■ NetApp

Reference

Cloud Backup

NetApp May 10, 2022

This PDF was generated from https://docs.netapp.com/us-en/cloud-manager-backup-restore/reference-aws-backup-tiers.html on May 10, 2022. Always check docs.netapp.com for the latest.

Table of Contents

R	eference	1
	AWS S3 archival storage classes and restore retrieval times	1
	Azure archival tiers and restore retrieval times	2
	Cross-account and cross-region configurations	3

Reference

AWS S3 archival storage classes and restore retrieval times

Cloud Backup supports two S3 archival storage classes and most regions.

Supported S3 archival storage classes for Cloud Backup

When backup files are initially created they're stored in S3 *Standard* storage. This tier is optimized for storing data that's infrequently accessed; but that also allows you to access it immediately. After 30 days the backups transition to the S3 *Standard-Infrequent Access* storage class to save on costs.

If your source clusters are running ONTAP 9.10.1 or greater, you can choose to tier backups to either *S3 Glacier* or *S3 Glacier Deep Archive* storage after a certain number of days (typically more than 30 days) for further cost optimization. Data in these tiers can't be accessed immediately when needed, and will require a higher retrieval cost, so you need to consider how often you may need to restore data from these archived backup files. See the section about restoring data from archival storage.

Note that when you configure Cloud Backup with this type of lifecycle rule, you must not configure any lifecycle rules when setting up the bucket in your AWS account.

Learn about S3 storage classes.

Restoring data from archival storage

While storing older backup files in archival storage is much less expensive than Standard or Standard-IA storage, accessing data from a backup file in archive storage for restore operations will take a longer amount of time and will cost more money.

How much does it cost to restore data from Amazon S3 Glacier and Amazon S3 Glacier Deep Archive?

There are 3 restore priorities you can choose when retrieving data from Amazon S3 Glacier, and 2 restore priorities when retrieving data from Amazon S3 Glacier Deep Archive. S3 Glacier Deep Archive costs less than S3 Glacier:

Archive Tier	Restore Priority & Cost		
	High	Standard	Low
S3 Glacier	Fastest retrieval, highest cost	Slower retrieval, lower cost	Slowest retrieval, lowest cost
S3 Glacier Deep Archive		Faster retrieval, higher cost	Slower retrieval, lowest cost

Each method has a different per-GB retrieval fee and per-request fee. For detailed S3 Glacier pricing by AWS Region, visit the Amazon S3 pricing page.

How long will it take to restore my objects archived in Amazon S3 Glacier?

There are 2 parts that make up the total restore time:

• **Retrieval time**: The time to retrieve the backup file from archive and place it in Standard storage. This is sometimes called the "rehydration" time. The retrieval time is different depending on the restore priority you choose.

Archive Tier	Restore Priority & Retrieval Time		
	High	Standard	Low
S3 Glacier	3-5 minutes	3-5 hours	5-12 hours
S3 Glacier Deep Archive		12 hours	48 hours

• **Restore time**: The time to restore the data from the backup file in Standard storage. This time is no different than the typical restore operation directly from Standard storage - when not using an archival tier.

For more information about Amazon S3 Glacier and S3 Glacier Deep Archive retrieval options, refer to the Amazon FAQ about these storage classes.

Azure archival tiers and restore retrieval times

Cloud Backup supports one Azure archival access tier and most regions.

Supported Azure Blob access tiers for Cloud Backup

When backup files are initially created they're stored in the *Cool* access tier. This tier is optimized for storing data that's infrequently accessed; but when needed, can be accessed immediately.

If your source clusters are running ONTAP 9.10.1 or greater, you can choose to tier backups from *Cool* to *Azure Archive* storage after a certain number of days (typically more than 30 days) for further cost optimization. Data in this tier can't be accessed immediately when needed, and will require a higher retrieval cost, so you need to consider how often you may need to restore data from these archived backup files. See the next section about restoring data from archival storage.

Note that when you configure Cloud Backup with this type of lifecycle rule, you must not configure any lifecycle rules when setting up the container in your Azure account.

Learn about Azure Blob access tiers.

Restoring data from archival storage

While storing older backup files in archival storage is much less expensive than Cool storage, accessing data from a backup file in Azure Archive for restore operations will take a longer amount of time and will cost more money.

