001", which is circled in red.
- Storage server type:** A dropdown menu set to "hp-StoreOnceCatalyst". Below the dropdown, the text "hp-StoreOnceCatalyst" is displayed.
- Media server:** A dropdown menu set to "d2dblade03".

Below the "Storage server details" section, there is a note: "Select a media server that has the vendor's OpenStorage plug-in installed. NetBackup will query the storage server to determine its capabilities using this media server."

In the "Enter storage server credentials" section:

- User name:** A text input field containing "FibreConnect".
- Password:** A text input field containing "xxxxxx".
- Confirm password:** A text input field containing "xxxxxx".

At the bottom of the wizard, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

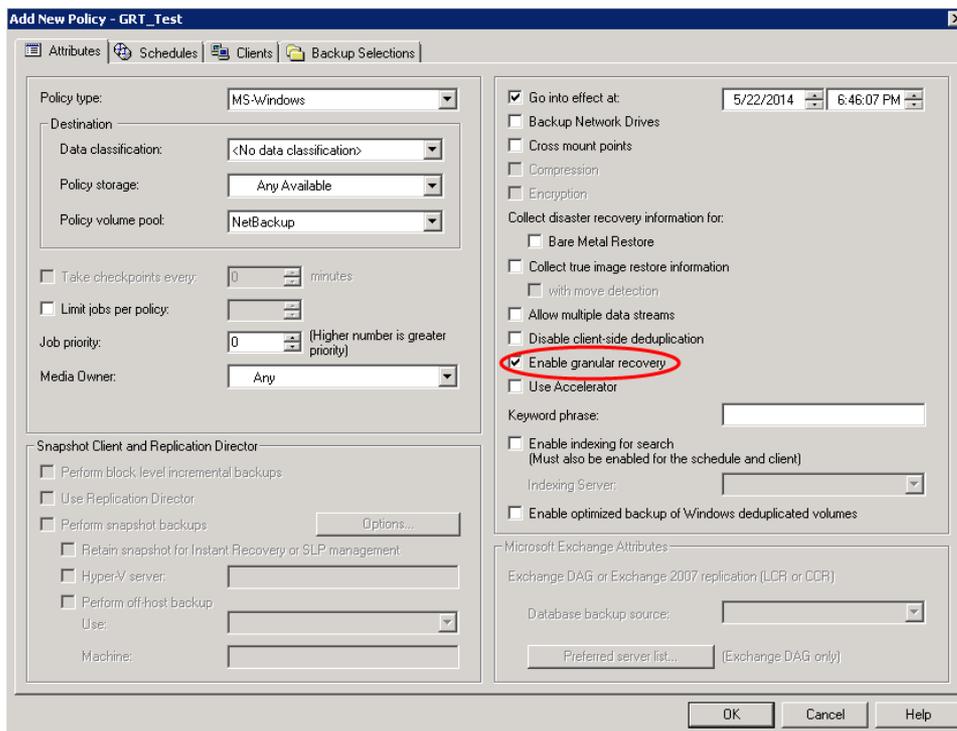
6. Continue with the rest of the setup as you would do for setting up NetBackup to work with the OST plug-in.

9 Setting up NetBackup with Granular Recovery Technology (GRT)

The OST plug-in version 3.1 supports Symantec's NetBackup Granular Recovery Technology (GRT) feature, a feature that enables select items from database backups to be restored on clients. GRT has been tested with Microsoft Exchange Server, Active Directory (AD) Server, and Microsoft SharePoint solutions. For details on GRT setup information, refer to the appropriate Symantec and Microsoft documentation.

While setting up NetBackup backup policies for GRT, be sure to check **Enable Granular Recovery** for granular restores later.

Figure 18 Setting up backup policies using the Add New Policy window



NOTE: During recoveries and browse sessions of GRT-enabled backups, sessions that last longer than four hours sometimes time out and the operation fails. If this occurs, please contact HP Support.

10 Setting up Symantec NetBackup Accelerator with HP StoreOnce Catalyst

Accelerator is a Symantec NetBackup feature which performs a full backup at the speed of an incremental backup. Accelerator leverages change track logging for files in a data set on the client and sends only the changed blocks of data to the storage server. Therefore, full backups can be synthesized on the disk on the fly with NetBackup by cloning the disk resident portion of the data (copied from previous backups) and the modified data sent to the storage server. The result is a full backup created on the storage server by sending the incrementals only. StoreOnce deduplication works at a much finer level of data management (chunking, hashing, and matching) and complements the bandwidth savings of Netbackup Accelerator.

The OST plug-in implements support for cloning disk resident data extents to help Symantec NetBackup perform an Accelerator Backup on HP StoreOnce appliances. The feature is supported on HP StoreOnce appliances running software version 3.12.0 or later.

NetBackup Accelerator backups are supported for File Systems (on NetBackup versions 7.5 and later) and VMware (on NetBackup versions 7.6 and later).

For best practices when using Accelerator, see the Symantec documentation.

NOTE: Accelerator backups are supported with OST plug-in version 3.1 and later with StoreOnce Catalyst using low bandwidth data transfer mode only. High bandwidth accelerated backup should not be used.

In some cases, Accelerator-forced rescan backups can run slower than non-Accelerated backups.

Configuring Accelerator

Download the device mappings file from Symantec and install it on the Master/EMM server. Detailed instructions and versions of the mappings file to use are found on Symantec's HCL listing at http://www.symantec.com/business/support/library/BUSINESS/xCL/TECH76495/nbu_7x_hcl.html#device_mappings_files.

Verifying the Accelerator Configuration

To verify if Accelerator is configured on your setup, execute the following commands on the Master/EMM server:

- `nbdevquery -listdp -stype hp-StoreOnceCatalyst -U`

```
Disk Pool Name : Accelerator
Disk Pool Id   : Accelerator
Disk Type      : hp-StoreOnceCatalyst
Status         : UP
Flag           : Patchwork
Flag           : Usible
Flag           : OpenStorage
Flag           : SingleStorageServer
Flag           : CopyExtents
Flag           : AdminUp
Flag           : InternalUp
Flag           : LifeCycle
Flag           : CapacityMgmt
Flag           : FragmentImages
Flag           : Cpr
Flag           : FT-Transfer
Flag           : OptimizedImage
Raw Size (GB)  : 35300.83
Usable Size (GB) : 35300.83
Num Volumes    : 1
High Watermark : 98
Low Watermark  : 80
Max IO Streams : -1
Comment        :
Storage Server : 172.28.6.10 <UP>
```

- `nbdevquery -liststs -stype hp-StoreOnceCatalyst -U`

```

C:\Program Files\Veritas\NetBackup\bin\admincmd>nbdevquery -liststs -styp hp-St
oreOnceCatalyst -U
Storage Server      : 10.65.80.95
Storage Server Type : hp-StoreOnceCatalyst
Storage Type        : Formatted Disk, Network Attached
State               : UP
Flag                : OpenStorage
Flag                : CopyExtents
Flag                : AdminUp
Flag                : InternalUp
Flag                : LifeCycle
Flag                : CapacityMgmt
Flag                : FragmentImages
Flag                : Cpr
Flag                : FT-Transfer

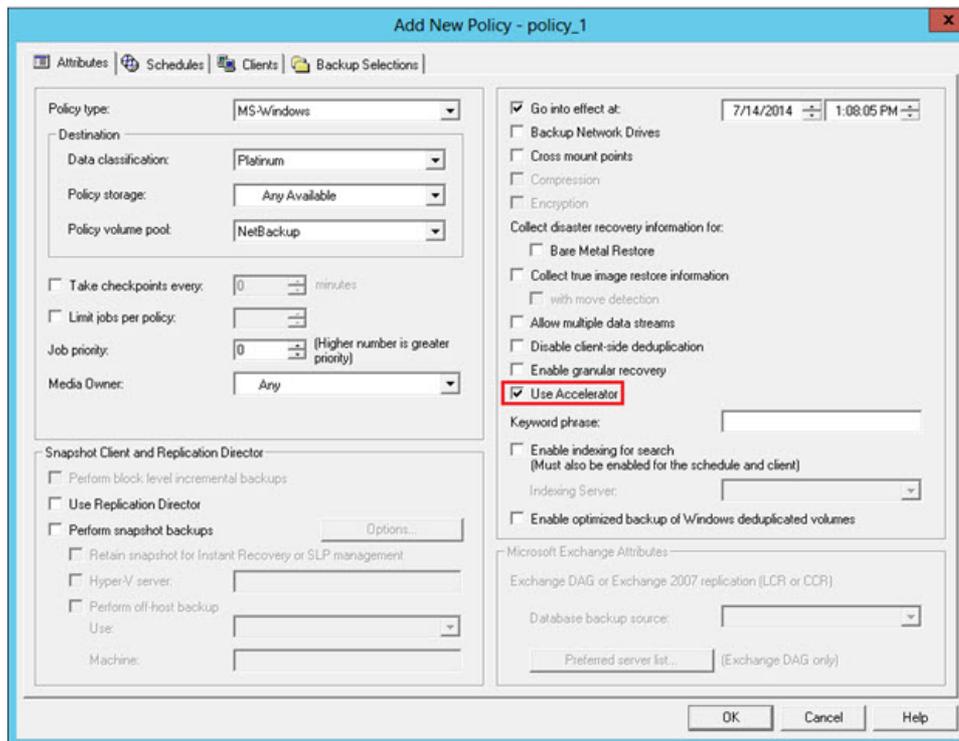
Storage Server      : 172.28.6.10
Storage Server Type : hp-StoreOnceCatalyst
Storage Type        : Formatted Disk, Network Attached
State               : UP
Flag                : OpenStorage
Flag                : CopyExtents
Flag                : AdminUp
Flag                : InternalUp
Flag                : LifeCycle
Flag                : CapacityMgmt
Flag                : FragmentImages
Flag                : Cpr
Flag                : FT-Transfer
Flag                : OptimizedImage

