



# Configuration Guide:

Deploying SwiftStack as a Storage Target  
for CommVault Simpana



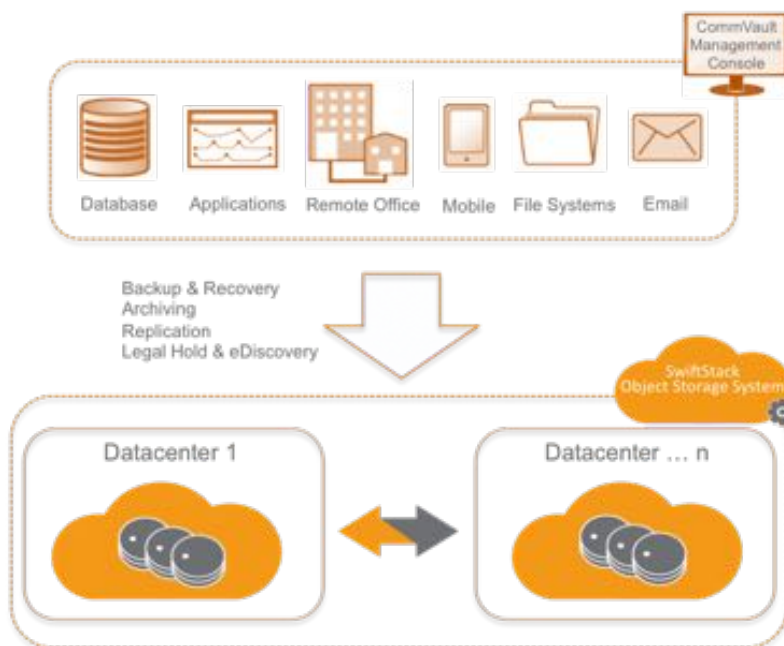
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## Introduction

CommVault Simpana software can be used to analyze, backup and recover, archive, and search data and information across your enterprise and across any storage platform, including the SwiftStack Object Storage System. SwiftStack provides an enterprise-grade object storage system, which includes the SwiftStack Controller making it simple for IT administrators to deploy, integrate, and manage their object storage clusters.

When combined with SwiftStack, CommVault administrators can geographically distribute data across multiple locations - allowing backup and archival data to be available for local site access and remotely for disaster recovery scenarios. IT administrators can independently scale performance and capacity with the SwiftStack storage platform to maintain backup windows and improve RTO and RPO goals.



In this configuration guide, we will discuss important considerations for optimizing your deployment and provide step-by-step instructions to configure the SwiftStack Object Storage System as a storage target for CommVault Simpana.

# Best Practice Recommendations

## Multiple Storage Libraries

To ensure performance is not impacted as additional clients are added, it is recommended that multiple Storage Libraries backed by SwiftStack are created in a CommVault Simpana Storage Policy. Each Storage Library should be mapped to a dedicated container in the SwiftStack Object Storage System and the Storage Policy should be configured to use multiple data paths in a round-robin fashion allowing the backup load to be spread across the storage system.

## Data Pruning

CommVault Simpana uses a “chunk-based” storage scheme for storing data and may combine data from numerous clients into objects stored in SwiftStack. Some features in Simpana, such as Data Aging, use a “pruning” method to remove bytes of data from the chunks as needed based on configured policies. However, since the SwiftStack Object Storage System supports operations on entire objects, Simpana will “flag” the byte range within the chunks for pruning and an object will not be removed until all of the chunks that comprise the object have been flagged for removal.

Since data is stored as whole objects in the SwiftStack Object Storage System, storage utilization with the current supported version(s) of Simpana is not as granular as block-based storage technologies. To optimize the utilization, we recommend combining backups and archives for applications/clients requiring the same retention policies to dedicated Simpana Storage Policies. This will ensure a higher likelihood that all bytes in a given object will eventually be a candidate for pruning and will be deleted to free up capacity.

## SwiftStack Storage Policies

A storage policy in CommVault Simpana is primarily used to map data from clients to a storage backend for backup and recovery operations. However, the SwiftStack Object Storage System also includes a storage policy feature but is used to organize data based on location, storage media, and data protection scheme across the storage system.

