System administration

Cloud Volumes ONTAP

NetApp
January 19, 2024

Table of Contents

System administration

Upgrade Cloud Volumes ONTAP software

Upgrade Cloud Volumes ONTAP from BlueXP to gain access to the latest new features and enhancements. You should prepare Cloud Volumes ONTAP systems before you upgrade the software.

Upgrade overview

You should be aware of the following before you start the Cloud Volumes ONTAP upgrade process.

Upgrade from BlueXP only

Upgrades of Cloud Volumes ONTAP must be completed from BlueXP. You should not upgrade Cloud Volumes ONTAP by using System Manager or the CLI. Doing so can impact system stability.

How to upgrade

BlueXP provides two ways to upgrade Cloud Volumes ONTAP:

- By following upgrade notifications that appear in the working environment
- By placing the upgrade image at an HTTPS location and then providing BlueXP with the URL

Supported upgrade paths

The version of Cloud Volumes ONTAP that you can upgrade to depends on the version of Cloud Volumes ONTAP that you're currently running.

Current version	Versions that you can directly upgrade to
9.14.0	9.14.1
9.13.1	9.14.1
	9.14.0
9.13.0	9.13.1
9.12.1	9.13.1
	9.13.0
9.12.0	9.12.1
9.11.1	9.12.1
	9.12.0
9.11.0	9.11.1
9.10.1	9.11.1
	9.11.0

Current version	Versions that you can directly upgrade to
9.10.0	9.10.1
9.9.1	9.10.1
	9.10.0
9.9.0	9.9.1
9.8	9.9.1
9.7	9.8
9.6	9.7
9.5	9.6
9.4	9.5
9.3	9.4
9.2	9.3
9.1	9.2
9.0	9.1
8.3	9.0

Note the following:

- The supported upgrade paths for Cloud Volumes ONTAP are different than they are for an on-premises ONTAP cluster.
- If you upgrade by following the upgrade notifications that appear in a working environment, BlueXP will prompt you to upgrade to a release that follows these supported upgrade paths.
- If you upgrade by placing an upgrade image at an HTTPS location, be sure to follow these supported upgrade paths.
- In some cases, you might need to upgrade a few times to reach your target release.

  For example, if you're running version 9.8 and you want to upgrade to 9.10.1, you first need to upgrade to version 9.9.1 and then to 9.10.1.

Patch releases

Starting in January 2024, patch upgrades are only available in BlueXP if they are a patch release for the three latest versions of Cloud Volumes ONTAP. We use the latest GA release to determine the three latest versions to display in BlueXP. For example, if the current GA release is 9.13.1, patches for 9.11.1-9.13.1 appear in BlueXP. If you want to upgrade to a patch release for versions 9.11.1 or below, you will need to use the manual upgrade procedure by downloading the ONTAP image.

As a general rule for patch (P) releases, you can upgrade from one version release to any P-release of the current version you're running or the next version.

Here are a couple examples:

- 9.13.0 > 9.13.1P15

- 9.12.1 > 9.13.1P2

Reverting or downgrading

Reverting or downgrading Cloud Volumes ONTAP to a previous release is not supported.

Support registration

Cloud Volumes ONTAP must be registered with NetApp support in order to upgrade the software using any of the methods described on this page. This applies to both PAYGO and BYOL. You'll need to manually register PAYGO systems, while BYOL systems are registered by default.

A system that isn't registered for support will still receive the software update notifications that appear in BlueXP when a new version is available. But you will need to register the system before you can upgrade the software.

Upgrades of the HA mediator

BlueXP also updates the mediator instance as needed during the Cloud Volumes ONTAP upgrade process.

Upgrades in AWS with c4, m4, and r4 EC2 instance types

Cloud Volumes ONTAP no longer supports the c4, m4, and r4 EC2 instance types. You can upgrade existing deployments to Cloud Volumes ONTAP versions 9.8-9.12.1 with these instance types. Before you upgrade we recommend that you change the instance type. If you can't change the instance type, you need to enable enhanced networking before you upgrade. Read the following sections to learn more about changing the instance type and enabling enhanced networking.

In Cloud Volumes ONTAP running versions 9.13.0 and above, you cannot upgrade with c4, m4, and r4 EC2 instance types. In this case, you need to reduce the number of disks and then change the instance type or deploy a new HA-pair configuration with the c5, m5, and r5 EC2 instance types and migrate the data.

Change the instance type

c4, m4, and r4 EC2 instance types allow for more disks per node than the c5, m5, and r5 EC2 instance types. If the disk count per node for the c4, m4, or r4 EC2 instance you're running is below the max disk allowance per node for c5, m5, and r5 instances, you can change the EC2 instance type to c5, m5, or r5.

Check disk and tiering limits by EC2 instance
Change the EC2 instance type for Cloud Volumes ONTAP

If you can't change the instance type, follow the steps in Enable enhanced networking.

Enable enhanced networking

To upgrade to Cloud Volumes ONTAP versions 9.8 and later, you must enable *enhanced networking* on the cluster running the c4, m4, or r4 instance type. To enable ENA, refer to the Knowledge Base article "How to enable Enhanced networking like SR-IOV or ENA on AWS Cloud Volumes ONTAP instances".

Prepare to upgrade

Before performing an upgrade, you must verify that your systems are ready and make any required configuration changes.

- Plan for downtime
- Verify that automatic giveback is still enabled
- Suspend SnapMirror transfers
- Verify that aggregates are online
- Verify that all LIFs are on home ports

Plan for downtime

When you upgrade a single-node system, the upgrade process takes the system offline for up to 25 minutes, during which I/O is interrupted.

In many cases, upgrading an HA pair is nondisruptive and I/O is uninterrupted. During this nondisruptive upgrade process, each node is upgraded in tandem to continue serving I/O to clients.

Session-oriented protocols might cause adverse effects on clients and applications in certain areas during upgrades. For details, refer to ONTAP documentation

Verify that automatic giveback is still enabled

Automatic giveback must be enabled on a Cloud Volumes ONTAP HA pair (this is the default setting). If it isn't, then the operation will fail.

ONTAP 9 Documentation: Commands for configuring automatic giveback

Suspend SnapMirror transfers

If a Cloud Volumes ONTAP system has active SnapMirror relationships, it is best to suspend transfers before you update the Cloud Volumes ONTAP software. Suspending the transfers prevents SnapMirror failures. You must suspend the transfers from the destination system.

Even though BlueXP backup and recovery uses an implementation of SnapMirror to create backup files (called SnapMirror Cloud), backups do not need to be suspended when a system is upgraded.

About this task

These steps describe how to use System Manager for version 9.3 and later.

Steps

1. Log in to System Manager from the destination system.

   You can log in to System Manager by pointing your web browser to the IP address of the cluster management LIF. You can find the IP address in the Cloud Volumes ONTAP working environment.

   The computer from which you are accessing BlueXP must have a network connection to Cloud Volumes ONTAP. For example, you might need to log in to BlueXP from a jump host that's in your cloud provider network.