```

Accelerated Backups for File Systems using HP StoreOnce Open Storage Plug-in for NetBackup

Enabling NetBackup Accelerator for File Systems only requires a check box selection in the NetBackup policy editor.

Figure 19 Checking Use Accelerator



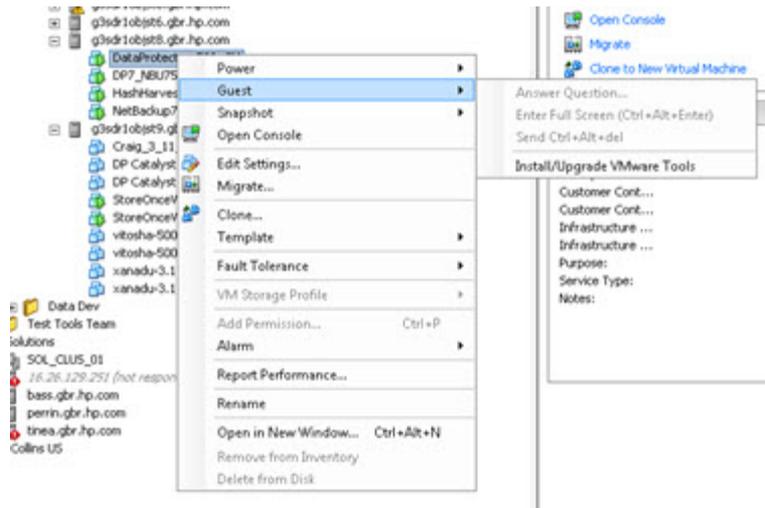
NOTE: The first Accelerated backup might be bit slower than a regular Backup without accelerator because NetBackup Accelerator needs to generate change track logs for the entire Dataset being written to on the storage appliance. Subsequent Accelerated backups (full and incremental) are much faster than corresponding regular Backups.

Accelerated Backups for VMware using HP StoreOnce Open Storage Plug-in for NetBackup

NetBackup uses Change Block Tracking on VMware for Accelerated Backups on VMware. Note that VMware Accelerator Backups are supported on NetBackup 7.6 and later. To set up Accelerator Backups for VMware:

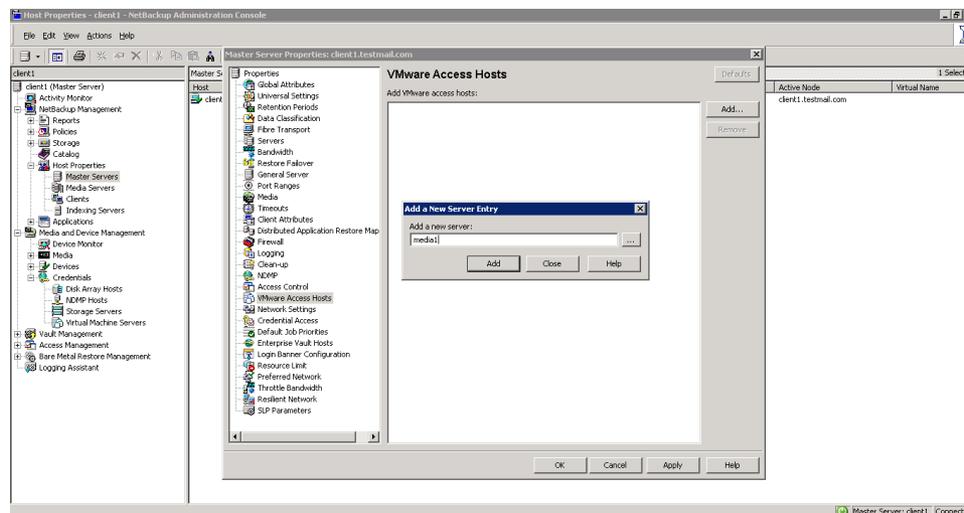
1. Install VMware Tools on the VM client you intend to backup. In ESX vSphere, right click the client and select **Install / Upgrade VMWare Tools**.

Figure 20 Installing VMware Tools



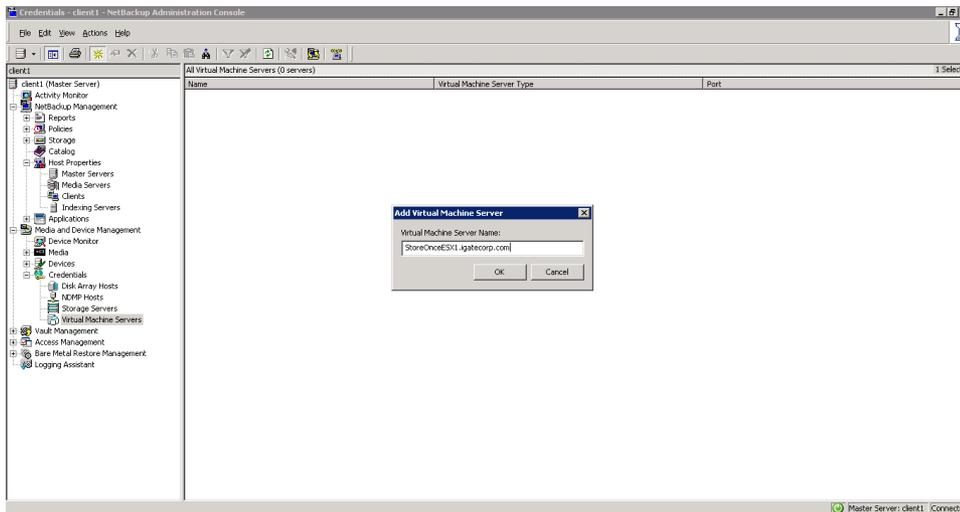
2. Log into the client and open My Computer. You will see a VMWare drive mounted. Double click the drive letter and complete the installation instructions. At the end of the process, the client will reboot.
3. On NetBackup Server, create a NetBackup Storage Server, Disk Pool, and Storage Unit.
4. Add a backup host in your Master Server settings; the backup host is the media server name.

