



# **Aggregate administration**

## **Cloud Volumes ONTAP**

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# Aggregate administration

## Create aggregates

You can create aggregates yourself or let BlueXP do it for you when it creates volumes. The benefit of creating aggregates yourself is that you can choose the underlying disk size, which enables you to size your aggregate for the capacity or the performance that you need.



All disks and aggregates must be created and deleted directly from BlueXP. You should not perform these actions from another management tool. Doing so can impact system stability, hamper the ability to add disks in the future, and potentially generate redundant cloud provider fees.

### Steps

1. From the left navigation menu, select **Storage > Canvas**.
2. On the Canvas page, double-click the name of the Cloud Volumes ONTAP instance on which you want to manage aggregates.
3. On the Aggregates tab, click **Add Aggregate** and then specify details for the aggregate.

## AWS

- If you're prompted to choose a disk type and disk size, refer to [Plan your Cloud Volumes ONTAP configuration in AWS](#).
- If you're prompted to enter the aggregate's capacity size, then you're creating an aggregate on a configuration that supports the Amazon EBS Elastic Volumes feature. The following screenshot shows an example of a new aggregate comprised of gp3 disks.

The screenshot shows the AWS console interface for selecting a disk type. At the top, there are four steps: 1 Disk Type (active), 2 Aggregate details, 3 Tiering Data, and 4 Review. The main heading is 'Select Disk Type'. Below it, a 'Disk Type' dropdown menu is set to 'GP3 - General Purpose SSD Dynamic Performance'. A detailed box for 'General Purpose SSD (gp3) Disk Properties' is shown, containing a description: 'General purpose SSD volume that balances price and performance (performance level is independent of storage capacity)'. It also features two input fields: 'IOPS Value' set to 12000 and 'Throughput MB/s' set to 250, each with an information icon and a dropdown arrow.

[Learn more about support for Elastic Volumes.](#)

## Azure

For help with disk type and disk size, refer to [Plan your Cloud Volumes ONTAP configuration in Azure](#).

## Google Cloud

For help with disk type and disk size, refer to [Plan your Cloud Volumes ONTAP configuration in Google Cloud](#).

4. Click **Go**, and then click **Approve and Purchase**.

# Manage aggregates

Manage aggregates yourself by adding disks, viewing information about the aggregates, and by deleting them.



All disks and aggregates must be created and deleted directly from BlueXP. You should not perform these actions from another management tool. Doing so can impact system stability, hamper the ability to add disks in the future, and potentially generate redundant cloud provider fees.

## Before you begin


If you want to delete an aggregate, you must have first deleted the volumes in the aggregate.

## About this task


If an aggregate is running out of space, you can move volumes to another aggregate by using System Manager.

## Steps

1. From the left navigation menu, select **Storage > Canvas**.
2. On the Canvas page, double-click the Cloud Volumes ONTAP working environment on which you want to manage aggregates.
3. In the working environment, click the **Aggregates** tab.
4. On the Aggregates tab, navigate to the desired title and then click the ... (ellipse icon).

 aggr1


■ ONLINE



INFO		CAPACITY	
Disk Type	GP3 3000 IOPS	Provisioned size	907.12 GiB
Disks	4	EBS Used	1.13 GiB
Volumes	2	S3 Used	0 GiB
Elastic Volumes	Enabled		
S3 Tiering	Enabled		

5. Manage your aggregates:

Task	Action
View information about an aggregate	Under the ... (ellipse icon) menu, click <b>View aggregate details</b> .

Task	Action
Create a volume on a specific aggregate	Under the ... (ellipse icon) menu, click <b>Add volume</b> .
Add disks to an aggregate	<p>a. Under the ... (ellipse icon) menu, click <b>Add disks</b>.</p> <p>b. Select the number of disks that you want to add and click <b>Add</b>.</p> <div>  <p>All disks in an aggregate must be the same size.</p> </div>
Increase the capacity of an aggregate that supports Amazon EBS Elastic Volumes	<p>a. Under the ... (ellipse icon) menu, click <b>Increase capacity</b>.</p> <p>b. Enter the additional capacity that you'd like to add and then click <b>Increase</b>.</p> <p>Note that you must increase the capacity of the aggregate by a minimum of 256 GiB or 10% of the aggregate's size.</p> <p>For example, if you have a 1.77 TiB aggregate, 10% is 181 GiB. That's lower than 256 GiB, so the size of the aggregate must be increased by the 256 GiB minimum.</p>
Delete an aggregate	<p>a. Select an aggregate tile that does not contain any volumes click the ... (ellipse icon) &gt; <b>Delete</b>.</p> <p>b. Click <b>Delete</b> again to confirm.</p>

## Manage capacity settings on a Connector

Each Connector has settings that determines how it manages aggregate capacity for Cloud Volumes ONTAP.

