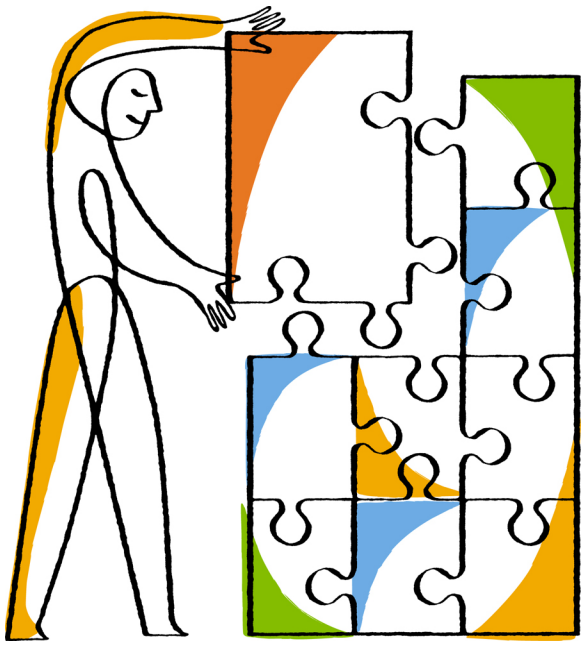
Updated for 8.3.1

Cloud ONTAP® 8.3 for Amazon Web Services

Upgrade Guide



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Ways to upgrade Cloud ONTAP

You can upgrade Cloud ONTAP software by using the Cloud ONTAP CLI or by using OnCommand Cloud Manager. Using Cloud Manager is recommended because it automates the process.

This guide describes how to upgrade Cloud ONTAP using the CLI. For instructions about using Cloud Manager, see the *OnCommand Cloud Manager 2.0 Storage Management Guide*.

Preparing to upgrade Cloud ONTAP

Before you upgrade Cloud ONTAP, you should prepare the system, choose an accessible location for the Cloud ONTAP system image, and then download and copy the image to that location.

Steps

1. Review version requirements for SnapMirror source and destination systems on page 5
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Version requirements for SnapMirror source and destination systems

If any of your systems have active SnapMirror relationships, you must prepare and upgrade both source and destination systems. The destination system must run a clustered Data ONTAP or Cloud ONTAP version that is the same as or later than that of the source system.

The version of clustered Data ONTAP or Cloud ONTAP that is running on the destination system must be the same or later than the *major* version running on the source system.

The destination can run an earlier *maintenance* version, as long as it is the same *major* version.

For example, replication is supported in the following scenarios:

- The source is running 8.3 and the destination is running 8.3.1
- The source is running 8.3.1 and the destination is running 8.3
- The source is running 8.2.3 and the destination is running 8.3

Whereas replication from an 8.3 source to an 8.2.3 destination is not supported because the destination is running an earlier major version.

Connecting to the Cloud ONTAP CLI

The Cloud ONTAP CLI enables you to execute 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 ONTAP must have a network connection to the Cloud ONTAP instance. For example, you might need to use SSH from the Cloud Manager instance or from a jump host in AWS.

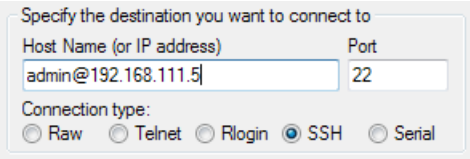
Steps

1. In Cloud Manager, identify the IP address of the cluster management interface:
   a. On the **Working Environments** page, double-click the name of the instance.
   b. In the **Cloud ONTAP Storage** pane, click the menu icon, and then click **Information**.
   c. Copy the cluster management IP address:

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::>
```

Suspending SnapMirror and SnapVault transfers

It is best to suspend SnapMirror and SnapVault transfers before you upgrade Cloud ONTAP to prevent failed transfers. You must suspend the transfers from the destination system.

Steps

1. From the CLI, identify the relationships for which the system is the source or destination:

If you want to...	Use this command...
Identify relationships for which the system is the source	`snapmirror list-destinations`
Identify relationships for which the system is the destination	`snapmirror show`

2. For each destination volume, suspend future transfers:

   `snapmirror quiesce -destination-path` ***`destination`***

   If there are no active transfers for the relationship, this command sets the status to `Quiesced`. If the relationship has active transfers, the status is set to `Quiescing` until the transfer is completed, and then the status becomes `Quiesced`.

   #### Example

   The following example shows transfers involving the destination volume `vol1` from SVM `svm_COT2` being quiesced:

   ```
   COT2::> snapmirror quiesce -destination-path svm_COT2:vol1
   ```

3. Verify that all relationships are quiesced:

   `snapmirror show -status !Quiesced`

   This command displays any relationships that are *not* quiesced.

   #### Example

   The following example shows that all relationships are quiesced:

   ```
   COT2::> snapmirror show -status !Quiesced
   There are no entries matching your query.
   ```

4. If any SnapMirror or SnapVault relationships are currently transferring, wait or stop the transfers:

Option	Description
Wait for the transfers to complete before performing the upgrade.	Once each transfer completes, the relationship changes to the `Quiesced` status.

Option	Description
Stop the transfers by entering the following command: **`snapmirror abort -destination-path destination -h`** **Note:** You must use the `-foreground true` parameter if you are aborting load-sharing mirror transfers.	This command stops the transfer and restores the destination volume to the last Snapshot copy that was successfully transferred. The relationship is set to the `Quiesced` status.

Verifying storage health

Your aggregates must be online before you start the upgrade.

Step

1. From the CLI, verify that all aggregates are online:

   `storage aggregate show`

   ### Example

   ```
   COT2::> storage aggregate show