Figure 21 Adding the backup host



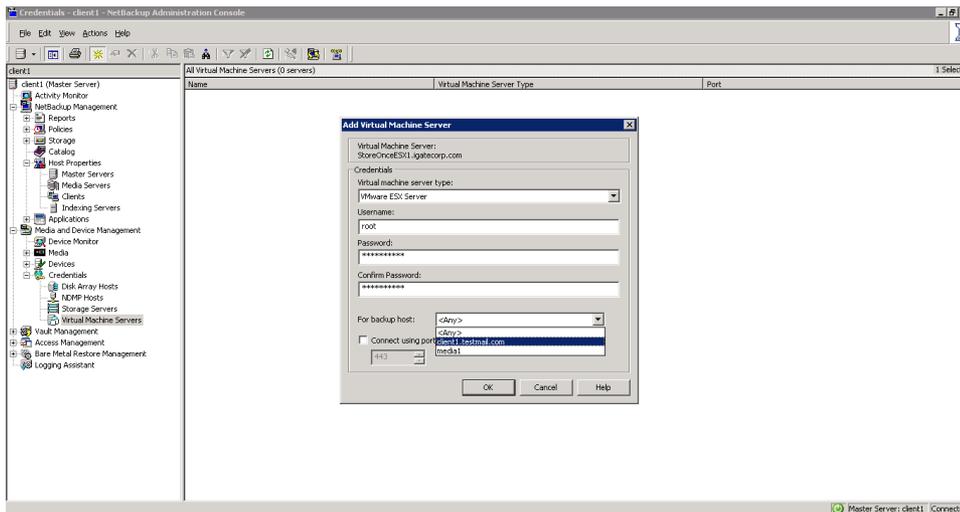
5. Add the ESX server hosting the guest OS (VM to be backed up) to the NetBackup Virtual Machine server list.

Figure 22 Adding the virtual machine server



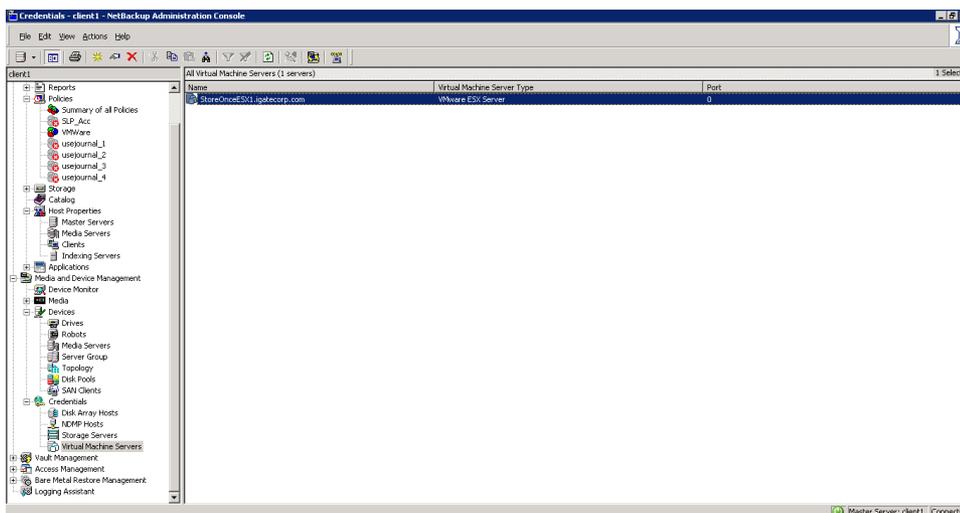
6. Authenticate the ESX server and add the backup host details (this example chose client1).

Figure 23 Adding the backup host details



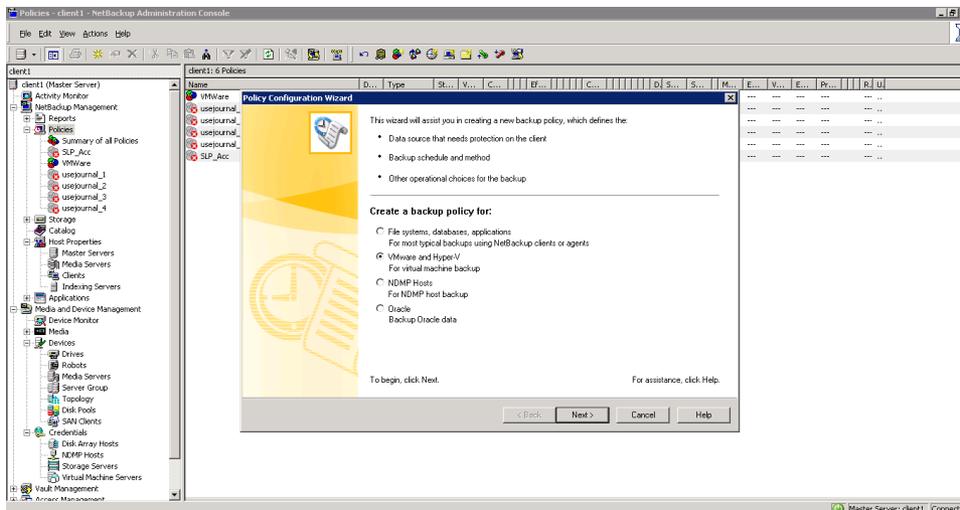
7. The ESX server will appear in the list of Virtual Machine servers.

Figure 24 The ESX server is shown



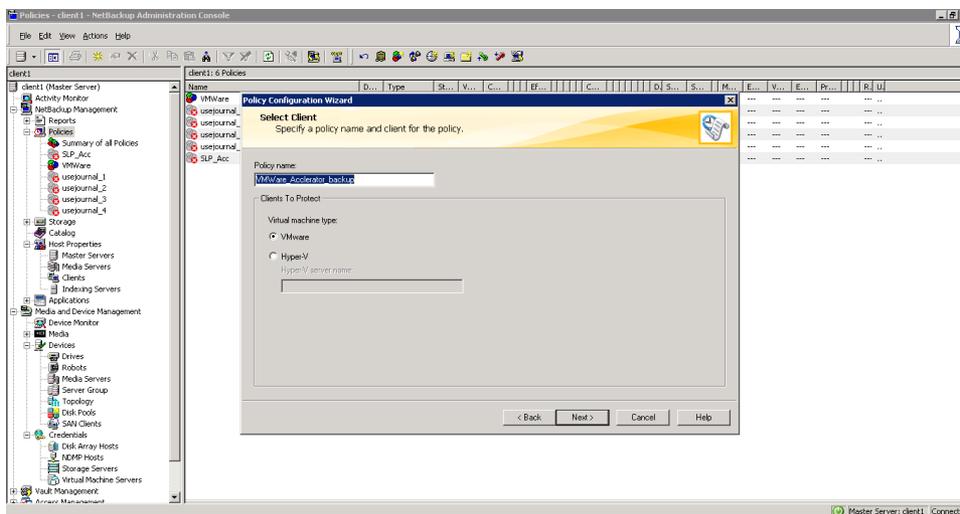
8. Create a Backup Policy of type VMware.

Figure 25 Creating the Backup Policy



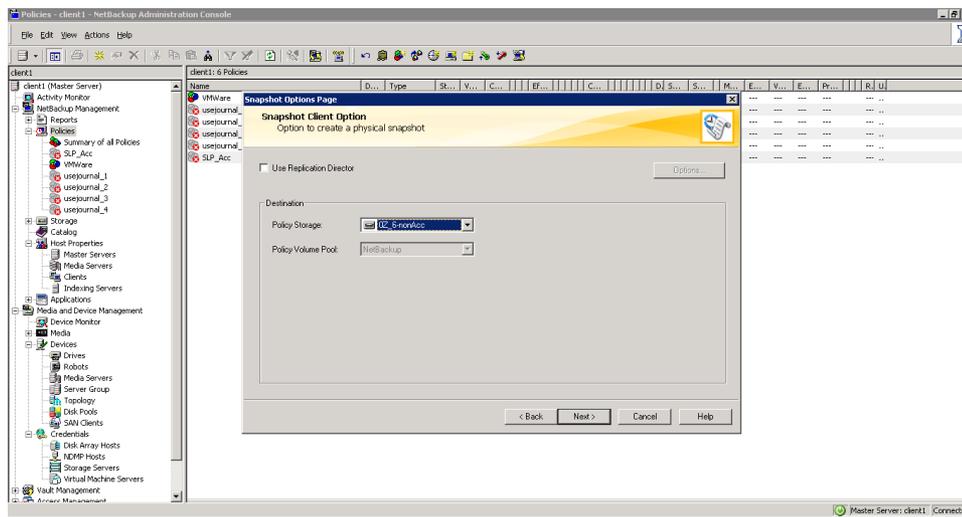
9. Choose a suitable policy name for your VMware Backups.

