



# **Manage volumes**

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# Manage volumes

## Increase capacity of a volume

You can increase the reported capacity (the capacity reported to hosts) of a volume by using the free capacity that is available in the pool or volume group.

### Before you begin

- Enough free capacity is available in the volume's associated pool or volume group.
- The volume is Optimal and not in any state of modification.
- The maximum reported capacity of 256 TiB has not been reached for thin volumes.
- No hot spare drives are in use in the volume. (Applies only to volumes in volume groups.)



You can only expand volume capacity up to 128 TiB at a single time.

### About this task

Keep in mind any future capacity requirements that you might have for other volumes in this pool or volume group. Make sure that you allow enough free capacity to create snapshot images, snapshot volumes, or remote mirrors.



Increasing the capacity of a volume is supported only on certain operating systems. If you increase the volume capacity on a host operating system that is unsupported, the expanded capacity is unusable, and you cannot restore the original volume capacity.

### Steps

1. Select **Storage > Volumes**.
2. Select the volume for which you want to increase capacity, and then select **Increase Capacity**.

The Confirm Increase Capacity dialog box appears.

3. Select **Yes** to continue.

The Increase Reported Capacity dialog box appears.

This dialog box displays the volume's current reported capacity and the free capacity available in the volume's associated pool or volume group.

4. Use the **Increase reported capacity by adding...** box to add capacity to the current available reported capacity. You can change the capacity value to display in either mebibytes (MiB), gibibytes (GiB), or tebibytes (TiB).
5. Click **Increase**.

### Results

- System Manager increases the volume's capacity based on your selection.
- Select **Home > View Operations in Progress** to view the progress of the increase capacity operation that is currently running for the selected volume. This operation can be lengthy and could affect system performance.

## After you finish

After you expand the volume capacity, you must manually increase the file system size to match. How you do this depends on the file system you are using. See your host operating system documentation for details.

# Initialize volumes

A volume is automatically initialized when it is first created. However, the Recovery Guru might advise that you manually initialize a volume to recover from certain failure conditions. Use this option only under the guidance of technical support. You can select one or more volumes to initialize.

## Before you begin

- All I/O operations have been stopped.
- Any devices or file systems on the volumes you want to initialize must be unmounted.
- The volume is in Optimal status and no modification operations are in progress on the volume.



You cannot cancel the operation after it starts. All volume data is erased. Do not try this operation unless the Recovery Guru advises you to do so. Contact technical support before you begin this procedure.

## About this task

When you initialize a volume, the volume keeps its WWN, host assignments, allocated capacity, and reserved capacity settings. It also keeps the same Data Assurance (DA) settings and security settings.

The following types of volumes *cannot* be initialized:

- Base volume of a snapshot volume
- Primary volume in a mirror relationship
- Secondary volume in a mirror relationship
- Source volume in a volume copy
- Target volume in a volume copy
- Volume that already has an initialization in progress

This topic applies only to standard volumes created from pools or volume groups.

## Steps

1. Select **Storage › Volumes**.
2. Select any volume, and then select **More › Initialize volumes**.

The Initialize Volumes dialog box appears. All volumes on the storage array appear in this dialog box.

3. Select one or more volumes that you want to initialize, and confirm that you want to perform the operation.

## Results

System Manager performs the following actions:

- Erases all data from the volumes that were initialized.

- Clears the block indices, which causes unwritten blocks to be read as if they are zero-filled (the volume appears to be completely empty).

Select **Home** › **View Operations in Progress** to view the progress of the initialize operation that is currently running for the selected volume. This operation can be lengthy and could affect system performance.

## Redistribute volumes

You redistribute volumes to move volumes back to their preferred controller owners. Typically, multipath drivers move volumes from their preferred controller owner when a problem occurs along the data path between the host and storage array.

### Before you begin

- The volumes you want to redistribute are not in use, or I/O errors will occur.
- A multipath driver is installed on all hosts using the volumes you want to redistribute, or I/O errors will occur.

If you want to redistribute volumes without a multipath driver on the hosts, all I/O activity to the volumes *while the redistribution operation is in progress* must be stopped to prevent application errors.

### About this task

Most host multipath drivers attempt to access each volume on a path to its preferred controller owner. However, if this preferred path becomes unavailable, the multipath driver on the host fails over to an alternate path. This failover might cause the volume ownership to change to the alternate controller. After you have resolved the condition that caused the failover, some hosts might automatically move the volume ownership back to the preferred controller owner, but in some cases, you might need to manually redistribute the volumes.

