System administration

Cloud Volumes ONTAP

NetApp
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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
9.13.0	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
9.10.0	9.10.1
9.9.1	9.10.1
	9.10.0

Current version	Versions that you can directly upgrade to
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.

- For patch (P) releases, you can upgrade from one version release to any P-release of 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.

Upgrades of the HA mediator

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

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

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.

> ℹ️ 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**.

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**.

> ℹ️ 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:

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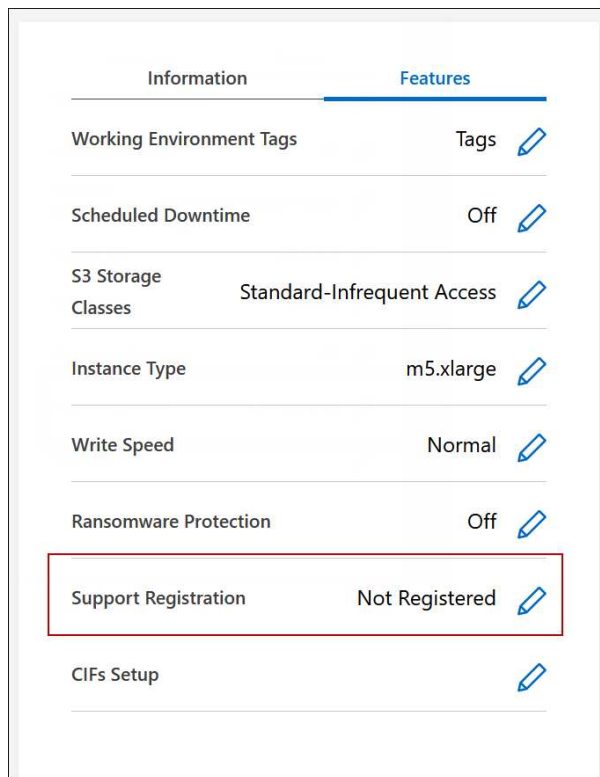
4. Select a NetApp Support Site account and click **Register**.

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.

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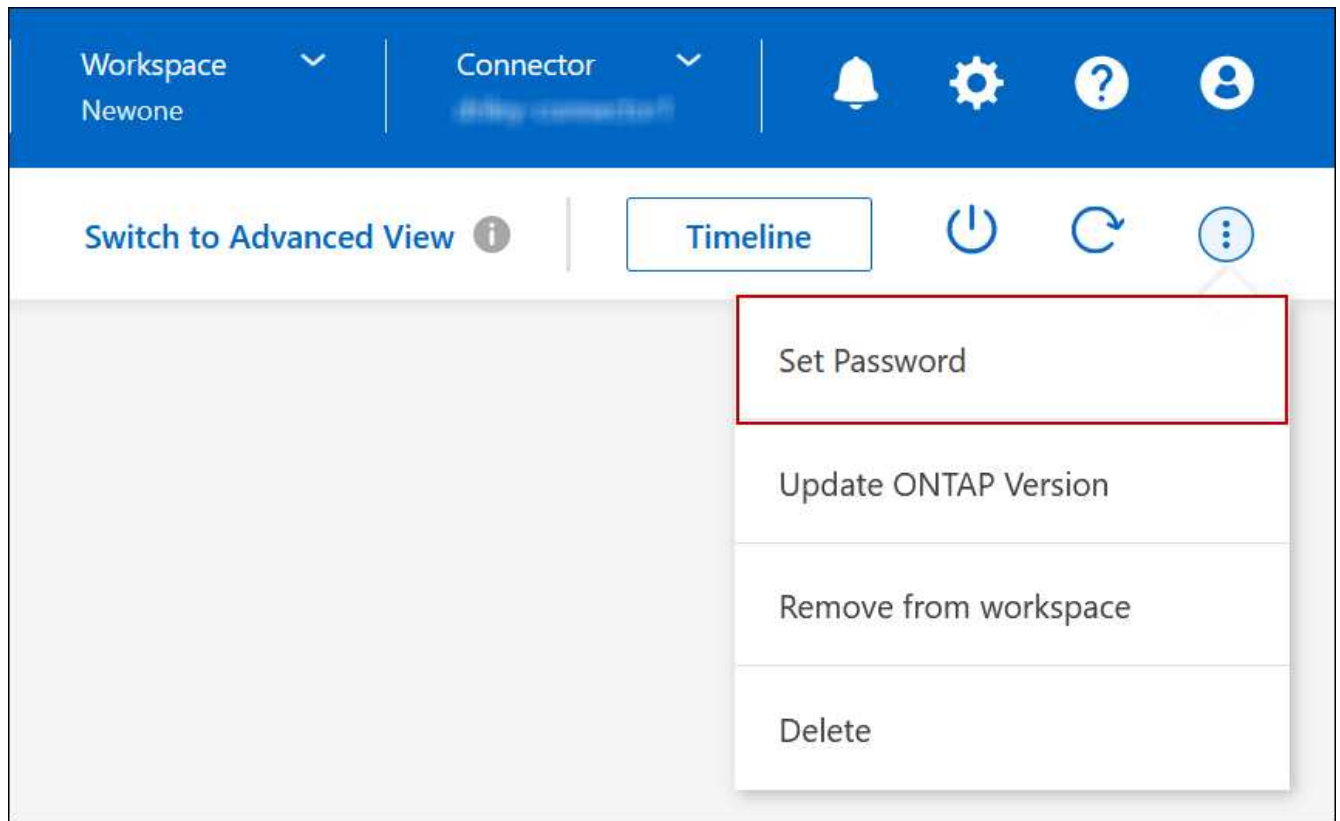
The new password must be different than one of the last six passwords that you used.