Figure 26 Entering a policy name



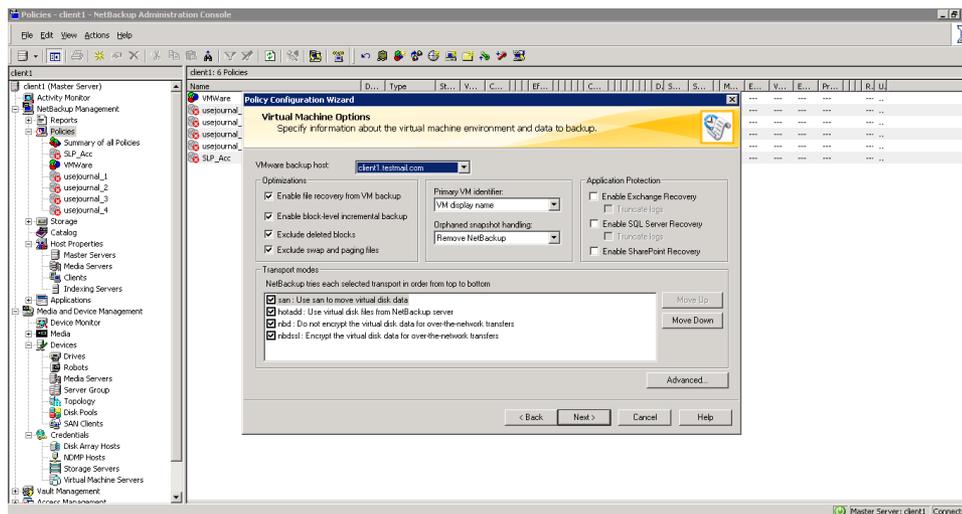
10. Add the Storage Unit details created in "step 3" (page 33).

Figure 27 Adding the Storage Unit



11. Add the details on the backup host selected earlier.

Figure 28 Adding the backup host details



12. Select and add the Virtual machine that you want to backup.

Figure 29 Browsing the Virtual Machines

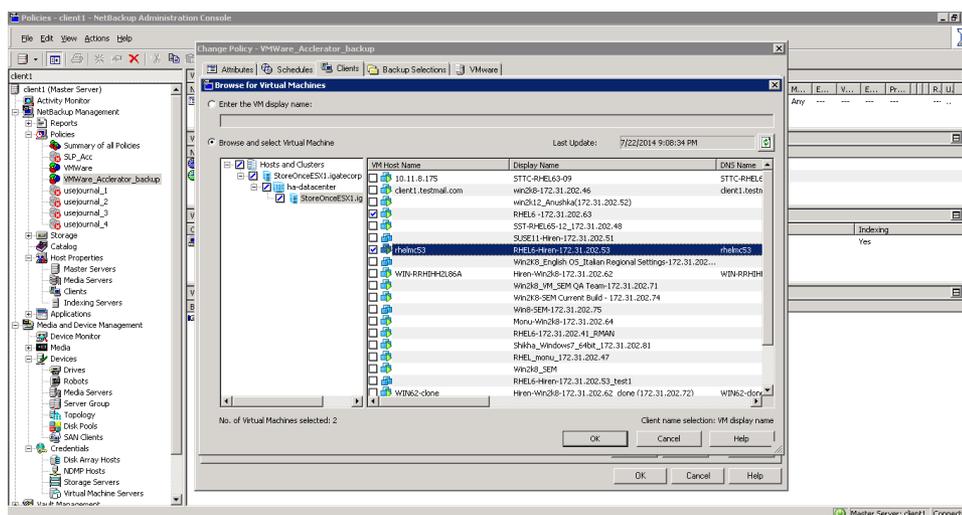
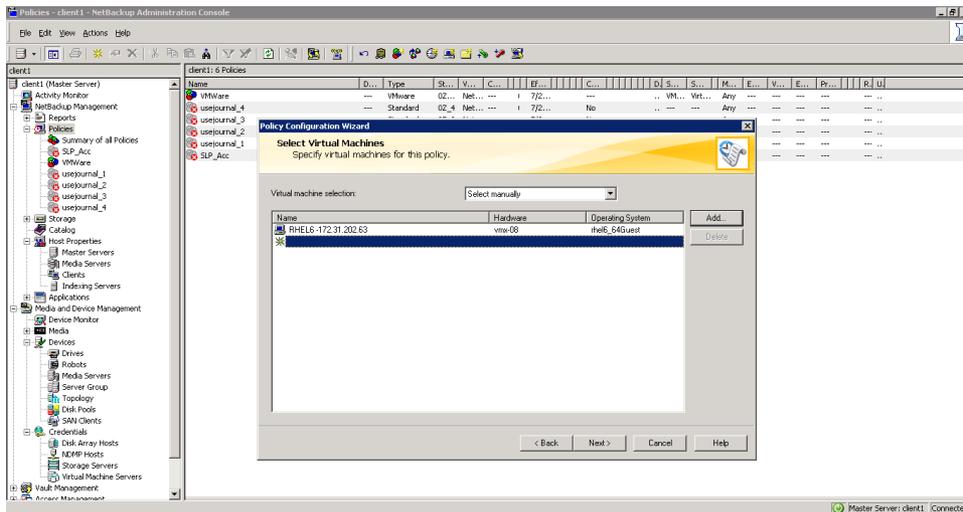
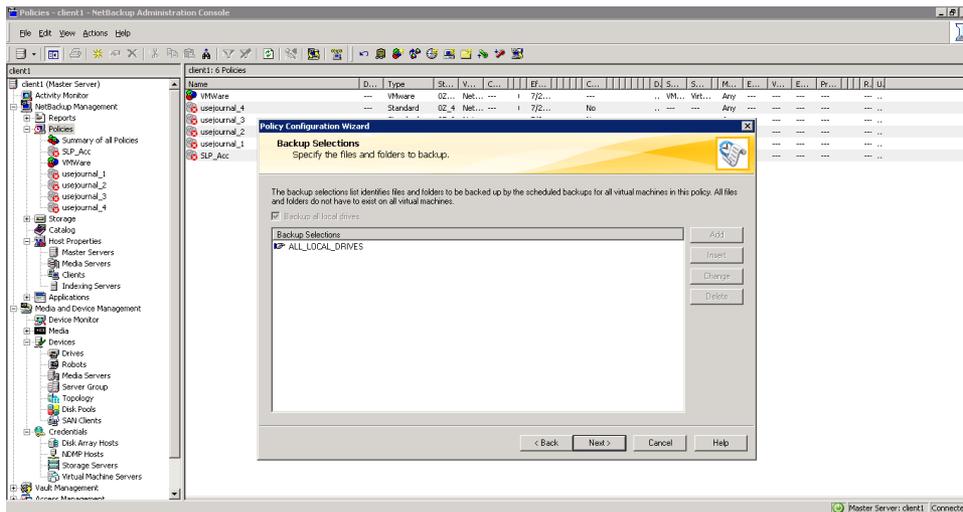


Figure 30 Adding the Virtual Machine of interest



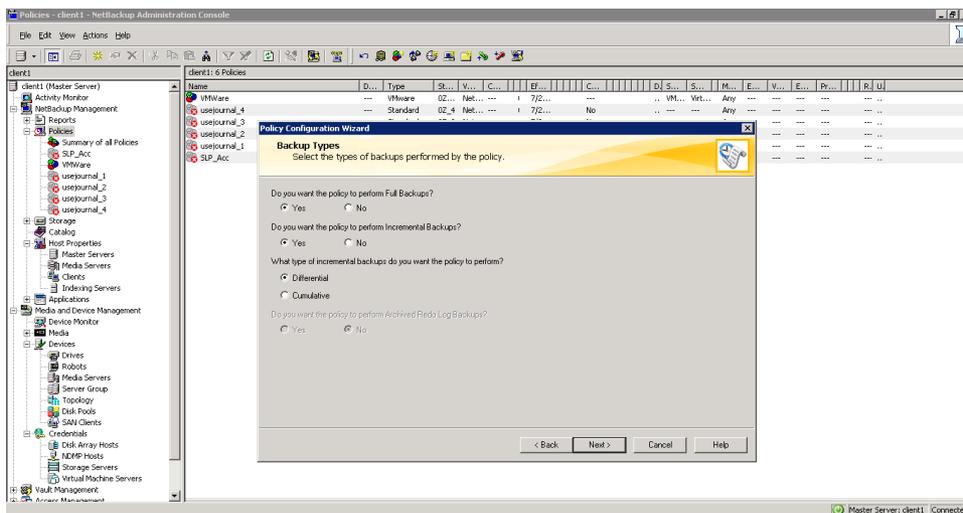
13. Select the data to be backed up on the Virtual Machine.

