



# Open Enterprise Server 2023 Unified Management Console (UMC)

July 2023

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# About This Document

This document provides frequently asked questions on the tasks performed through the Unified Management Console (UMC) application.

- ♦ [Chapter 1, “Overview of Unified Management Console,” on page 9](#)
- ♦ [Chapter 2, “What’s New or Changed in UMC,” on page 11](#)
- ♦ [Chapter 3, “Installing and Configuring UMC,” on page 13](#)
- ♦ [Chapter 4, “Managing NSS Pools,” on page 19](#)
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- ♦ [Chapter 11, “Managing Files and Folders,” on page 83](#)
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## Audience

This document is intended for UMC administrators.

## Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the [comment on this topic](#) link at the bottom of each page of the online documentation.

## Additional Documentation

For documentation on OES guides, see the [OES 2023 Documentation web site](#).





# 1 Overview of Unified Management Console

Open Enterprise Server (OES) 2023 is built on SLES 15 SP4 and ships with eDirectory 9.2.7. Various consoles and command-line tools are used to manage OES services. Unified Management Console (UMC) is installed and configured through YaST.

UMC is a highly responsive, simple, and secure web-based management console for managing small and large OES deployments. UMC provides customized access to network administration utilities and content from virtually anywhere using the Internet and a web browser similar to iManager. UMC provides single point of administration for OES resources.

Because UMC is a Web-based tool, it enjoys several advantages over client-based administrative tools:

- ◆ Changes to UMC look, feel, and functionality are immediately available to all administrative users.
- ◆ No need to open additional administrative ports for remote access. UMC leverages standard HTTPS ports (443).
- ◆ Not necessary to download and maintain an administrative client.



# 2 What's New or Changed in UMC

This section describes enhancements and changes in unified management console.

## What's New or Changed in OES 2023 Update 4

In addition to the bug fixes, the following are the improvements in UMC:

- ◆ Improved navigation side bar for better usability.
- ◆ Fixed functionality defects related to Files and Folder.
- ◆ Platform updates to Angular, UX Aspects Universal, NestJS and NX modules.

## What's New or Changed in OES 2023 Update 3

### Files and Folders

Unified management console supports files and rights management features such as managing files, folders, trustees, and so on. For more information, see [Chapter 11, "Managing Files and Folders," on page 83](#).

### Issues Fixed

The following are the improvements in UMC:

- ◆ Addressed UMC configuration related issues.
- ◆ Fixed functionality defects related to storage.

## What's New or Changed in OES 2023 Update 2

The following are the improvements in UMC:

- ◆ Addressed usability issues related to storage workflows.
- ◆ Updated UMC universal modal components with the latest UX design pattern.
- ◆ Fixed UMC install and configuration related issues.

## What's New or Changed in OES 2023 Update 1

The following are the improvements in UMC:

- ◆ Addressed usability issues related to storage workflows.
- ◆ Fixed issues on functional workflows.

- ◆ Updated UMC user interface according to the UXAspects Universal standards.
- ◆ Fixed UMC reconfiguration and database related issues.

# 3 Installing and Configuring UMC

This FAQ describes the procedures to install and configure Unified Management Console.

- ♦ [“What are the prerequisites for installing and configuring UMC?” on page 13](#)
- ♦ [“What are the user permissions required for installing and configuring UMC?” on page 13](#)
- ♦ [“What are the user permissions required for storage management?” on page 14](#)
- ♦ [“What are the procedures to install and configure UMC during OES installation?” on page 14](#)
- ♦ [“What are the procedures to install and configure UMC post OES installation?” on page 16](#)
- ♦ [“How to access UMC?” on page 17](#)
- ♦ [“What details are displayed on UMC home page?” on page 17](#)

## What are the prerequisites for installing and configuring UMC?

Once you have an ISO build file for OES, verify that the setup satisfies the following requirement:

- ♦ Ensure the environment consists of OES 2023 non-DSfW setup.
- ♦ A minimum of one server must have UMC installed to manage the other servers in the tree.
- ♦ Ensure that the necessary ports are available for UMC. The UMC port details are:
  - ♦ APACHE-443 (Secure HTTP)
  - ♦ OES-REST-3000
  - ♦ UMC-REST-3333
  - ♦ eDir API-9010 (Default)
  - ♦ POSTGRES DB-5432 (Default)

## What are the user permissions required for installing and configuring UMC?

The user permissions varies between the first and second instances of UMC.

- ♦ First instance of UMC:

You must have supervisor rights or an admin equivalent tree level rights to the tree root.
- ♦ Successive instances of UMC:

You must have Write permission on All Attributes Rights property on the umcConfig object under the Security context.

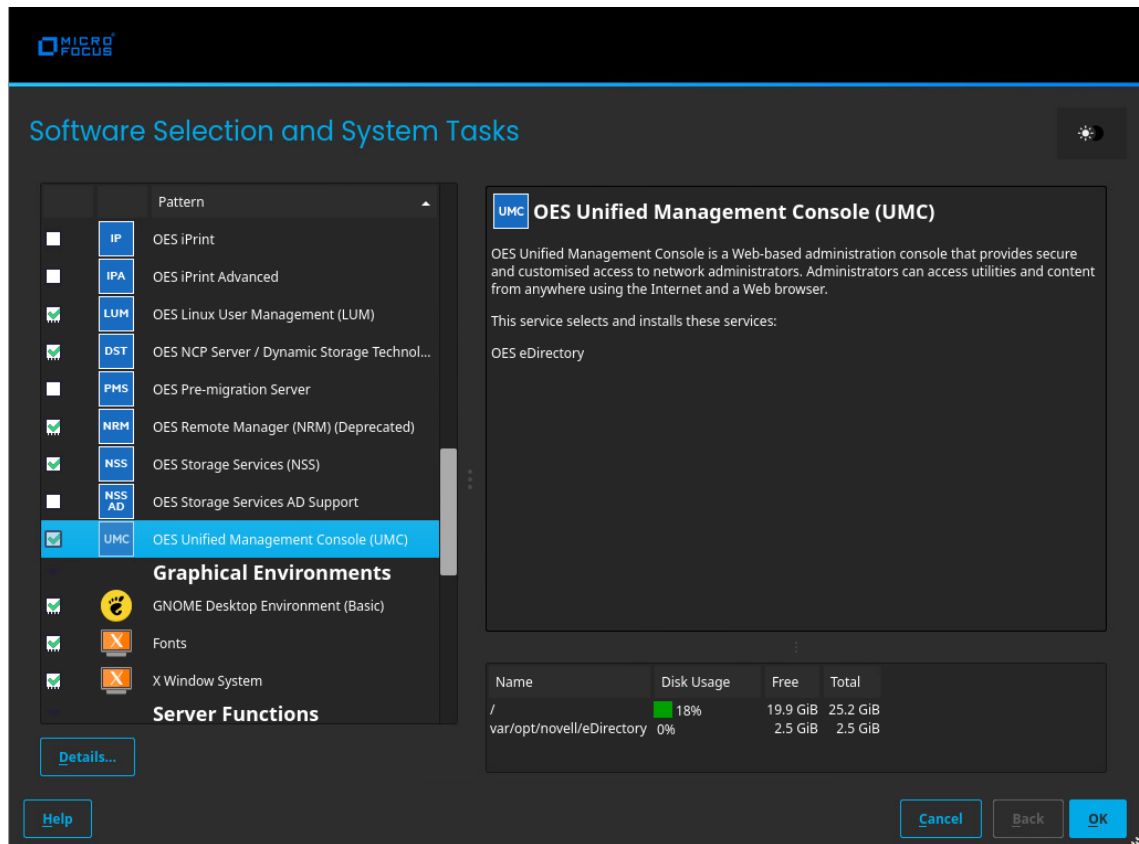
# What are the user permissions required for storage management?

- Logged-in users must have supervisor rights on the NCP server object where the pools and volumes are mounted for performing storage management.
- The Compare, Read, and Write permissions on **All Attributes Rights** and Browse permission on **Entry Rights** are required at the tree level for the logged-in users to browse through the eDirectory tree.

# What are the procedures to install and configure UMC during OES installation?

1. In the YaST install for OES, on the **System Role** page, select **OES eDirectory Role**, and then click **Next**.
2. On the **Installation Setting** page, click **Software** to go to the **Software Selections** page.
3. From the **OES Services** option, select **UMC**, and click **OK**.