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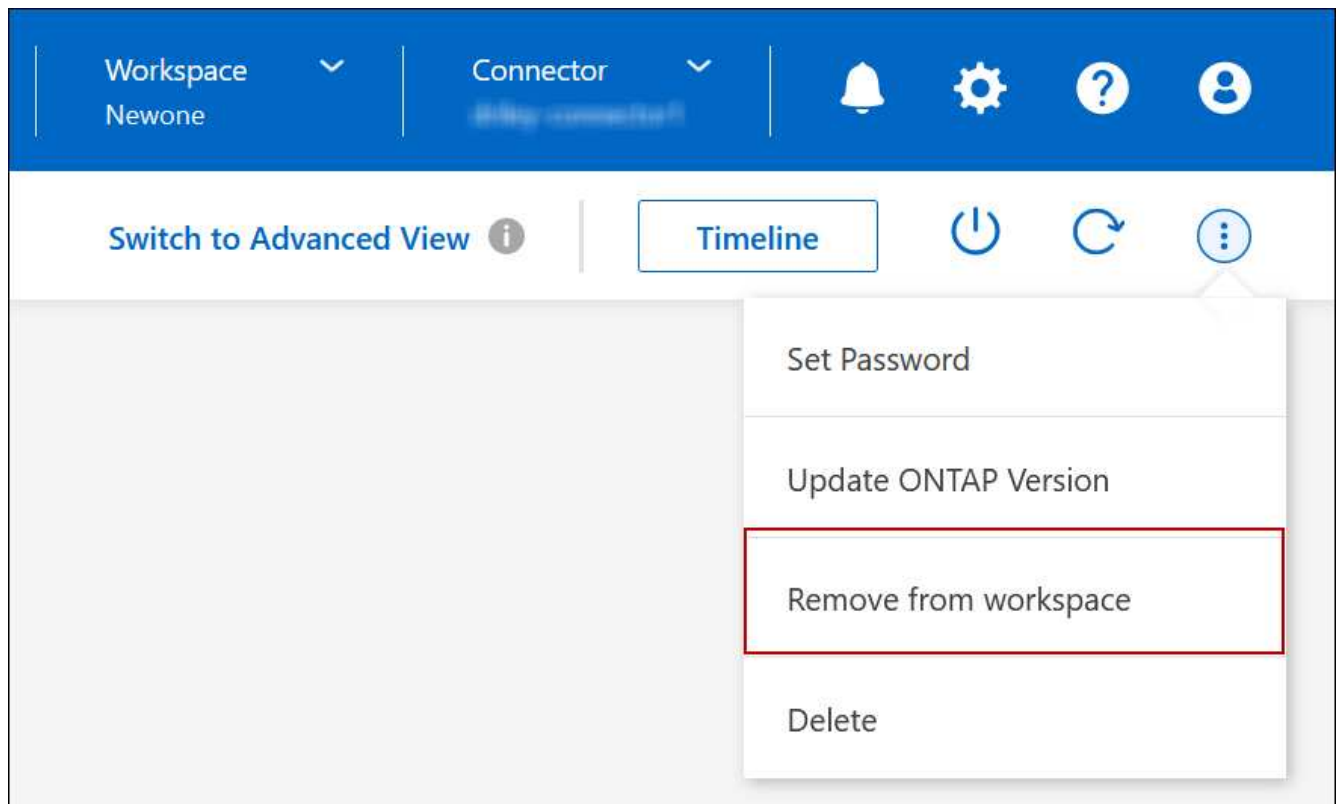
3. In the Review from Workspace window, click **Remove**.