Storage policies in SwiftStack can be used to distribute data off-site for disaster recovery capabilities. To take advantage of this feature, you must ensure that the containers in a Simpana Storage Library are associated with a SwiftStack Storage Policy that will store data in different regions or locations. For this configuration, it is recommended that the “Write Affinity” feature is turned on in SwiftStack to enable Simpana to write data locally - to meet your backup windows, for example - and the data will eventually be distributed throughout the storage system. However, if data cannot reside in certain

locations due to regulations or policies, you can apply a SwiftStack Storage Policy to the appropriate SwiftStack containers to ensure the data will reside in a specific location.

## Undelete

The SwiftStack Object Storage System includes an “undelete” feature, which allows storage administrators to recover objects that were accidentally deleted by users. However, this feature can interfere with CommVault Simpana’s data storage and pruning schemes. To prevent any chance of interference, it is recommended this feature be disabled on any container(s) used to store data from Simpana.

# Step-by-Step Configuration Guide

## 1. Create a Storage Library backed by SwiftStack

Simpana Storage Libraries are configured targets for CommVault Simpana to store data. To integrate Simpana with SwiftStack, one or more Storage Library definitions need to be created that point to your SwiftStack Object Storage System.

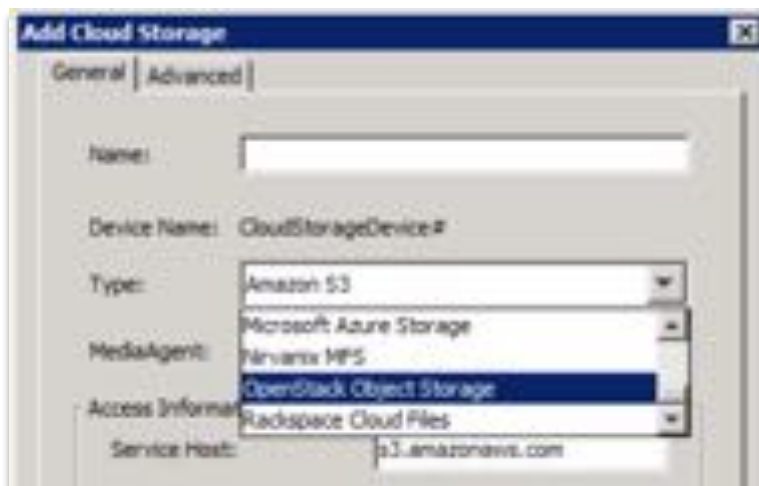
1. In the CommCell Browser, expand the “Storage Resources” tree.



