Tiering data from on-premises ONTAP clusters to S3 object storage

Cloud Manager

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Free space on your on-prem ONTAP clusters by tiering inactive data to any object storage service which uses the Simple Storage Service (S3) protocol.

Quick start

Get started quickly by following these steps, or scroll down to the remaining sections for full details.

Prepare to tier data to S3-compatible object storage

You need the following:

- An AFF or FAS system with all-SSD aggregates that's running ONTAP 9.8 or later, and a connection over a user-specified port to the S3-compatible object storage. Learn how to discover a cluster.
- The FQDN, Access Key, and Secret Key for the object storage server so that the ONTAP cluster can access the bucket.
- A Connector installed on your premises.
- Networking for the Connector that enables an outbound HTTPS connection to the ONTAP cluster, to the S3-compatible object storage, and to the Cloud Tiering service.

Set up tiering

In Cloud Manager, select an on-prem working environment, click **Enable** for the Tiering service, and follow the prompts to tier data to S3-compatible object storage.

Set up licensing

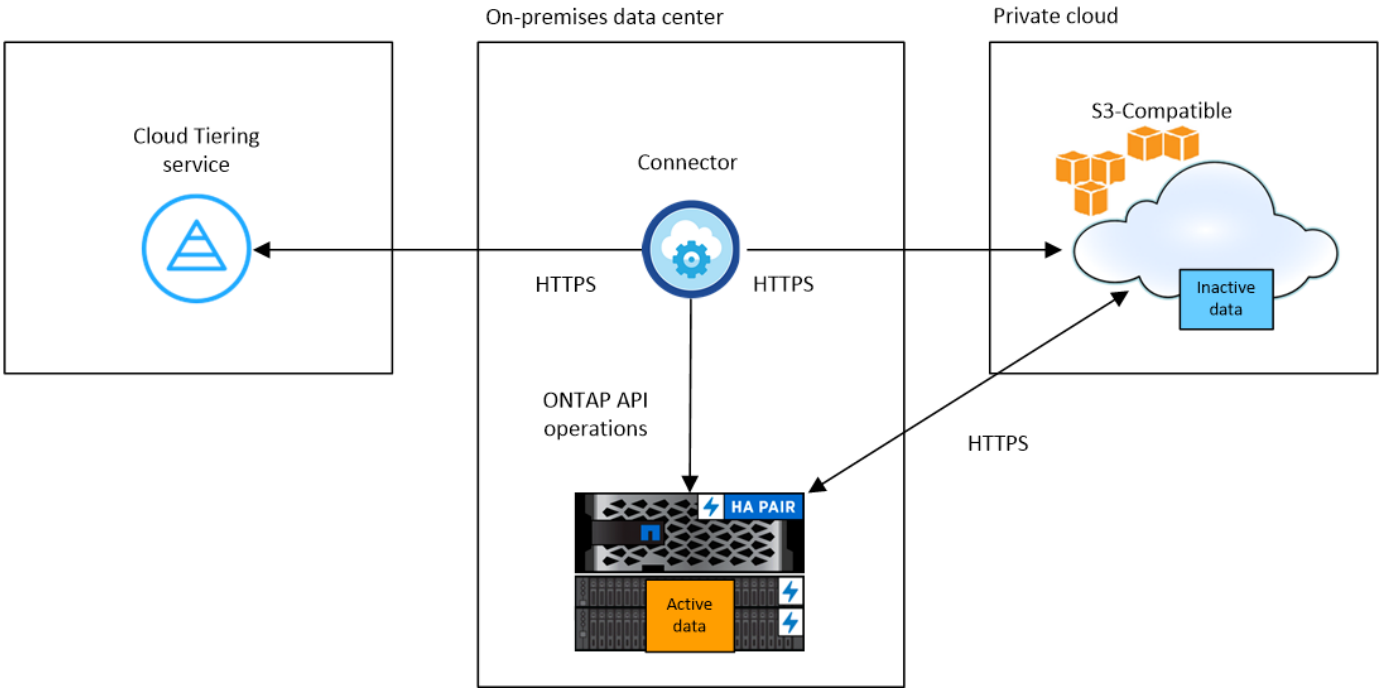
Pay for Cloud Tiering through a pay-as-you-go subscription from your cloud provider, a NetApp Cloud Tiering bring-your-own-license, or a combination of both:

- To subscribe to the Cloud Manager PAYGO offering from the AWS Marketplace, Azure Marketplace, or GCP Marketplace, click **Subscribe** and follow the prompts.
- To pay using a Cloud Tiering BYOL license, contact us if you need to purchase one, and then add it to your account from the Cloud Manager Digital Wallet.

Requirements

Verify support for your ONTAP cluster, set up your networking, and prepare your object storage.