Figure 31 Selecting the data



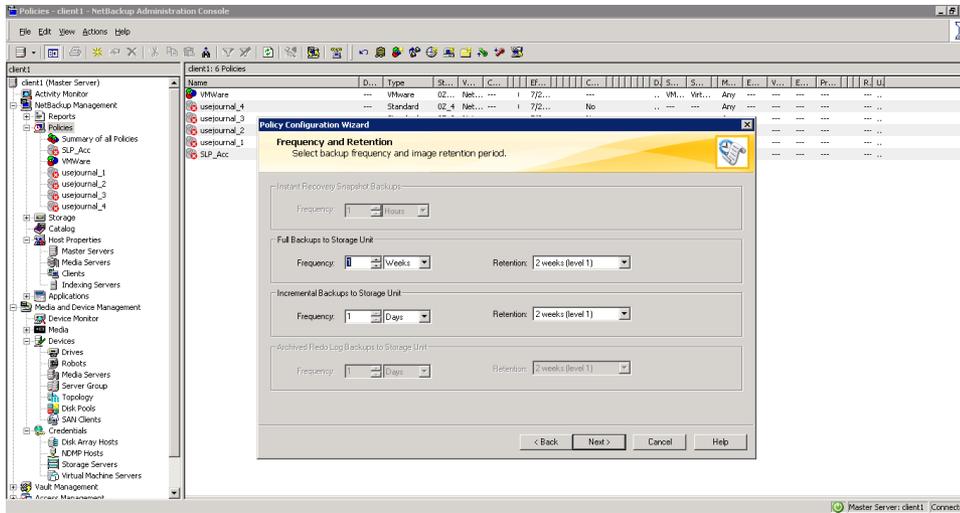
14. Choose the Backup type.

Figure 32 Choosing the Backup type



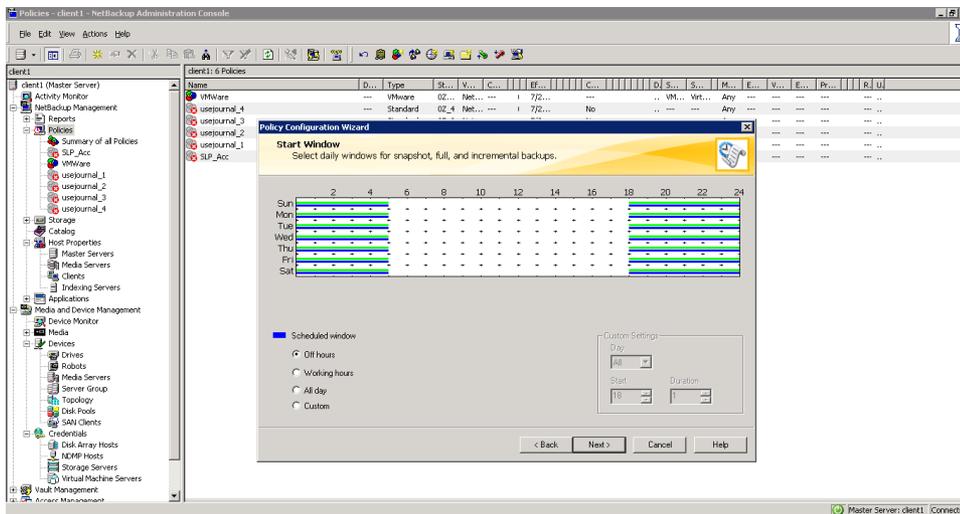
- Set the frequency and retention for backups.

Figure 33 Setting the frequency and retention



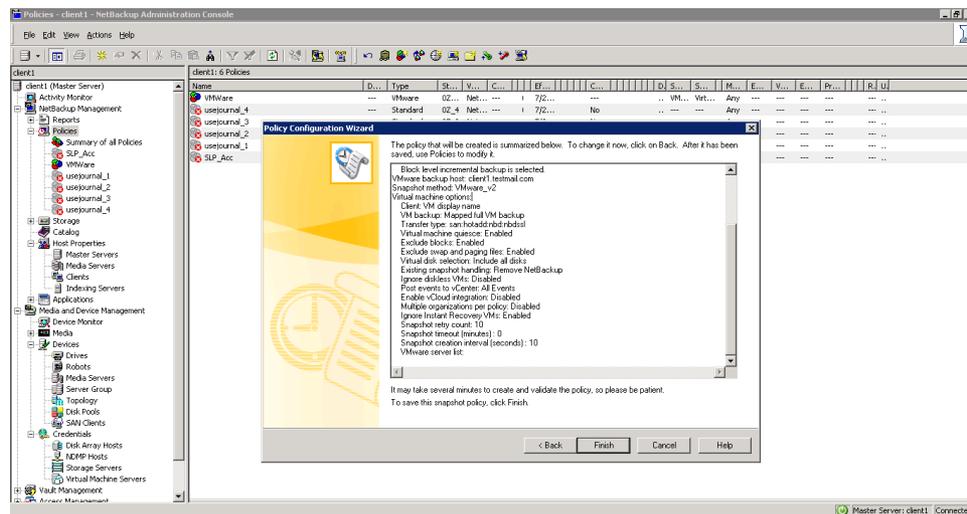
- Define the backup window.

Figure 34 Defining the backup window



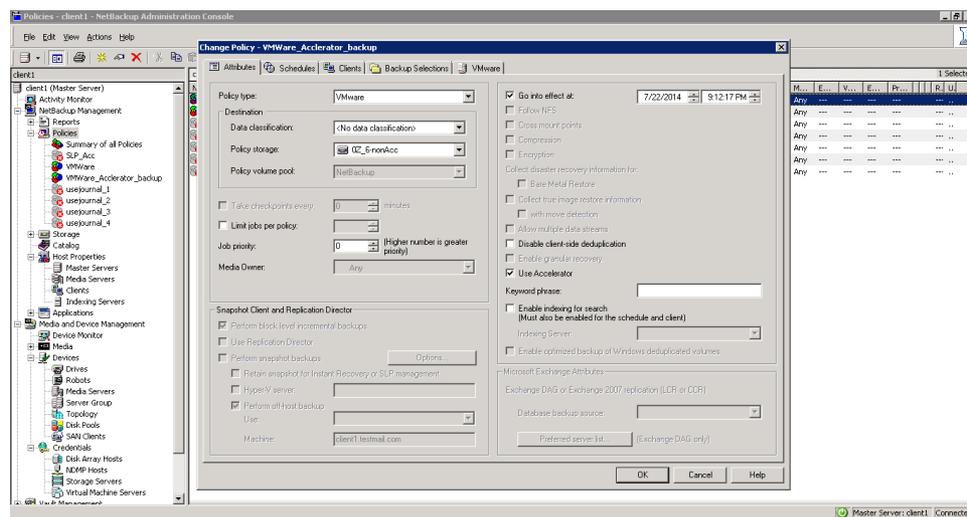
- Complete the backup selection details under the corresponding tab.

Figure 35 Completing the backup details



- For VMware backups, add details under an additional VMware tab. Ensure you select the check box “Use Accelerator.”

Figure 36 Adding VMware details



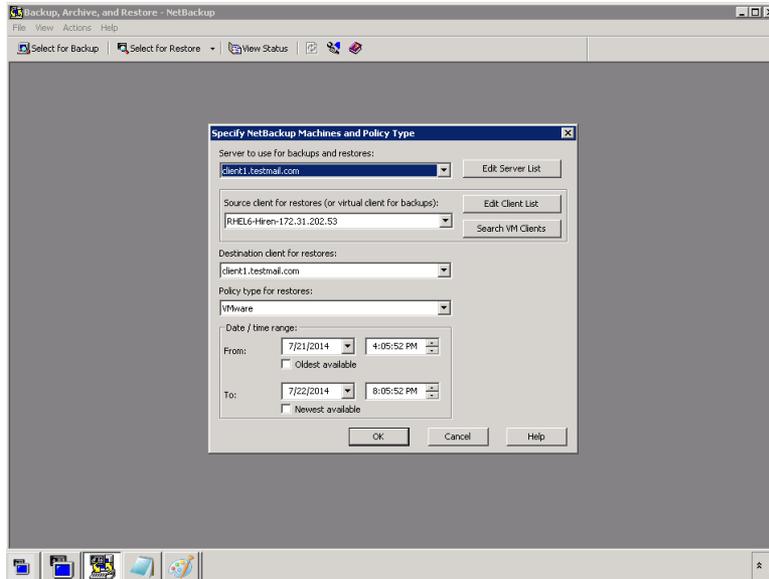
- To test your Accelerated backups, right click on the policy and trigger a manual VMware backup for the selections made in the above steps.