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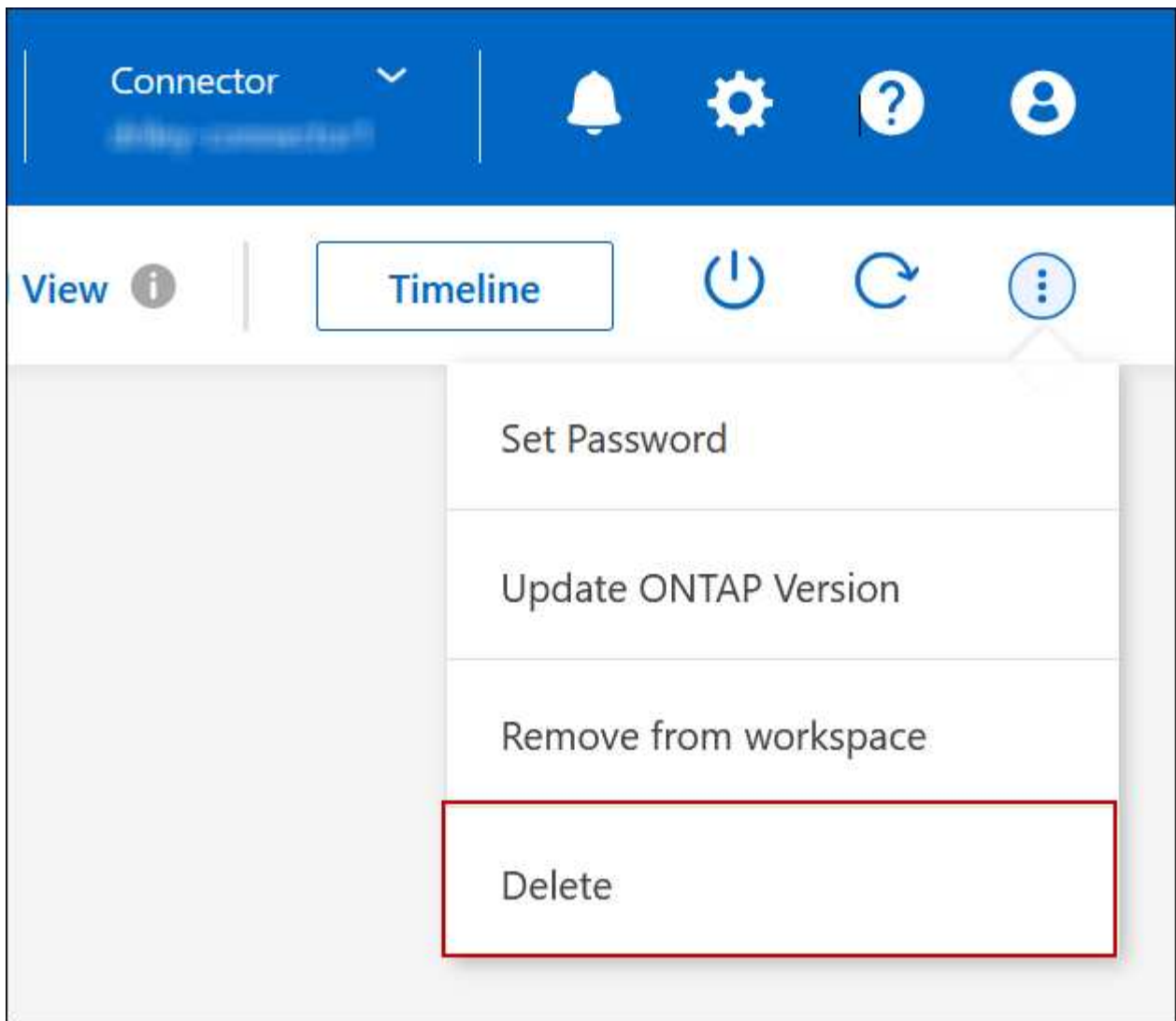
   c. Under the Delete Working Environment window, type the name of the working environment and then click **Delete**.

