

# Veritas NetBackup™ Copilot™ for Oracle Configuration Guide

**VERITAS™**

# Veritas NetBackup™ Copilot™ for Oracle Configuration Guide

Release: 3.0

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[https://sort.veritas.com/data/support/SORT\\_Data\\_Sheet.pdf](https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf)

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# Overview

This chapter includes the following topics:

- [About Copilot](#)
- [Copilot configuration overview](#)

## About Copilot

Copilot is a NetBackup appliance exclusive feature that integrates with native Oracle tools and processes to give database backup administrators (DBA) more control, visibility, and the ability to recover their database backups. Backup administrators can then manage policies, move the data to different storage types, and create off-site backup copies of the database backups.

Additionally, Copilot features NetBackup Accelerator technology to boost Oracle backup and restore performance. NetBackup Accelerator integrates with Oracle's incremental merge capabilities to eliminate the need for full backups and allow new full database images to be synthesized on backup storage post-process.

Copilot lets you create shares on the appliance for Oracle backup and recovery and create further protection policies in NetBackup for advanced data protection features like long-term retention, replication, and NetBackup Oracle Accelerator technology. Copilot is exclusive to the appliance but requires additional configuration steps within NetBackup software.

You can choose to create a standard share or optimized share. Both share types support all workload sizes, but optimized shares employ storage enhancements to reduce protection windows for larger databases. Standard shares are supported on the 5230 and 5330 appliances and do not have disk layout requirements, while optimized shares are only supported on the 5330 appliance and require reservation of an Expansion Storage Shelf for optimized shares.

See “[Database dump backup details](#)” on page 6.

See “[Oracle Accelerator backup details](#)” on page 6.

See “[Restore details](#)” on page 7.

## Database dump backup details

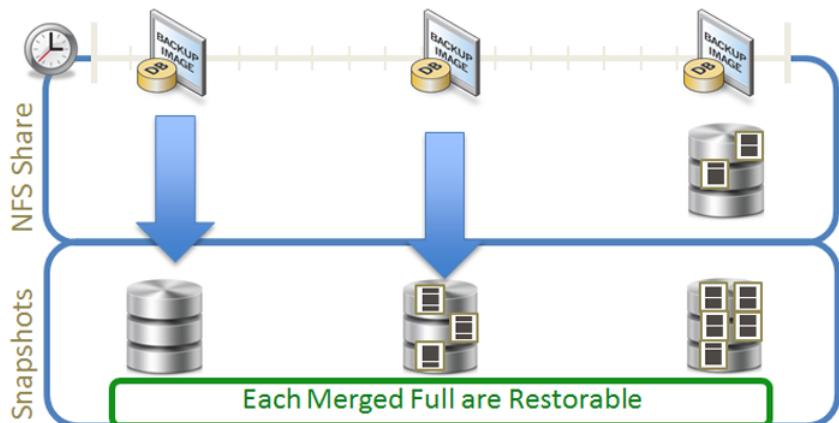
In a database dump configuration, RMAN is configured to put backup data on the appliance share, which a scheduled NetBackup policy protects. Backup metadata is synced with the RMAN catalog and the restore can be initiated either through RMAN or NetBackup.

See “[Oracle Intelligent Policy configuration options for Copilot](#)” on page 32.

See “[Create the Oracle Intelligent Policy for database dump backups](#)” on page 41.

## Oracle Accelerator backup details

In an Oracle accelerator backup configuration, an initial full backup is required and subsequent backups consist of only changed blocks. The changed blocks are merged with the full image to protect a new full backup. Once the merge process is completed, a snapshot is created to produce a NetBackup backup image for restore. Storage Lifecycle Policies (SLPs) are used for replication for data protection. All images on the share and in NetBackup are available in RMAN or NetBackup for restore. The following graphic illustrates how an Oracle accelerator backup works:



See “[Oracle Intelligent Policy configuration options for Copilot](#)” on page 32.

See “[Create the Oracle Intelligent Policy for Oracle accelerator backups](#)” on page 33.

## Restore details

Copilot restores can be initiated from RMAN and NetBackup. In either case, RMAN needs to be functional to complete the restore, as is the case with traditional restores. The process to restore data is the same regardless if the data resides on a share or in a NetBackup storage unit.

# Copilot configuration overview

The following is a high level overview of what is needed to configure Copilot from start to finish. The configuration covered in this guide uses two NetBackup appliances. Your configuration may vary if using a different number of appliances in your configuration.

- Create a share on the appliance using the NetBackup Appliance Shell Menu.  
See “[Creating a share from the NetBackup Appliance Shell Menu](#)” on page 8.
- Mount the appliance share on the Oracle client using OS tools.  
See “[Mounting an appliance share](#)” on page 11.
- Configure a Storage Lifecycle Policy (SLP) using NetBackup.  
See “[Create a snapshot-based storage lifecycle policy for Copilot](#)” on page 13.  
See “[Configure a second storage lifecycle policy for Copilot](#)” on page 21.  
See “[Register the Oracle database credentials with NetBackup for Copilot](#)” on page 28.
- Configure an Oracle Intelligent Policy (OIP) using NetBackup. There are two OIP options available:  
See “[Create the Oracle Intelligent Policy for Oracle accelerator backups](#)” on page 33.  
See “[Create the Oracle Intelligent Policy for database dump backups](#)” on page 41.

# Creating an appliance share

This chapter includes the following topics:

- [Creating a share from the NetBackup Appliance Shell Menu](#)
- [NFS export options](#)

## Creating a share from the NetBackup Appliance Shell Menu

The following procedure explains how to create a standard share or optimized share from the shell menu.

Before starting this procedure, determine what type of share you want to create. You can choose between the following:

- Standard Share
- Optimized Share

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**Note:** If you want to create an optimized share and have not yet created the optimized share reserve, you are prompted to create it within the command.

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### To create a new share from the shell menu:

- 1 Open an SSH session to log on to the appliance as an administrator.
- 2 Enter the create command specific to share you want to create:
  - `Main_Menu > Manage > Storage > Create Share Standard` creates a standard share.

- Main\_Menu > Manage > Storage > Create Share Optimized creates an optimized share.

The command guides you through the process of configuring a new share.

- 3 Enter the share name, for example share\_1.
- 4 Enter a short description for the share, for example Test for share\_1.
- 5 Enter the allocated capacity for the share, for example 5GB.
- 6 Enter a comma-separated list of Oracle server clients that can access the share, for example 10.100.0.2, 10.100.0.3.

---

**Note:** Client names can be entered using the short name, the FQDN, or the IP format. These are translated to the FQDN format after entry.

---

- 7 Enter the NFS export options for each of the Oracle clients. You are prompted to enter options for each client you added in the previous step.  
See “[NFS export options](#)” on page 9.
- 8 Once you have entered the NFS export options, a summary is displayed.
- 9 Enter yes to create the share. A series of messages are displayed as the share is created.

See “[Copilot configuration overview](#)” on page 7.

Refer to the *NetBackup™ Copilot™ for Oracle Configuration Guide* for more information on configuring Oracle database backups.

Refer to the *NetBackup™ for Oracle Administrator’s Guide* for more information on Copilot in NetBackup software.

## NFS export options

The following table describes the export options available for share creation or modification.

Option	Description
ro	Allows only read requests on the Share.
rw	Allows both read requests and write requests on the Share.

Option	Description
<code>no_root_squash</code>	Disables all root squashing. Allows root account on client to access export share on server as the root account.
<code>root_squash</code>	Maps requests from UID and GID 0 to the anonymous UID and GID.
<code>all_squash</code>	Maps all UIDs and GIDs to the anonymous user account. By default, the NFS server chooses a UID and GID of 65534 for squashed access. These values can be overridden by using the <code>anonuid</code> and <code>anongid</code> options.
<code>anonuid</code>	Sets the <code>uid</code> of the anonymous user account. This option forces all anonymous connections to a predefined UID on a server.
<code>anongid</code>	Sets the <code>gid</code> of the anonymous account. This option forces all anonymous connections to a predefined GID on a server.
<code>secure</code>	Requires that requests originate from an Internet port less than <code>IPPORT_RESERVED</code> (1024).
<code>insecure</code>	Disables the requirement that requests originate from an Internet port less than <code>IPPORT_RESERVED</code> (1024).

# Mounting an appliance share

This chapter includes the following topics:

- [Mounting an appliance share](#)

## Mounting an appliance share

This procedure covers how to mount the share on Linux or Solaris Oracle server. For more information about mounting the share on a Windows Oracle server, please refer to documentation for configuring Direct NFS (dNFS) at <http://docs.oracle.com/>.

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**Note:** Oracle Direct NFS (dNFS) is recommended for optimal NFS client performance with Copilot.

---

Use the following procedure to mount the appliance share.

### Mount an appliance share

- 1 Log on to the Oracle server as root.
- 2 Create a directory for the mount point using the following command:
  - `#mkdir /mntpoint`
- 3 Mount the appliance share using the following command. Replace `<appliancename>` with the name of the appliance and `<share_name>` with the name of the share to be mounted.
  - For a Linux-based server, use:

```
- #mount -t nfs <appliancename>:<share_name> -o  
rw,bg,hard,nointr,rsize=1048576,wszie=1048576,tcp,actimeo=0,vers=3,timeo=600  
/mntpoint
```

- For a Solaris-based server, use:

```
- #mount -F nfs <appliancename>:<share_name> -o  
rw,bg,hard,rsize=1048576,wszie=1048576,vers=3,forcedirectio,nointr,proto=tcp  
/mntpoint
```

- 4 Grant the Oracle user permission to access the mount point using the following command:

```
- #chmod 700 /mntpoint  
- #chown <oracle_user>:<oracle_group> /mntpoint
```

---

**Note:** To change share permissions, the `no_root_squash` option must be enabled when on the share. This option can be disabled when the permissions have been changed. Use the Edit Share command to change the NFS options of the share. See the *NetBackup Appliance Administrator's Guide* for more information on editing a share.

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**Note:** Before restarting, make sure to unmount shares on all clients. If you cannot perform this action, unmount the shares on the clients, then remount the shares once the appliance has restarted fully.

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See “[Copilot configuration overview](#)” on page 7.