**NOTE:** The OES eDirectory is automatically selected.



4. On the **Installation Setting** page, click **Install** to perform the installation.

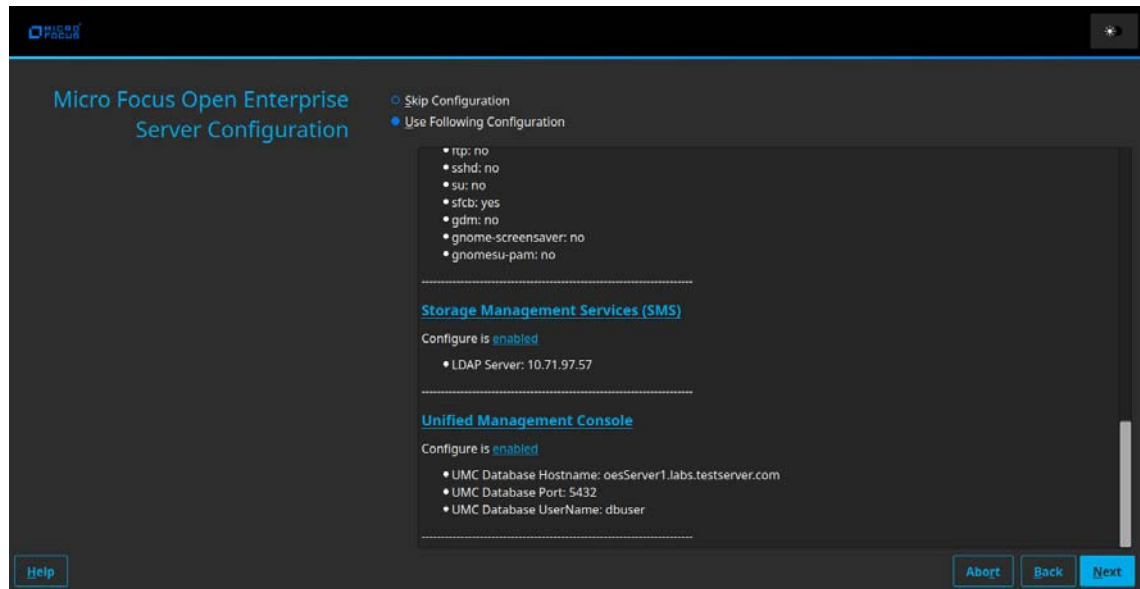
This action installs the packages that are required for OES. After installation, the system prompts for a reboot.

5. On the **Configuration** selection page, select the appropriate install option, and click **Next**.

**Typical Configuration:** A two-click express installation with minimal user inputs. This method collects only essential information to proceed with the OES configuration and uses default values for most options. In case you want to modify the default configuration parameters on the OES install summary screen, click the respective links and modify them.

**Custom Configuration:** This method of OES configuration requires inputs for all parameters.

6. Specify the required details for the respective OES configuration and click **Next**.
7. On the **OES Configuration** page, select **Unified Management Console**.



8. On the **UMC Configuration** page, specify new PostgreSQL database details, and click **Next**.

UMC ships with PostgreSQL by default. The database port number is 5432 and eDirectory API port is 9010 by default and can be modified if necessary.

OES Unified Management Console (UMC) Configuration ▶

Database Details

Hostname  
umcServer1.labs.blr.novell.com

Port  
5432

Username  
dbuser

Password  
\*\*\*\*\*

Verify Password  
\*\*\*\*\*

Open Port in Firewall

eDirectory API Port  
9010

9. On the OES Configuration page, click **Next** to start the configuration process.  
After the successful configuration, click **Finish**.

---

**NOTE:** Use the command "yast2 umc" to configure UMC post UMC pattern installation.

---

## What are the procedures to install and configure UMC post OES installation?

- 1 In yast2 oes-install, select the UMC pattern from the OES pattern list, and click **Accept**.
- 2 On the OES configuration page, scroll down the LDAP configuration, and select **Unified Management Console**.
- 3 Specify the eDirectory admin password.
- 4 On the **UMC Configuration** page, specify new PostgreSQL database details, and click **Next**.  
UMC ships with PostgreSQL by default.
- 5 On the OES configuration page, click **Next** to start the configuration process.
- 6 After the successful configuration, click **Finish**.

---

**NOTE:** Use the command "yast2 umc" to configure UMC post UMC pattern installation.

---



# How to access UMC?

You can login to UMC web-based management console using LDAP authentication.

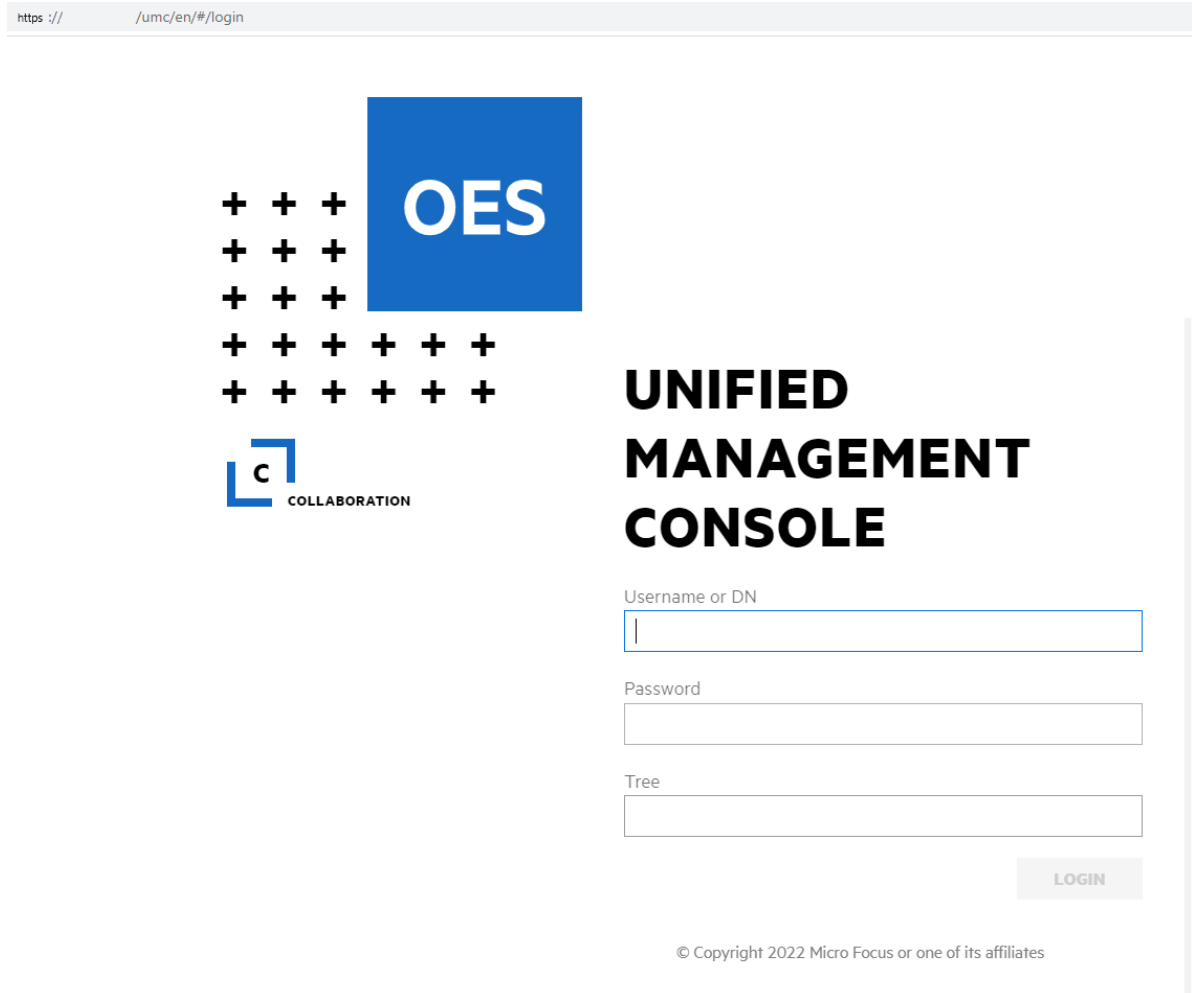
1. Open any web browser and go to the URL `https://<ServerIP/Hostname>/umc`.
2. Specify the username (CN or FQDN) and password.

---

**NOTE:** The tree detail is auto-populated based on the username and password.

---

**Figure 3-1** Login Page



## What details are displayed on UMC home page?

The UMC home page is the default landing page for all users.

- ◆ Highlights – Displays the high-level features of OES 2023.
- ◆ Recent Actions – Displays a list of actions performed on the system by the logged-in user through UMC.
- ◆ Downloads – Contains the links to download the OES 2023 software for different OES services.

- ♦ Resources – Links to various resources such as documentation, knowledge base, YouTube channel, and so on.
- ♦ Forum – Links to Community discussions, resource library, and Idea forum.
- ♦ Management Tool – Links to various tools that are used to manage OES and its services. Click the tool to know more about it.

# 4 Managing NSS Pools

This chapter describes the procedures for creating and managing NSS pools on a server.