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

Azure administration

Change the Azure VM type for Cloud Volumes ONTAP

You can choose from several VM types when you launch Cloud Volumes ONTAP in Microsoft Azure. You can change the VM 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.

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- Changing the VM type can affect Microsoft Azure 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.

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 **VM type**.

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

3. Select a VM 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.

Overriding CIFS locks for Cloud Volumes ONTAP HA pairs in Azure

The Account Admin can enable a setting in BlueXP that prevents issues with Cloud Volumes ONTAP storage giveback during Azure maintenance events. When you enable this setting, Cloud Volumes ONTAP vetoes CIFS locks and resets active CIFS sessions.

About this task

Microsoft Azure schedules periodic maintenance events on its virtual machines. When a maintenance event occurs on a Cloud Volumes ONTAP HA pair, the HA pair initiates storage takeover. If there are active CIFS sessions during this maintenance event, the locks on CIFS files can prevent storage giveback.

If you enable this setting, Cloud Volumes ONTAP will veto the locks and reset the active CIFS sessions. As a result, the HA pair can complete storage giveback during these maintenance events.

> ⚠️ This process might be disruptive to CIFS clients. Data that is not committed from CIFS clients could be lost.

What you'll need

You need to create a Connector before you can change BlueXP settings. Learn how.

Steps

1. In the upper right of the BlueXP console, click the Settings icon, and select **Connector Settings**.
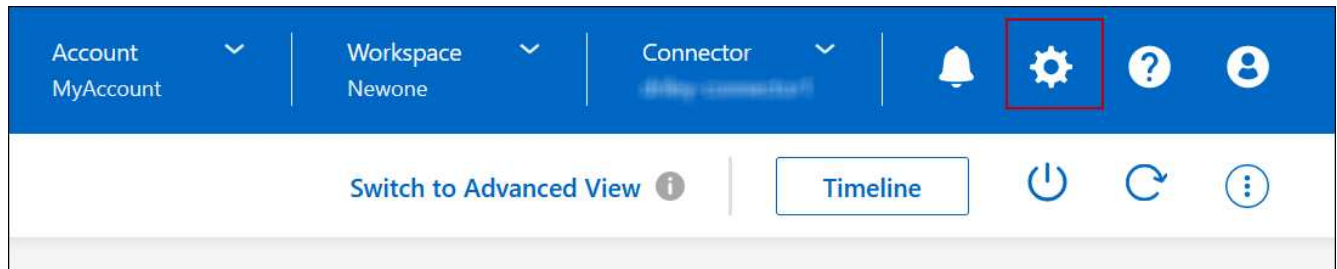
2. Under **Azure**, click **Azure CIFS locks for Azure HA working environments**.
3. Click the checkbox to enable the feature and then click **Save**.

Use an Azure Private Link or service endpoints

Cloud Volumes ONTAP uses an Azure Private Link for connections to its associated storage accounts. If needed, you can disable Azure Private Links and use service endpoints instead.

Overview

By default, BlueXP enables an Azure Private Link for connections between Cloud Volumes ONTAP and its associated storage accounts. An Azure Private Link secures connections between endpoints in Azure and provides performance benefits.

If required, you can configure Cloud Volumes ONTAP to use service endpoints instead of an Azure Private

Link.

