



Technical Report

Provisioning NFS volumes from the Volume View

Cloud Manager 3.5

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Provisioning NFS volumes from the Volume View

Changing to the Volume View

Cloud Manager provides two management views: the Storage System View for managing storage systems across a hybrid cloud and the Volume View for creating volumes in AWS without having to manage storage systems. You can switch between these views, but those instances should be rare because a single view should meet your needs.

For more information about the Volume View, see [Simplified storage management using the Volume View](#).

Steps

1. In the upper right of the Cloud Manager console, click the menu, and then click **View Selection**.
2. On the View Selection page, select **Storage System View**, and then click **Switch**.

Result

Cloud Manager switches to the Volume View.

Creating and mounting NFS volumes

You can use Cloud Manager to create NFS volumes that provide enterprise-class features on top of AWS storage.

Creating NFS volumes

You can create a volume attached to a single AWS instance or to an instance that is mirrored to another instance to provide high availability.

Steps

1. In the Volumes tab, click **Create New Volume**.
2. On the Create New Volume page, select a volume type:

Option	Description
Create Volume	Creates a volume attached to a single AWS instance.
Create HA volume	Creates a volume attached to a single AWS instance and mirrored to another instance to provide high availability in case of failures. Click the Info icon to see additional details about the instances required for an HA volume.

3. If you chose Create Volume, specify details for your first volume, and then click **Create**.

The following table describes fields for which you might need guidance:

Field	Description
Size	<p>The maximum size for the volume depends on the capacity available in existing storage systems.</p> <p>Thin provisioning is automatically enabled on the volume, which enables you to create a volume that is bigger than the physical storage currently available to it. Instead of preallocating storage space, space is allocated to each volume as data is written.</p>
AWS Disk Type	<p>You should choose the disk that meets your requirements for both performance and cost.</p> <ul style="list-style-type: none">• General Purpose SSD disks balance cost and performance for a broad range of workloads. Performance is defined in terms of IOPS.• Throughput Optimized HDD disks are for frequently accessed workloads that require fast and consistent throughput at a lower price.• Cold HDD disks are meant for backups, or infrequently accessed data, because the performance is very low. Like Throughput Optimized HDD disks, performance is defined in terms of throughput. <p>For more details, refer to AWS Documentation: EBS Volume Types.</p>

The following image shows the Create Volume page filled out:

[Screen shot: Shows the Create New Volume page filled out.]

4. If you chose Create HA volume, specify details for the volume, and then click **Create**.

The following table describes fields for which you might need guidance:

Field	Description
Size	<p>The maximum size for the volume depends on the capacity available in existing storage systems.</p> <p>Thin provisioning is automatically enabled on the volume, which enables you to create a volume that is bigger than the physical storage currently available to it. Instead of preallocating storage space, space is allocated to each volume as data is written.</p>

Field	Description
AWS Disk Type	<p>You should choose the disk that meets your requirements for both performance and cost.</p> <ul style="list-style-type: none"> • General Purpose SSD disks balance cost and performance for a broad range of workloads. Performance is defined in terms of IOPS. • Throughput Optimized HDD disks are for frequently accessed workloads that require fast and consistent throughput. <p>For more details, refer to AWS Documentation: EBS Volume Types.</p>
Location	You should choose a VPC that includes three subnets in three separate Availability Zones.
Nodes and Mediator	If possible, Cloud Manager chooses separate Availability Zones for each instance because it is the supported and optimal configuration.
Floating IP	The IP addresses must be outside of the CIDR block for all VPCs in the region.
Route Table	<p>If you have more than one route table, it is very important to select the correct route tables. Otherwise, some clients might not have access to the HA pair.</p> <p>For more details, refer to AWS Documentation: Route Tables.</p>

The following image shows the Nodes and Mediator page. Each instance is in a separate Availability Zone.

[Screen shot: Shows AWS networking selections for the two Cloud Volumes ONTAP nodes and the mediator. Each instance is in a separate Availability Zone and subnet.]

Result

Cloud Manager creates the volume on an existing system or on a new system. If a new system is required, creating the volume can take approximately 25 minutes.

Mounting volumes to Linux hosts

After you create a volume, you should mount it to your hosts so that they can access the volume.

Steps

1. In the Volumes tab, place your mouse cursor over the volume, select the menu icon, and then click **Mount**.
2. Click **Copy**.
3. On your Linux hosts, modify the copied text by changing the destination directory, and then enter the command to mount the volume.

Managing NFS volumes

You can manage NFS volumes by cloning them, managing data access, changing

the underlying disk type, and more.

Cloning volumes

If you need an instantaneous copy of your data without using a lot of disk space, you can create a clone of an existing volume.

About this task

The cloned volume is a writable, point-in-time copy that is space-efficient because it uses a small amount of space for metadata, and then only consumes additional space as data is changed or added.

Steps

1. In the Volumes tab, place your mouse cursor over the volume, select the menu icon, and then click **Clone**.
2. Modify the name of the cloned volume, if needed, and then click **Clone**.

Result

Cloud Manager creates a new volume that is a clone of an existing volume.

Managing data access to volumes

When you create a volume, Cloud Manager makes the volume available to all EC2 instances in the VPC in which the volume was created. You can modify this default value if you need to restrict data access to the volume.

Steps

1. In the Volumes tab, place your mouse cursor over the volume, select the menu icon, and then click **Manage Access**.
2. Modify the volume access list, and then click **Save**.

Changing the underlying AWS disk for a volume

You can change the underlying AWS disk that a volume uses to provide storage. For example, if higher performance is needed, you can change from a Throughput Optimized HDD to a General Purpose SSD.

Steps

1. In the Volumes tab, place your mouse cursor over the volume, select the menu icon, and then click **Change Disk**.
2. Select the AWS disk type and click **Change**.

Result

Cloud Manager moves the volume to an existing aggregate that uses the selected disk type or it creates a new aggregate for the volume.

Viewing and modifying AWS resources

When you create a new volume, Cloud Manager allocates the AWS instances and EBS storage required for that volume. If required, you can view details about AWS instances and EBS storage, change instance types, and turn instances off and on.

Steps

1. Click **AWS Resources**.

The list of AWS instances displays. You can view details such as instance type, AWS location, and the volumes attached to the instance.

2. If required, select the menu icon next to the Status column, and then choose one of the available actions:

[Screen shot that shows the available actions on the AWS Resources page in the Volume View.]

Deleting volumes

You can delete volumes that you no longer need.

Steps

1. In the Volumes tab, place your mouse cursor over the volume, select the menu icon, and then click **Delete**.
2. Click **Delete** to confirm that you want to delete the volume.

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