- ♦ [“What is a pool?” on page 19](#)
- ♦ [“What are the prerequisites for creating a new pool?” on page 19](#)
- ♦ [“How to create a new pool?” on page 20](#)
- ♦ [“How to list pools?” on page 22](#)
- ♦ [“How to view pool dashboard?” on page 23](#)
- ♦ [“How to deactivate or activate pool for pool maintenance?” on page 24](#)
- ♦ [“How to perform a pool move?” on page 26](#)
- ♦ [“What happens when I delete a pool?” on page 27](#)
- ♦ [“What are the prerequisites for deleting a pool?” on page 27](#)
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- ♦ [“How to rename a pool?” on page 28](#)
- ♦ [“How to increase the size of a pool?” on page 29](#)
- ♦ [“How to discard unused blocks in a pool?” on page 31](#)
- ♦ [“Where are my deleted volumes? Can i restore/salvage them?” on page 32](#)
- ♦ [“What are the prerequisites for AD users to access NSS data?” on page 33](#)
- ♦ [“I am an AD user. How do I access NSS data?” on page 34](#)
- ♦ [“The eDirectory pool object is corrupted. How to recover it?” on page 37](#)

## What is a pool?

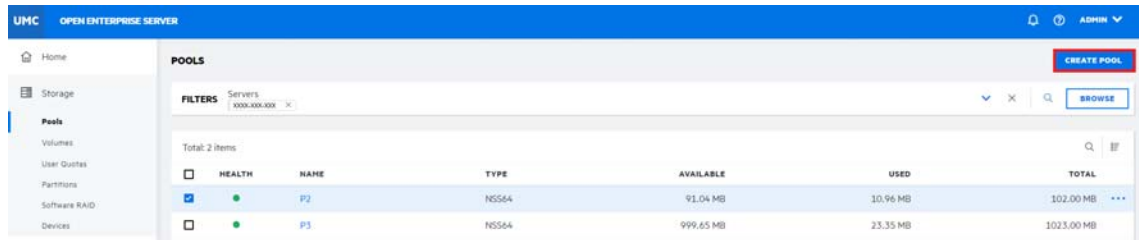
A pool is an area of storage that consists of space, called a partition, obtained from one or more of the storage devices available on a server. The amount of space that each storage device contributes varies. NSS uses storage pools to efficiently acquire and use all free space available on devices.

## What are the prerequisites for creating a new pool?

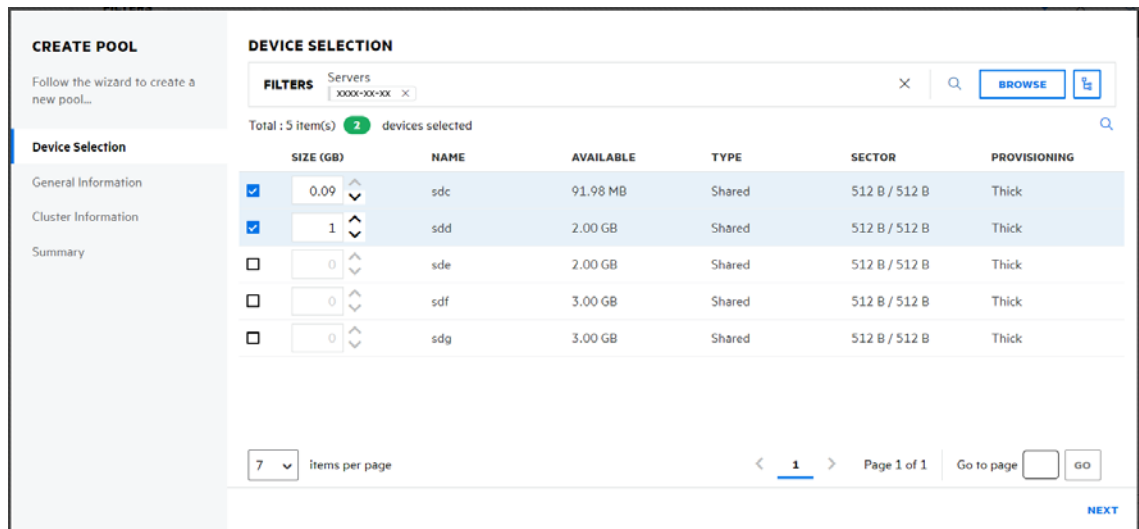
- ♦ Devices must be initialized, so that the available space is displayed for creating a pool.
- ♦ OES CIFS must be installed, configured, and running before you can select the CIFS option when cluster enabling an NSS pool.

# How to create a new pool?

- 1 In UMC, click  **Storage > Pools**.
- 2 Click **CREATE POOL**.



- 3 On the **DEVICE SELECTION** page, search or browse to select the server, and select the required device(s).



- 4 Specify the device space up to the free space available on the devices for the pool, and then click **NEXT**.  
Only initialized devices that have free space are listed on the device selection page. If no devices are listed, cancel the wizard, add more devices to the server or free up space on the existing devices.
- 5 On the **INFORMATION** page, specify a name for the new pool, then click **NEXT**.

The description is an optional field. All the NSS64-bit pools are AD media upgraded by default.

- 6 If the selected device type is shared, on the **CLUSTER INFORMATION** page, specify the details as required, and then click **NEXT**.

The Enable Cluster toggle is automatically turned on. Turn it off to create a non-clustered pool with shared devices.

---

**NOTE:** This page is not available if the selected device type is local on the **DEVICE SELECTION** page.

---

### Parameters Required for Cluster Enabled Pools:

- ◆ **Virtual Server Name:** This name is assigned to the virtual server that represents the shared pool in the cluster. When you cluster-enable a pool, a virtual server object is automatically created in eDirectory and given the name of the cluster object plus the name of the cluster-enabled pool. For example, if the cluster name is cluster1 and the cluster-enabled pool name is pool1, then the default virtual server name will be cluster1\_pool1\_server. You can edit the field to change the default virtual server name. The virtual server name used for NCP and CIFS servers will be the same.

- ◆ **IP Address:** The IP address that you want to assign to the virtual server. Each cluster-enabled NSS pool requires its own IP address. The IP address is used to provide access and fail-over capability to the cluster-enabled pool (virtual server). The IP address you assign to the pool remains assigned to the pool regardless of which server in the cluster is accessing the pool.

---

**IMPORTANT:** The IP address for the virtual server must be in the same IP subnet as the server nodes in the cluster where you plan to use it.

---


- ◆ **Advertising Protocols:** Protocols that give users native file access to data.  
Specify one or more advertising protocols by using the toggle button of the protocols you want to enable for data requests to this shared pool.
- ◆ **OES NCP:** NCP is the networking protocol used by the Client for Open Enterprise Server. It is selected by default. Selecting NCP causes commands to be added to the pool-resource load and unload scripts to activate the NCP protocol on the cluster.
- ◆ **CIFS:** CIFS is a Windows networking protocol. Selecting CIFS causes commands to be added to the pool-resource load and unload scripts to activate the CIFS protocol on the cluster.

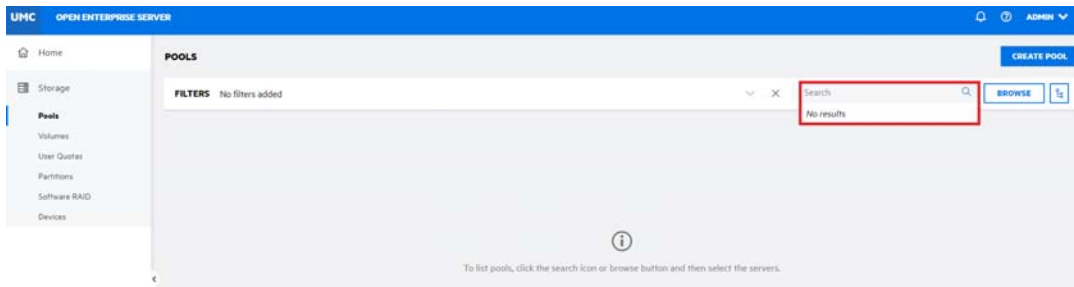
7 Review the pool details, and click **FINISH** to create the pool.