# Storage Lifecycle Policy (SLP) configuration

This chapter includes the following topics:

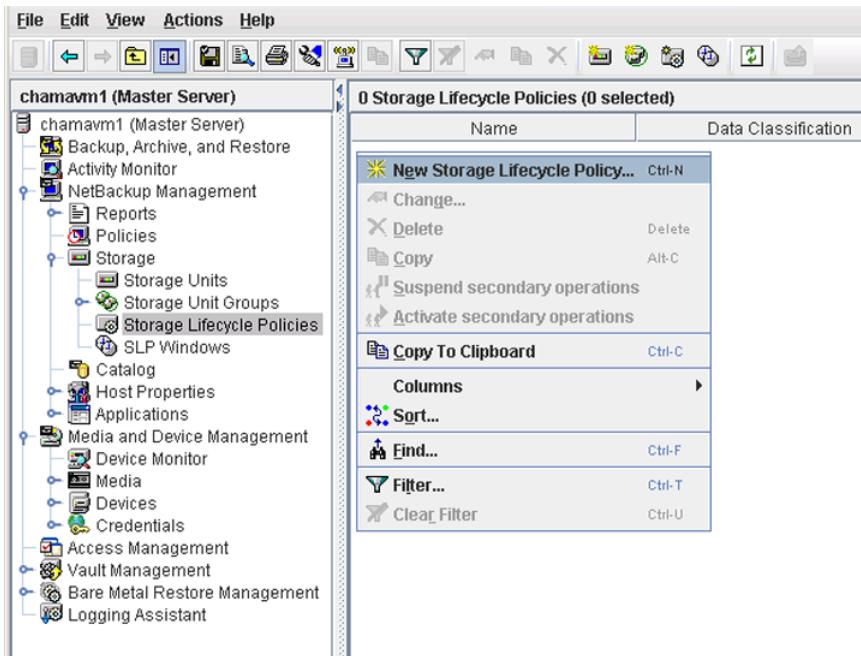
- [Create a snapshot-based storage lifecycle policy for Copilot](#)
- [Configure a second storage lifecycle policy for Copilot](#)
- [Register the Oracle database credentials with NetBackup for Copilot](#)

## Create a snapshot-based storage lifecycle policy for Copilot

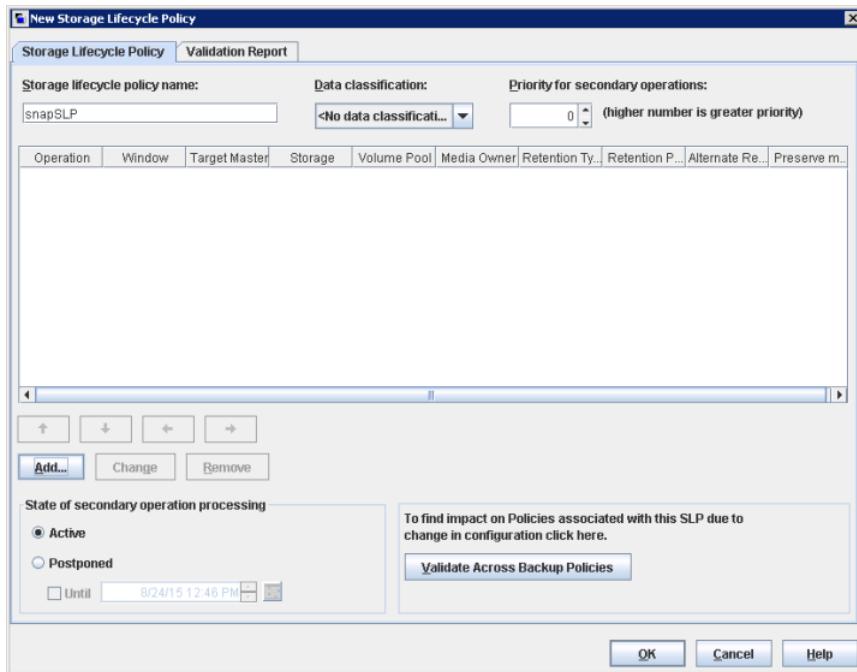
Use the following procedure to create a snapshot-based storage lifecycle policy (SLP) for Copilot using the NetBackup Admin console.

## Create a snapshot-based SLP

- 1 Log on to the NetBackup Admin Console.
- 2 Right click, then select **New Storage Lifecycle Policy**.

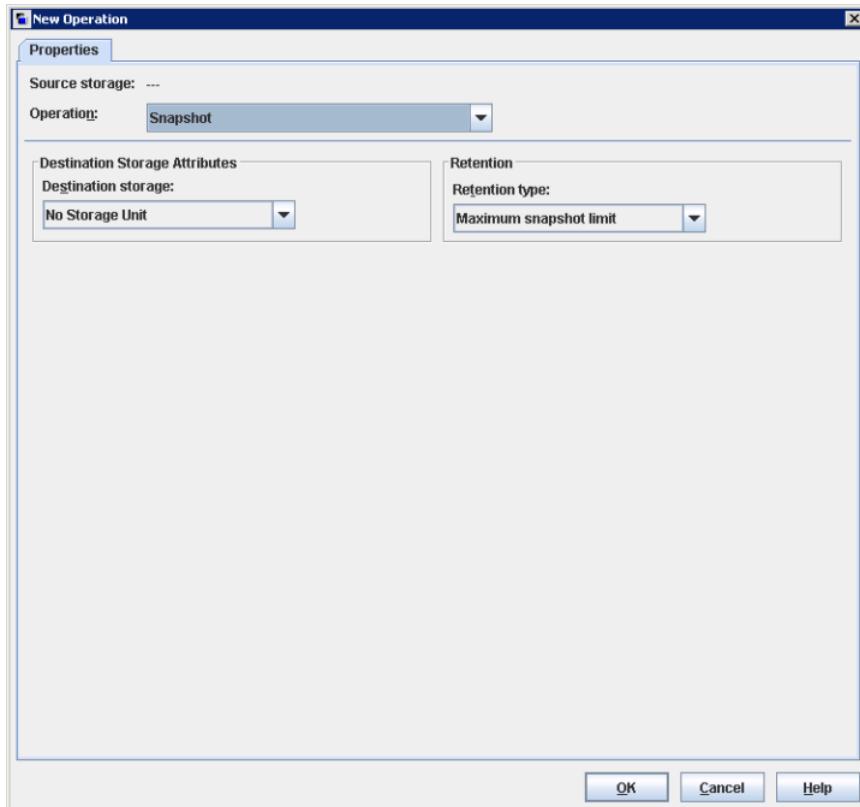


3 Enter a policy name, then click **Add**.

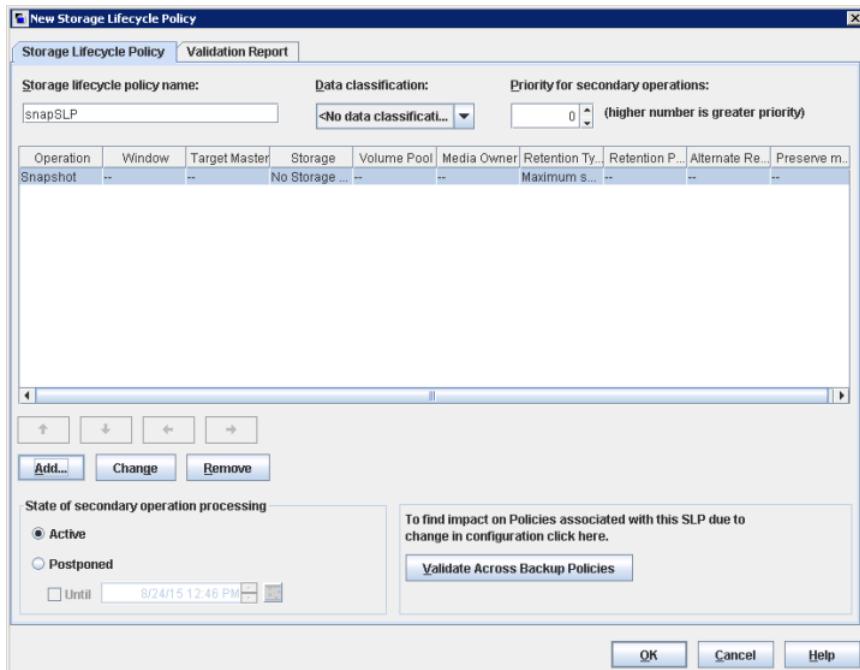


4 Select **Snapshot** in the **Operation** drop-down menu.

- 5 Select **No Storage Unit** in the **Destination storage** drop-down menu, then click **OK**.

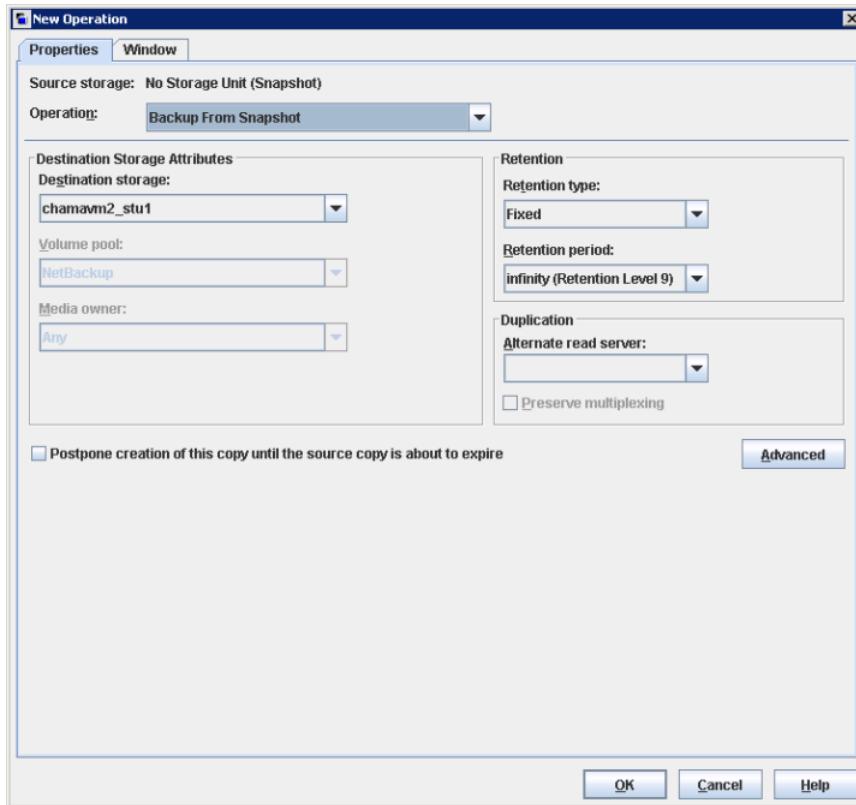


**6 Click Add...**

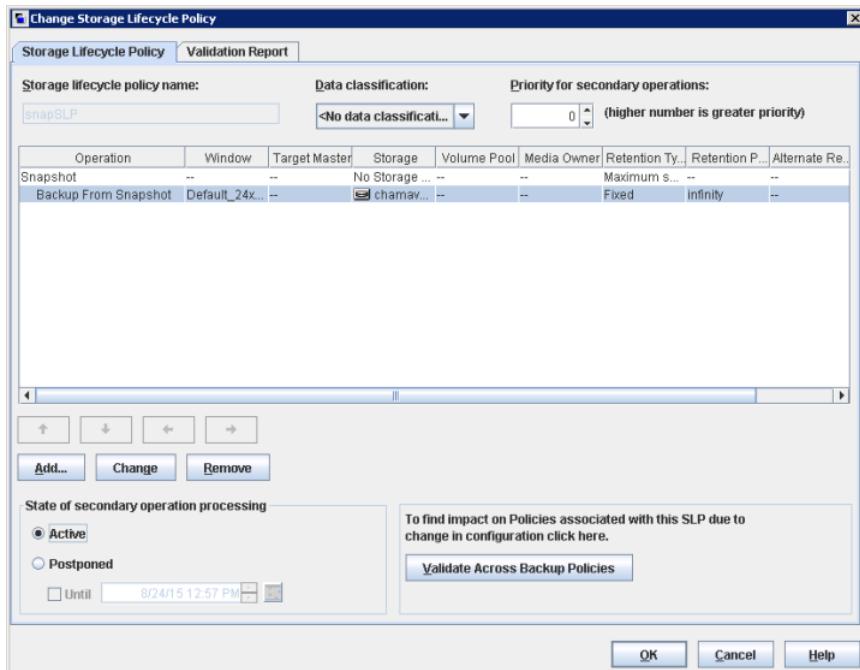


**7 Select **Backup From Snapshot** in the **Operation** drop-down menu.**

- 8 Select the storage unit from the **Destination storage** drop-down menu, then click **OK**.