With either configuration, BlueXP always limits network access for connections between Cloud Volumes ONTAP and storage accounts. Network access is limited to the VNet where Cloud Volumes ONTAP is deployed and the VNet where the Connector is deployed.
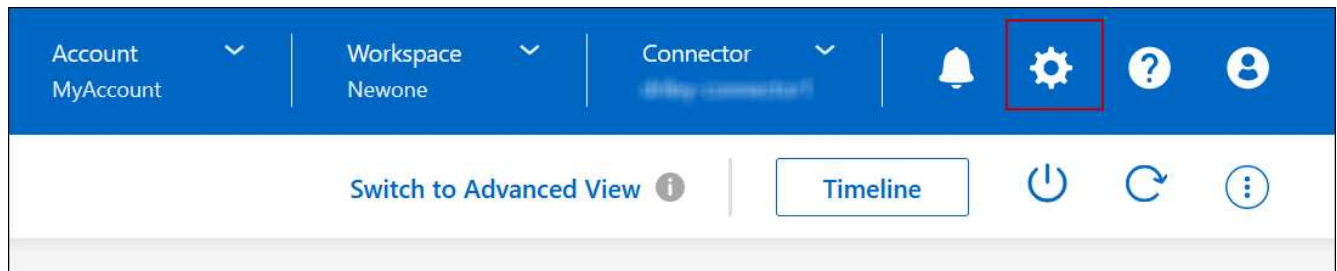
Disable Azure Private Links and use service endpoints instead

If required by your business, you can change a setting in BlueXP so that it configures Cloud Volumes ONTAP to use service endpoints instead of an Azure Private Link. Changing this setting applies to new Cloud Volumes ONTAP systems that you create. Service endpoints are only supported in Azure region pairs between the Connector and Cloud Volumes ONTAP VNets.

The Connector should be deployed in the same Azure region as the Cloud Volumes ONTAP systems that it manages, or in the Azure region pair for the Cloud Volumes ONTAP systems.

Steps

1. In the upper right of the BlueXP console, click the Settings icon, and select **Connector Settings**.

2. Under **Azure**, click **Use Azure Private Link**.
3. Deselect **Private Link connection between Cloud Volumes ONTAP and storage accounts**.
4. Click **Save**.

After you finish
If you disabled Azure Private Links and the Connector uses a proxy server, you must enable direct API traffic.

Learn how to enable direct API traffic on the Connector

Work with Azure Private Links

In most cases, there's nothing that you need to do to set up Azure Private links with Cloud Volumes ONTAP. BlueXP manages Azure Private Links for you. But if you use an existing Azure Private DNS zone, then you'll need to edit a configuration file.

Requirement for custom DNS

Optionally, if you work with custom DNS, you need to create a conditional forwarder to the Azure private DNS zone from your custom DNS servers. To learn more, refer to Azure's documentation on using a DNS forwarder.

How Private Link connections work

When BlueXP deploys Cloud Volumes ONTAP in Azure, it creates a private endpoint in the resource group. The private endpoint is associated with storage accounts for Cloud Volumes ONTAP. As a result, access to Cloud Volumes ONTAP storage travels through the Microsoft backbone network.

Client access goes through the private link when clients are within the same VNet as Cloud Volumes ONTAP, within peered VNets, or in your on-premises network when using a private VPN or ExpressRoute connection to the VNet.