CREATE POOL		SUMMARY		ALLOCATED DEVICES			
Follow the wizard to create a new pool.		<b>GENERAL INFORMATION</b>		<b>NAME</b>	<b>ALLOCATED</b>	<b>PROVISIONING</b>	<b>TYPE</b>
Device Selection	✓	Selected Server	xxxx-xxx-xxx	sdc	3.50 GB	Thick	Shared
General Information	✓	Pool Name	example_pool1				
Cluster Information	✓	Pool Description					
<b>Summary</b>		<b>CLUSTER INFORMATION</b>					
		Clustering enabled	✓				
		Virtual Server	CLUSTER123				
		IP Address	xxxx-xxx-xxx				
		NCP	✓				
		CIFS	✗				
				PREVIOUS FINISH			

## How to list pools?

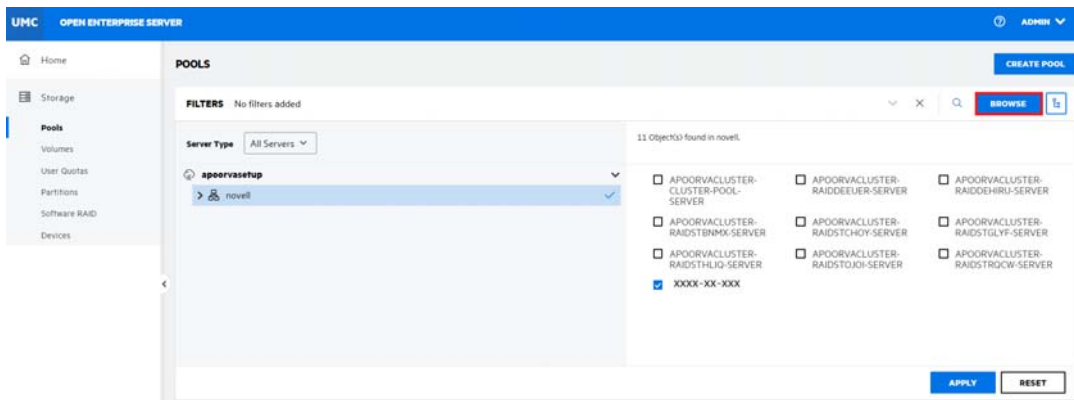
You can view the list of pools and their related information available on the server. The pool's list also includes pool snapshots if you have previously created a pool snapshot.

- 1 In UMC, click  **Storage > Pools**.
- 2 Click the Search Icon and specify the server name.



or

Click **Browse**, select **Server Type** to list their associated servers. Select the required servers from the list, and then click **APPLY**.




---


**NOTE:** When the **BROWSE** or tree view icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.

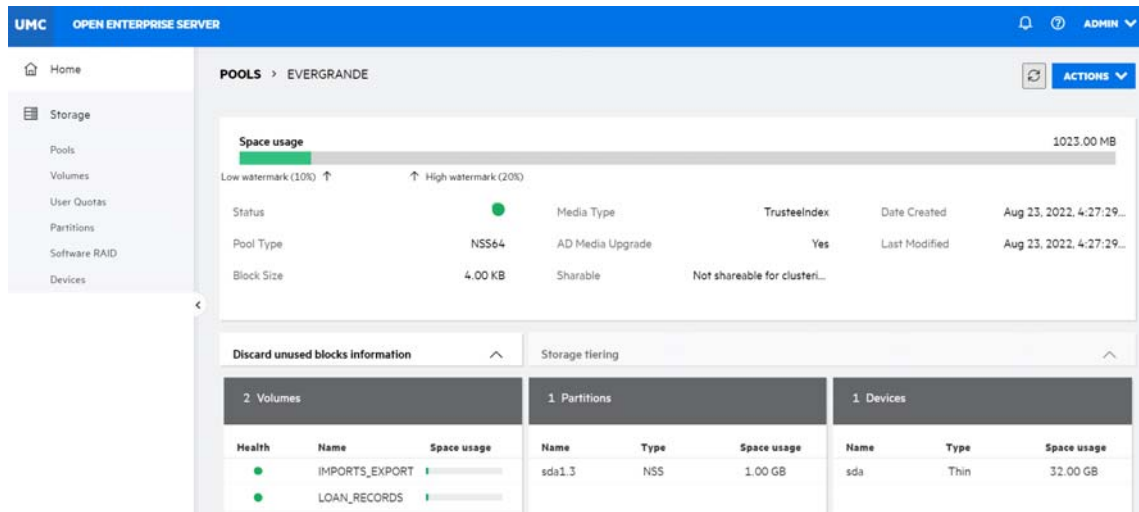
---

The list of pools available on the selected servers is displayed.

## How to view pool dashboard?

You can view the details of a pool like space usage, volumes, partitions, and devices on the pool dashboard page.

- 1 In UMC, click  **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Click on the pool name to view the pool dashboard page.





You can use **ACTIONS** to perform various pool operations like rename, increase size, manage snapshot, create snapshot, update pool object, discard unused blocks, activate, deactivate, and delete.

## How to deactivate or activate pool for pool maintenance?

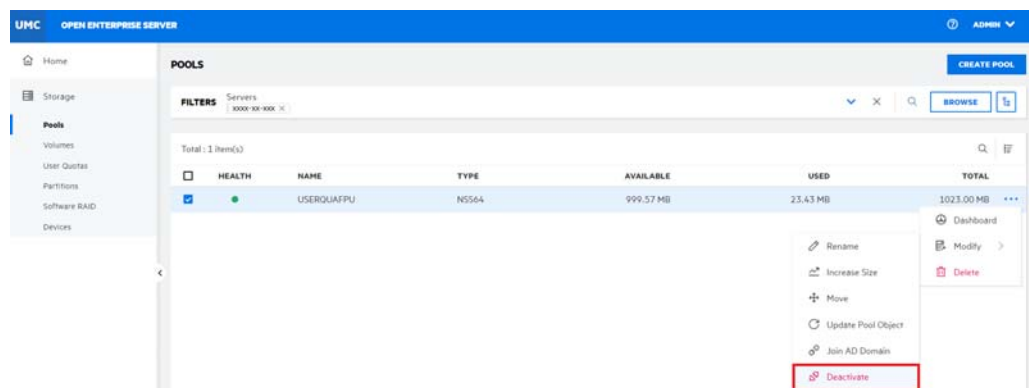
You can perform pool maintenance without shutting down the server. Access to a pool can temporarily be restricted by deactivating them.

After deactivating a pool, perform the pool maintenance. The pool and its volumes are temporarily unavailable to the users. Deactivating a pool does not delete the volumes or their data.

- 1 In UMC, click  **Storage > Pools**.
  - 2 Search or browse the servers to list the pools associated with them.
- 
- 3 **NOTE:** If you select multiple pools, the More Options  icon is available at the top right corner of the table.

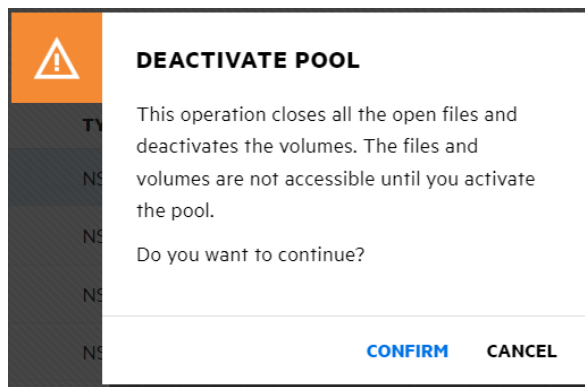
### 3a To deactivate a pool:

- 3a1 Select a pool, click More Options  icon, click **Modify**, and then select **Deactivate**.



- 3a2 Click **CONFIRM** to deactivate the selected pools.



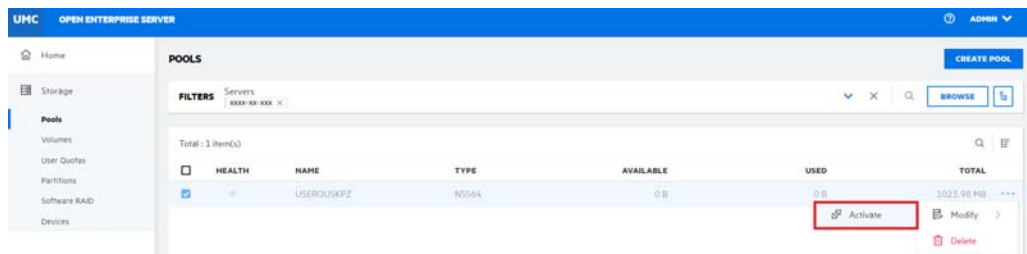


The deactivated pool details are not displayed on the **POOLS** page.

