

Backing up data from an on-premises ONTAP system to the cloud

Cloud Manager

Tom Onacki
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Backing up data from an on-premises ONTAP system to the cloud

Complete a few steps to get started backing up data from your on-premises ONTAP system to low-cost object storage in the cloud.

Quick start

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



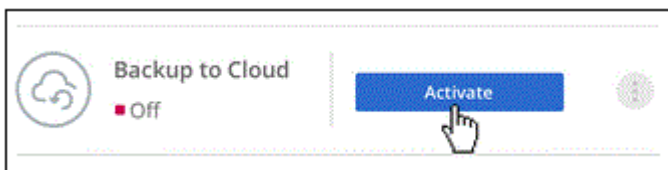
Verify support for your configuration

- You have discovered the on-premises cluster and added it to a working environment in Cloud Manager. See [Discovering ONTAP clusters](#) for details.
 - The cluster is running ONTAP 9.7P5 or later.
 - The cluster has a SnapMirror license—which is included as part of the PREM or Data Protection bundle.
- You have subscribed to the [Azure NetApp Cloud Manager Marketplace offering](#), the [AWS Cloud Manager Marketplace offering](#), or you have purchased [and activated](#) a Backup to Cloud BYOL license from NetApp.
- You have a valid cloud provider subscription for the storage space where your backups will be located.
- For AWS, you need to have an account that has an access key and the required permissions so the ONTAP cluster can back up data to S3.



Enable Backup to Cloud on the system

Select the working environment and click **Activate** next to the Backup to Cloud service in the right-panel, and then follow the setup wizard.



Select the cloud provider and enter provider details

Select the provider and then enter the provider details. You also need to specify the IPspace in the

ONTAP cluster where the volumes reside.

4 Define the backup policy

The default policy backs up volumes every day and retains the most recent 30 backup copies of each volume. Change to weekly or monthly backups, or select one of the system-defined policies that provide more options.

The screenshot shows the 'Define Policy' wizard. It has a title bar 'Define Policy' and a tab 'Policy - Retention & Schedule'. There are two radio buttons: 'Create a New Policy' (selected) and 'Select an Existing Policy'. Below these are two input fields: 'Backup Every' with a dropdown menu showing 'Day' and 'Number of backups to retain' with a text input showing '30'. There are three sections: 'DP Volumes' with text about retention periods, 'Storage Account' with text about Cloud Manager creating the account, and a 'Storage Account' section with text about Cloud Manager creating the account.

5 Select the volumes that you want to back up

Identify which volumes you want to back up from the cluster.

6 Restore your data, as needed

From the Backup List, select a volume, select a backup, and then restore data from the backup to a new volume on a Cloud Volumes ONTAP system that is using the same cloud provider.

The screenshot shows the 'Volume Source Name' interface. It has a title bar 'Volume Source Name' and a dropdown menu. Below the title bar is a section 'Select the backup you want to restore' with a list of backup times: 'May 22 2019 00:00:00', 'May 21 2019 00:00:00', and 'May 20 2019 00:00:00'. A 'Restore' button with a circular arrow icon is next to the 'May 21 2019 00:00:00' backup, and a hand cursor is pointing at it.

Requirements

Read the following requirements to make sure you have a supported configuration before you start backing up on-prem volumes to object storage.

ONTAP requirements

ONTAP 9.7P5 and later.

A SnapMirror license (included as part of the PREM or Data Protection bundle).

Cluster networking requirements

An intercluster LIF is required on each ONTAP node that hosts the volumes you want to back up. The LIF must be associated with the *IPspace* that ONTAP should use to connect to object storage. [Learn more about IPspaces.](#)

When you set up backup to cloud, you are prompted 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.

Supported regions

Backups from on-prem systems are supported in all regions [where Cloud Volumes ONTAP is supported](#).

- For Azure, you specify the region where the backups will be stored when you set up the service.
- For AWS, backups are stored in the region where Cloud Manager is installed.

License requirements

For Backup to Cloud PAYGO licensing, a subscription to the [Azure Marketplace Cloud Manager Backup offering](#) or [AWS Marketplace Cloud Manager Backup offering](#) is required before you enable Backup to Cloud. Billing for Backup to Cloud is done through this subscription.

For Backup to Cloud BYOL licensing, you need the serial number from NetApp that enables you to use the service for the duration and capacity of the license. See [Adding and updating your Backup BYOL license](#).