The following image shows each component and the connections that you need to prepare between them:



Communication between the Connector and the S3-compatible object storage server is for object storage setup only.

Preparing your ONTAP clusters

Your ONTAP clusters must meet the following requirements when tiering data to S3-compatible object storage.

Supported ONTAP platforms

Cloud Tiering supports AFF systems and FAS systems with all-SSD aggregates.

Supported ONTAP version

ONTAP 9.8 or later

Cluster networking requirements

- The ONTAP cluster initiates an HTTPS connection over a user-specified port to S3-compatible object storage (the port is configurable during tiering setup).

  ONTAP reads and writes data to and from object storage. The object storage never initiates, it just responds.

- An inbound connection is required from the Connector, which must reside on your premises.

  A connection between the cluster and the Cloud Tiering service is not required.

- An intercluster LIF is required on each ONTAP node that hosts the volumes you want to tier. The LIF must be associated with the *IPspace* that ONTAP should use to connect to object storage.

  When you set up data tiering, Cloud Tiering prompts you for the IPspace to use. You should choose the IPspace that each LIF is associated with. That might be the "Default" IPspace or a custom IPspace that you created. Learn more about LIFs and IPspaces.

Supported volumes and aggregates

The total number of volumes that Cloud Tiering can tier might be less than the number of volumes on your ONTAP system. That's because volumes can't be tiered from some aggregates. Refer to ONTAP documentation for functionality or features not supported by FabricPool.

Cloud Tiering supports both FlexVol and FlexGroup volumes.

Discovering an ONTAP cluster

You need to create an on-prem ONTAP working environment in the Cloud Manager Canvas before you can start tiering cold data.

Learn how to discover a cluster.

Preparing S3-compatible object storage

S3-compatible object storage must meet the following requirements.

S3 credentials

When you set up tiering to S3-compatible object storage, you're prompted to create an S3 bucket or to select an existing S3 bucket. You need to provide Cloud Tiering with an S3 access key and secret key. Cloud Tiering uses the keys to access your bucket.

These access keys must be associated with a user who has the following permissions:

```
"s3:ListAllMyBuckets",
"s3:ListBucket",
"s3:GetObject",
"s3:PutObject",
"s3:DeleteObject",
"s3:CreateBucket"
```

Creating or switching Connectors

A Connector is required to tier data to the cloud. When tiering data to S3-compatible object storage, a Connector must be available on your premises. You'll either need to install a new Connector or make sure that the currently selected Connector resides on-prem.

- Learn about Connectors
- Connector host requirements
- Installing the Connector on an existing Linux host
- Switching between Connectors

Preparing networking for the Connector

Ensure that the Connector has the required networking connections.

Steps

1. Ensure that the network where the Connector is installed enables the following connections:
    - An outbound internet connection to the Cloud Tiering service over port 443 (HTTPS)
    - An HTTPS connection over port 443 to S3-compatible object storage
    - An HTTPS connection over port 443 to your ONTAP cluster

Tiering inactive data from your first cluster to S3-compatible object storage

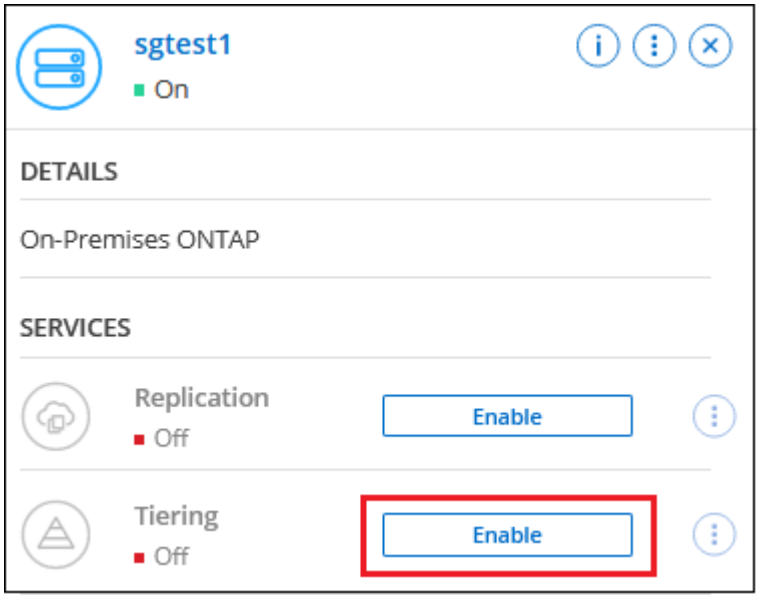
After you prepare your environment, start tiering inactive data from your first cluster.

What you'll need

- An on-premises working environment.
- The FQDN of the S3-compatible object storage server and the port that will be used for HTTPS communications.
- An access key and secret key that has the required S3 permissions.