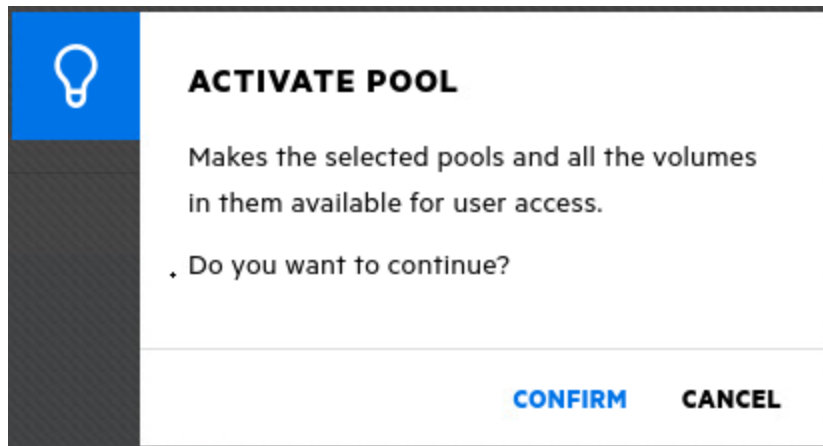
OR

**3b To activate a pool:**

**3b1** Select a pool, click More Options **...** icon, click **Modify**, and then select **Activate**.





**3b2** Click **CONFIRM** to activate the selected pool.

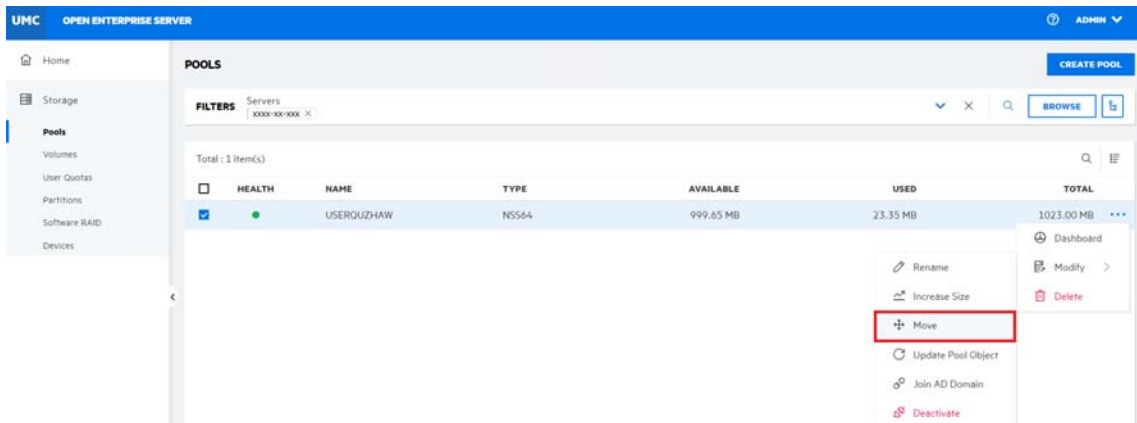


You must manually activate the volumes after the pool is active. For more information on activating volumes, see [“How to deactivate and activate NSS volumes?”](#) on page 48.

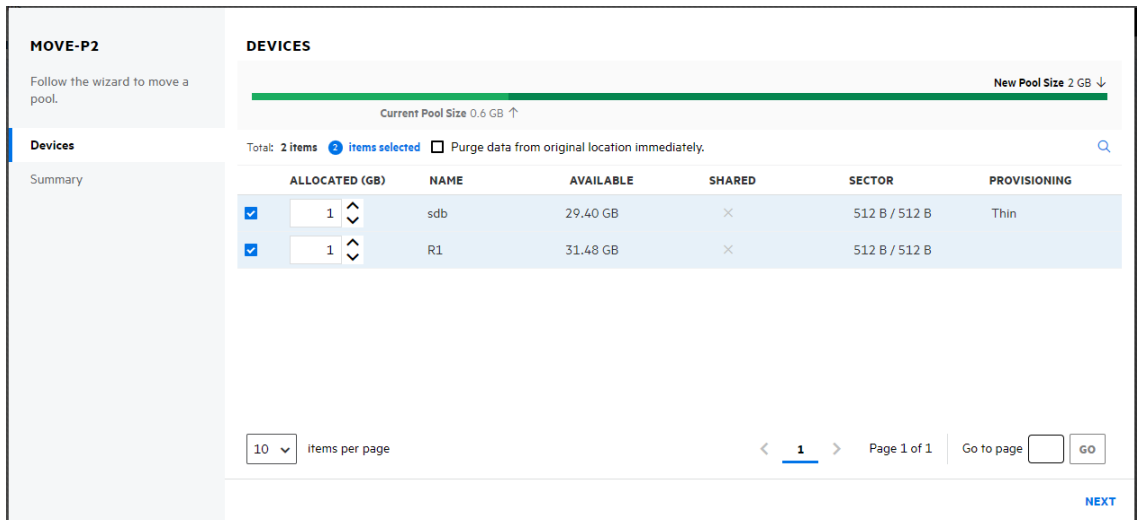
# How to perform a pool move?

You can move an NSS pool from one location to another on the same system. The pool remains active during this process. All the segments in the pool are consolidated and moved to the specified device(s). If a specified device is larger than the original device, the pool is automatically expanded on completion of the move job.

- 1 In UMC, click  **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool you want to move, click More Options  icon, click **Modify**, and then select **Move**.



- 4 Select the device(s), specify the required allocated size for the selected device(s), and then click **NEXT**.



Select the **Purge data from original location immediately** checkbox to permanently delete the moved pool from the original location after the pool move.

- 5 Review the details and click **FINISH**.

**MOVE-P2**

Follow the wizard to move a pool.

Devices ✓

**Summary**

**SUMMARY**

Purge data from original location immediately.

**POOL ALLOCATIONS**

NAME	REMAINING	ALLOCATED
sdb	28.40 GB	1.00 GB ↑
R1	30.48 GB	1.00 GB ↑

[PREVIOUS](#) [FINISH](#)

The pool is moved to the selected devices after the process is successfully completed.

## What happens when I delete a pool?

Deleting a pool removes the ownership of the space it occupied, freeing the space for reassignment. The **Delete** option on the **Pools** page removes the selected pools from the server, including all member partitions and the data on them.

NSS pools can be deleted to create free space for other pools.

---



### WARNING

- ◆ Deleting a pool deletes all the volumes and data in it. These volumes cannot be restored.
  - ◆ If the pool is created on a RAID1 device, deleting the pool deletes the RAID1 device.
- 


## What are the prerequisites for deleting a pool?

- ◆ If the pool is shared in an OES Cluster, you must offline the cluster resource before you attempt to delete the clustered pool or its cluster resource.
- ◆ If the pool has pool snapshots, you must delete the pool snapshots before deleting the pool.

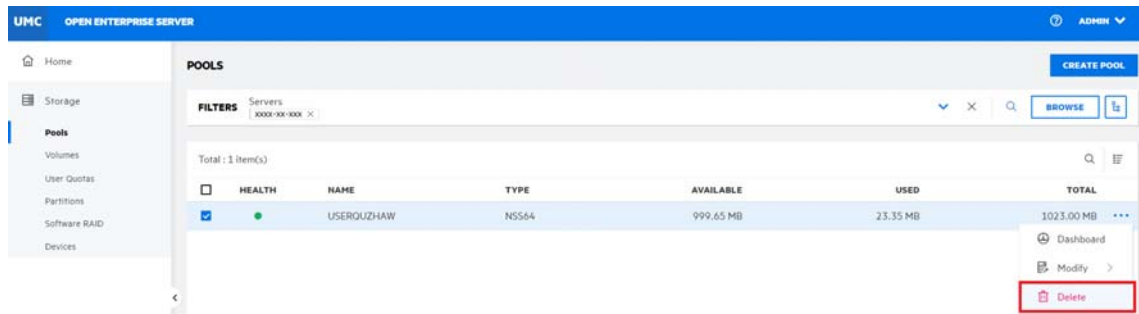
## How to delete pools?

- 1 In UMC, click  **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options  icon, and then select **Delete**.

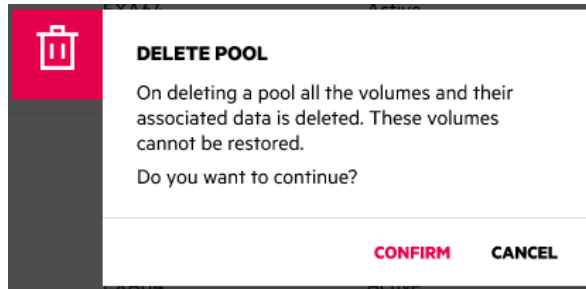
---

**NOTE:** If you select multiple pools, the More Options  icon is available at the top right corner of the table.

---



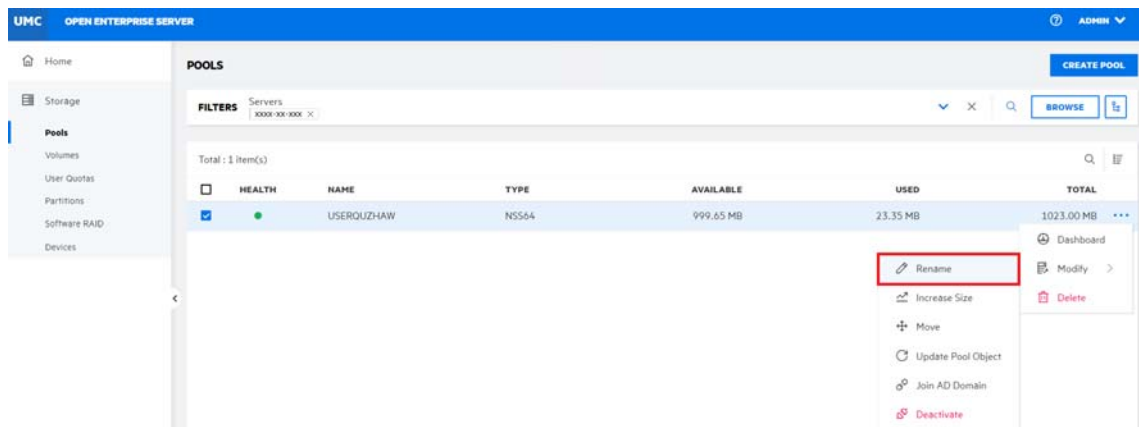
4 Click **CONFIRM** to delete the selected pool.