   Aggregate   Size Available Used% State   #Vols  Nodes      RAID Status
   --------- ------ --------- ----- ------- ------ ---------- -----------
   aggr0    124.0GB   56.90GB   54% online       1 COT2-01    raid0,
                                                               normal
   aggr1    442.9GB   431.9GB    3% online       3 COT2-01    raid0,
                                                               normal
   2 entries were displayed.
   ```

   If any aggregates are offline, use the `storage aggregate online` command to bring the aggregates online.

Backing up Cloud ONTAP system and configuration data

Before you upgrade a Cloud ONTAP system, a cluster configuration backup file should be available. You should also create an EBS snapshot of the boot and root EBS volumes. Having these backups enables you to recover your system if necessary.

Steps

1. Ensure that a recent Cloud ONTAP cluster configuration backup file is available on a remote server.

   If the NetApp Support instance is running in AWS, then a recent backup file is already available. Cloud ONTAP automatically replicates configuration backup files to the NetApp Support instance every eight hours.

   If you stopped the NetApp Support instance, you should upload a backup to a remote server. You can do so from the Cloud ONTAP CLI by using the `system configuration backup` commands, which are available at the advanced privilege level.

2. Create EBS snapshots of the root and boot disks by stopping and then restarting the Cloud ONTAP instance from Cloud Manager:

   a. On the **Resources** page for the working environment, click the menu icon, and then click **Turn Off Cloud ONTAP**.

   b. Keep the option to create EBS snapshots enabled, and then click **Turn Off**.

   c. After the instance stops, click the icon to restart the instance.

   You can also take the EBS snapshots using the `rec_snap_volume.pl` script, which is available on the NetApp Support instance.

   Using the AWS EC2 console to create the EBS snapshots is not recommended because of the following reasons:

   - The console allows you to create the snapshots on a running instance (the Cloud ONTAP instance must be stopped).
   - The snapshots are not tagged so that the NetApp Support instance tools can use them to recover an instance.

Related information

Clustered Data ONTAP 8.3.1 man page: system configuration backup create - Create a configuration backup

Clustered Data ONTAP 8.3.1 man page: system configuration backup upload - Upload a configuration backup

Choosing a location for the Cloud ONTAP software image

You must place the Cloud ONTAP software image on an HTTP server or FTP server that is accessible from the Cloud ONTAP instance. Cloud ONTAP accesses the software image when you run the `system node image update` command.

Steps

1. Set up an HTTP server or FTP server that can host the Cloud ONTAP software image.

   If you have a VPN connection to your AWS Virtual Private Cloud (VPC), you can place the Cloud ONTAP software image on an HTTP server or FTP server in your own network. Otherwise, you need to place the file on an HTTP server or FTP server in AWS.

   #### Example

   The NetApp Support instance includes an FTP server that you can use for upgrades. You can connect to an instance in your VPC (the Cloud Manager instance, for example), download the software image to that instance, connect to the NetApp Support instance's private IP address using FTP, and then upload the image.

   The user name for the FTP server is **`supportftp`** and the password is the ID of the VPC in which the instance is running.

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

   Note: The predefined Cloud ONTAP security group allows outbound HTTP and FTP connections by default.

Obtaining the Cloud ONTAP software image

The Cloud ONTAP software image is available from the NetApp Support site. After you download the image, you need to copy it to a location that is accessible from Cloud ONTAP instances.

Steps

1. Go to the NetApp Support Site and download the Cloud ONTAP software image.

   NetApp Downloads: Software

2. Copy the software image to the directory on the HTTP or FTP server from which the file will be served.

Upgrading Cloud ONTAP

You upgrade Cloud ONTAP by installing the software image from an HTTP or FTP server.

Steps

1. From the CLI, run the following command to download and install the software image:

   `system node image update -package` *`location`* `-setdefault true`

   See the man page for more details about the command.

   Clustered Data ONTAP 8.3.1 man page: system node image update - Perform software image upgrade/downgrade

   #### Example

   The following command updates the software image from a software package located at `ftp://192.168.111.1/image.tgz`:

   `system node image update -package ftp://192.168.111.1/image.tgz -setdefault true`

2. After the upgrade is complete, reboot the system:

   `system node reboot`

   The system boots the new image.

Verifying Cloud ONTAP system status

You should verify that upgraded systems are functioning as expected before you return them to production. This includes verifying the status of storage resources and resuming SnapMirror and SnapVault transfers if they were suspended before the upgrade.

Steps

1. Verify that the intended target release is installed and running:

   `version`

2. Verify that all aggregates are online:

   `storage aggregate show`

3. If you suspended SnapMirror and SnapVault transfers, enter the following command on the destination system to resume the transfers:

   `snapmirror resume` ***`destination`***

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