How much does it cost to restore data from Azure Archive?

There are two restore priorities you can choose when retrieving data from Azure Archive:

- · High: Fastest retrieval, higher cost
- · Standard: Slower retrieval, lower cost

Each method has a different per-GB retrieval fee and per-request fee. For detailed Azure Archive pricing by Azure Region, visit the Azure pricing page.

How long will it take to restore my data archived in Azure Archive?

There are 2 parts that make up the restore time:

- Retrieval time: The time to retrieve the archived backup file from Azure Archive and place it in Cool storage. This is sometimes called the "rehydration" time. The retrieval time is different depending on the restore priority you choose:
 - **High**: < 1 hour
 - Standard: < 15 hours
- **Restore time**: The time to restore the data from the backup file in Cool storage. This time is no different than the typical restore operation directly from Cool storage when not using an archival tier.

For more information about Azure Archive retrieval options, refer to this Azure FAQ.

Cross-account and cross-region configurations

These topics describe how to configure Cloud Backup for cross account configurations when using different cloud providers.

- Configure Cloud Backup for multi-account access in AWS
- · Configure Cloud Backup for multi-account access in Azure

Configure backup for multi-account access in AWS

Cloud Backup enables you to create backup files in an AWS account that is different than where your source Cloud Volumes ONTAP volumes reside. And both of those accounts can be different than the account where the Cloud Manager Connector resides.

These steps are required only when you are backing up Cloud Volumes ONTAP data to Amazon S3.

Follow the steps below to set up your configuration in this manner.

Set up VPC peering between accounts

- 1. Log in to second account and Create Peering Connection:
 - a. Select a local VPC: Select the VPC of the second account.
 - b. Select another VPC: Enter the account ID of the first account.
 - c. Select the Region where the Cloud Manager Connector is running. In this test setup both accounts are running in same region.
 - d. VPC ID: Log into first account and enter the acceptor VPC ID. This is the VPC ID of the Cloud Manager Connector.



A Success dialog displays.



The status of the peering connection shows as Pending Acceptance.



2. Log into the first account and accept the peering request:





a. Click Yes.



The connection now shows as Active. We have also added a Name tag to identify the peering connection called cbs-multi-account.



b. Refresh the peering connection in the second account and notice that the status changes to Active.



Add a route to the route tables in both accounts

1. Go to VPC > Subnet > Route table.



2. Click on the Routes tab.



3. Click Edit routes.



- 4. Click **Add route**, and from the Target drop-down list select **Peering Connection**, and then select the peering connection that you created.
 - a. In the Destination, enter the other account's subnet CIDR.



b. Click Save routes and a Success dialog displays.



Add the second AWS account credentials in Cloud Manager

1. Add the second AWS account, for example, Saran-XCP-Dev.



2. In the Discover Cloud Volumes ONTAP page, select the newly added credentials.



3. Select the Cloud Volumes ONTAP system you want to discover from second account. You can also deploy a new Cloud Volumes ONTAP system in the second account.



The Cloud Volumes ONTAP system from the second account is now added to Cloud Manager which is running in a different account.



Enable backup in the other AWS account

1. In Cloud Manager, enable backup for the Cloud Volumes ONTAP system running in the first account, but select the second account as the location for creating the backup files.



2. Then select a backup policy and the volumes you want to back up, and Cloud Backup attempts to create a new bucket in the selected account.

However, adding the bucket to the Cloud Volumes ONTAP system will fail because Cloud Backup uses the instance profile to add the bucket and the Cloud Manager instance profile doesn't have access to the resources in the second account.

3. Get the working environment ID for the Cloud Volumes ONTAP system.



Cloud Backup creates every bucket with the prefix Netapp-backup- and will include the working environment ID; for example: 87ULeA10

4. In the EC2 portal, go to S3 and search for the bucket with name ending with 87uLeA10 and you'll see the bucket name displayed as Netapp-backup-vsa87uLeA10.