2. Right-click on “Libraries” and select “Add > Cloud Storage Library...”

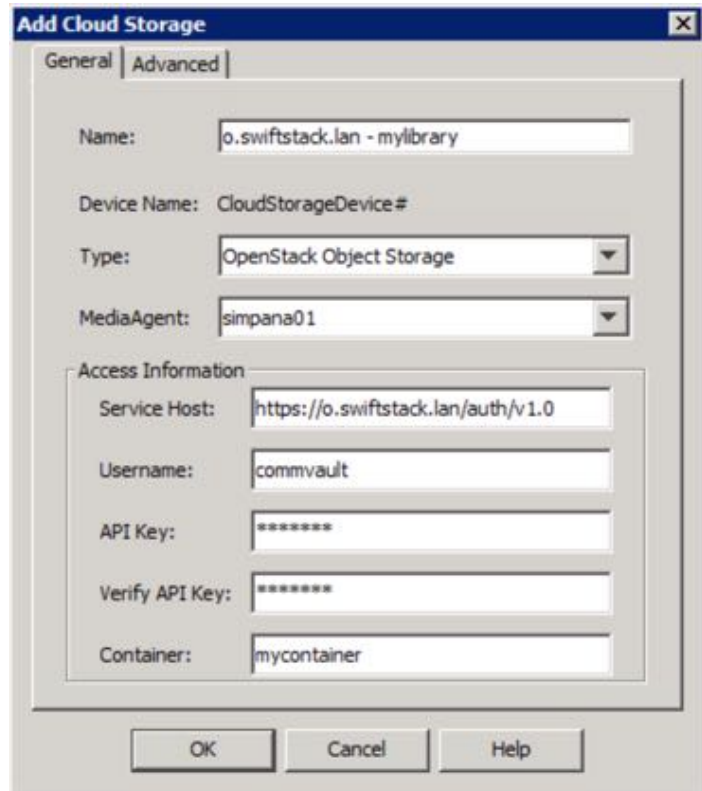


3. Under “Type,” Select “OpenStack Object Storage.”



4. Enter in a name for your new Library, and enter in the following information:

- a. *MediaAgent* - the Media Agent assigned for transferring data to/from SwiftStack
- b. *Service Host* - the authentication URL for your SwiftStack Object Storage System. If you are not using HTTPS, be sure to put 'HTTP' in for the protocol.
- c. *Username* - the user for accessing your SwiftStack storage
- d. *API Key* - the password for the above user
- e. *Container* - the SwiftStack container used to store the data from CommVault Simpana. This does not need to be the same name as your Library



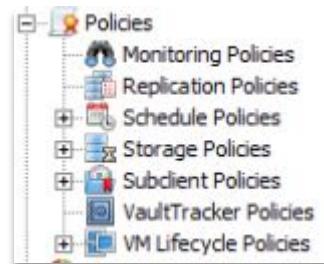
5. Click "OK" and you will now see your new Library in the list of configured Libraries.

Name	Status
 o.swiftstack.lan - databases	Ready
 o.swiftstack.lan - desktops	Ready
 o.swiftstack.lan - foo	Ready
 o.swiftstack.lan - mylibrary	Ready
 o.swiftstack.lan - servers	Ready

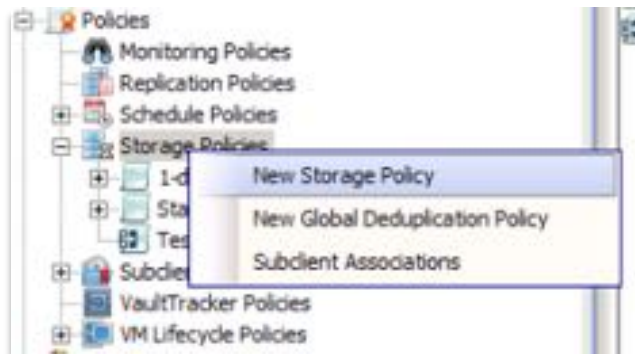
## 2. Create a Simpana Storage Policy to Use SwiftStack

Simpana Storage Policies dictate where and how backup data from clients are to be stored. A Simpana Storage Policy can control data deduplication, the MediaAgent to be used for handling the data, and the Storage Libraries where the data will be stored.

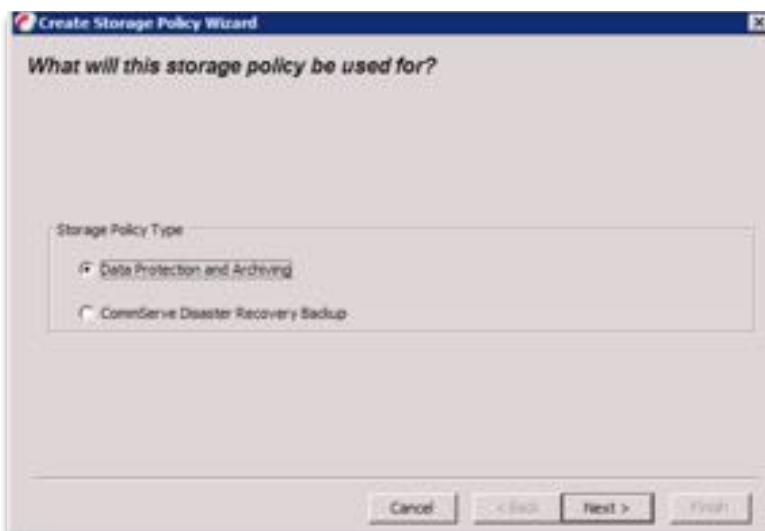
1. In the CommCell Browser, expand Policies.