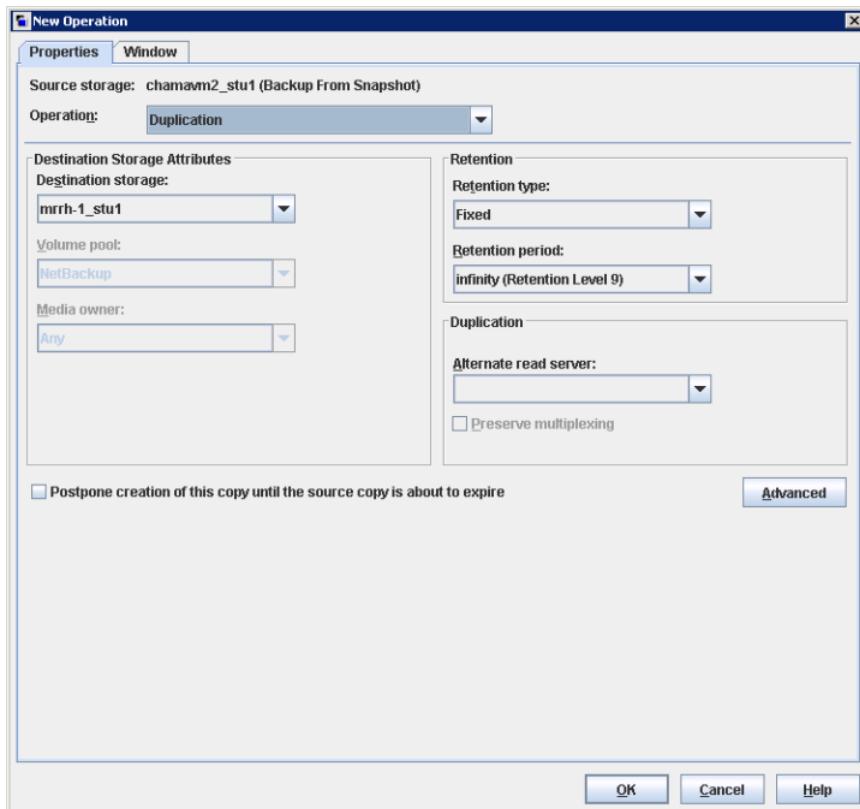


**9 Click Add...**

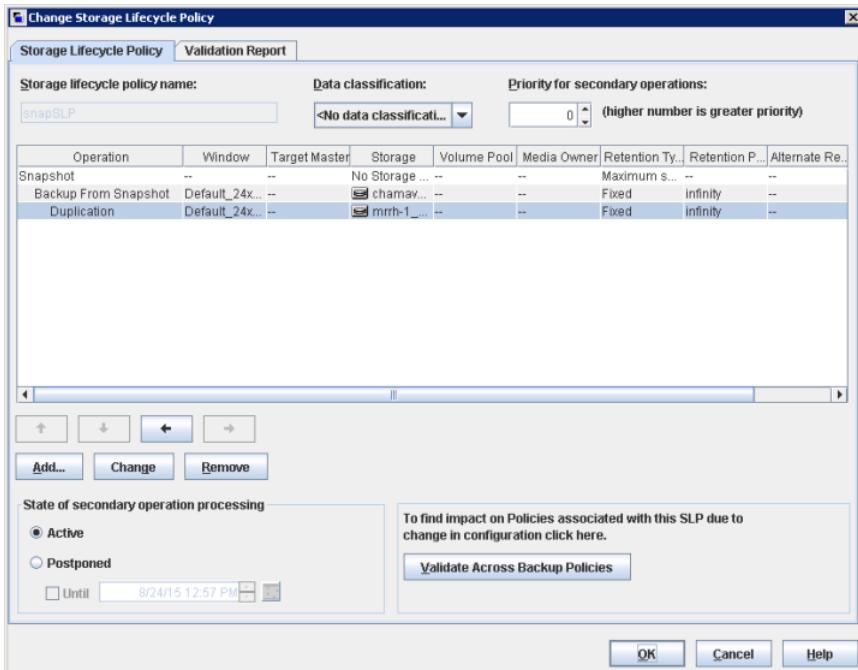


**10 Select Duplication from the Operation drop-down menu.**

- 11 Select the storage unit from the **Destination** storage drop-down menu, then click **OK**.



- 12 Review the configuration and verify that you have the snapshot backup and duplication portion of the SLP setup correctly, then click **OK**.



See “[Configure a second storage lifecycle policy for Copilot](#)” on page 21.

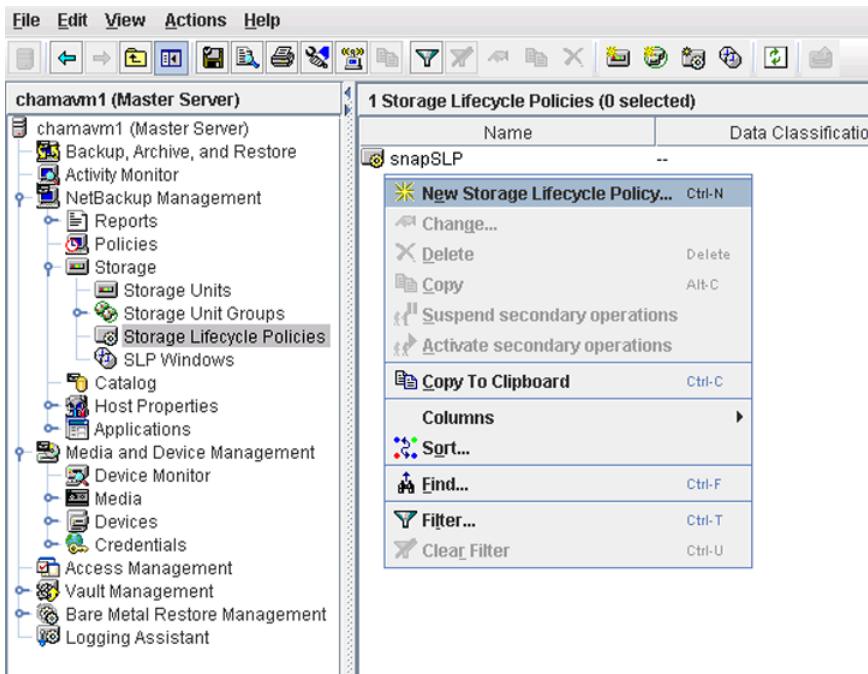
See “[Copilot configuration overview](#)” on page 7.

## Configure a second storage lifecycle policy for Copilot

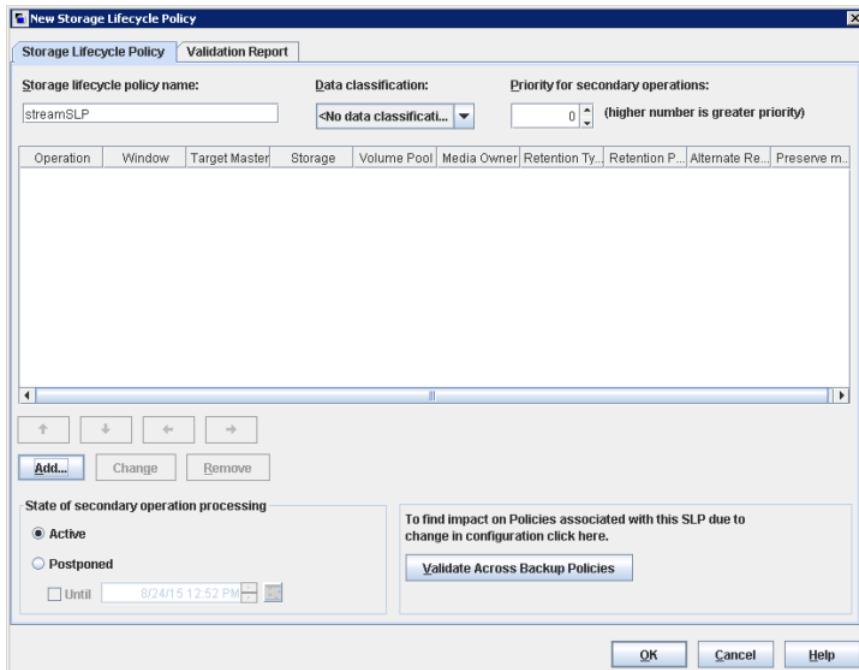
Use the following procedure to configure a second backup storage lifecycle policy (SLP) for Copilot using the NetBackup Admin console.

### Configure a second SLP

- 1 Log on to the NetBackup Admin Console.
- 2 Right click, then select **New Storage Lifecycle Policy**.