## How to rename a pool?

The **Rename** option on the **Pools** page allows you to modify the name of a pool. You can change the name of a pool that corresponds to a department name change. When you rename a pool, it must be in the active state so that the eDirectory gets updated.

- 1 In UMC, click **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options **...** icon, click **Modify**, and then select **Rename**.



4 Specify the new pool name and click **CONFIRM**.

**Table 4-1** Actions Required After Renaming a Pool

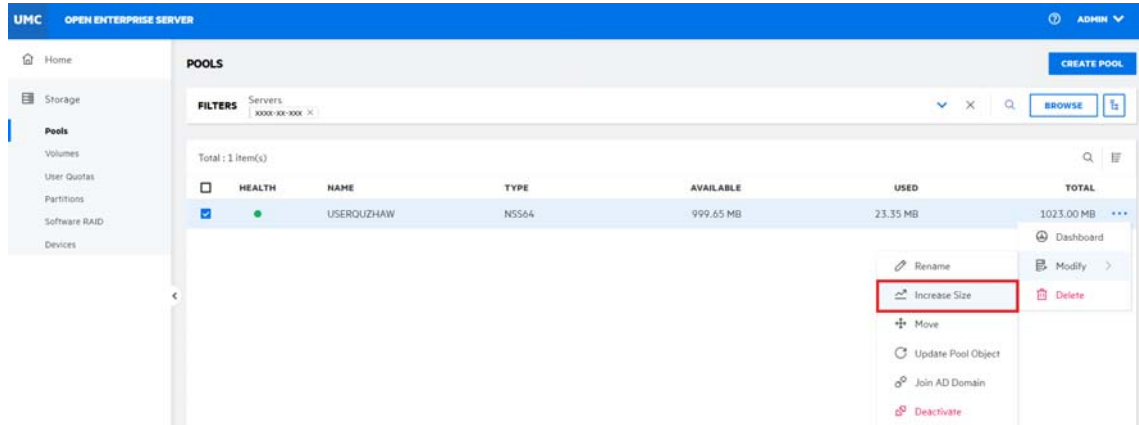
Pool Share State	Pool Load-Time State	Pool State After a Rename	Action Required
Unshared	Autoloaded	Active with volumes dismounted	Mount the pool's volumes
Unshared	Not autoloaded	Deactive	Activate the pool, then mount its volumes
Shared	Load and unload are controlled by OES Cluster Services. Before you rename a cluster-enabled pool, make sure to offline the pool resource, activate the pool by using UMC or NSSMU instead of using the load script, then you can rename the pool by using UMC or NSSMU.	Deactive	Online the pool resource to activate the pool and its volumes. OES Cluster Services automatically updates the pool resource load and unload scripts to reflect the name change. Also, NSS automatically changes the Pool Resource object name in eDirectory.

## How to increase the size of a pool?

The **Increase Size** option on the **Pools** page allows you to expand the storage capacity of a selected pool by adding new partitions. You can increase the size of your storage pools, but you cannot reduce their size.

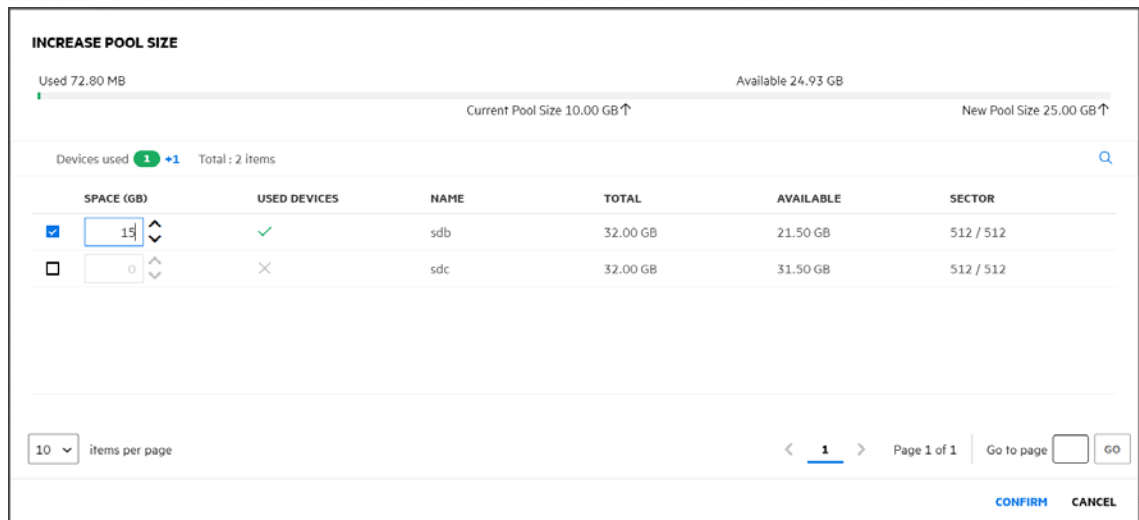
- 1 In UMC, click  **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.

3 Select the pool, click More Options **...** icon, click **Modify**, and then select **Increase Size**.



4 Select the devices and specify the space to be used from each device.

Only the devices that have free space are listed. If no devices are listed, there is no space available to increase the size of the pool. Click **Cancel**, add more devices to the server or free up space on the existing devices, then return to the **POOLS** page to increase the size of the pool.





5 Click **CONFIRM** to expand the size of the selected pool.


# How to discard unused blocks in a pool?

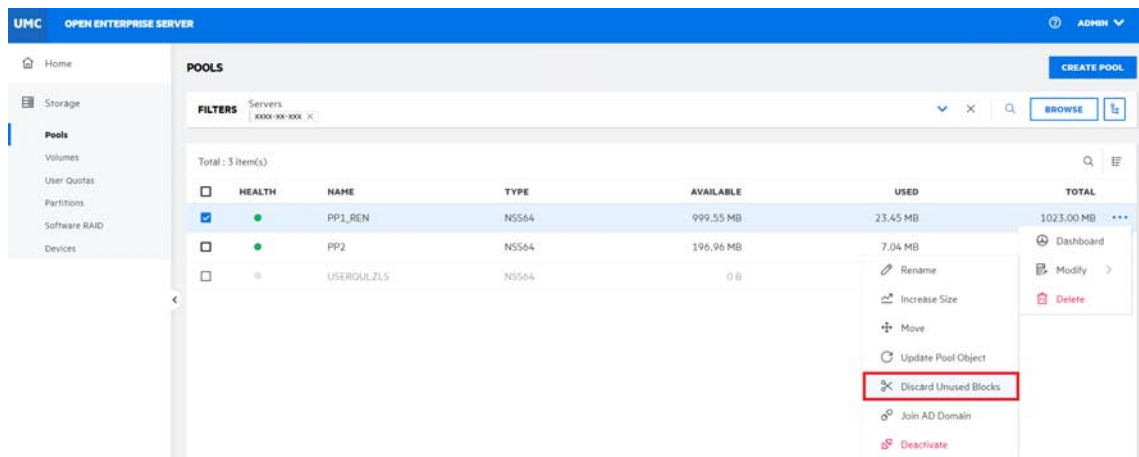
The unused blocks in the selected pool can be freed by using the **Discard** option, making them available for usage. This functionality is supported only on thin-provisioned SCSI devices with VMware ESXi on a linear target.

**Table 4-2** Support Matrix

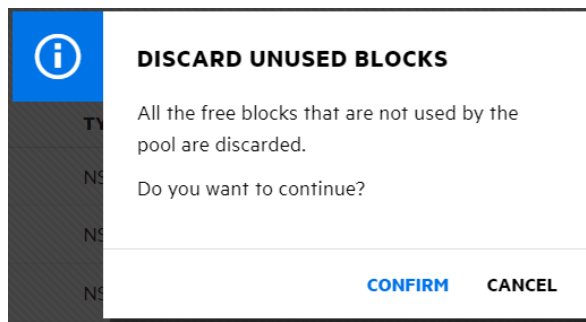
Device Type	Provisioning Type		Support on Pool
SCSI Devices with Vmware ESXi	Thin		Supported
SCSI Devices with Vmware ESXi		Thick	Not Supported
SCSI Devices with Vmware ESXi	Thin	Thick	Not Supported
RAID Devices	Any type	Any type	Not Supported
Pools that contain Snapshots	Any type	Any type	Not Supported

- 1 In UMC, click  **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options  icon, click **Modify**, and then select **Discard Unused Blocks**.