2. Right-click on "Storage Policies" and select "New Storage Policy."

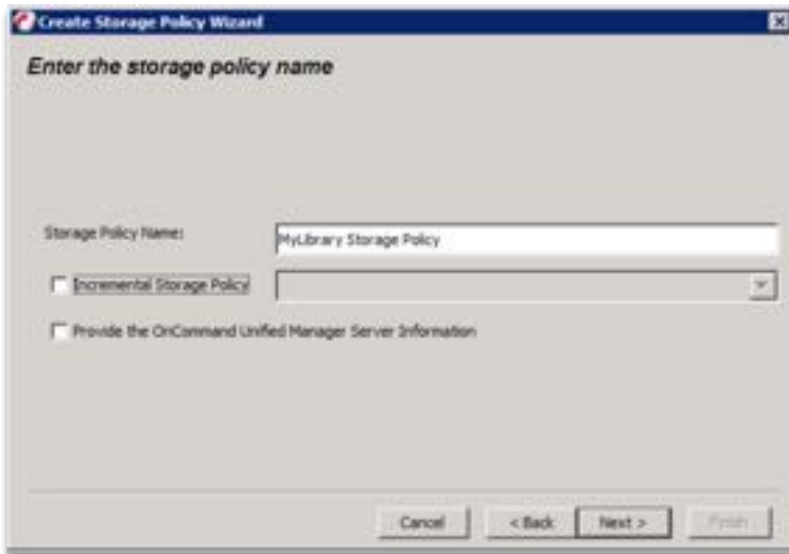


3. Select "Data Protection and Archiving."



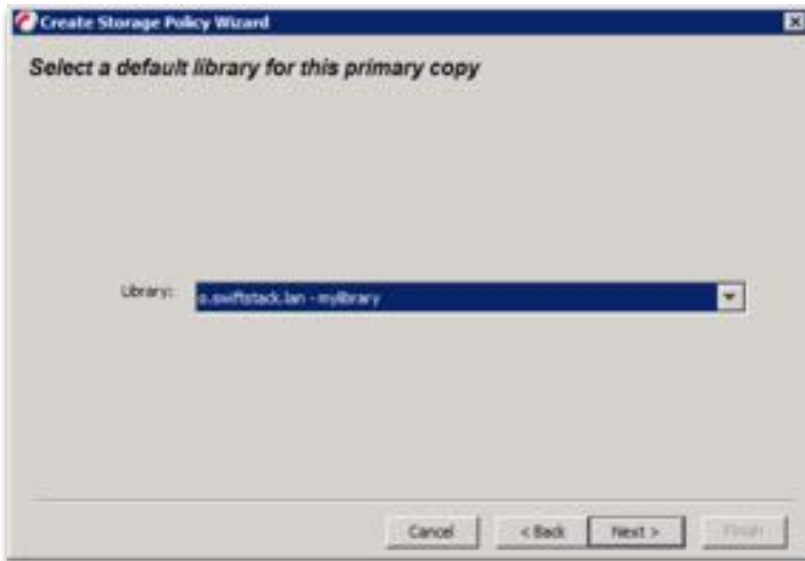


4. Give the Policy a Name.



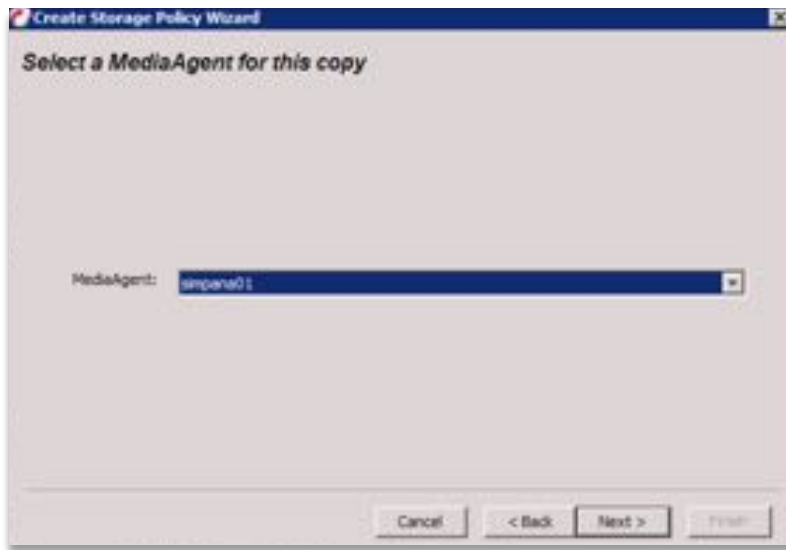
The screenshot shows a window titled "Create Storage Policy Wizard" with the subtitle "Enter the storage policy name". It contains a text input field for "Storage Policy Name" with the value "MyLibrary Storage Policy". Below it is a dropdown menu for "Incremental Storage Policy" which is currently empty. There is also a checkbox for "Provide the OnCommand Unified Manager Server Information" which is unchecked. At the bottom, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