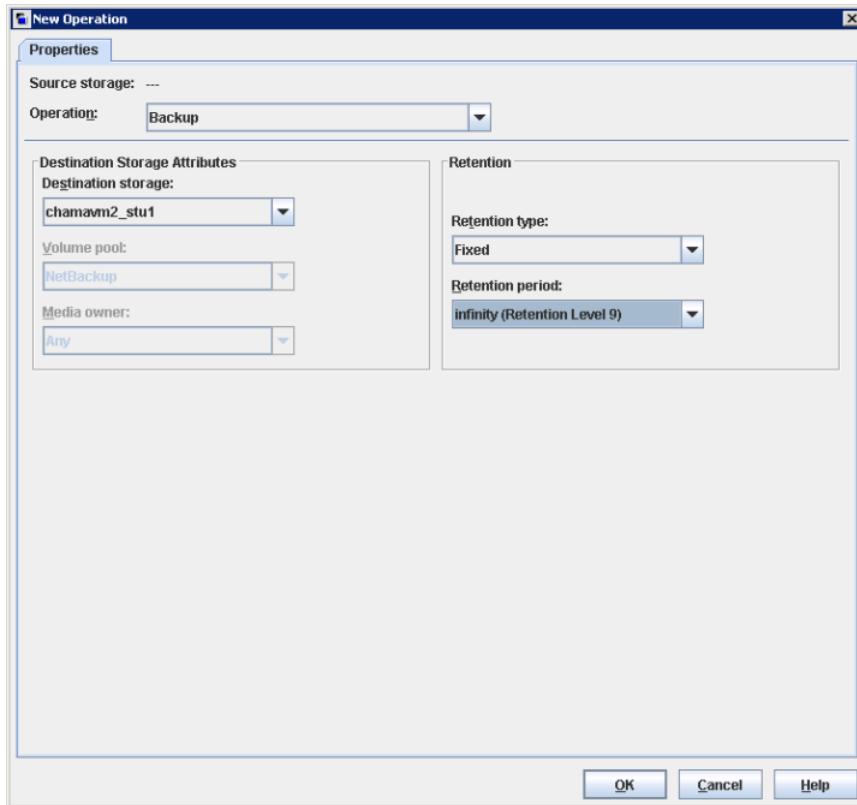


3 Enter a storage lifecycle policy name, then click **Add**.

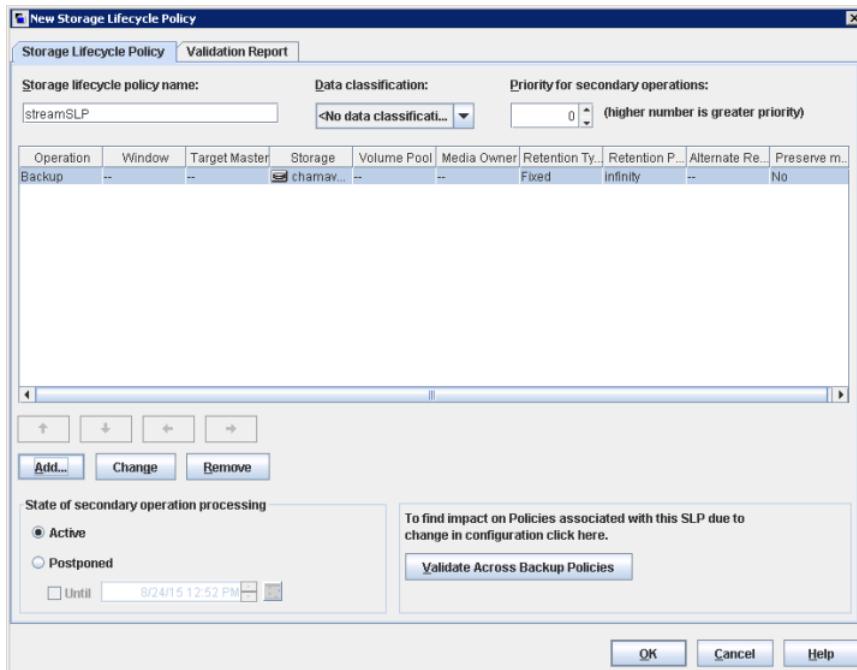


4 Select **Backup** from the **Operation** drop-down menu.

- 5 Select the storage unit from the **Destination storage** drop-down menu, then click **OK**.

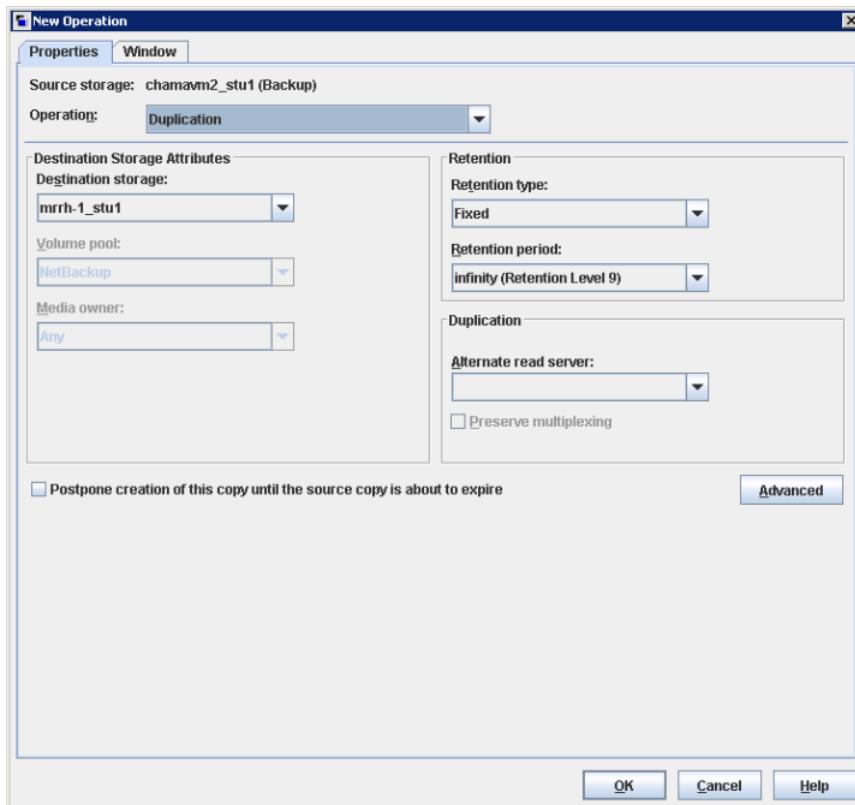


**6 Click Add...**

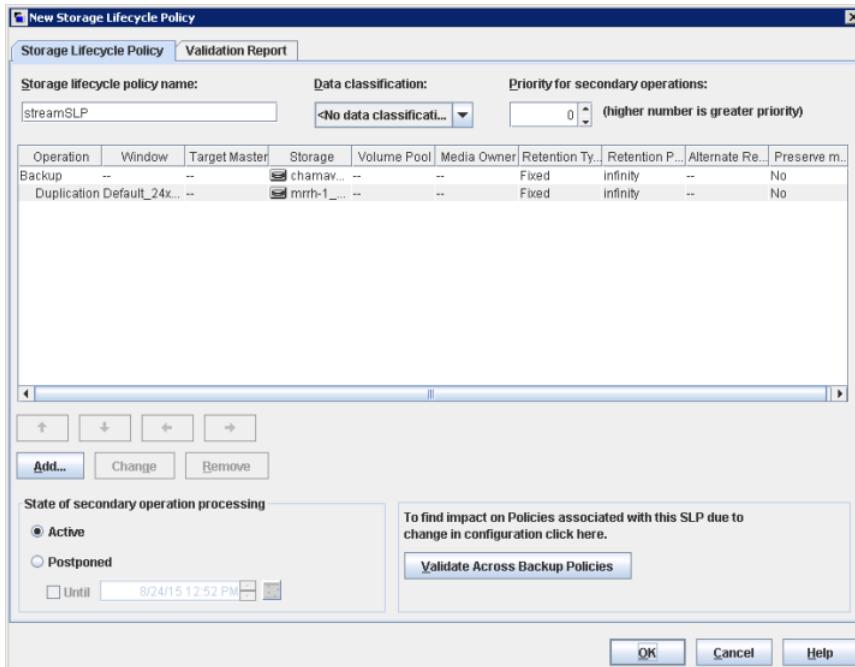


**7 Select Duplication from the Operation drop-down menu.**

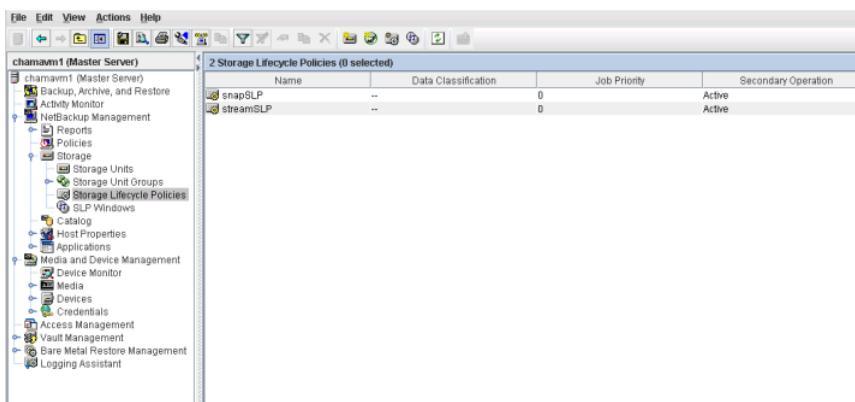
- 8 Select the storage unit from the **Destination storage** drop-down menu, then click **OK**.



- 9** Review the configuration to verify that you have setup the stream portion of the SLP setup correctly, then click **OK**.



- 10** Review the SLPs window to verify that both SLPs are active.



See “[Register the Oracle database credentials with NetBackup for Copilot](#)” on page 28.

See “[Copilot configuration overview](#)” on page 7.

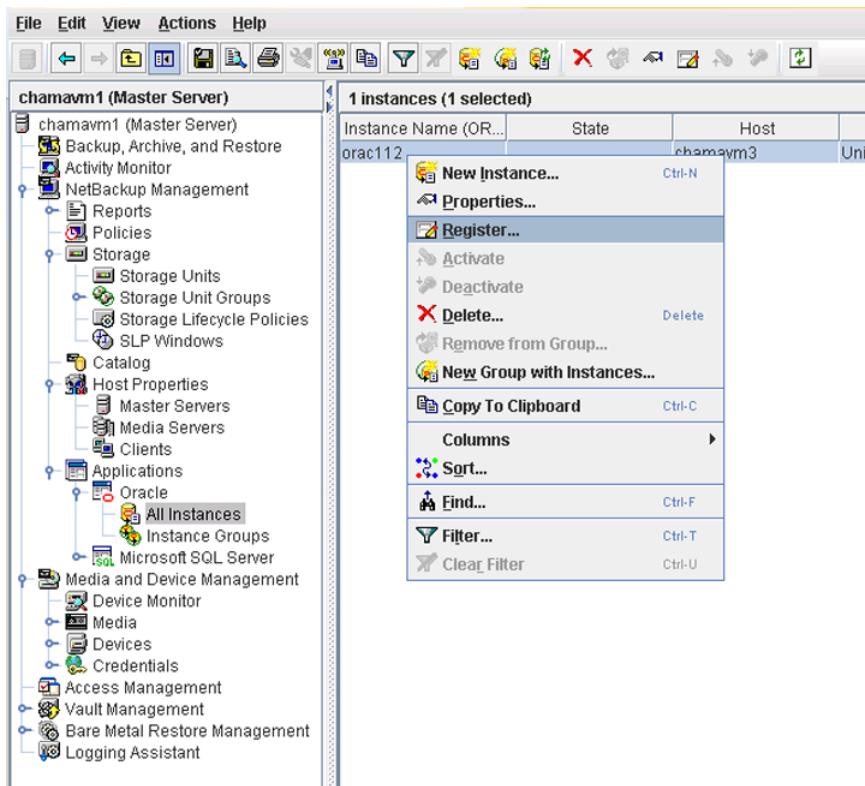
## Register the Oracle database credentials with NetBackup for Copilot