Here's an example that shows client access over a private link from within the same VNet and from an on-prem network that has either a private VPN or ExpressRoute connection.
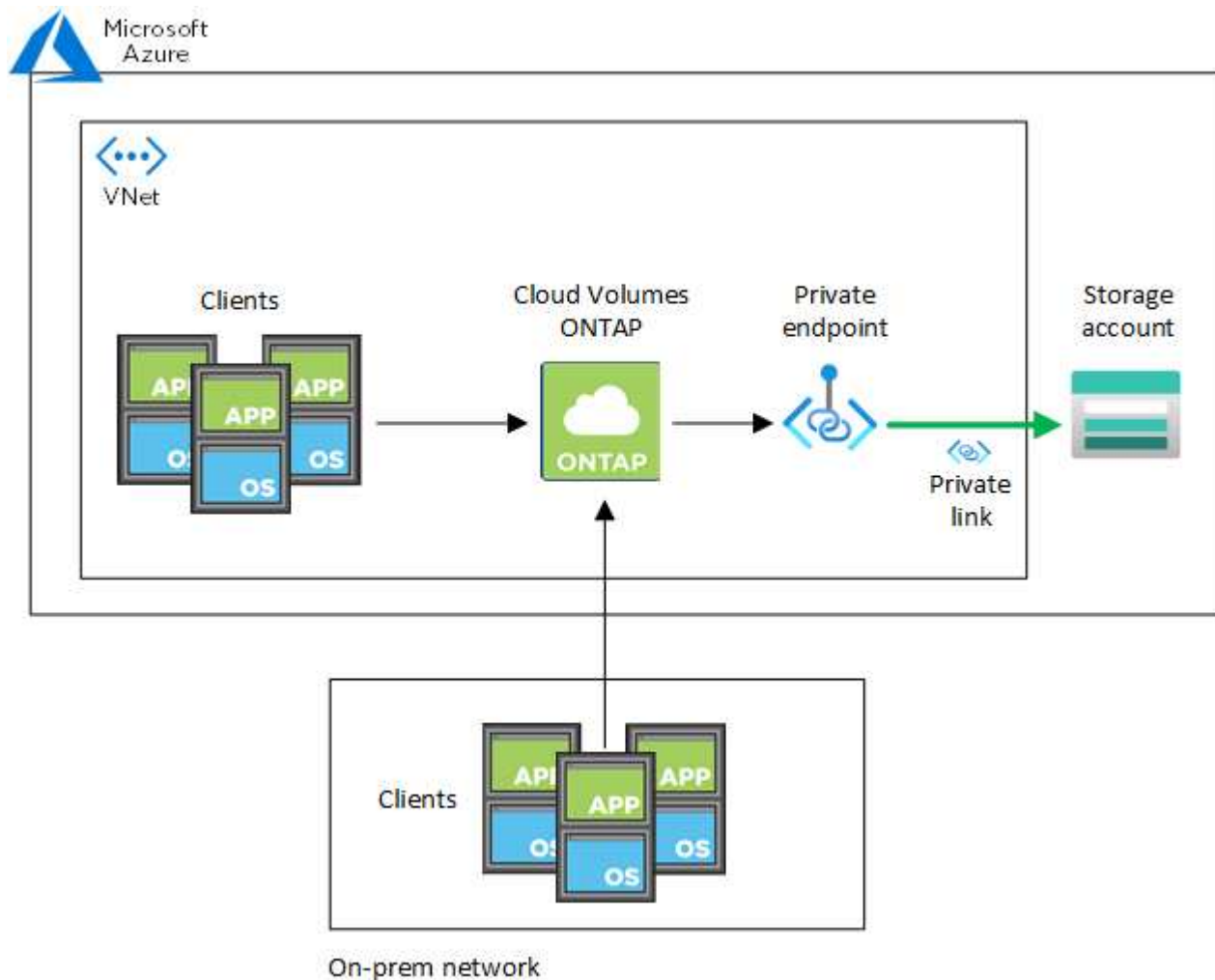
> (i) If the Connector and Cloud Volumes ONTAP systems are deployed in different VNets, then you must set up VNet peering between the VNet where the Connector is deployed and the VNet where the Cloud Volumes ONTAP systems are deployed.

Provide BlueXP with details about your Azure Private DNS

If you use Azure Private DNS, then you need to modify a configuration file on each Connector. Otherwise, BlueXP can't enable the Azure Private Link connection between Cloud Volumes ONTAP and its associated storage accounts.

Note that the DNS name must match Azure DNS naming requirements as shown in Azure documentation.

Steps

1. SSH to the Connector host and log in.

2. Navigate to the following directory: /opt/application/netapp/cloudmanager/docker_occm/data

3. Edit app.conf by adding the "user-private-dns-zone-settings" parameter with the following keyword-value pairs:

```
"user-private-dns-zone-settings" : {
    "resource-group" : "<resource group name of the DNS zone>",
    "subscription" : "<subscription ID>",
    "use-existing" : true,
    "create-private-dns-zone-link" : true
}
```

The parameter should be entered at the same level as "system-id" like shown below:

```
"system-id" : "<system ID>",
"user-private-dns-zone-settings" : {
```

Note that the subscription keyword is required only if the Private DNS Zone exists in a different subscription than the Connector.