5. Select Library for Policy.

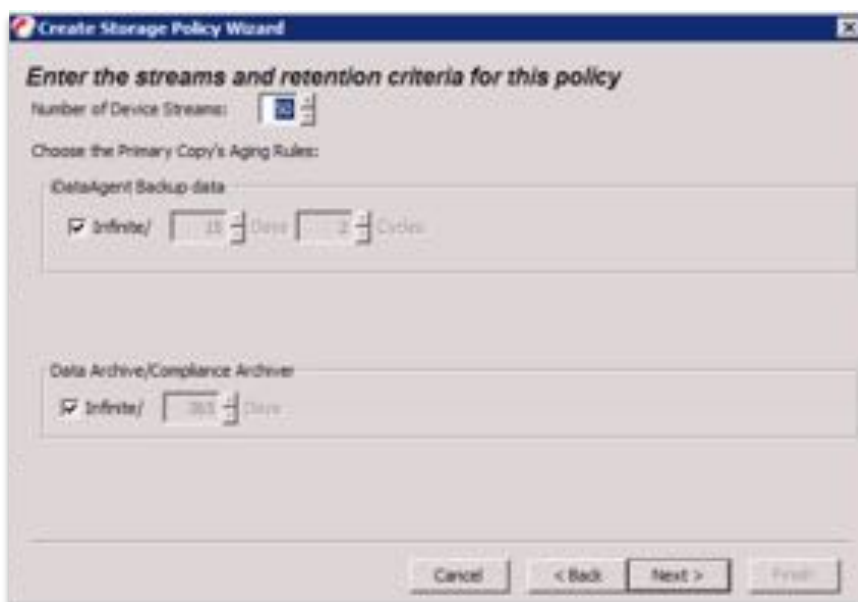


The screenshot shows a window titled "Create Storage Policy Wizard" with the subtitle "Select a default library for this primary copy". It features a dropdown menu labeled "Library:" with the selected value "s.swiftstack.lan - mylibrary". At the bottom, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

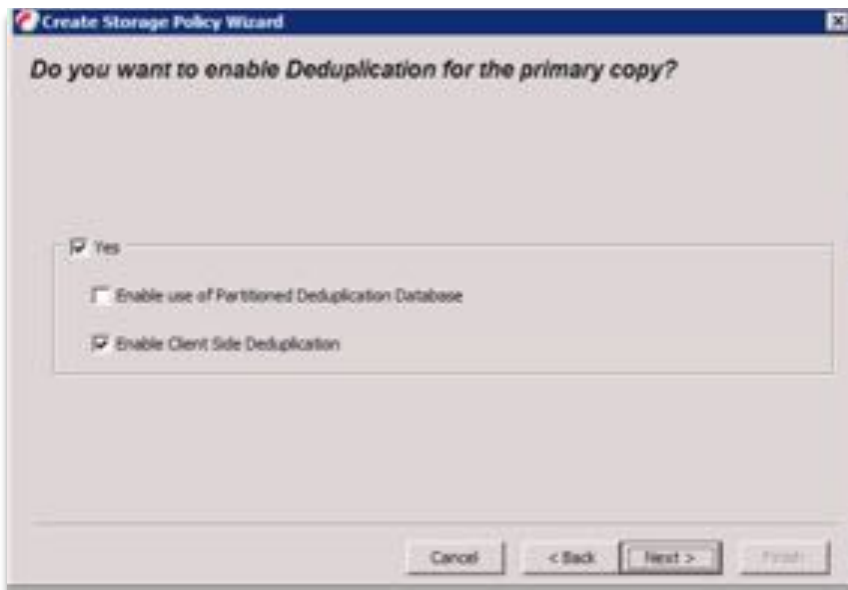
6. Select Media Agent to handle policy.