Restoring VMware Accelerated Backups

To restore Virtual Machine backups:

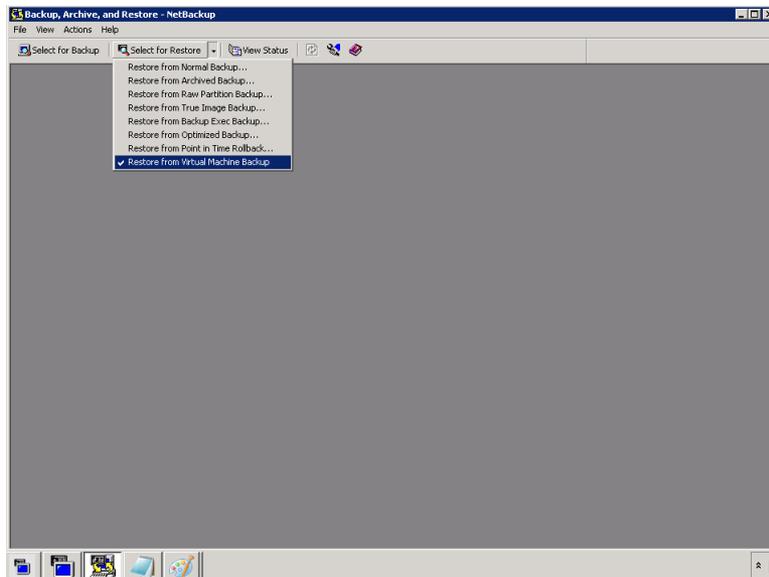
1. Launch **Backup/Archive and Restore**.
2. Select the appropriate server, client, and the policy type of VMware.

Figure 40 Selecting the restore details



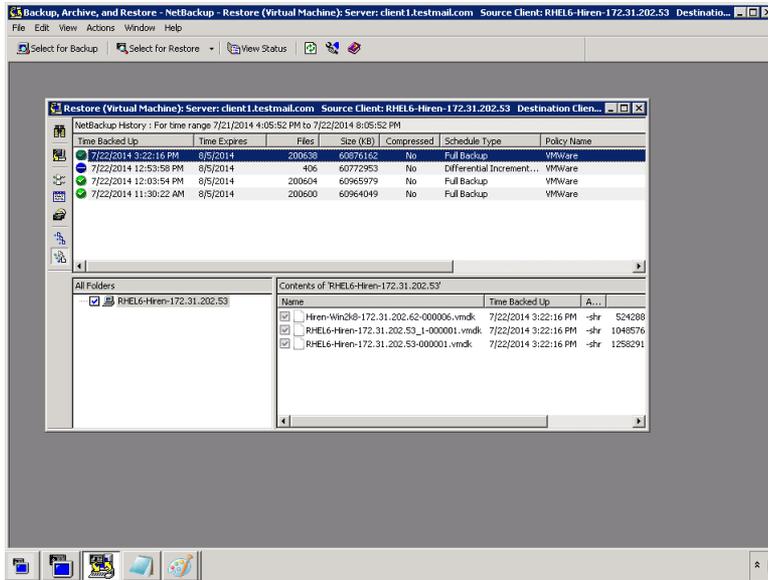
3. Select **Restore from Virtual Machine Backups**.

Figure 41 Selecting “Restore from Virtual Machine Backups”



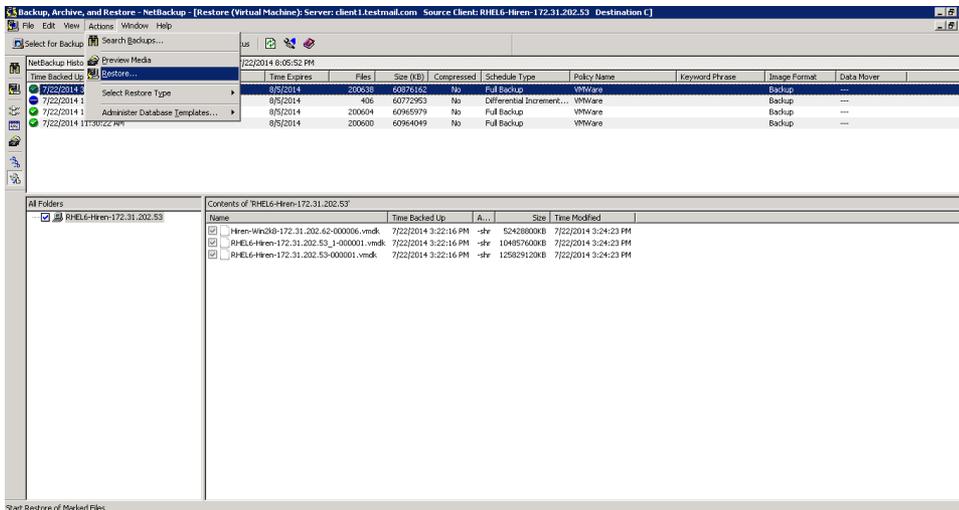
4. Select the backup of interest and the required data for restore from the catalog.

Figure 42 Selecting the backup and data



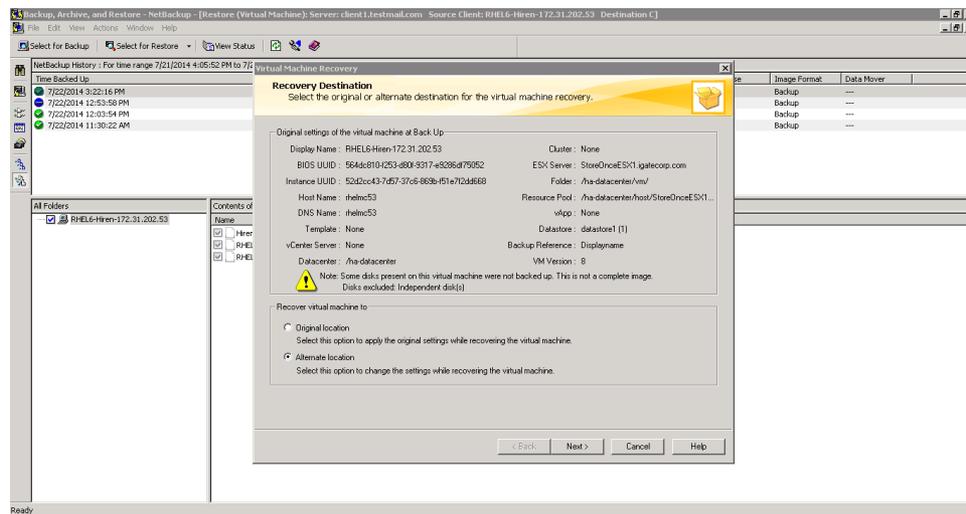
5. Select **Actions**→**Restore...** to open the Virtual Machine Recovery wizard.