2. Click **Protection > Relationships**.
3. Select the relationship and click **Operations > Quiesce**.

Verify that aggregates are online

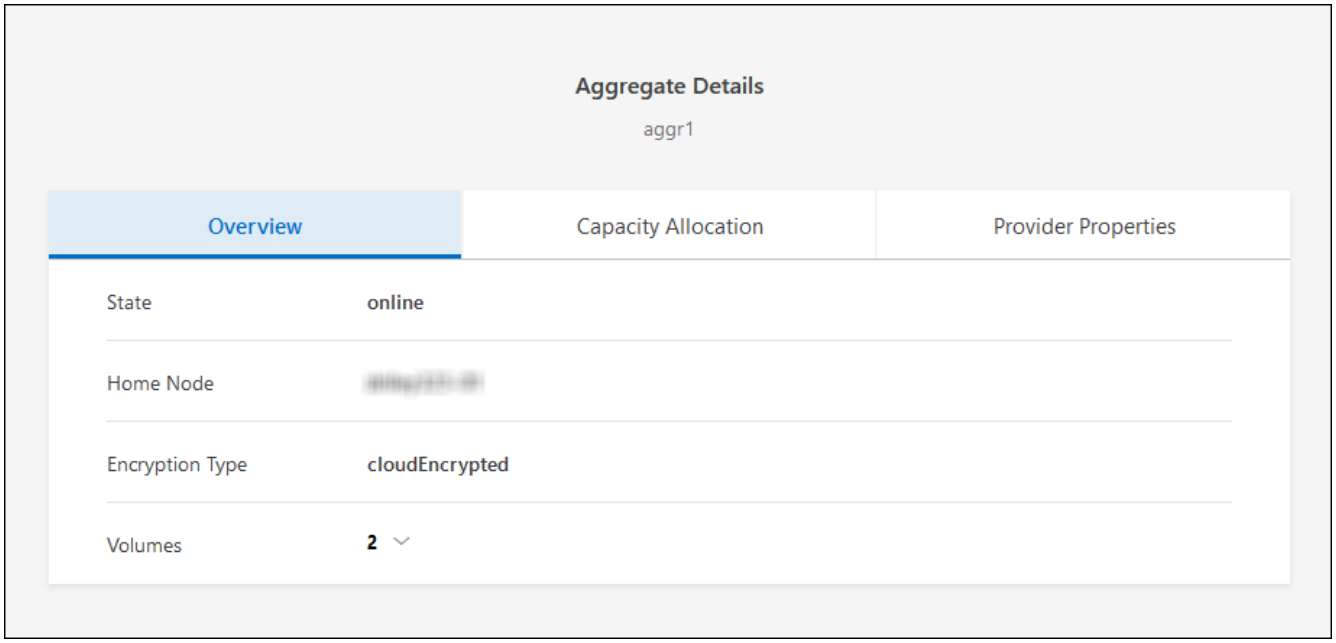
Aggregates for Cloud Volumes ONTAP must be online before you update the software. Aggregates should be online in most configurations, but if they are not, then you should bring them online.

About this task

These steps describe how to use System Manager for version 9.3 and later.

Steps

1. In the working environment, click the **Aggregates** tab.
2. Under the aggregate title, click the ellipse button, and then select **View Aggregate details**.



3. If the aggregate is offline, use System Manager to bring the aggregate online:
   a. Click **Storage > Aggregates & Disks > Aggregates**.
   b. Select the aggregate, and then click **More Actions > Status > Online**.

Verify that all LIFs are on home ports

Before you upgrade, all LIFs must be on home ports. Refer to ONTAP documentation to verify that all LIFs are on home ports.

If an upgrade failure error occurs, refer to the Knowledge Base article "Cloud Volumes ONTAP upgrade fails".

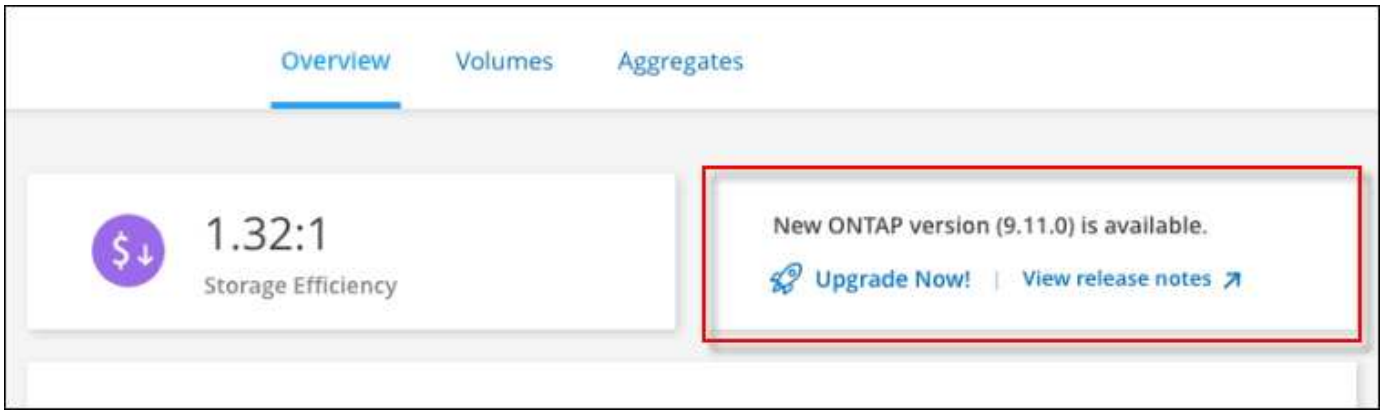
Upgrade Cloud Volumes ONTAP

BlueXP notifies you when a new version is available for upgrade. You can start the upgrade process from this notification. For details, see Upgrade from BlueXP notifications.

Another way to perform software upgrades by using an image on an external URL. This option is helpful if BlueXP can't access the S3 bucket to upgrade the software or if you were provided with a patch. For details, see Upgrade from an image available at a URL.

Upgrade from BlueXP notifications

BlueXP displays a notification in Cloud Volumes ONTAP working environments when a new version of Cloud Volumes ONTAP is available:



You can start the upgrade process from this notification, which automates the process by obtaining the software image from an S3 bucket, installing the image, and then restarting the system.

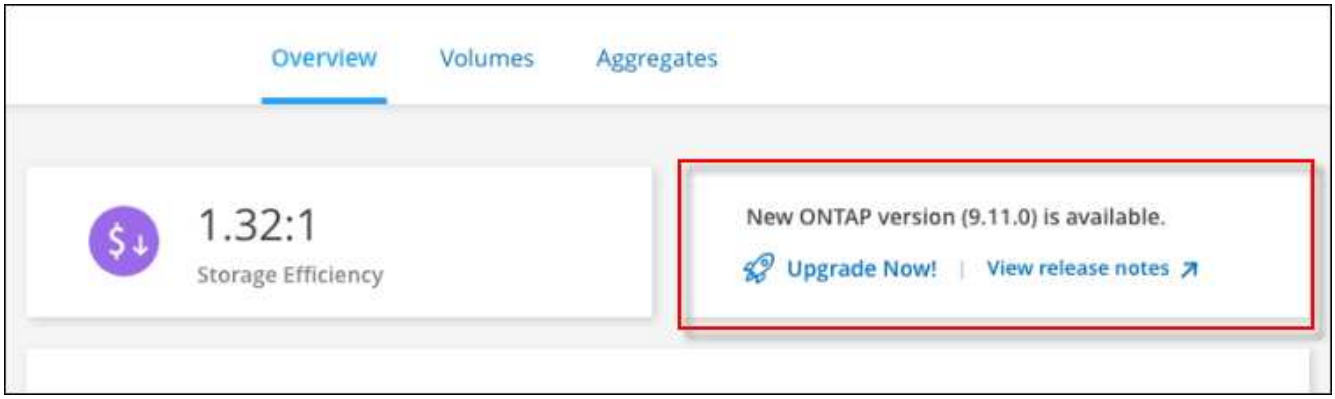
Before you begin

BlueXP operations such as volume or aggregate creation must not be in progress on the Cloud Volumes ONTAP system.