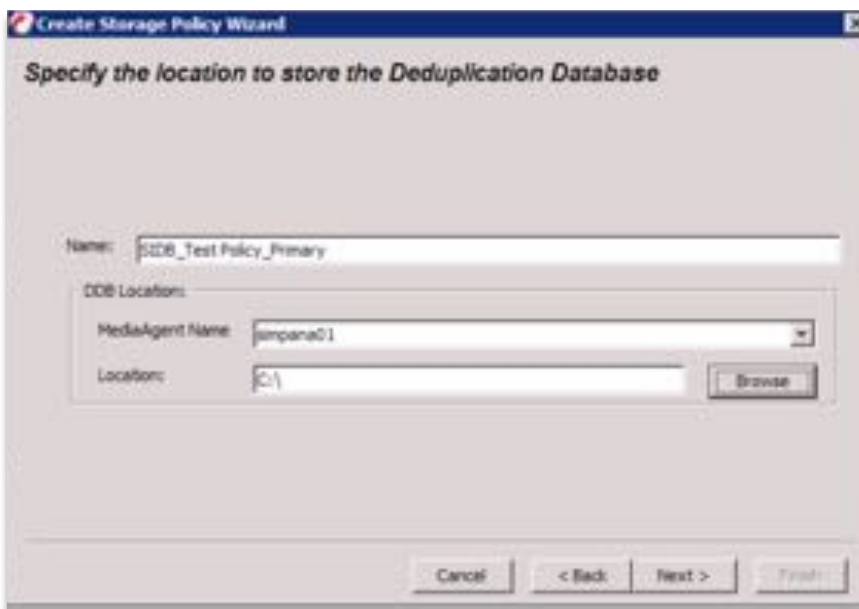
7. Set number of streams and retention criteria.



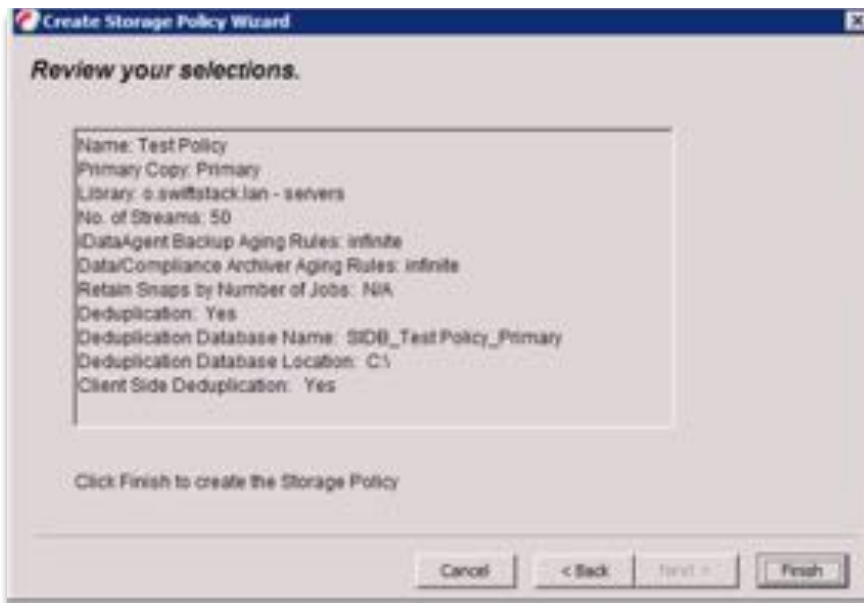
8. Enable deduplication for the primary policy copy, if needed.