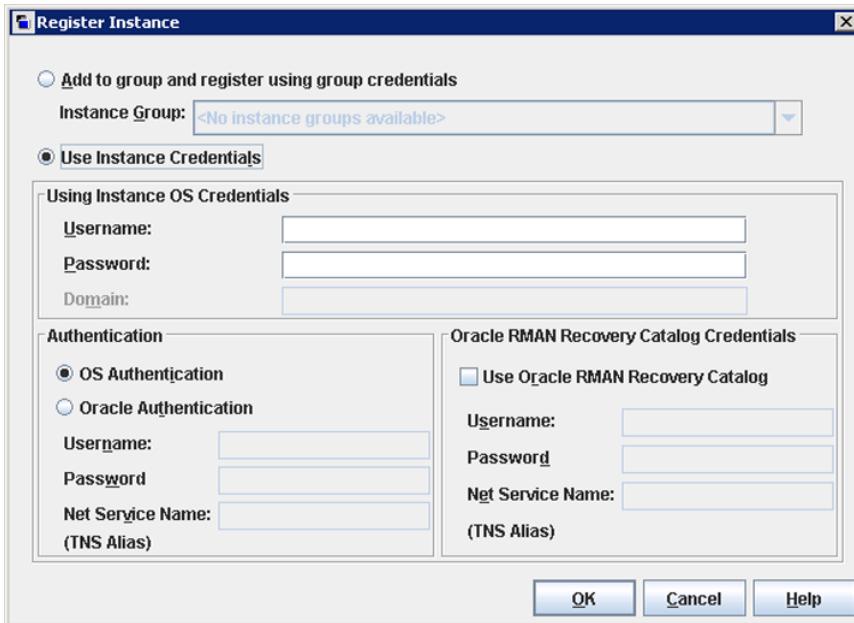
Use the following procedure to register the Oracle database credentials with NetBackup.

### **Register the Oracle database credentials**

- 1** Right click on the instance, then select **Register**.

2 Enter the proper credentials for the instance, then click OK.





**3** Review the instance window to verify the instance is registered correctly.

Instance Name (OR...)	State	Host	OS Type	Oracle Home	Registered
orac112	Active	chamavm3	Unix	/db/orac112/app/ora...	08/24/2015 13:11:54

See “[Oracle Intelligent Policy configuration options for Copilot](#)” on page 32.

See “[Copilot configuration overview](#)” on page 7.

# Oracle Intelligent Policy (OIP) configuration

This chapter includes the following topics:

- [Oracle Intelligent Policy configuration options for Copilot](#)
- [Create the Oracle Intelligent Policy for Oracle accelerator backups](#)
- [Create the Oracle Intelligent Policy for database dump backups](#)

## Oracle Intelligent Policy configuration options for Copilot

There are two options available during the OIP configuration for Copilot. You can choose between the following two options:

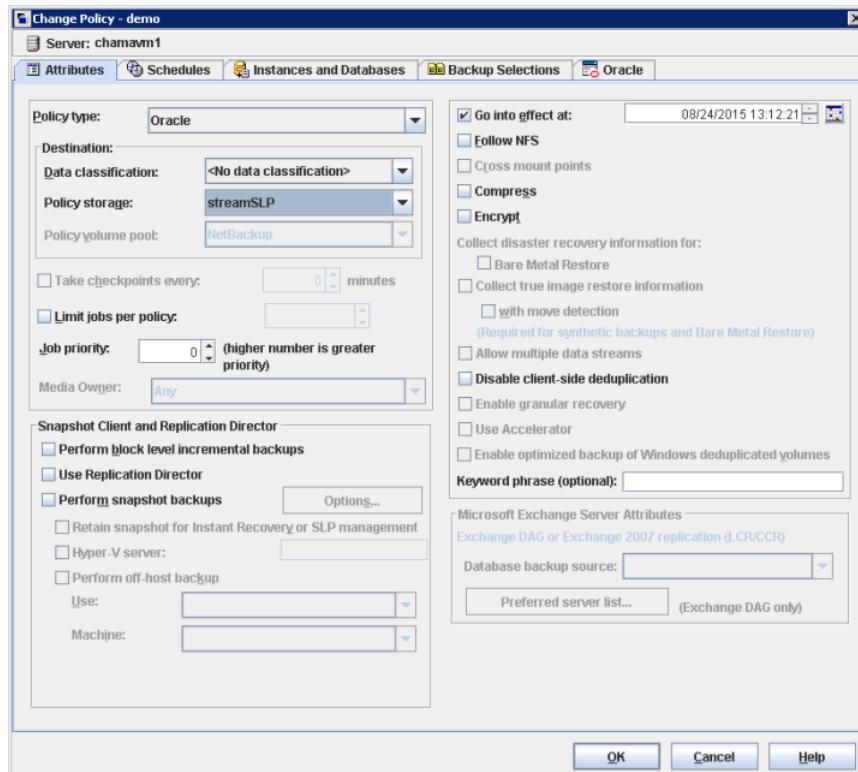
- **Database Backup Shares**  
Select this option to perform database dump backups.  
See “[Database dump backup details](#)” on page 6.  
See “[Create the Oracle Intelligent Policy for database dump backups](#)” on page 41.
- **Whole Database - Datafile Copy Share**  
Select this option to perform Oracle accelerator backups.  
See “[Oracle Accelerator backup details](#)” on page 6.  
See “[Create the Oracle Intelligent Policy for Oracle accelerator backups](#)” on page 33.

# Create the Oracle Intelligent Policy for Oracle accelerator backups

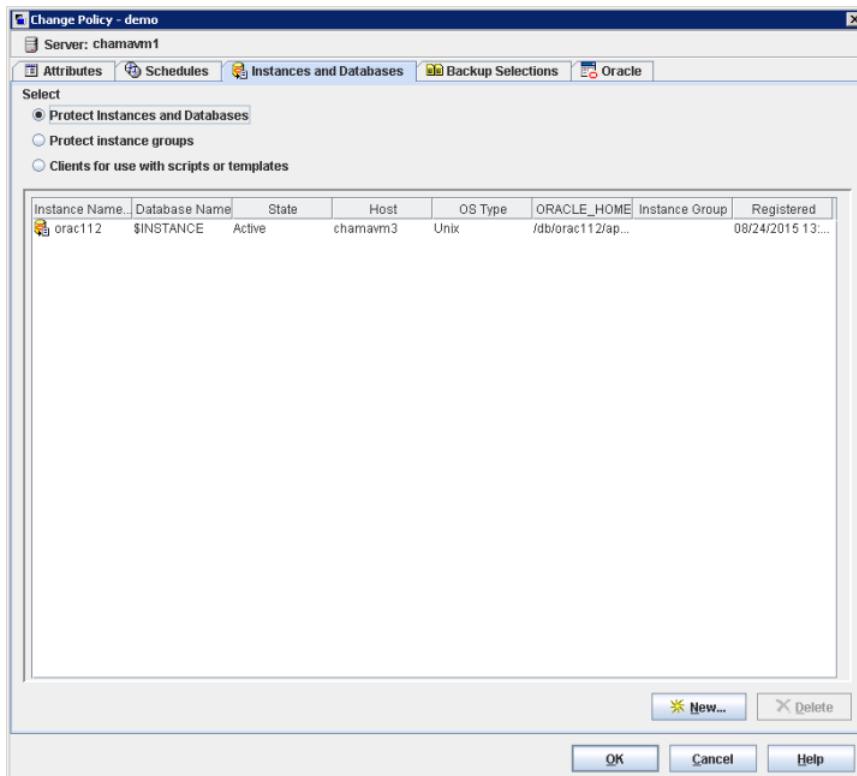
Use the following procedure to create the Oracle Intelligent Policy (OIP) for Oracle accelerator backups.

## Create the OIP for Oracle accelerator backups

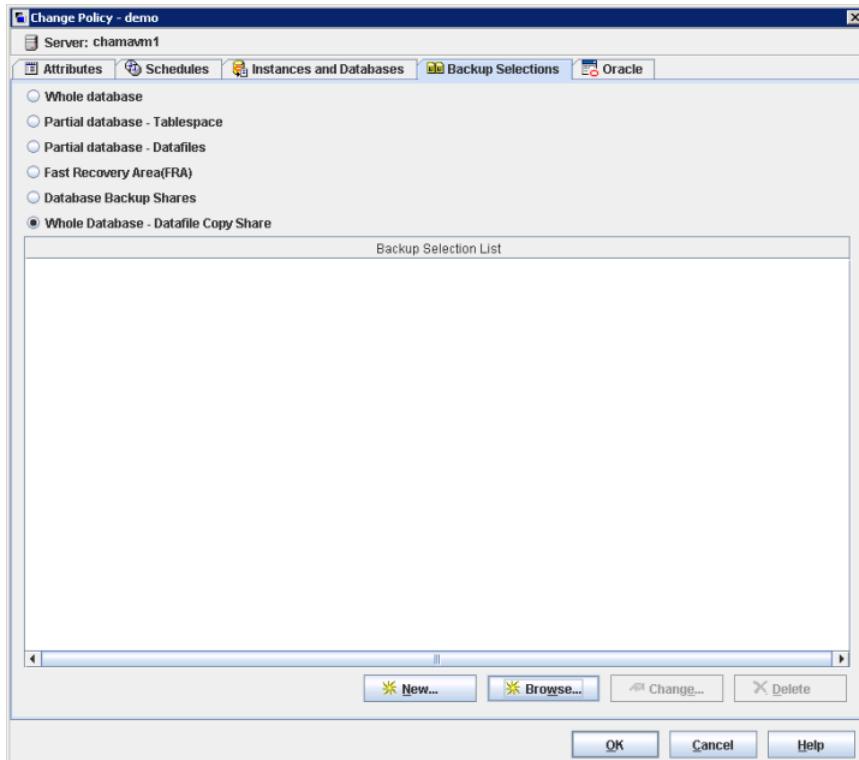
- 1 In the left pane of the NetBackup Admin Console, expand **NetBackup Management > Policies**.
- 2 Select **Actions > New > Policy** or right-click on **All Policies** in the center pane, then click **New Policy** on the shortcut menu.
- 3 Select **Oracle** in the **Policy type** drop-down menu.
- 4 Select the stream policy you created earlier in the **Policy storage** drop-down menu.



- 5 Click the **Instances and Databases** tab, then select **Protect Instances and Databases**.