Steps

1. From the left navigation menu, select **Storage > Canvas**.
2. Select a working environment.

   A notification appears in the Overview tab if a new version is available:

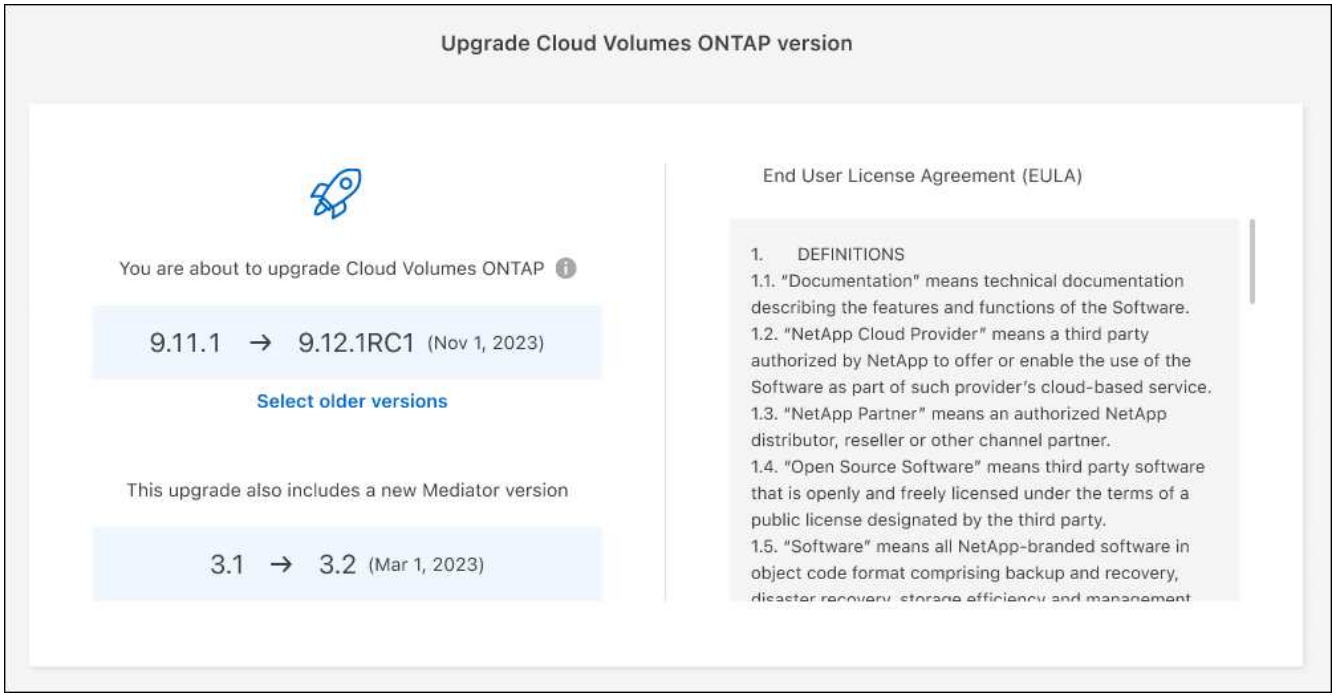


3. If a new version is available, click **Upgrade Now!**

   Before you can upgrade Cloud Volumes ONTAP through the BlueXP notification, you must have a NetApp Support Site account.

4. In the Upgrade Cloud Volumes ONTAP page, read the EULA, and then select **I read and approve the EULA**.
5. Click **Upgrade**.

The Upgrade Cloud Volumes ONTAP page selects the latest available Cloud Volumes ONTAP version for upgrade by default. If available, older versions of Cloud Volumes ONTAP can instead be selected for your upgrade by clicking **Select older versions**.
Refer to the Supported upgrade paths list for the appropriate upgrade path based on your current Cloud Volumes ONTAP version.



6. To check the status of the upgrade, click the Settings icon and select **Timeline**.

Result

BlueXP starts the software upgrade. You can perform actions on the working environment when the software update is complete.

After you finish

If you suspended SnapMirror transfers, use System Manager to resume the transfers.

Upgrade from an image available at a URL

You can place the Cloud Volumes ONTAP software image on the Connector or on an HTTP server and then initiate the software upgrade from BlueXP. You might use this option if BlueXP can't access the S3 bucket to upgrade the software.

Before you begin

- BlueXP operations such as volume or aggregate creation must not be in progress on the Cloud Volumes ONTAP system.
- If you use HTTPS to host ONTAP images, the upgrade can fail due to SSL authentication issues, which are caused by missing certificates. The workaround is to generate and install a CA-signed certificate to be used for authentication between ONTAP and BlueXP.

  Go to the NetApp Knowledge Base to view step-by-step instructions:

  NetApp KB: How to configure BlueXP as an HTTPS server to host upgrade images

Steps

1. Optional: Set up an HTTP server that can host the Cloud Volumes ONTAP software image.

   If you have a VPN connection to the virtual network, you can place the Cloud Volumes ONTAP software image on an HTTP server in your own network. Otherwise, you must place the file on an HTTP server in the cloud.

2. If you use your own security group for Cloud Volumes ONTAP, ensure that the outbound rules allow HTTP connections so Cloud Volumes ONTAP can access the software image.

   > The predefined Cloud Volumes ONTAP security group allows outbound HTTP connections by default.

3. Obtain the software image from the NetApp Support Site.
4. Copy the software image to a directory on the Connector or on an HTTP server from which the file will be served.

   Two paths are available. The correct path depends on your Connector version.

   - `/opt/application/netapp/cloudmanager/docker_occm/data/ontap/images/`
   - `/opt/application/netapp/cloudmanager/ontap/images/`

5. From the working environment in BlueXP, click the **… (ellipse icon)**, and then click **Update Cloud Volumes ONTAP**.
6. On the Update Cloud Volumes ONTAP version page, enter the URL, and then click **Change Image**.

   If you copied the software image to the Connector in the path shown above, you would enter the following URL:

   http://<Connector-private-IP-address>/ontap/images/<image-file-name>

   > In the URL, **image-file-name** must follow the format "cot.image.9.13.1P2.tgz".

7. Click **Proceed** to confirm.

Result

BlueXP starts the software update. You can perform actions on the working environment once the software update is complete.

After you finish

If you suspended SnapMirror transfers, use System Manager to resume the transfers.

Registering pay-as-you-go systems

Support from NetApp is included with Cloud Volumes ONTAP PAYGO systems, but you must first activate support by registering the systems with NetApp.

Registering a PAYGO system with NetApp is required to upgrade ONTAP software using any of the methods described on this page.

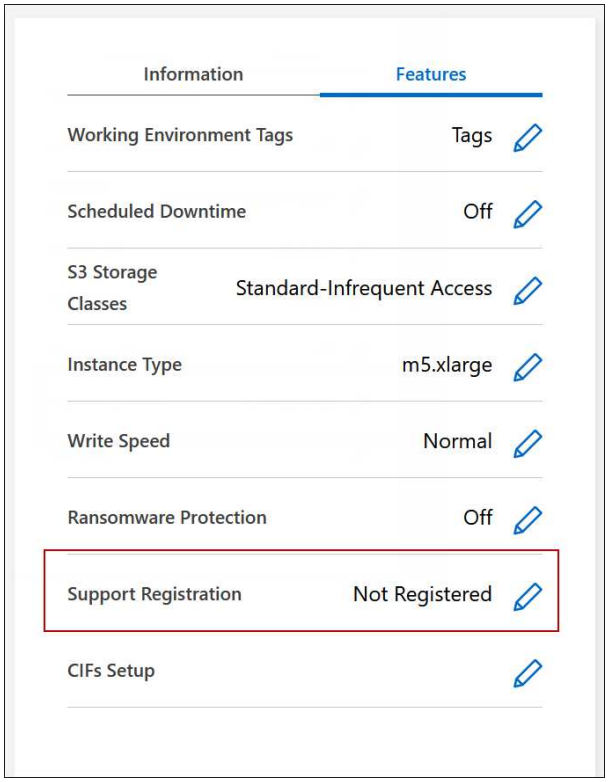
A system that isn't registered for support will still receive the software update notifications that appear in BlueXP when a new version is available. But you will need to register the system before you can upgrade the software.

Steps

1. If you have not yet added your NetApp Support Site account to BlueXP, go to **Account Settings** and add it now.

   Learn how to add NetApp Support Site accounts.

2. On the Canvas page, double-click the name of the system you want to register..
3. On the Overview tab, click the Features panel and then click the pencil icon next to **Support Registration**.



4. Select a NetApp Support Site account and click **Register**.

Result

BlueXP registers the system with NetApp.

Managing the state of Cloud Volumes ONTAP

You can stop and start Cloud Volumes ONTAP from BlueXP to manage your cloud compute costs.

Scheduling automatic shutdowns of Cloud Volumes ONTAP

You might want to shut down Cloud Volumes ONTAP during specific time intervals to lower your compute costs. Rather than do this manually, you can configure BlueXP to automatically shut down and then restart systems at specific times.

About this task

- When you schedule an automatic shutdown of your Cloud Volumes ONTAP system, BlueXP postpones the shutdown if an active data transfer is in progress.