9. If you enabled deduplication, select working directory for deduplication on the MediaAgent.



10. Review your selections and click “Finish” to create the policy.



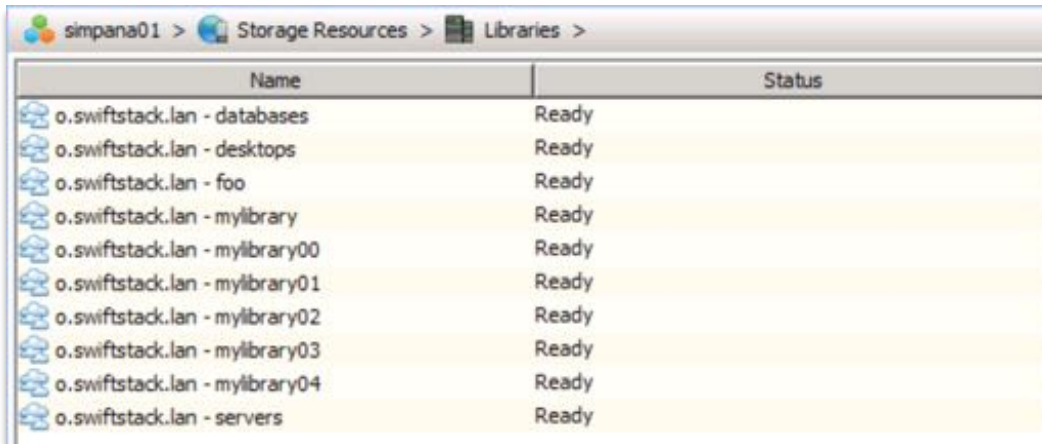
11. You can now select this Storage Policy when configuring or installing a subclient.



### 3. Add Additional Storage Libraries to Simpana Storage Policies

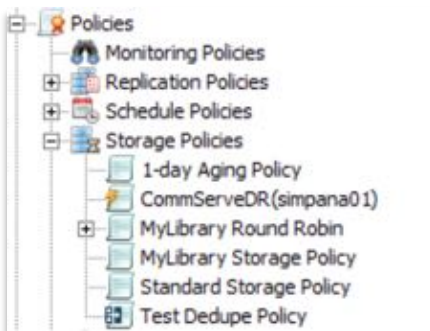
When using SwiftStack as a storage target for CommVault Simpana, a good practice is to configure multiple containers as Storage Libraries in Simpana and then use a Simpana Storage Policy to spread the data across these containers. Storage Policies can do “Round-Robin” among multiple data paths to libraries.

1. First, create multiple new Storage Libraries pointing to different containers in SwiftStack (see above).

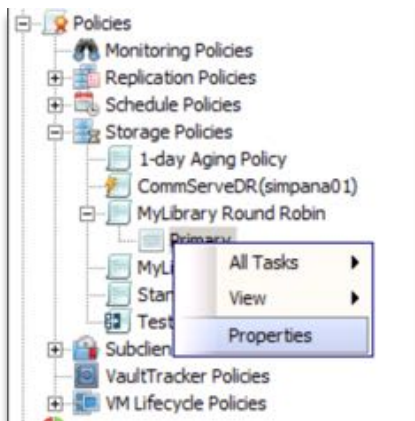


Name	Status
o.swiftstack.lan - databases	Ready
o.swiftstack.lan - desktops	Ready
o.swiftstack.lan - foo	Ready
o.swiftstack.lan - mylibrary	Ready
o.swiftstack.lan - mylibrary00	Ready
o.swiftstack.lan - mylibrary01	Ready
o.swiftstack.lan - mylibrary02	Ready
o.swiftstack.lan - mylibrary03	Ready
o.swiftstack.lan - mylibrary04	Ready
o.swiftstack.lan - servers	Ready

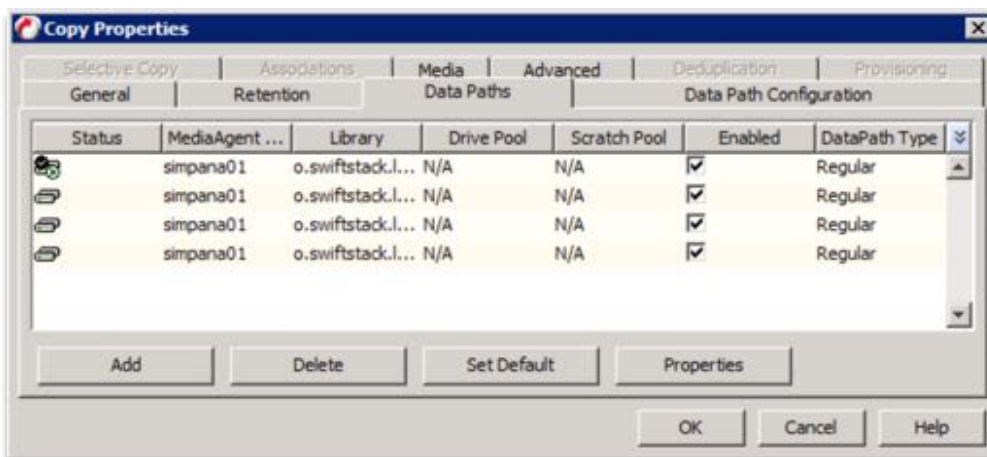
2. In the CommCell Browser, expand Policies and then Storage Policies.