### Steps

1. Select **Storage** › **Volumes**.
2. Select **More** › **Redistribute volumes**.

The Redistribute Volumes dialog box appears. All volumes on the storage array whose preferred controller owner does not match its current owner appear in this dialog box.

3. Select one or more volumes that you want to redistribute, and confirm that you want to perform the operation.

### Results

System Manager moves the selected volumes to their preferred controller owners or you might see a Redistribute Volumes Unnecessary dialog box.

## Change controller ownership of a volume

You can change the preferred controller ownership of a volume, so that I/O for host applications is directed through the new path.

### Before you begin

If you do not use a multipath driver, any host applications that are currently using the volume must be shut

down. This action prevents application errors when the I/O path changes.

### About this task

You can change controller ownership for one or more volumes in a pool or volume group.

### Steps

1. Select **Storage › Volumes**.
2. Select any volume, and then select **More › Change ownership**.

The Change Volume Ownership dialog box appears. All volumes on the storage array appear in this dialog box.

3. Use the **Preferred Owner** drop-down list to change the preferred controller for each volume that you want to change, and confirm that you want to perform the operation.

### Results

- System Manager changes the controller ownership of the volume. I/O to the volume is now directed through this I/O path.
- The volume might not use the new I/O path until the multipath driver reconfigures to recognize the new path. This action usually takes less than five minutes.

## Delete volume

Typically, you delete volumes if the volumes were created with the wrong parameters or capacity, no longer meet storage configuration needs, or are snapshot images that are no longer needed for backup or application testing.

Deleting a volume increases the free capacity in the pool or volume group. You can select one or more volumes to delete.

### Before you begin

On the volumes that you plan to delete, make sure of the following:

- All data is backed up.
- All Input/Output (I/O) is stopped.
- Any devices and file systems are unmounted.

### About this task

You cannot delete a volume that has one of these conditions:

- The volume is initializing.
- The volume is reconstructing.
- The volume is part of a volume group that contains a drive that is undergoing a copyback operation.
- The volume is undergoing a modification operation, such as a change of segment size, unless the volume is now in Failed status.
- The volume is holding any type of persistent reservation.
- The volume is a source volume or a target volume in a Copy Volume that has a status of Pending, In Progress, or Failed.



Deleting a volume causes loss of all data on those volumes.



When a volume exceeds a given size (currently 128 TB) the delete is being performed in background and the freed space may not be immediately available.

### Steps

1. Select **Storage > Volumes**.
2. Click **Delete**.

The Delete Volumes dialog box appears.

3. Select one or more volumes that you want to delete, and confirm that you want to perform the operation.
4. Click **Delete**.

### Results

System Manager performs the following actions:

- Deletes any associated snapshot images, schedules, and snapshot volumes.
- Removes any mirroring relationships.
- Increases the free capacity in the pool or volume group.

## Change allocated capacity limit for a thin volume

For thin volumes capable of allocating space on demand, you can change the limit that restricts the allocated capacity to which a thin volume can automatically expand.

You also can change the percentage point at which an alert (warning threshold exceeded) is sent to the Notifications area on the Home page when a thin volume is near the allocated capacity limit. You can choose to enable or disable this alert notification.



This feature is not available on the EF600 or EF300 storage system.

The system automatically expands the allocated capacity based on the allocated capacity limit. The allocated capacity limit allows you to limit the thin volume's automatic growth below the reported capacity. When the amount of data written gets close to the allocated capacity, you can change the allocated capacity limit.

When changing a thin volume's allocated capacity limit and warning threshold, you must take into account the space to be consumed by both the volume's user data and copy services data.

### Steps

1. Select **Storage > Volumes**.
2. Select the **Thin Volume Monitoring** tab.

The Thin Volume Monitoring view appears.

3. Select the thin volume that you want to change, and then select **Change Limit**.

The Change Limit dialog box appears. The allocated capacity limit and warning threshold setting for the thin volume you selected appear in this dialog box.

4. Change the allocated capacity limit and warning threshold as needed.

**Field details**

Setting	Description
Change allocated capacity limit to...	The threshold at which writes fail, preventing the thin volume from consuming additional resources. This threshold is a percentage of the volume's reported capacity size.
Alert me when... (warning threshold)	<p>Select the check box if you want the system to generate an alert when a thin volume is near the allocated capacity limit. The alert is sent to the Notifications area on the Home page. This threshold is a percentage of the volume's reported capacity size.</p> <p>Clear the check box to disable the warning threshold alert notification.</p>

5. Click **Save**.



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