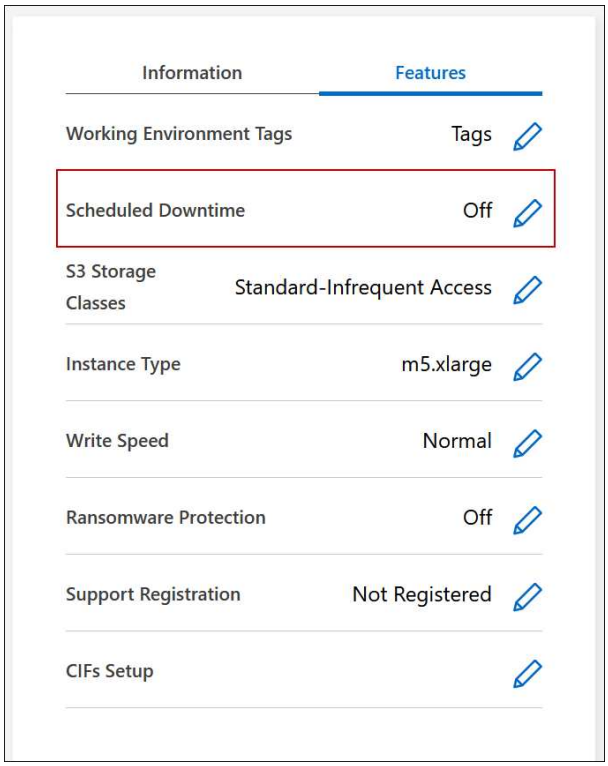
  BlueXP shuts down the system after the transfer is complete.

- This task schedules automatic shutdowns of both nodes in an HA pair.
- Snapshots of boot and root disks are not created when turning off Cloud Volumes ONTAP through scheduled shutdowns.

  Snapshots are automatically created only when performing a manual shutdown, as described in the next section.

Steps

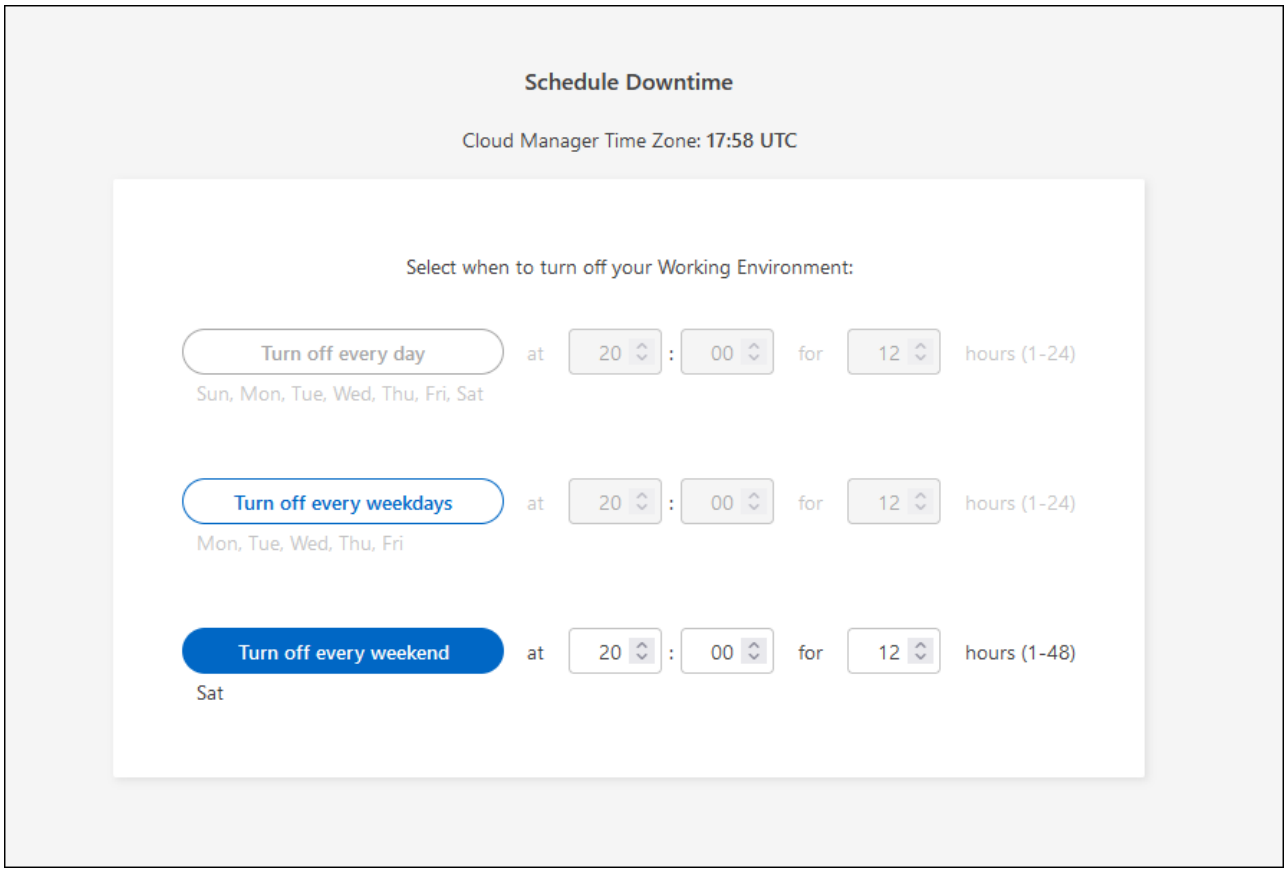
1. On the Canvas page, double-click the desired working environment.
2. On the Overview tab, click the Features panel and then click the pencil icon next to **Scheduled Downtime**.



3. Specify the shutdown schedule:
   a. Choose whether you want to shut down the system every day, every weekday, every weekend, or any combination of the three options.
   b. Specify when you want to turn off the system and for how long you want it turned off.

      Example

      The following image shows a schedule that instructs BlueXP to shut down the system every Saturday at 20:00 P.M. (8:00 PM) for 12 hours. BlueXP restarts the system every Monday at 12:00 a.m.



4. Click **Save**.

Result

BlueXP saves the schedule. The corresponding Scheduled Downtime line item under the Features panel displays 'On'.

Stopping Cloud Volumes ONTAP

Stopping Cloud Volumes ONTAP saves you from accruing compute costs and creates snapshots of the root and boot disks, which can be helpful for troubleshooting.

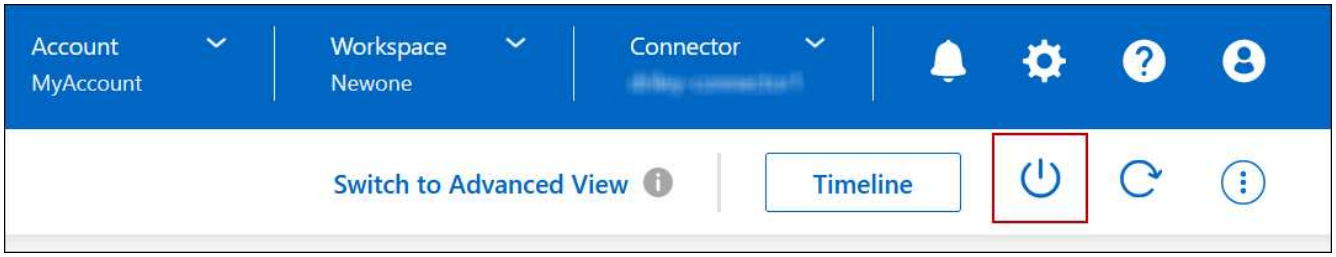
To reduce costs, BlueXP periodically deletes older snapshots of root and boot disks. Only the two most recent snapshots are retained for both the root and boot disks.

About this task

When you stop an HA pair, BlueXP shuts down both nodes.

Steps

1. From the working environment, click the **Turn off** icon.



2. Keep the option to create snapshots enabled because the snapshots can enable system recovery.
3. Click **Turn Off**.

   It can take up to a few minutes to stop the system. You can restart systems at a later time from the working environment page.

   Snapshots are created automatically upon reboot.

Synchronize the system time using NTP

Specifying an NTP server synchronizes the time between the systems in your network, which can help prevent issues due to time differences.

Specify an NTP server using the BlueXP API or from the user interface when you create a CIFS server.