5. Click on the bucket, then click the Permissions tab, and then click **Edit** in the Bucket policy section.



6. Add a bucket policy for the newly created bucket to provide access to the Cloud Manager's AWS account, and then Save the changes.

```
"Version": "2012-10-17",
  "Statement": [
      "Sid": "PublicRead",
      "Effect": "Allow",
      "Principal": {
        "AWS": "arn:aws:iam::464262061435:root"
      },
      "Action": [
        "s3:ListBucket",
        "s3:GetBucketLocation",
        "s3:GetObject",
        "s3:PutObject",
        "s3:DeleteObject"
      1,
      "Resource": [
        "arn:aws:s3:::netapp-backup-vsa87uleai0",
        "arn:aws:s3:::netapp-backup-vsa87uleai0/*"
  1
}
```

Note that "AWS": "arn:aws:iam::464262061435:root" gives complete access this bucket for all resources in account 464262061435. If you want to reduce it to specific role, level, you can update the policy with specific role(s). If you are adding individual roles, ensure that occm role also added, otherwise backups will not get updated in the Cloud Backup UI.

For example: "AWS": "arn:aws:iam::464262061435:role/cvo-instance-profile-version10-d8e-lamInstanceRole-IKJPJ1HC2E7R"

7. Retry enabling Cloud Backup on the Cloud Volumes ONTAP system and this time it should be successful.

Configure backup for multi-account access in Azure

Cloud Backup enables you to create backup files in an Azure account that is different than where your source Cloud Volumes ONTAP volumes reside. And both of those accounts can be different than the account where the Cloud Manager Connector resides.

These steps are required only when you are backing up Cloud Volumes ONTAP data to Azure Blob storage.

Just follow the steps below to set up your configuration in this manner.

Set up VNet peering between accounts

Note that if you want Cloud Manager to manage your Cloud Volumes ONTAP system in a different account/region, then you need to setup VNet peering. VNet peering is not required for storage account

connectivity.

- 1. Log in to the Azure portal and from home, select Virtual Networks.
- 2. Select the subscription you are using as subscription 1 and click on the VNet where you want to set up peering.



3. Select **cbsnetwork** and from the left panel, click on **Peerings**, and then click **Add**.



- 4. Enter the following information on the Peering page and then click **Add**.
 - Peering link name for this network: you can give any name to identify the peering connection.
 - Remote virtual network peering link name: enter a name to identify the remote VNet.

- · Keep all the selections as default values.
- Under subscription, select the subscription 2.
- Virtual network, select the virtual network in subscription 2 to which you want to set up the peering.



5. Perform the same steps in subscription 2 VNet and specify the subscription and remote VNet details of subscription 1.



The peering settings are added.



Create a private endpoint for the storage account

Now you need to create a private endpoint for the storage account. In this example, the storage account is created in subscription 1 and the Cloud Volumes ONTAP system is running in subscription 2.



You need network contributor permission to perform the following action.

```
"id": "/subscriptions/d333af45-0d07-4154-
943dc25fbbce1b18/providers/Microsoft.Authorization/roleDefinitions/4d97b98
b-1d4f-4787-a291-c67834d212e7",
  "properties": {
    "roleName": "Network Contributor",
    "description": "Lets you manage networks, but not access to them.",
    "assignableScopes": [
      11 / 11
    ],
    "permissions": [
      {
        "actions": [
          "Microsoft.Authorization/*/read",
          "Microsoft.Insights/alertRules/*",
          "Microsoft.Network/*",
          "Microsoft.ResourceHealth/availabilityStatuses/read",
          "Microsoft.Resources/deployments/*",
          "Microsoft.Resources/subscriptions/resourceGroups/read",
          "Microsoft.Support/*"
        ],
        "notActions": [],
        "dataActions": [],
        "notDataActions": []
    1
  }
}
```

1. Go to the storage account > Networking > Private endpoint connections and click + Private endpoint.



2. In the Private Endpoint *Basics* page:

- Select subscription 2 (where the Cloud Manager Connector and Cloud Volumes ONTAP system are deployed) and the resource group.
- · Enter an endpoint name.
- Select the region.



3. In the Resource page, select Target sub-resource as blob.



- 4. In the Configuration page:
 - Select the virtual network and subnet.
 - Click the Yes radio button to "Integrate with private DNS zone".



5. In the Private DNS zone list, ensure that the Private Zone is selected from the correct Region, and click **Review + Create**.



Now the storage account (in subscription 1) has access to the Cloud Volumes ONTAP system which is running in subscription 2.

6. Retry enabling Cloud Backup on the Cloud Volumes ONTAP system and this time it should be successful.

Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at http://www.netapp.com/TM are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.