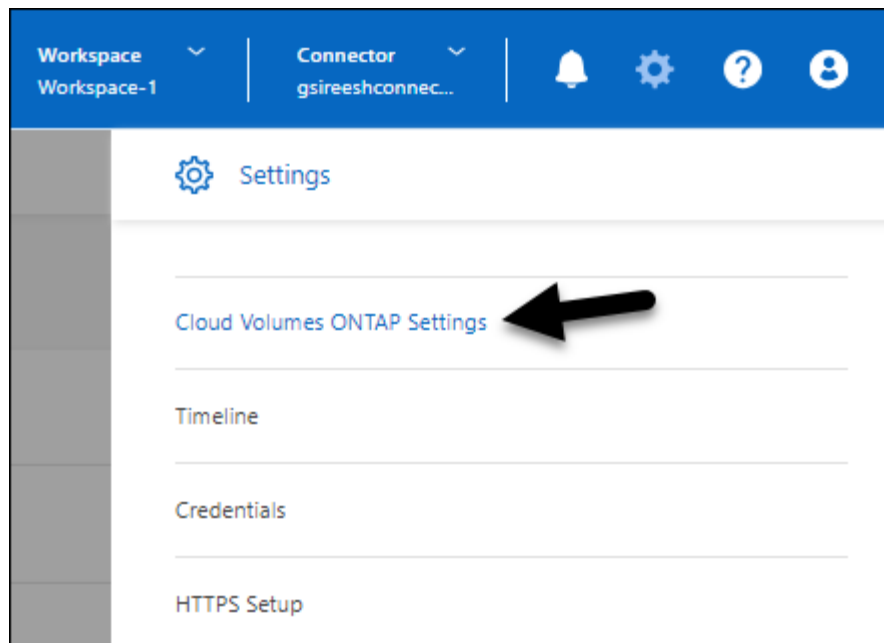
These settings affect all Cloud Volumes ONTAP systems managed by a Connector. If you have another Connector, it can be configured differently.

### Required permissions

Account Admin privileges are required to modify Cloud Volumes ONTAP Settings.

### Steps

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



2. Under **Capacity**, modify any of the following settings:

### Capacity Management Mode

Choose whether BlueXP notifies you of storage capacity decisions or whether BlueXP automatically manages capacity requirements for you.

[Learn how Capacity Management Mode works.](#)

### Aggregate Capacity Threshold - Free Space Ratio

This ratio is a key parameter in capacity management decisions, and understanding its impact is essential regardless of whether you are in an automatic or manual mode of capacity management. It is recommended to set this threshold with consideration of your specific storage needs and anticipated growth to maintain a balance between resource utilization and cost.

In the manual mode, if the free space ratio on an aggregate drops below the specified threshold, it triggers a notification, alerting you that you should take actions to address the low free space ratio. It is important to monitor these notifications and manually manage the aggregate capacity to avoid service disruption and ensure optimal performance.

The free space ratio is calculated as follows:

$$(\text{aggregate capacity} - \text{total used capacity on the aggregate}) / \text{aggregate capacity}$$

See [Automatic capacity management](#) to learn how capacity is automatically managed in Cloud Volumes ONTAP.

### Aggregate Capacity Thresholds - Free Space Ratio for Data Tiering

Defines how much free space is required on the performance tier (disks) when tiering data to a capacity tier (object storage).

The ratio is important for disaster recovery scenarios. As data is read from the capacity tier, Cloud Volumes ONTAP moves data to the performance tier to provide better performance. If there isn't sufficient space, then Cloud Volumes ONTAP can't move the data.

3. Click **Save**.

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