Figure 43 Opening the Virtual Machine Recovery wizard



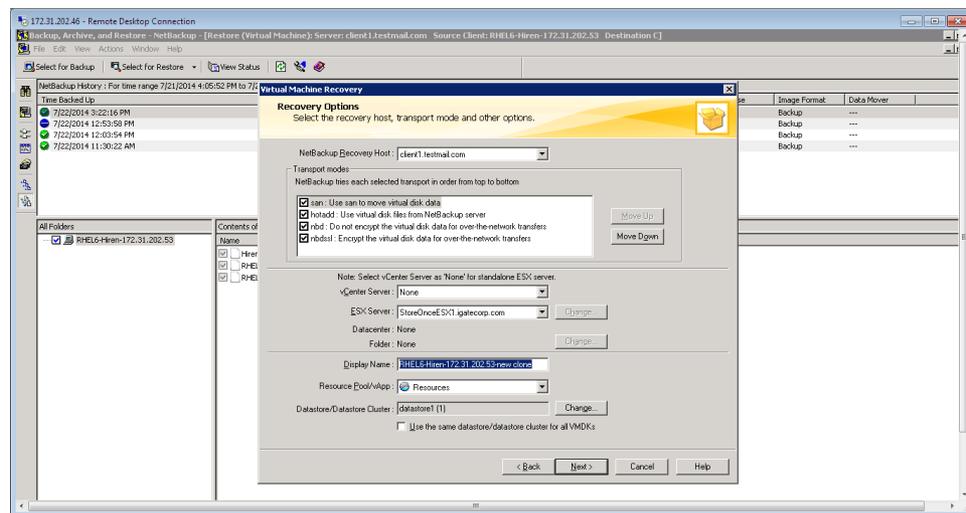
6. Select the destination location to restore the virtual machine backup.

Figure 44 Selecting the destination location



7. Specify the NetBackup media server to use and the VM name to create for the restore (if it is not the original location).

Figure 45 Selecting the NetBackup media server



8. Select any additional VM options for the restore.

Figure 46 Selecting VM options

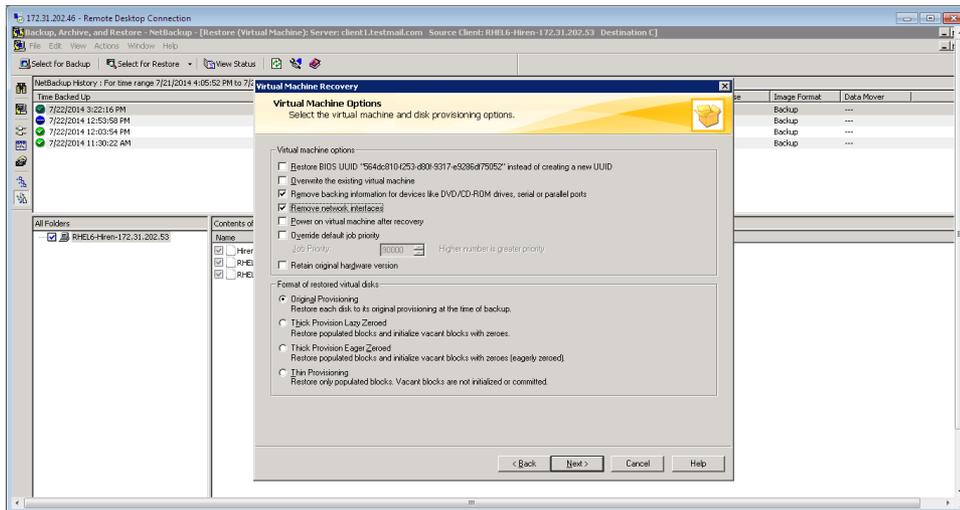
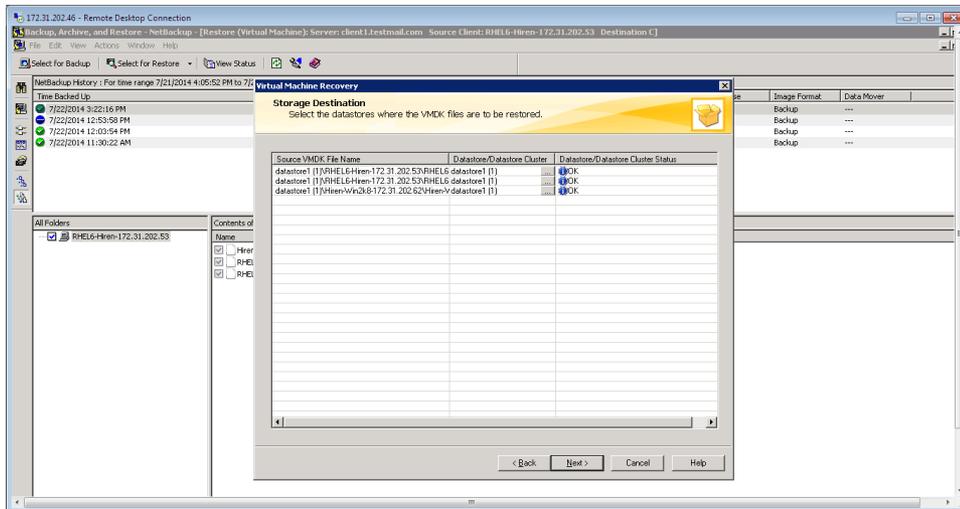
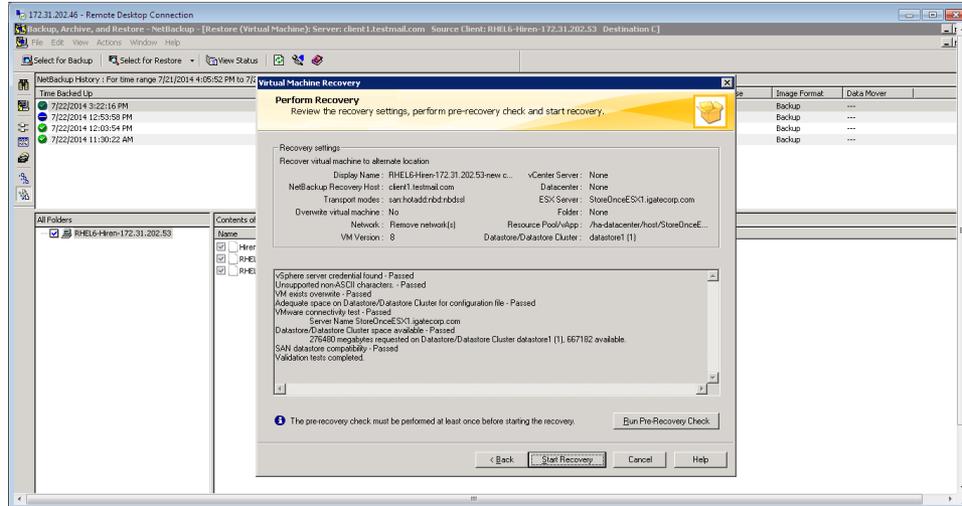


Figure 47 Selecting the Storage Destination



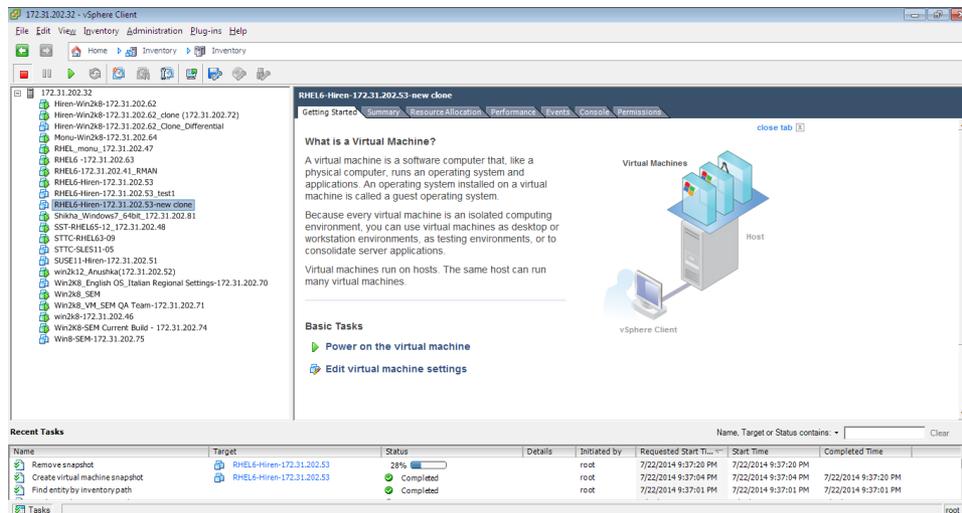
9. Click **Start Recovery**.

Figure 48 Starting the Recovery



The VM will appear in the list of the Virtual machine entries under the ESX host.