**NOTE:** If you select multiple pools, the More Options  icon is available at the top right corner of the table.



- 4 Click **CONFIRM** to discard the unused blocks in the selected pool.



The process is executed in the background and discards unused blocks on the selected pool.

## Where are my deleted volumes? Can i restore/salvage them?



On deleting a volume, NSS removes it from the pool. The **Deleted Volumes** option on the **Pools** page displays a separate **Deleted Volumes** page where you can purge or salvage the deleted volumes for the pool. This option is only available if the selected pool has deleted volumes in it.

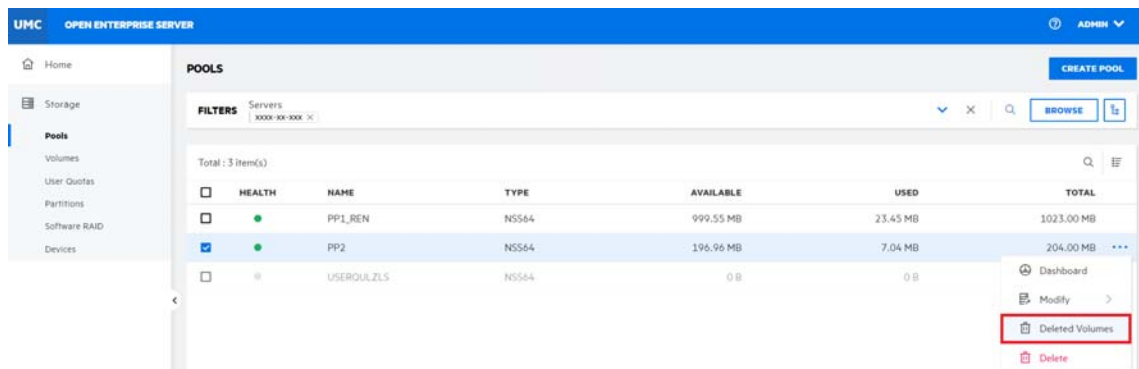
During the Purge Delay (by default, four days after a volume is deleted), you can manually purge deleted volumes, view the volume contents, transfer files from the deleted volume to other volumes, or salvage the entire volume. When you salvage a volume, the data and metadata are the same as they were at delete time, with no changes. After the Purge Delay time elapses, NSS automatically purges the deleted volume from the system, and it can no longer be accessed.

---

**WARNING:** If you delete an entire pool, all the volumes are deleted with it. You cannot restore a deleted pool or volumes in it.

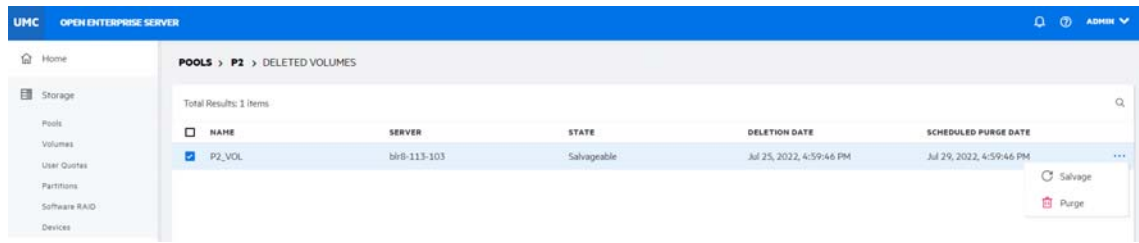
---

- 1 In UMC, click  **Storage** > **Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options  icon, and then select **Deleted Volumes**.



- 4 Select the deleted volume, click the (...) option, and then select **Salvage/Purge**.





**Salvage:** You can restore and assign a new name to the deleted volume or reuse the old name if no other volume is using that name.

**NOTE:** If you salvage an encrypted volume, you are prompted for the related password.

**SALVAGE VOLUME**

Existing Volume Name: VOLUME\_6

New Volume Name\*:

[CONFIRM](#) [CANCEL](#)

**Purge:** You can manually delete one or more deleted volumes and can no longer be salvaged or recovered.

**PURGE VOLUME**

Purging permanently deletes the volume and its contents.

Do you want to continue?

[CONFIRM](#) [CANCEL](#)

5 Click **CONFIRM** to complete the selected process.

## What are the prerequisites for AD users to access NSS data?

- ◆ The pool must contain at least one active volume.
- ◆ The pool must support AD Media.
- ◆ CIFS service must be configured and operational on the pool.
- ◆ CIFS service must be configured and operational on the OES server.
- ◆ Server must be added to AD domain.



# I am an AD user. How do I access NSS data?

Active Directory (AD) users are Windows users who use the CIFS protocol to access NSS volumes on OES servers and administer them. AD users and groups are not required to be moved to eDirectory as NSS resources can be accessed by both AD and eDirectory users at the same time.

---

**NOTE:** Ensure that the logged-in user has sufficient rights to create the object in the particular container in AD before joining a pool to an AD domain.

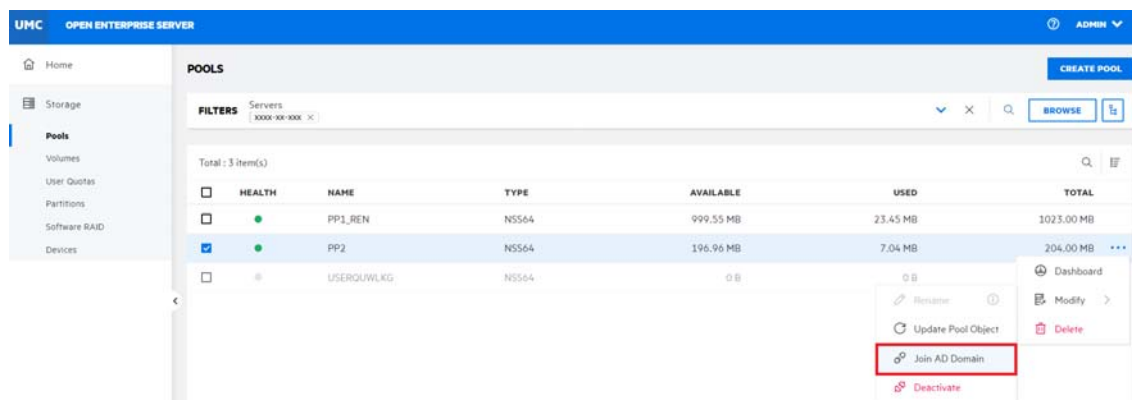
---

- 1 In UMC, click  **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options  icon, and then select **Join AD Domain**.

---

**NOTE:** The **Join AD Domain** option is available only if the selected pool is AD enabled.

---



---

**NOTE:** If any of the prerequisites for joining the AD Domain is not met, the **CANNOT JOIN AD DOMAIN** page is displayed to indicate it. Click **CANCEL**, ensure to meet the prerequisites, then perform Join AD Domain from the **POOLS** page. See [“What are the prerequisites for AD users to access NSS data?”](#) on page 33.

## CANNOT JOIN AD DOMAIN

Ensure that the following prerequisites are met:



### Volume

The pool must have one active volume.



### AD Media Support

The pool must support AD Media.



### CIFS

CIFS should be enabled for the pool.



### CIFS

CIFS should be enabled for the server.



### Server

Server should be added to AD domain.



**CANCEL**

- 4 In the **AUTHENTICATION** page, specify the **Username** and **Password** of the AD user, and click **TEST CONNECTION**.

The screenshot shows the 'JOIN AD DOMAIN' wizard in the 'Authentication' step. The left sidebar has 'Authentication' selected. The main area displays the following information:

AUTHENTICATION	
Domain Name	MFDOMAIN.COM
NETBIOS Name	clst75-tp1-w
Username*	abcxyz
Password*	*****

Below the form is a blue button labeled 'TEST CONNECTION'. At the bottom right of the window is a 'NEXT' button.

The existence of the user in the AD database is verified. After successful verification of the domain, click **NEXT**.

**5** Follow the steps for selecting or creating an object.

**5a** For selecting a pre-existing object in the active directory:

If you already have a computer object created in the active directory for the server, follow the steps to select the object.

**5a1** Select the **Use pre-created computer object** checkbox.

**5a2** Specify the **Container** name.

**5a3** Specify the description details, and then click **FINISH**.

The screenshot shows the 'JOIN AD DOMAIN' wizard in the 'Information' step. The left sidebar has 'General Information' selected. The main area displays the following information:

INFORMATION	
Domain Name	WIN2022IMD.COM
NETBIOS Name	ster123-cp123-w
	<input checked="" type="checkbox"/> Use pre-created computer object
Container*	CN=Computers
Description	

At the bottom right of the window are 'PREVIOUS' and 'FINISH' buttons.