Modify system write speed

BlueXP enables you to choose a normal or high write speed for Cloud Volumes ONTAP. The default write speed is normal. You can change to high write speed if fast write performance is required for your workload.

High write speed is supported with all types of single node systems and some HA pair configurations. View supported configurations in the Cloud Volumes ONTAP Release Notes

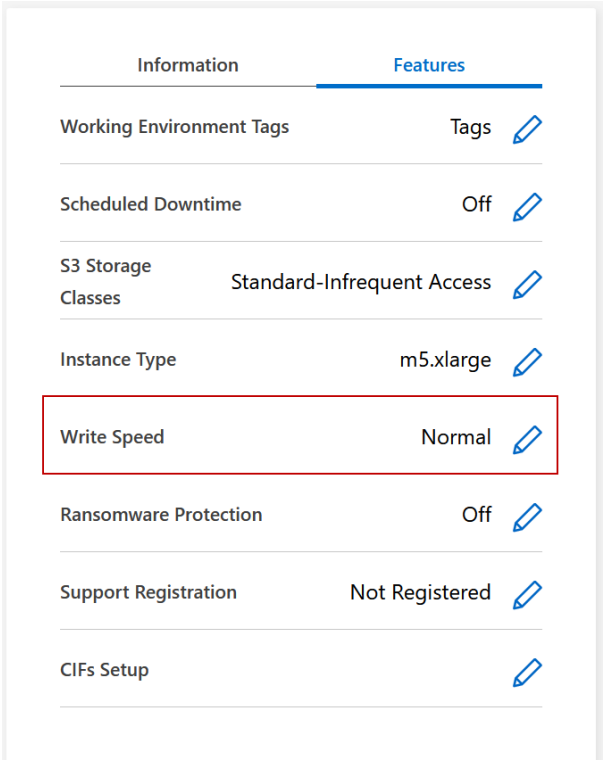
Before you change the write speed, you should understand the differences between the normal and high settings.

About this task

- Ensure that operations such as volume or aggregate creation are not in progress.
- Be aware that this change restarts the Cloud Volumes ONTAP system. This is disruptive process that requires downtime for the entire system.

Steps

1. On the Canvas page, double-click the name of the system you configure to the write speed.
2. On the Overview tab, click the Features panel and then click the pencil icon next to **Write Speed**.



3. Select **Normal** or **High**.

   If you choose High, then you'll need to read the "I understand…" statement and confirm by checking the box.

   The **High** write speed option is supported with Cloud Volumes ONTAP HA pairs in Google Cloud starting with version 9.13.0.

4. Click **Save**, review the confirmation message, and then click **Approve**.

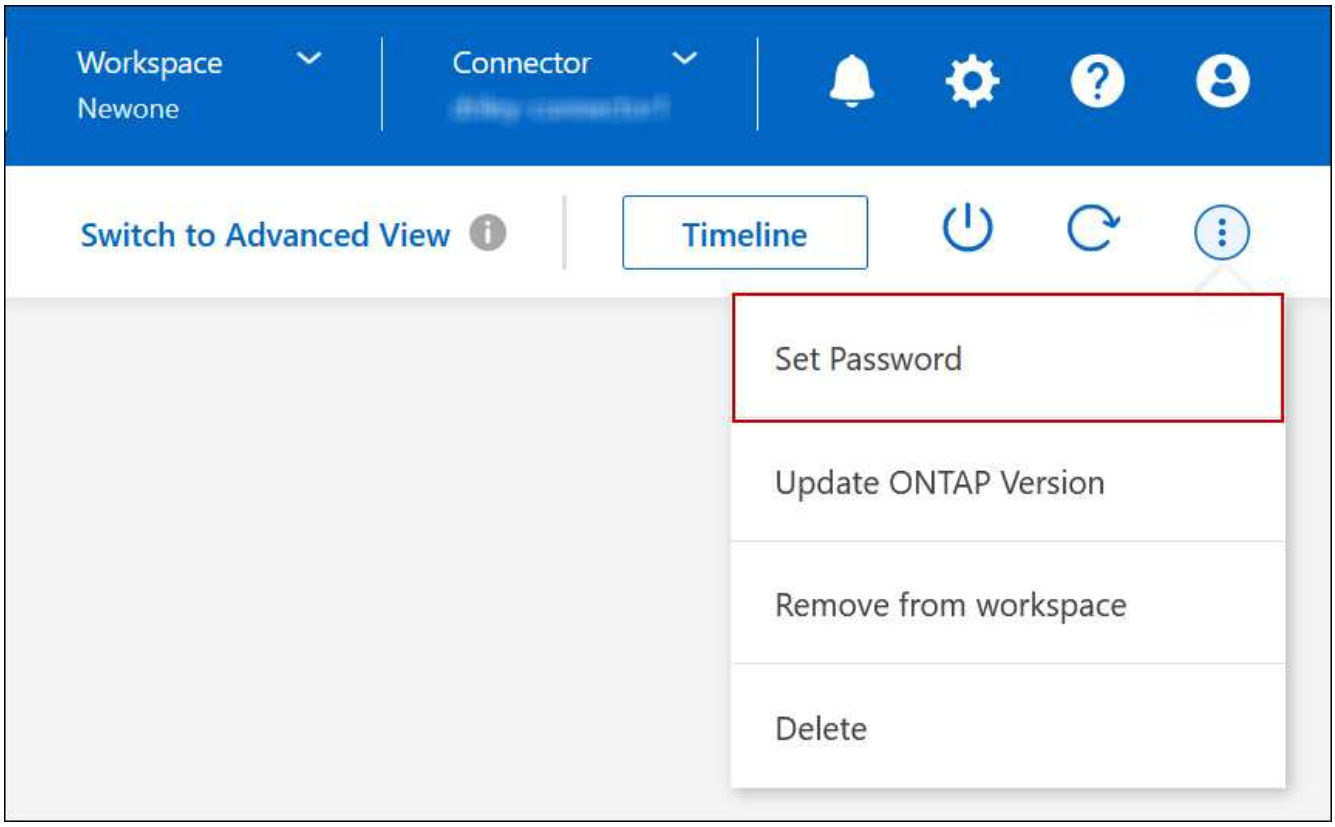
Change the password for Cloud Volumes ONTAP

Cloud Volumes ONTAP includes a cluster admin account. You can change the password for this account from BlueXP, if needed.

You should not change the password for the admin account through System Manager or the CLI. The password will not be reflected in BlueXP. As a result, BlueXP cannot monitor the instance properly.

Steps

1. On the Canvas page, double-click the name of the Cloud Volumes ONTAP working environment.
2. On the upper right of the BlueXP console, click the ellipse icon, and select **Set password**.



The new password must be different than one of the last six passwords that you used.