4. Save the file and log off the Connector.

   A reboot isn't required.

Enable rollback on failures

If BlueXP fails to create an Azure Private Link as part of specific actions, it completes the action without the Azure Private Link connection. This can happen when creating a new working environment (single node or HA pair), or when the following actions occur on an HA pair: creating a new aggregate, adding disks to an existing aggregate, or creating a new storage account when going above 32 TiB.

You can change this default behavior by enabling rollback if BlueXP fails to create the Azure Private Link. This can help to ensure that you're fully compliant with your company's security regulations.

If you enable rollback, BlueXP stops the action and rolls back all resources that were created as part of the action.

You can enable rollback through the API or by updating the app.conf file.

Enable rollback through the API

Step

1. Use the `PUT /occm/config` API call with the following request body:

```
{ "rollbackOnAzurePrivateLinkFailure": true }
```

Enable rollback by updating app.conf

Steps

1. SSH to the Connector host and log in.

2. Navigate to the following directory: /opt/application/netapp/cloudmanager/docker_occm/data

3. Edit app.conf by adding the following parameter and value:

```
"rollback-on-private-link-failure": true
```

4. Save the file and log off the Connector.

    A reboot isn't required.

Moving resource groups

Cloud Volumes ONTAP supports Azure resource groups moves but the workflow happens in the Azure console only.

You can move a working environment from one resource group to a different resource group in Azure within the same Azure subscription. Moving resource groups between different Azure subscriptions is not supported.

Steps

1. Remove the working environment from **Canvas**.

    To learn how to remove a working environment, see Removing Cloud Volumes ONTAP working environments.

2. Execute the resource group move in the Azure console.

    To complete the move, refer to Move resources to a new resource group or subscription in Microsoft Azure's documentation.

3. In **Canvas**, discover the working environment.

4. Look for the new resource group in the information for the working environment.

Result

The working environment and its resources (VMs, disks, storage accounts, network interfaces, snapshots) are in the new resource group.

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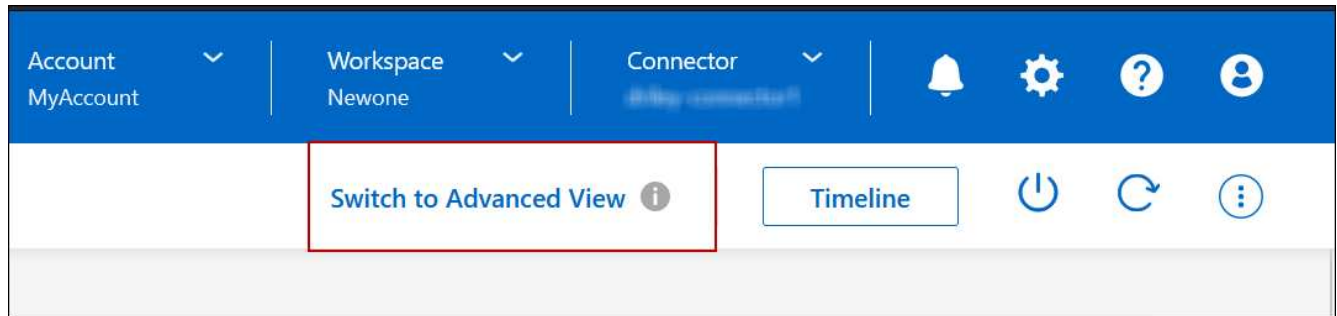
4. If the confirmation message appears, read through it and click **Close**.
5. Use System Manager to manage Cloud Volumes ONTAP.
6. If needed, click **Switch to Standard View** to return to standard management through BlueXP.

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.

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:


```
Specify the destination you want to connect to
Host Name (or IP address)          Port
admin@192.168.111.5                22
Connection type:
 ○ Raw   ○ Telnet  ○ Rlogin  ● SSH   ○ Serial
```

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

Example

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