Steps

1. Select an on-prem cluster.
2. In the right panel, click **Enable** for the Tiering service.



3. **Choose your provider**: Select **S3 Compatible** and click **Continue**.
4. Complete the steps on the **Tiering Setup** page:
    a. **Server**: Enter the FQDN of the S3-compatible object storage server, the port that ONTAP should use for HTTPS communication with the server, and the access key and secret key for an account that has the required S3 permissions.
    b. **Bucket**: Add a new bucket or select an existing bucket that starts with the prefix *fabric-pool* and click **Continue**.

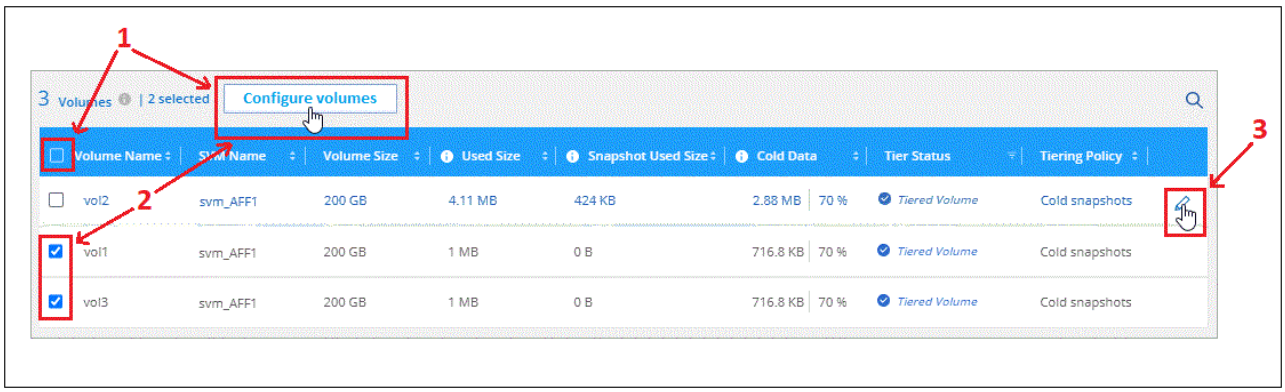
        The *fabric-pool* prefix is required because the IAM policy for the Connector enables the instance to perform S3 actions on buckets named with that exact prefix. For example, you could name the S3

bucket *fabric-pool-AFF1*, where AFF1 is the name of the cluster.

c. **Cluster Network**: Select the IPspace that ONTAP should use to connect to object storage and click **Continue**.

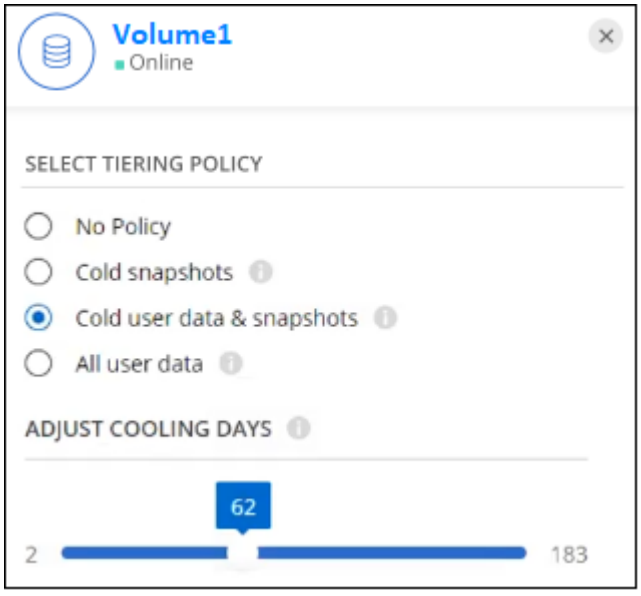
Selecting the correct IPspace ensures that Cloud Tiering can set up a connection from ONTAP to your S3-compatible object storage.

5. On the *Success* page click **Continue** to set up your volumes now.
6. On the *Tier Volumes* page, select the volumes that you want to configure tiering for and click **Continue**:
   - To select all volumes, check the box in the title row (Volume Name) and click **Configure volumes**.
   - To select multiple volumes, check the box for each volume (Volume_1) and click **Configure volumes**.
   - To select a single volume, click the row (or icon) for the volume.



7. In the *Tiering Policy* dialog, select a tiering policy, optionally adjust the cooling days for the selected volumes, and click **Apply**.

Learn more about volume tiering policies and cooling days.



Result

You've successfully set up data tiering from volumes on the cluster to S3-compatible object storage.

What's next?

Be sure to subscribe to the Cloud Tiering service.

You can add additional clusters or review information about the active and inactive data on the cluster. For details, see Managing data tiering from your clusters.