Add, remove, or delete systems

Adding existing Cloud Volumes ONTAP systems to BlueXP

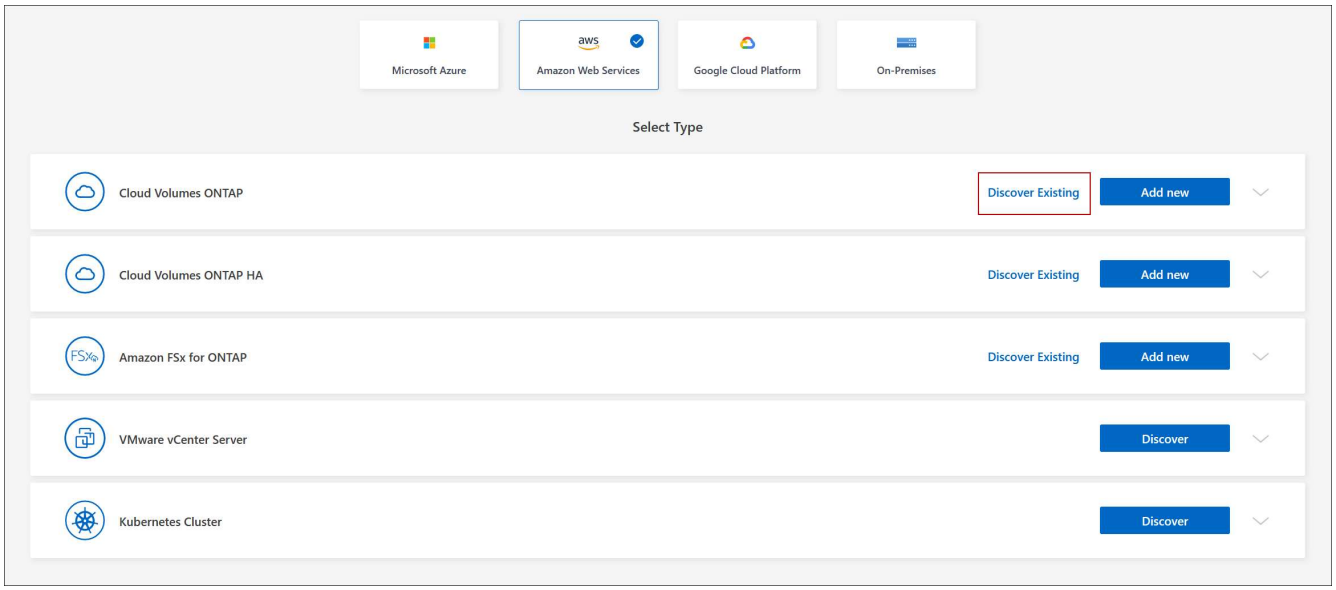
You can discover and add existing Cloud Volumes ONTAP systems to BlueXP. You might do this if you deployed a new BlueXP system.

Before you begin

You must know the password for the Cloud Volumes ONTAP admin user account.

Steps

1. From the left navigation menu, select **Storage > Canvas**.
2. On the Canvas page, click **Add Working Environment**.
3. Select the cloud provider in which the system resides.
4. Choose the type of Cloud Volumes ONTAP system.
5. Click the link to discover an existing system.



6. On the Region page, choose the region where the instances are running, and then select the instances.
7. On the Credentials page, enter the password for the Cloud Volumes ONTAP admin user, and then click **Go**.

Result

BlueXP adds the Cloud Volumes ONTAP instances to the workspace.

Removing Cloud Volumes ONTAP working environments

The Account Admin can remove a Cloud Volumes ONTAP working environment to move it to another system or to troubleshoot discovery issues.

About this task

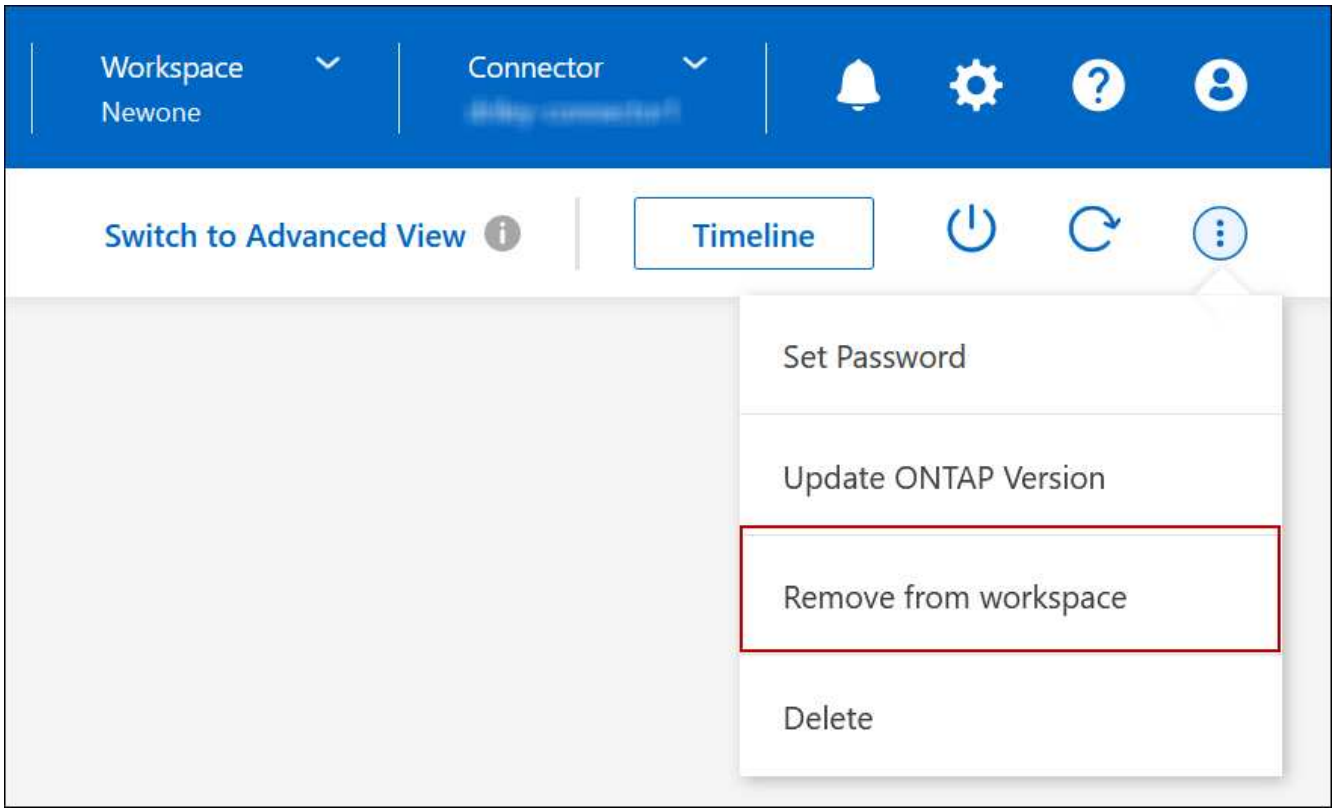
Removing a Cloud Volumes ONTAP working environment removes it from BlueXP. It does not delete the Cloud Volumes ONTAP system. You can later rediscover the working environment.

Removing a working environment from BlueXP enables you to do the following:

- Rediscover it in another workspace
- Rediscover it from another BlueXP system
- Rediscover it if you had problems during the initial discovery

Steps

1. On the Canvas page, double-click on the working environment you want to remove.
2. On the upper right of the BlueXP console, click the ellipse icon, and select **Remove from workspace**.



3. In the Review from Workspace window, click **Remove**.

Result

BlueXP removes the working environment. Users can rediscover this working environment from the Canvas page at any time.

Deleting a Cloud Volumes ONTAP system

You should always delete Cloud Volumes ONTAP systems from BlueXP, rather than from your cloud provider's console. For example, if you terminate a licensed Cloud Volumes ONTAP instance from your cloud provider, then you can't use the license key for another instance. You must delete the working environment from BlueXP to release the license.

When you delete a working environment, BlueXP terminates Cloud Volumes ONTAP instances and deletes disks and snapshots.

Resources managed by other services like backups for BlueXP backup and recovery and instances for BlueXP classification are not deleted when you delete a working environment. You'll need to manually delete them yourself. If you don't, then you'll continue to receive charges for these resources.

When BlueXP deploys Cloud Volumes ONTAP in your cloud provider, it enables termination protection on the instances. This option helps prevent accidental termination.

Steps

1. If you enabled BlueXP backup and recovery on the working environment, determine whether the backed up data is still required and then delete the backups, if necessary.