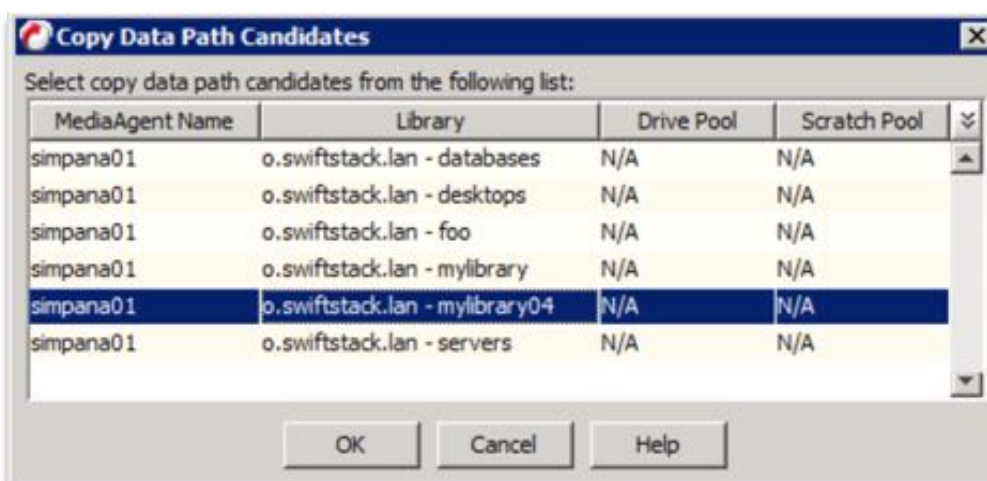
- Expand your Storage Policy, right-click on the “Primary” copy and select “Properties.”



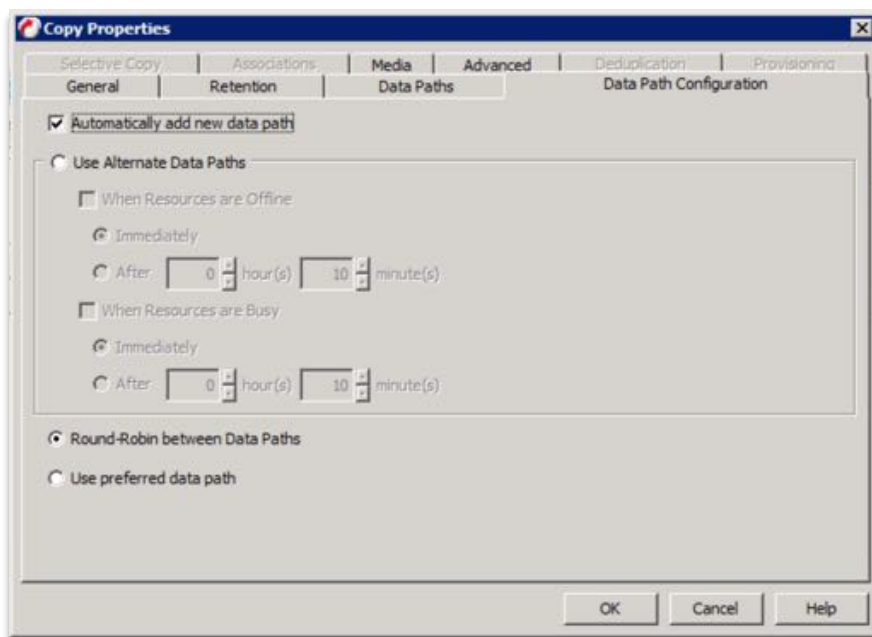
- In the Copy Properties dialog, go to the “Data Paths” tab and click “Add.”



- In the “Copy Data Path Candidates,” select the new SwiftStack-based libraries you created earlier and click “OK.”



6. In the “Copy Properties” screen, select “Data Path Configuration” and ensure “Round-Robin between Data Paths” is selected.



## Summary

This paper has documented SwiftStack’s recommendations on how the SwiftStack Object Storage System should be configured as backup and archival storage for CommVault Simpana software.



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