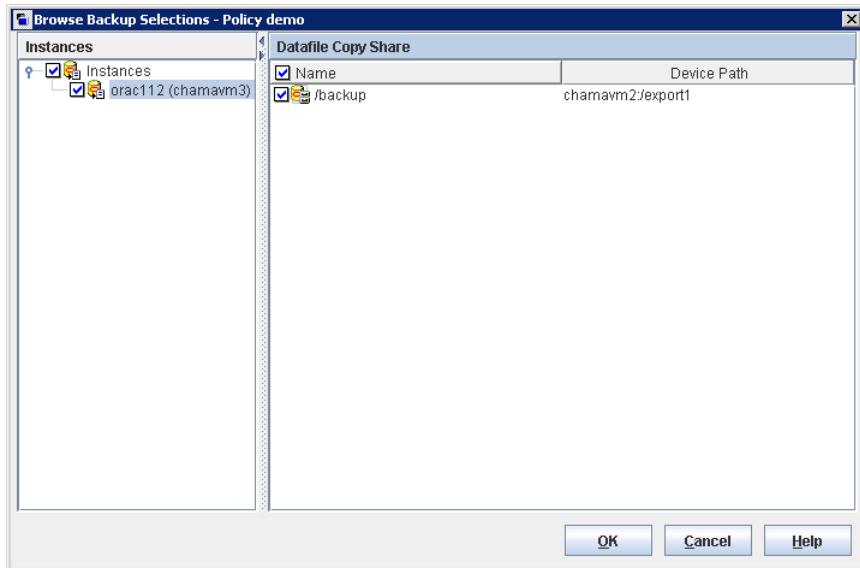


- 6 Click the **Backup Selections** tab, then select **Whole Database - Datafile Copy Share**.



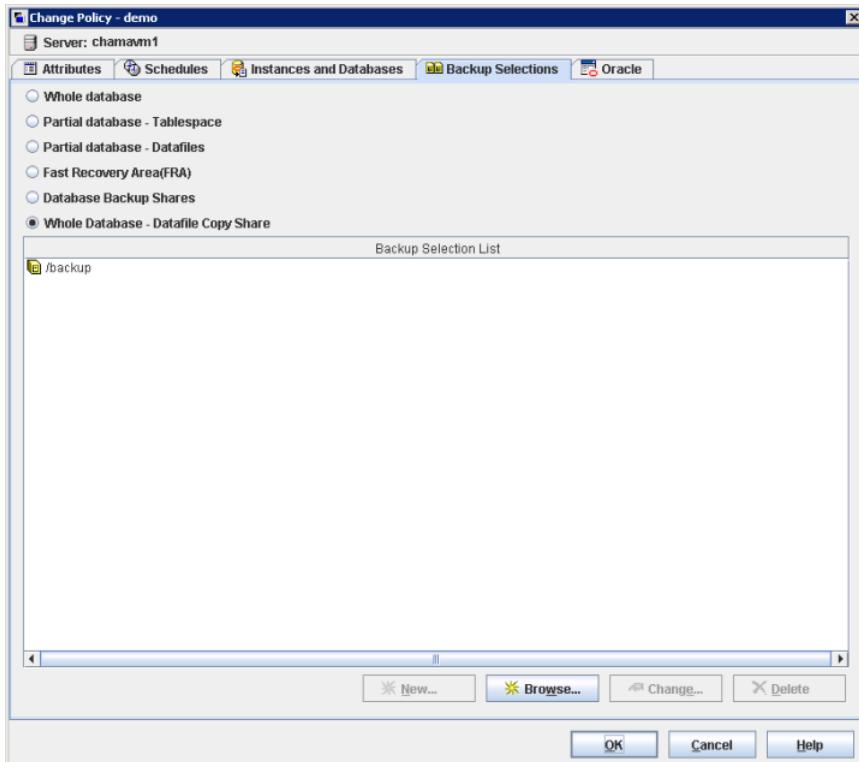
- 7 Click **Browse** to open the **browse backup selections** window.

- 8** Select the instance name and location you want to include in the backup, then click **OK**.



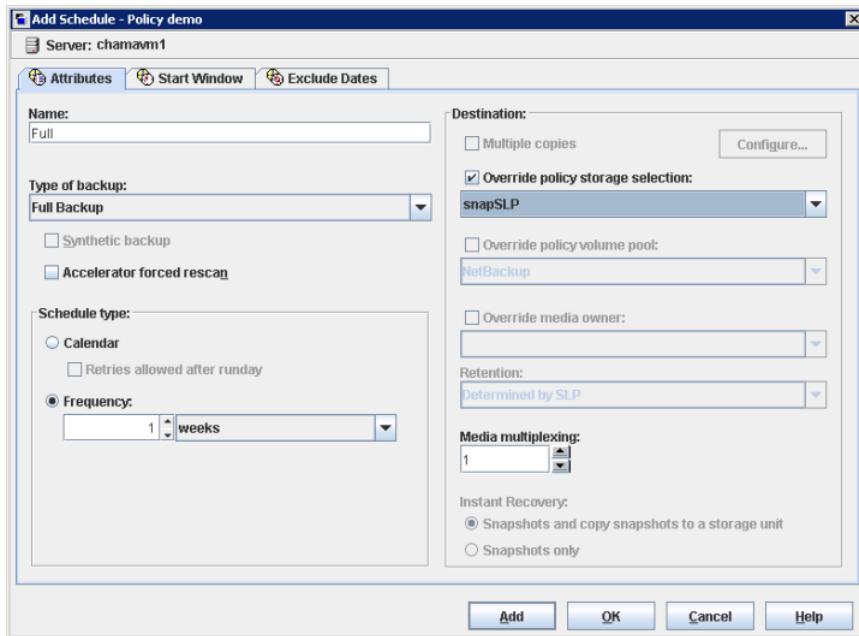
- 9** Review the **Backup Selection List** and verify that the proper instance location is selected.

The selected instance is the share mount point on the Oracle server.



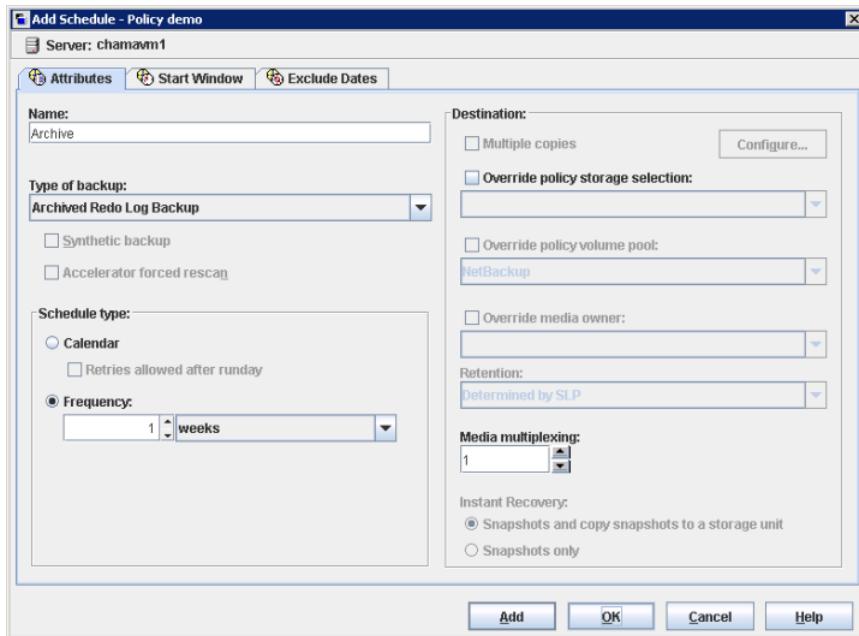
- 10** Click the **Schedules** tab to create a full schedule.
- 11** Select **Full Backup** in the **Type of backup** drop-down menu and enter a name for the schedule.
- 12** Select **Override policy storage selection** and choose the storage lifecycle policy you created earlier for the snapshot.