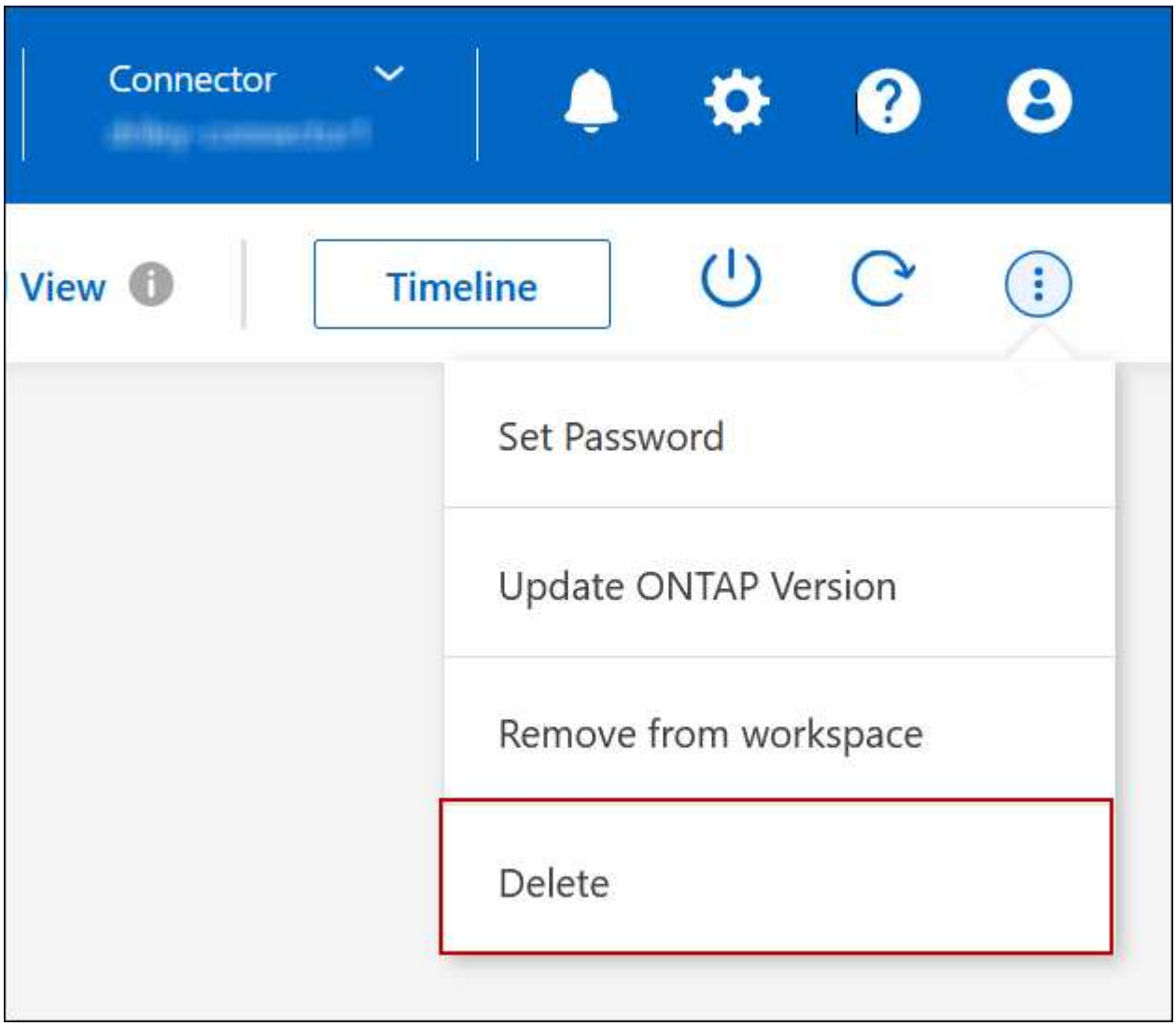
   BlueXP backup and recovery is independent from Cloud Volumes ONTAP by design. BlueXP backup and

recovery doesn't automatically delete backups when you delete a Cloud Volumes ONTAP system, and there is no current support in the UI to delete the backups after the system has been deleted.

2. If you enabled BlueXP classification on this working environment and no other working environments use this service, then you'll need to delete the instance for the service.

   Learn more about the BlueXP classification instance.

3. Delete the Cloud Volumes ONTAP working environment.
   a. On the Canvas page, double-click the name of the Cloud Volumes ONTAP working environment that you want to delete.
   b. On the upper right of the BlueXP console, click the ellipse icon, and select **Delete**.



   c. Under the Delete Working Environment window, type the name of the working environment and then click **Delete**.

      It can take up to 5 minutes to delete the working environment.

AWS administration

Change the EC2 instance type for Cloud Volumes ONTAP

You can choose from several instance or types when you launch Cloud Volumes ONTAP in AWS. You can change the instance type at any time if you determine that it is undersized or oversized for your needs.

About this task

- Automatic giveback must be enabled on a Cloud Volumes ONTAP HA pair (this is the default setting). If it isn't, then the operation will fail.

  ONTAP 9 Documentation: Commands for configuring automatic giveback

- Changing the instance type can affect AWS service charges.
- The operation restarts Cloud Volumes ONTAP.

  For single node systems, I/O is interrupted.

  For HA pairs, the change is nondisruptive. HA pairs continue to serve data.

BlueXP gracefully changes one node at a time by initiating takeover and waiting for give back. NetApp's QA team tested both writing and reading files during this process and didn't see any issues on the client side. As connections changed, we did see retries on the I/O level, but the application layer overcame these short "re-wire" of NFS/CIFS connections.

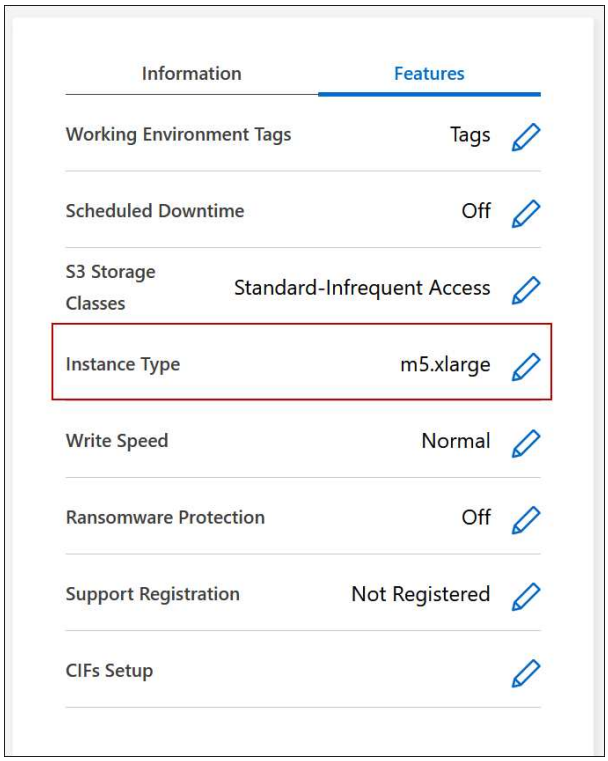
Reference

For a list of supported instance types in AWS, see Supported EC2 instances.

If you can't change the instance type from c4, m4, or r4 instances, see KB article "Unable to change the instance type from r4 to r5 with disk count error".

Steps

1. On the Canvas page, select the working environment.
2. On the Overview tab, click the Features panel and then click the pencil icon next to **Instance type**.



a. If you are using a node-based PAYGO license, you can optionally choose a different license and instance type by clicking the pencil icon next to **License type**.

3. Choose an instance type, select the check box to confirm that you understand the implications of the change, and then click **Change**.