And you need to have a Microsoft Azure or Amazon AWS subscription for the storage space where your backups will be located.

Preparing Amazon S3

When using Amazon S3, you must configure permissions for Cloud Manager to access the S3 bucket, and you must configure permissions so the on-prem ONTAP cluster can access the S3 bucket.

Steps

1. Provide the following S3 permissions (from the latest [Cloud Manager policy](#)) to the IAM role that

provides Cloud Manager with permissions:

```
{
  "Sid": "backupPolicy",
  "Effect": "Allow",
  "Action": [
    "s3:DeleteBucket",
    "s3:GetLifecycleConfiguration",
    "s3:PutLifecycleConfiguration",
    "s3:PutBucketTagging",
    "s3:ListBucketVersions",
    "s3:GetObject",
    "s3:ListBucket",
    "s3:ListAllMyBuckets",
    "s3:GetBucketTagging",
    "s3:GetBucketLocation",
    "s3:GetBucketPolicyStatus",
    "s3:GetBucketPublicAccessBlock",
    "s3:GetBucketAcl",
    "s3:GetBucketPolicy",
    "s3:PutBucketPublicAccessBlock"
  ],
  "Resource": [
    "arn:aws:s3:::netapp-backup-*"
  ]
},
```

2. Provide the following permissions to the IAM user so that the ONTAP cluster can back up data to S3.

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

See the [AWS Documentation: Creating a Role to Delegate Permissions to an IAM User](#) for details.

3. Create or locate an access key.

Backup to Cloud passes the access key on to the ONTAP cluster. The credentials are not stored in the Backup to Cloud service.

See the [AWS Documentation: Managing Access Keys for IAM Users](#) for details.

Enabling Backup to Cloud

Enable Backup to Cloud at any time directly from the working environment.

Steps

1. Select the working environment and click **Activate** next to the Backup to Cloud service in the right-panel.



2. Select the provider, and then enter the provider details:
 - For Azure, enter:
 - a. The Azure subscription used for backups and the Azure region where the backups will be stored.
 - b. The resource group - you can create a new resource group or select an existing resource group.
 - c. The IPspace in the ONTAP cluster where the volumes you want to back up reside.

Provider Settings

Provider Information

Azure Subscription

Azure_Subscription_1

Region

Default_CM_Region

IPspace

IP_Space_1

Resource Group

☐ Create a new ☒ Use an existing

Select an Existing Resource Group

Resource_Group_1

- For AWS, enter:
 - a. The AWS Access Key and Secret Key used to store the backups.
 - b. The IPspace in the ONTAP cluster where the volumes you want to back up reside.

Provider Settings

AWS Credentials

AWS Access Key

AWS Secret Key

Connectivity

IPspace ?

IP_Space_1
▼

Note that you cannot change this information after the service has started.

3. Then click **Continue**.
4. In the *Define Policy* page, select the backup schedule and retention value and click **Continue**.

Define Policy

Policy - Retention & Schedule

☒ Create a New Policy
☐ Select an Existing Policy

Backup Every

Day
▼

Number of backups to retain

30

DP Volumes

Data protection volume backups use the same retention period as defined in the source SnapMirror relationship by default. Use the API if you want to change this value

Storage Account

Cloud Manager will create the storage account after you complete the wizard

See [the list of existing policies](#).

5. Select the volumes that you want to back up and click **Save**.

Select Volumes

57 Volumes ?

<input checked="" type="checkbox"/>	Volume Name	Volume Type	SVM Name	Used Capacity	Allocated Capacity	Volume Status
<input checked="" type="checkbox"/>	Volume_Name_1	RW	SVM_Name_1	2.25 TB	10 TB	Active
<input checked="" type="checkbox"/>	Volume_Name_2	RW	SVM_Name_2	2.25 TB	10 TB	Active
<input checked="" type="checkbox"/>	Volume_Name_3	RW	SVM_Name_3	2.25 TB	10 TB	Active

- To back up all volumes, check the box in the title row (☒ Volume Name).

- To back up individual volumes, check the box for each volume (☒ Volume_1).

Result

Backup to Cloud starts taking the initial backups of each selected volume.

What's next?

You can [start and stop backups for volumes or change the backup schedule](#) and you can [restore entire volumes or individual files from a backup file](#).

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