**13 Click Add.**

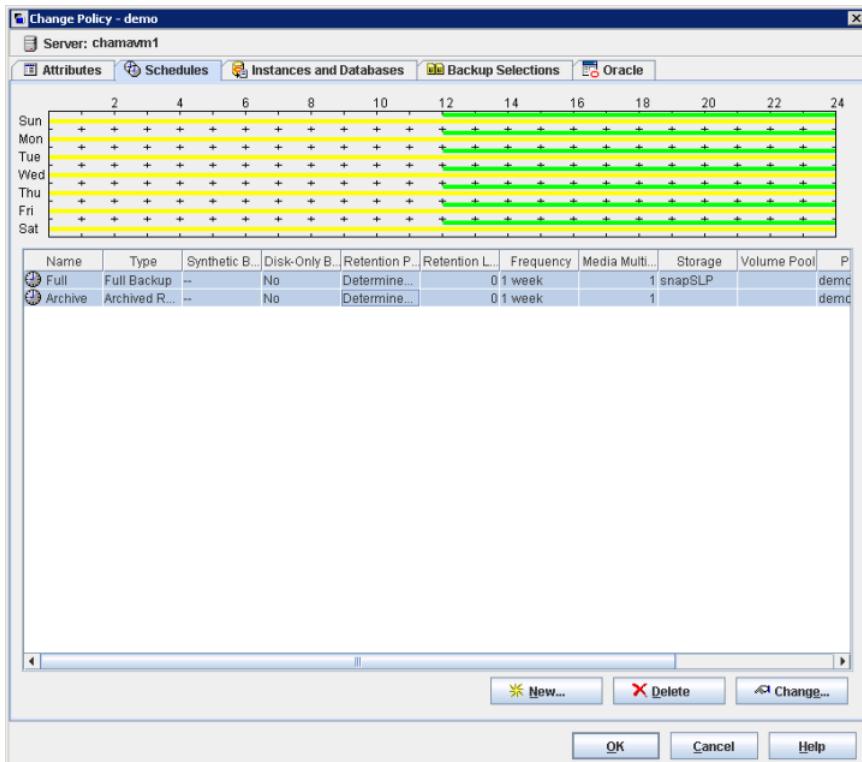


**14 Select Archived Redo Log Backup from the Type of backup drop-down menu and enter a name for the schedule.**

15 Click OK to confirm.

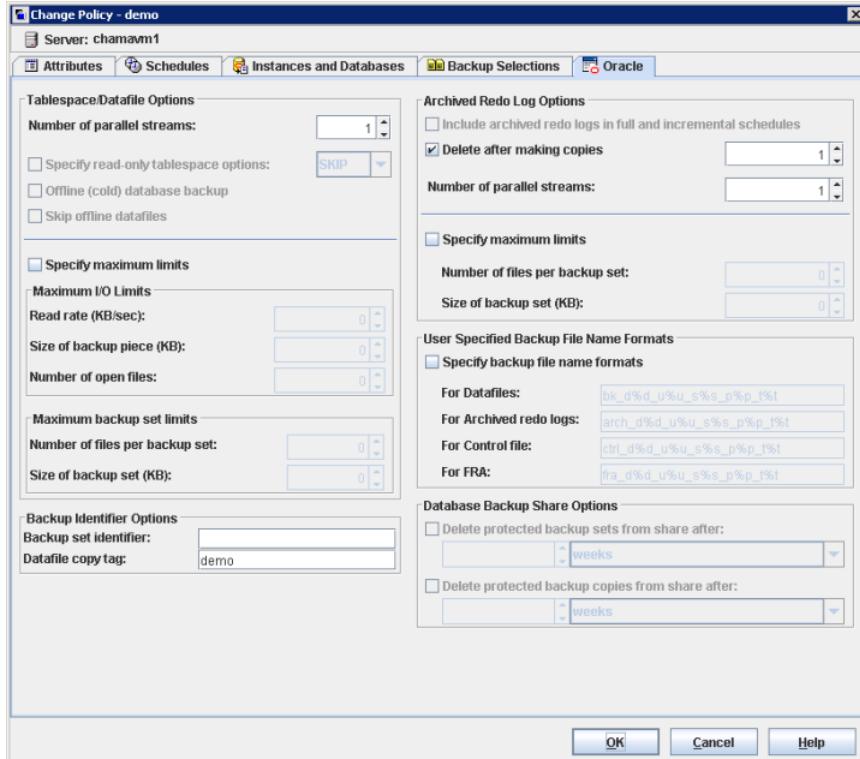


**16** Review the created schedule to verify that all selections are correct.



17 Click the **Oracle** tab to adjust any selections as needed.

18 Click **OK** to complete the setup.



See “[Copilot configuration overview](#)” on page 7.

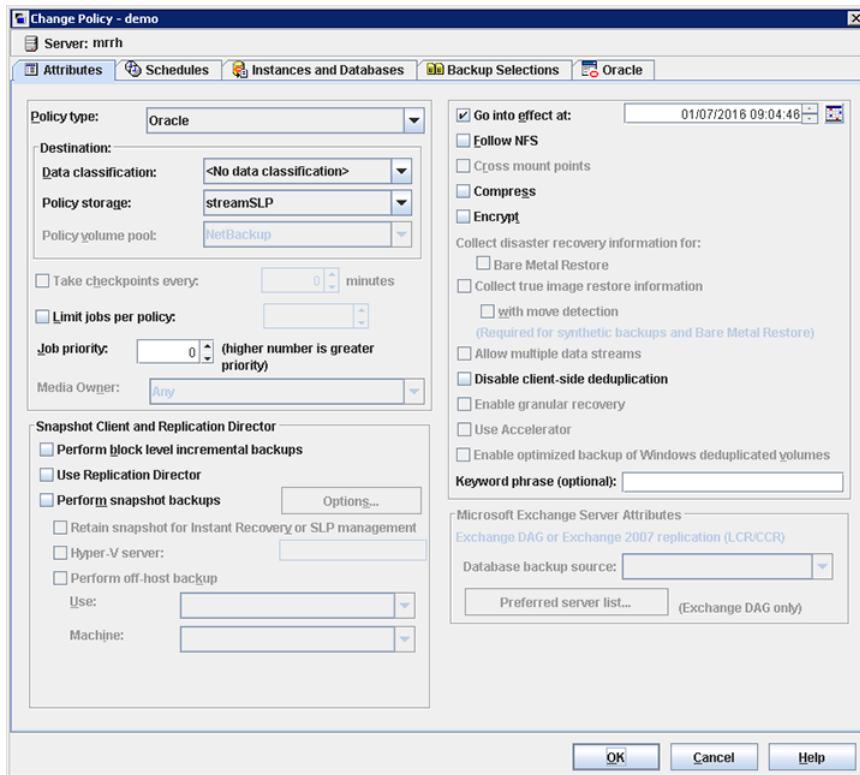
## Create the Oracle Intelligent Policy for database dump backups

Use the following procedure to create the Oracle Intelligent Policy (OIP) for database dump backups.

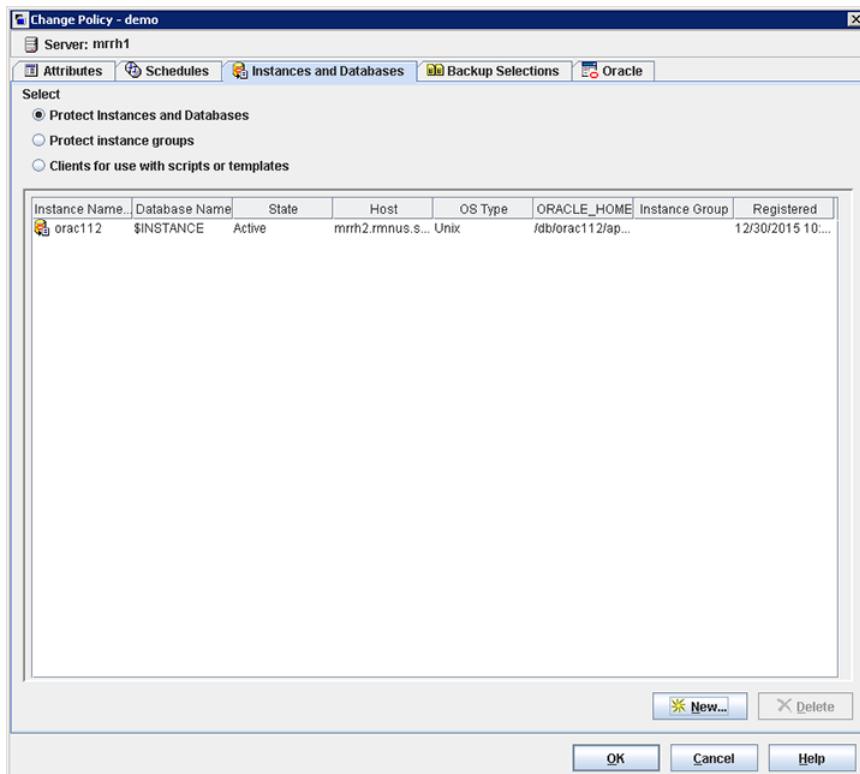
### Create the OIP for database dump backups

- 1 In the left pane of the NetBackup Admin Console, expand **NetBackup Management > Policies**.
- 2 Select **Actions > New > Policy** or right-click on **All Policies** in the center pane, then click **New Policy** on the shortcut menu.

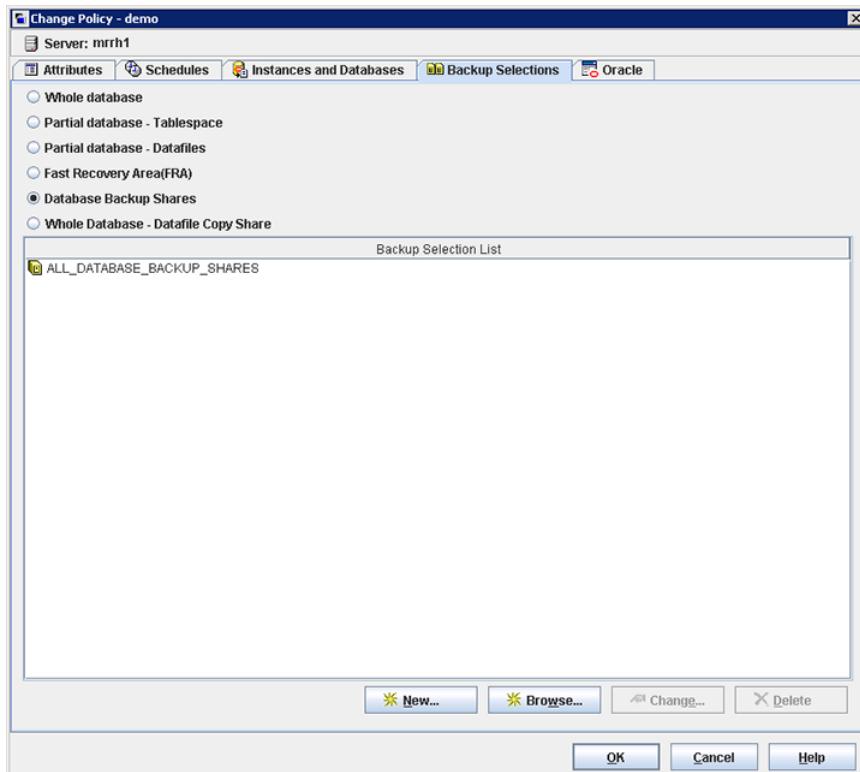
- 3 Select **Oracle** in the **Policy type** drop-down menu.
- 4 Select the stream policy you created earlier in the **Policy storage** drop-down menu.



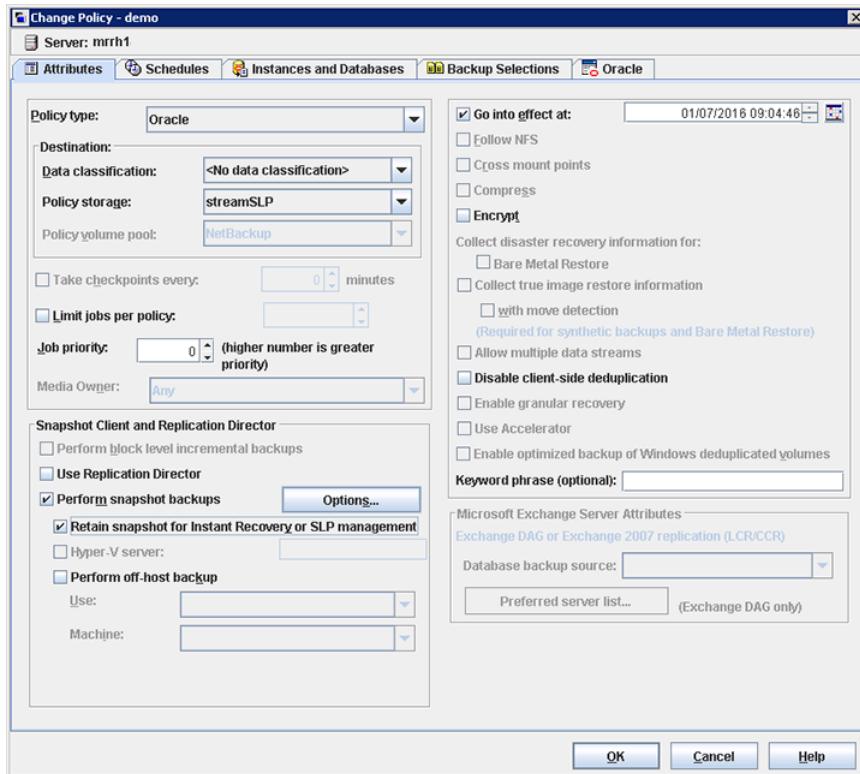
- 5 Click the Instances and Databases tab, then select **Protect Instances and Databases**.