Result

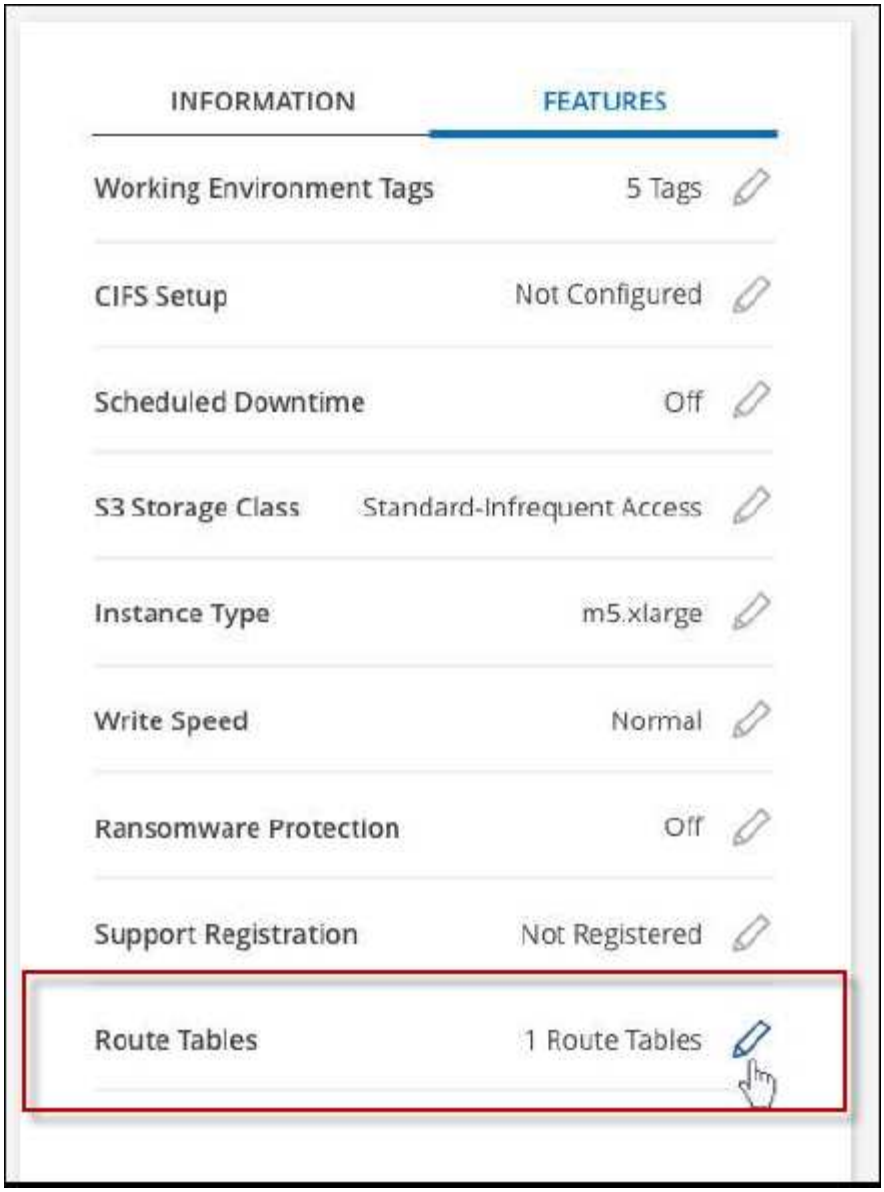
Cloud Volumes ONTAP reboots with the new configuration.

Change route tables for HA pairs in multiple AZs

You can modify the AWS route tables that include routes to the floating IP addresses for an HA pair that's deployed in multiple AWS Availability Zones (AZs). You might do this if new NFS or CIFS clients need to access an HA pair in AWS.

Steps

1. On the Canvas page, select the working environment.
2. On the Overview tab, click the Features panel and then click the pencil icon next to **Route tables**.



3. Modify the list of selected route tables and then click **Save**.

Result

BlueXP sends an AWS request to modify the route tables.

Administer Cloud Volumes ONTAP using the Advanced View

If you need to perform advanced management of Cloud Volumes ONTAP, you can do so using ONTAP System Manager, which is a management interface that's provided with an ONTAP system. We have included the System Manager interface directly inside BlueXP so that you don't need to leave BlueXP for advanced management.

This Advanced View is available as a Preview. We plan to refine this experience and add enhancements in upcoming releases. Please send us feedback by using the in-product chat.

Features

The Advanced View in BlueXP gives you access to additional management features:

- Advanced storage management

  Manage consistency groups, shares, qtrees, quotas, and Storage VMs.

- Networking management

  Manage IPspaces, network interfaces, portsets, and ethernet ports.

- Events and jobs

  View event logs, system alerts, jobs, and audit logs.

- Advanced data protection

  Protect storage VMs, LUNs, and consistency groups.

- Host management

  Set up SAN initiator groups and NFS clients.

Supported configurations

Advanced management through System Manager is supported with Cloud Volumes ONTAP 9.10.0 and later in standard cloud regions.

System Manager integration is not supported in GovCloud regions or in regions that have no outbound internet access.

Limitations

A few features that appear in the System Manager interface are not supported with Cloud Volumes ONTAP:

- BlueXP tiering

  The BlueXP tiering service is not supported with Cloud Volumes ONTAP. Tiering data to object storage must be set up directly from BlueXP's Standard View when creating volumes.

- Tiers

  Aggregate management (including local tiers and cloud tiers) is not supported from System Manager. You must manage aggregates directly from BlueXP's Standard View.

- Firmware upgrades

  Automatic firmware updates from the **Cluster > Settings** page is not supported with Cloud Volumes ONTAP.

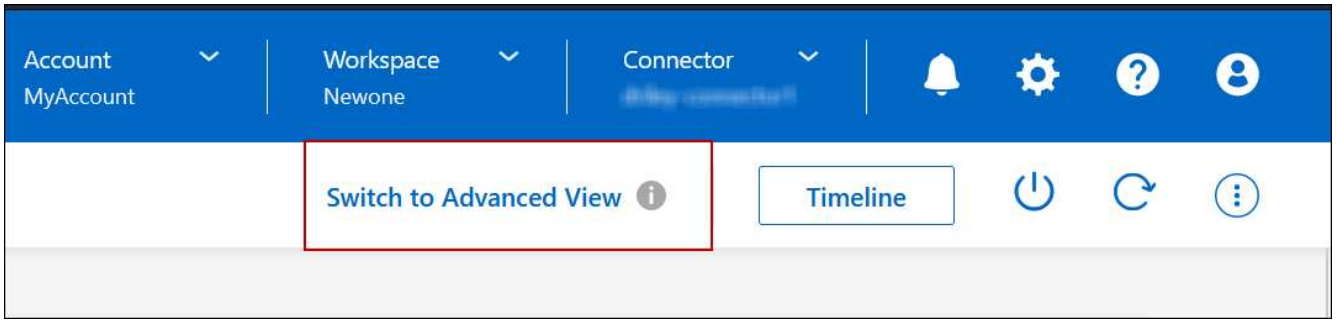
In addition, role-based access control from System Manager is not supported.

How to get started

Open a Cloud Volumes ONTAP working environment and click the Advanced View option.

Steps

1. From the left navigation menu, select **Storage > Canvas**.
2. On the Canvas page, double-click the name of a Cloud Volumes ONTAP system.
3. In the top-right, click **Switch to Advanced View**.



4. If the confirmation message appears, read through it and click **Close**.
5. Use System Manager to manage Cloud Volumes ONTAP.
6. If needed, click **Switch to Standard View** to return to standard management through BlueXP.

Help with using System Manager

If you need help using System Manager with Cloud Volumes ONTAP, you can refer to ONTAP documentation for step-by-step instructions. Here are a few links that might help:

- Volume and LUN management
- Network management
- Data protection

Administer Cloud Volumes ONTAP from the CLI

The Cloud Volumes ONTAP CLI enables you to run all administrative commands and is a good choice for advanced tasks or if you are more comfortable using the CLI. You can connect to the CLI using Secure Shell (SSH).

Before you begin

The host from which you use SSH to connect to Cloud Volumes ONTAP must have a network connection to Cloud Volumes ONTAP. For example, you might need to SSH from a jump host that's in your cloud provider network.

When deployed in multiple AZs, Cloud Volumes ONTAP HA configurations use a floating IP address for the cluster management interface, which means external routing is not available. You must connect from a host that is part of the same routing domain.

Steps

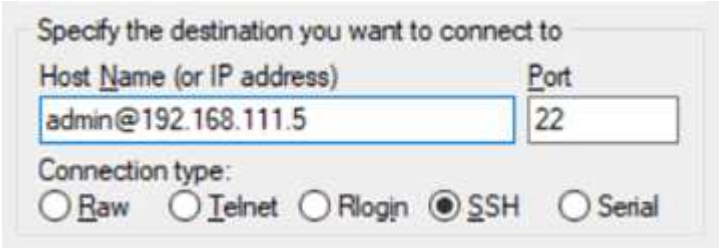
1. In BlueXP, identify the IP address of the cluster management interface:

a. From the left navigation menu, select **Storage > Canvas**.
b. On the Canvas page, select the Cloud Volumes ONTAP system.
c. Copy the cluster management IP address that appears in the right pane.

2. Use SSH to connect to the cluster management interface IP address using the admin account.

   Example

   The following image shows an example using PuTTY:



3. At the login prompt, enter the password for the admin account.

   Example

```
Password: ********
COT2::>
```

Copyright information

Trademark information