Figure 49 The VM machine is restored



11 Troubleshooting

Table 4 Common OST plug-in issues and solutions

| Symptom | Possible Cause | Solutions |
|---|--|--|
| Job failing with error code 83/84 | Storage server is not reachable. HP OST logs show an -1106 error from the server. | Connectivity between the media server and the HP StoreOnce Backup System should be checked. |
| Job failing with error code 83/84 | Storage server is overloaded, or the server is unable to service any more sessions. HP OST logs show an -1109 error from the server. | <p>Policies should be set up in such a way that maximum sessions are not reached on the HP StoreOnce Backup System.</p> <p>For information on StoreOnce Catalyst stores, see the <i>HP StoreOnce Backup System user guide</i> for your system available on the HP Enterprise Information Library page of the HP website: www.hp.com/go/storage/docs</p> <p>Select HP StoreOnce Backup and then select your product.</p> |
| StoreOnce Catalyst stores are not listed while creating the disk pool. | Client permission is enabled for the HP StoreOnce Backup System service set. | Correct credentials matching the HP StoreOnce Backup System should be given at the NetBackup console. Only stores which have permissions to given credentials are granted access. |
| Receive the error, Authorization error, verify User name and Password, while registering storage server with NetBackup. | IP/host name used for registering is not correct. | <p>The storage server IP/host name provided while registering with NetBackup is incorrect.</p> <p>Fusion Manager IP/host name should be used if using an HP StoreOnce 2700, 4500, 4700, or 4900 (or older) models; the service set IP/FQDN and Fusion Manager (HP StoreOnce Backup System management console) IP/FQDN are the same.</p> <p>Service set IP/ FQDN should be used if you are using an HP StoreOnce 6500 or B6200 model; the service set IP/FQDN is different from Fusion Manager IP/FQDN. Fusion Manager IP/FQDN cannot be used for registering with NetBackup.</p> |
| Backup failing with error code 23. | This occurs when a large number of jobs are running on the target system and results in a client timeout. | The timeout value should be increased in NetBackup master server host properties. |
| Import jobs failing with error code 191. | Data classification is different for source and target SLP. | The SLP data classification at the source and target should be kept the same. |
| Backup jobs failing with error code 83/84. | The storage server is not licensed. OST logs show error code -1111. | The StoreOnce Catalyst license should be applied on the HP StoreOnce Backup Storage System server. |
| RDSM cannot connect...CORBA error. . is displayed while registering a storage server with NetBackup. | Invalid storage server IP/StoreOnce Catalyst over Fibre Channel interface identifier specified. | Check and provide the correct IP address/StoreOnce Catalyst over Fibre Channel identifier. If the problem persists, restart NetBackup services and use the correct IP address/identifier. |

Table 4 Common OST plug-in issues and solutions *(continued)*

| Symptom | Possible Cause | Solutions |
|---|---|--|
| Disk pools are missing in the Remote Windows Java Admin Console. | A slow response to the Admin console from the NetBackup Server. | Increase the Java default timeout. See www.symantec.com/business/support/index?page=content&id=TECH204939 . |
| After installing NetBackup on Solaris, the configuration tabs are greyed out. | Firewall issue. | Clear the host cache using: #bpclntcmd -clear_host_cache Disable the firewall on Solaris using: #svcadm disable svc:/network/ipfilter:Default |
| Running the installer for 3.1 on AIX server gives the following error: cp: /usr/openv/lib/ost-plugins/libstspihpqMT.so: Cannot open or remove a file containing a running program. Cannot copy the OST libraries, files are in-use... Re-run the installer once problem is fixed... | The library is in use. | Perform one of the following: <ul style="list-style-type: none"> • Shutdown NetBackup services • Manually delete the library from these locations: <ul style="list-style-type: none"> ◦ rm -f /usr/openv/lib/ost-plugins/libstspihpqMT.so ◦ rm -f /usr/openv/lib/ost-plugins/libstspihpq.so |
| Selecting "Use Accelerator" and configuring NetBackup policy gives the following error: To use the Accelerator, select storage units from a supported storage server: PureDisk Deduplication (PDDO), Media Server Deduplication (MSDP), Symantec clouds, and other qualified storage servers. Currently configured and supported storage servers are: hp-StoreOnceCatalyst on [IP address], [IP address]. Storage Unit group is supported in failover mode only. | The Administration Console might not have picked up Accelerator configuration changes (possibly due to a command line configuration operation). | Restart the NetBackup Administration Console. |
| Accelerator backups fail with the following error: Info bpbbrm(pid=2428) The storage unit does not support accelerator Info bpbkar32(pid=0) done. status: 154: storage unit characteristics mismatched to request | NetBackup times out. OST and Catalyst logs do not show any errors. | In time, failed jobs are retried by NetBackup and the Accelerator Backup would complete. |

Table 4 Common OST plug-in issues and solutions *(continued)*

| Symptom | Possible Cause | Solutions |
|---|--|---|
| <p>Accelerator backups run slowly when using Windows media servers.</p> | <p>When switching between Clone and Write operations, backups are slowing down due to TCP Acknowledgment delays.</p> | <p>Improve the performance by editing the Windows registry for "TcpAckFrequency" as follows:</p> <ol style="list-style-type: none"> 1. In the Windows registry, navigate to the HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\Tcpip\Parameters\Interfaces section. 2. Select the interface/subnet being used for the StoreOnce operations. 3. Right-click on the interface and select "New, DWORD (32-bit) Value." Rename it "TcpAckFrequency" (this is case sensitive). 4. Right-click the new TcpAckFrequency value and select Modify, enter "1" and select the Hexadecimal option. 5. Exit regedit. <p>After a reboot to activate the change, Accelerator backups will run faster.</p> |
| <p>Accelerator incremental backups can sometimes appear larger than the corresponding non-Accelerator incremental backups when using Windows clients.</p> | <p>The "Time overlap" feature is set in NetBackup and specifies the number of minutes to add to the date range for incremental backups. This could include additional files in the backup.</p> | <p>Modify the "Time overlap" parameter (default value of 60 minutes) in the NetBackup settings:</p> <ol style="list-style-type: none"> 1. Navigate to Host Properties→Clients→Client Properties. 2. Select Windows Client→Client Settings. 3. Change "Time Overlap" to 0. <p>For more details, see the Symantec NetBackup technical articles on "Time overlap."</p> |
| <p>Accelerator backups can fail if the storage unit of the backup policy is changed after the first few Accelerator backups.</p> | <p>Accelerator refers to parent backups for detecting changes and cannot find them in the new storage unit.</p> | <p>Clear the Accelerator track log file on the backup client or copy the backup policy with a different name and use the new policy for backups.</p> |

Index

A

A.I.R. *see* Auto Image Replication

Accelerated backups
for File Systems, 32
for VMware, 33

Auto Image Replication

about, 12
prerequisites, 13
setting up with NetBackup, 12
targeted, setting up, 17
untargeted, setting up, 13

C

common problems, 46
configuration files, 10
hpostlog.config, 10
configuring
IPv6 addressing, 11
OST plug-in, 10

D

downloading the OST plug-in, 7

F

File Systems
Accelerated backups, 32

G

Granular Recovery Technology (GRT), 30

I

installing
the OST plug-in, 7
introduction to the OST plug-in, 4

N

NetBackup
Accelerator, 31
functions, 22
with Granular Recovery Technology, 30
with StoreOnce Catalyst stores, 23

O

OST plug-in
configuring, 10
downloading, 7
installing, 7
introduction, 4
overview, 4
prerequisites, 6
support matrix, 6
terminology, 4
uninstalling, 8
updating, 7
overview of the OST plug-in, 4

P

prerequisites, 6

R

restoring VMware Accelerated backups, 41

S

setting up
Auto Image Replication
targeted, 17
untargeted, 13
Granular Recovery Technology , 30
NetBackup functions, 22
StoreOnce Catalyst over Fibre Channel, 27
with Symantec NetBackup Accelerator, 31
solutions to problems, 46
StoreOnce
Catalyst over Fibre Channel
interface, 26
prerequisites, 26
setting up, 27
Catalyst stores
about, 23
Federated, 23
with NetBackup, 23
Federated Catalyst stores, 23
support matrix, 6

T

terminology, 4
troubleshooting, 46

U

uninstalling
from AIX, 9
from HP-UX, 9
from Linux, 9
from Solaris, 9
from Windows, 8
uninstalling the OST plug-in, 8
updating the OST plug-in, 7

V

VMware
Accelerated backups, 33
restoring, 41