**6 Click the **Backup Selections** tab, then select **Database Backup Shares**.**

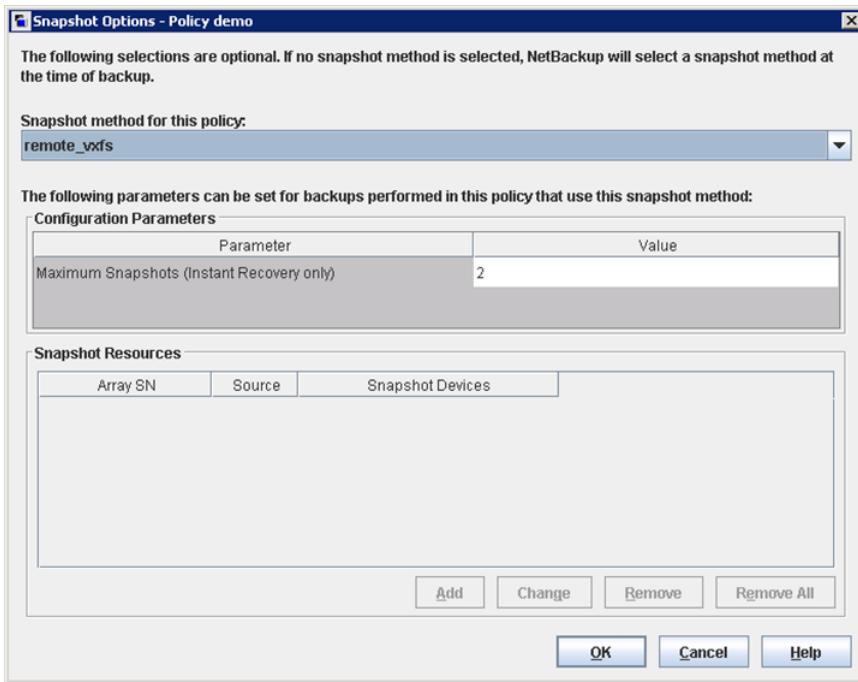


- 7 Click the **Attributes** tab, then select **Perform snapshot backups** and **Retain snapshot for Instant Recovery or SLP management**.



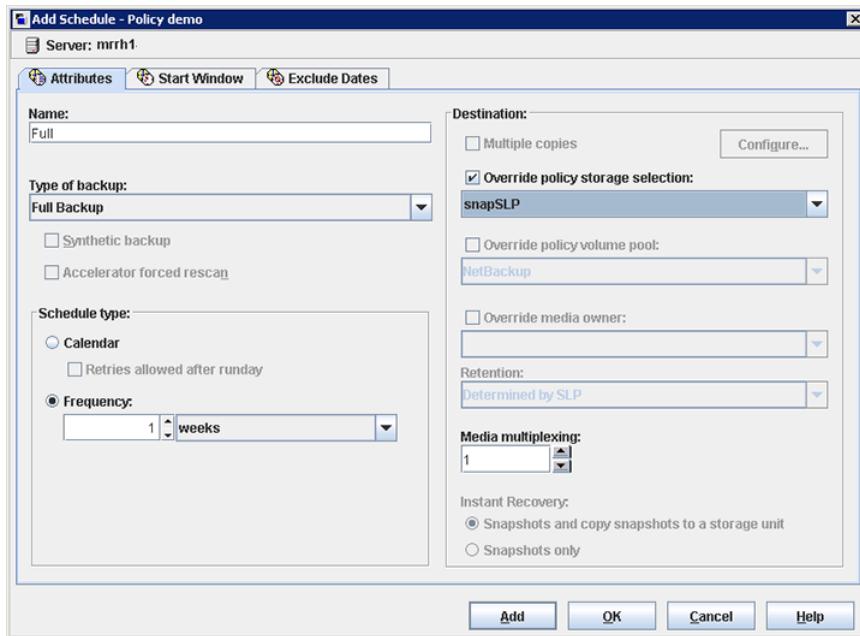
- 8 Click the **Options...** button, then select **remote\_vxfs** from the **Snapshot method for this policy** drop-down menu.

- 9 Click **OK** to confirm.



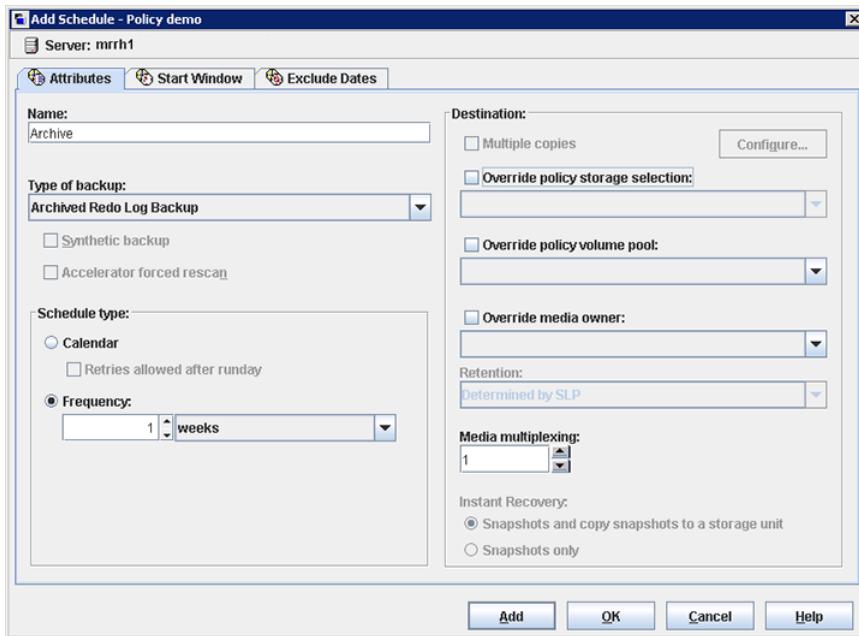
- 10 Click the **Schedules** tab to create a full schedule.  
11 Select **Full Backup** in the **Type of backup** drop-down menu and enter a name for the schedule.  
12 Select **Override policy storage selection** and choose the storage lifecycle policy you created earlier for the snapshot.

**13 Click Add.**

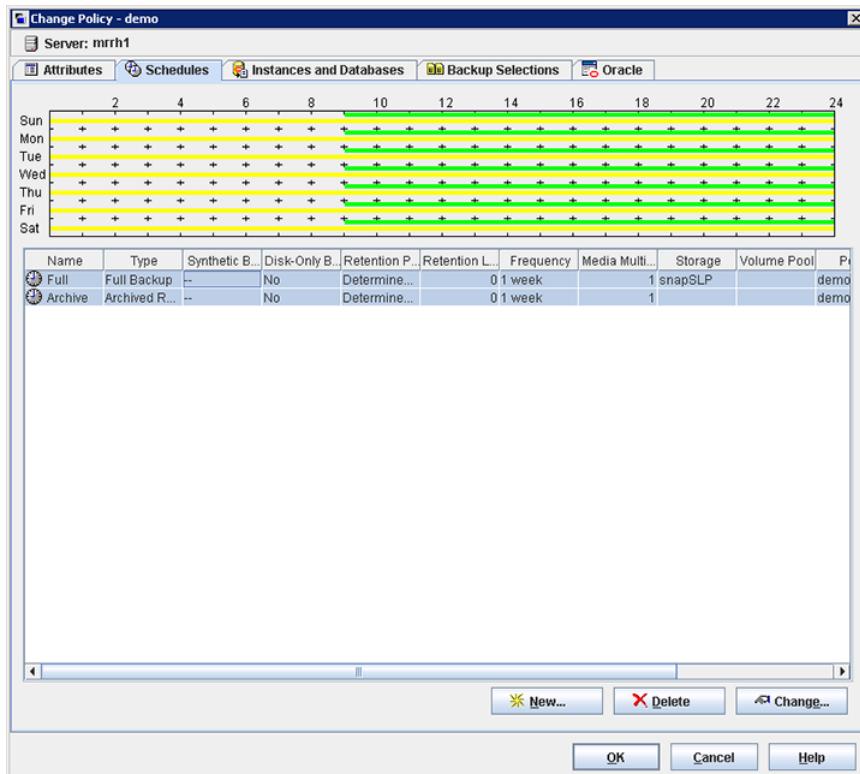


**14 Select Archived Redo Log Backup from the Type of backup drop-down menu and enter a name for the schedule.**

15 Click OK to confirm.

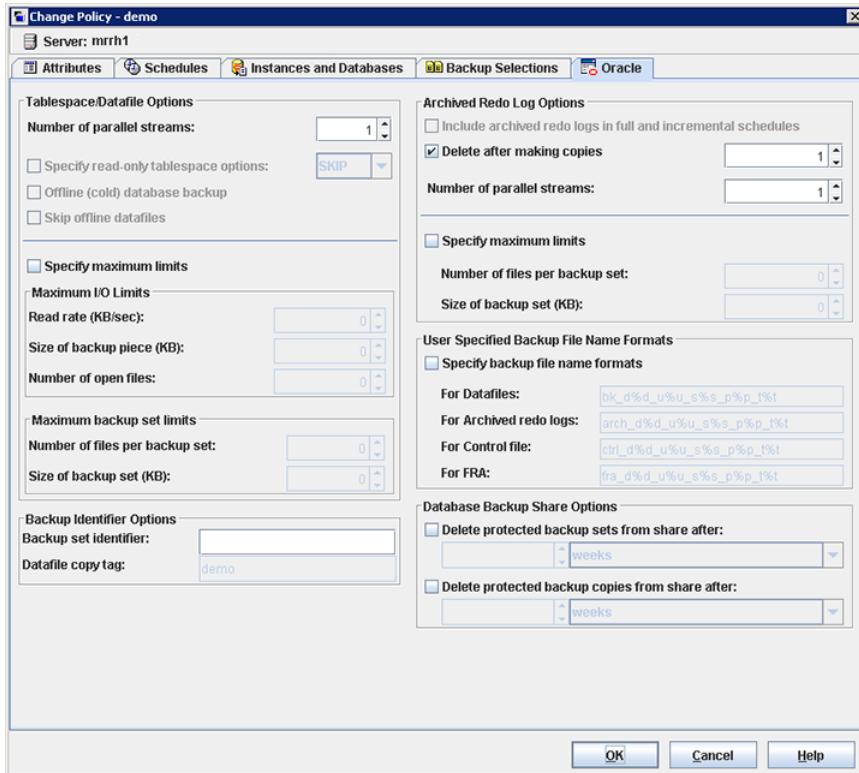


**16** Review the created schedule to verify that all selections are correct.



17 Click the **Oracle** tab to adjust any selections as needed.

18 Click **OK** to complete the setup.



See “[Copilot configuration overview](#)” on page 7.