OR

**5b** For creating a new object in the active directory:

If you have no computer object created in the active directory for the server, follow the steps to create an object.

---

**NOTE:** : Make sure to uncheck the “Use pre-created computer object” checkbox.

---

**5b1** Specify the container name.

The screenshot shows the 'JOIN AD DOMAIN' wizard in the 'General Information' tab. The 'Use pre-created computer object' checkbox is unchecked. The 'Container' field is set to 'CN=Computers'. The 'Description' field is empty. The 'Domain Name' is 'WIN2022IMD.COM' and the 'NETBIOS Name' is 'ster123-cp123-w'. There are 'PREVIOUS' and 'FINISH' buttons at the bottom right.

**5b2** Specify the description details, and then click **FINISH**.

The AD users have access to NSS volumes after the process is successfully completed.

## The eDirectory pool object is corrupted. How to recover it?

The **Update Pool Object** option on the **Pools** page allows you to add or update the eDirectory pool object. If the pool object already exists, NSS prompts with two options: Delete and replace the existing object, or Retain the existing object.

---

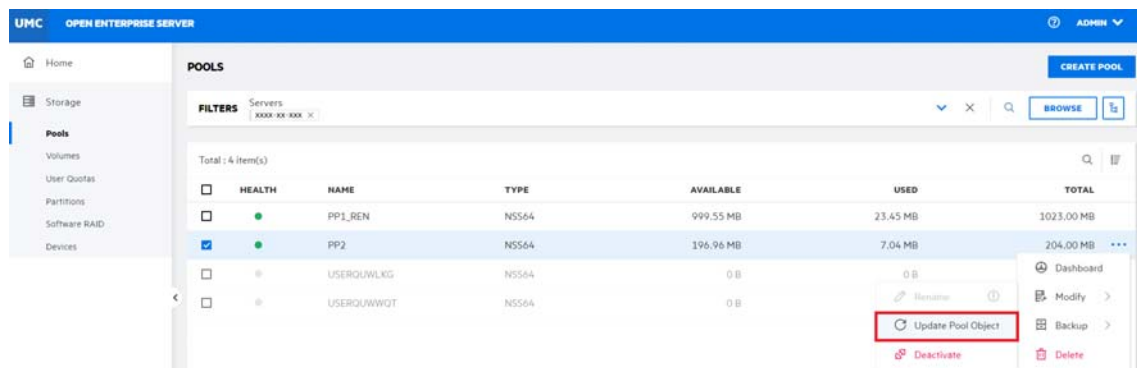
**NOTE:** Updating eDirectory pool object is a recovery process and is required only when the pool object is lost, corrupted, or deleted.

---

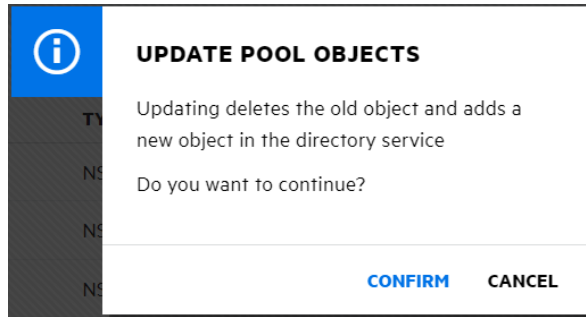
Update eDirectory object after modifying pool parameters or renaming it.

For more information on eDirectory, refer to the [eDirectory 9.2 documentation](#).

- 1 In UMC, click **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options icon, click **Modify**, and then select **Update Pool Object**.



- 4 Click **CONFIRM** to update the pool objects for the selected pool.



If the pool object does not exist, NSS adds it at the same context level as the server.

# 5 Managing Pool Snapshots

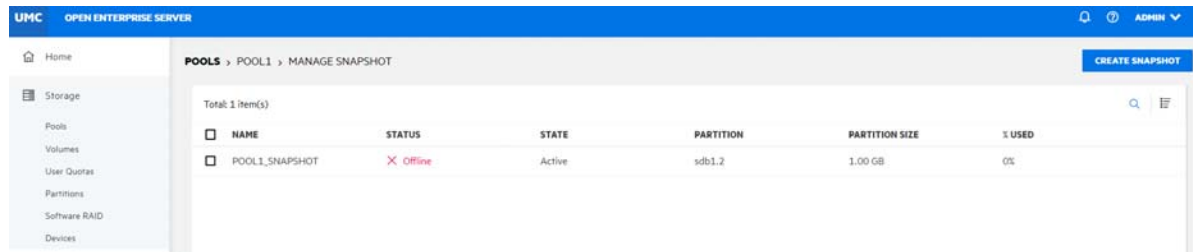
This section describes the procedure for creating and managing pool snapshots on a server.

---

**NOTE:** The status of a snapshot is usually Offline, and its state is Active.

---

*Figure 5-1 Snapshot*



- ◆ [“What is a pool snapshot?” on page 39](#)
- ◆ [“What are the prerequisites for creating a pool snapshot?” on page 39](#)
- ◆ [“How to create a pool snapshot?” on page 39](#)
- ◆ [“How to list pool snapshots?” on page 40](#)



## What is a pool snapshot?

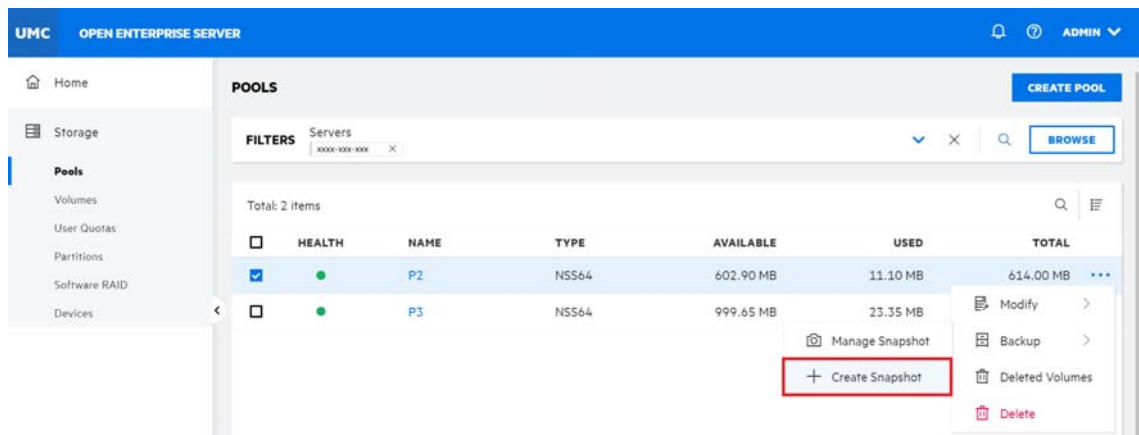
A pool snapshot is a metadata copy of a pool at a point-in-time. A pool snapshot improves the backup and restore services by saving time.

## What are the prerequisites for creating a pool snapshot?

- ◆ The pool you want to snapshot must already exist and be active.
- ◆ Free space must be available on a device to use it as the stored-on partition.
- ◆ Pool snapshots are not supported for shared NSS pools.

## How to create a pool snapshot?

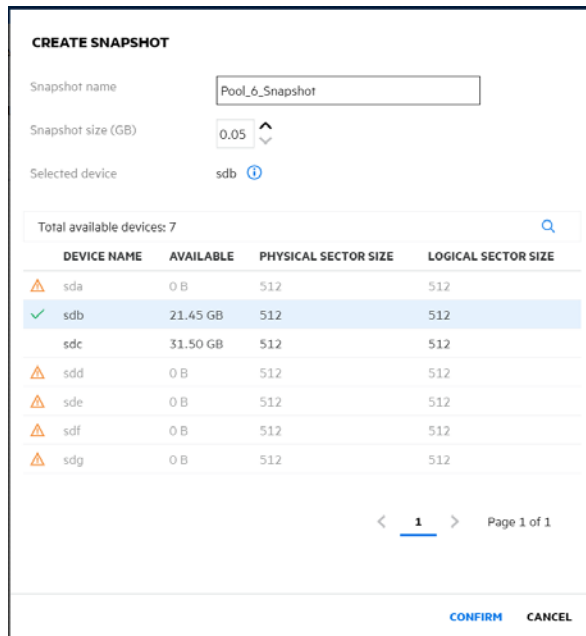
- 1 In UMC, click  **Storage** > **Pools**.
- 2 Search or browse the servers to list the pools associated with them.
- 3 Select the pool, click More Options  icon, click **Backup**, and then select **Create Snapshot**.



**NOTE:** Creating a snapshot of a pool snapshot is not supported. If the selected pool is a pool snapshot, then the **Create Snapshot** option will not be available.

When you create a snapshot, both the original pool and the pool where the snapshot is stored must be active.

- 4 Specify the **Snapshot name**, select **Snapshot size**, select device from the list, and then click **CONFIRM**.



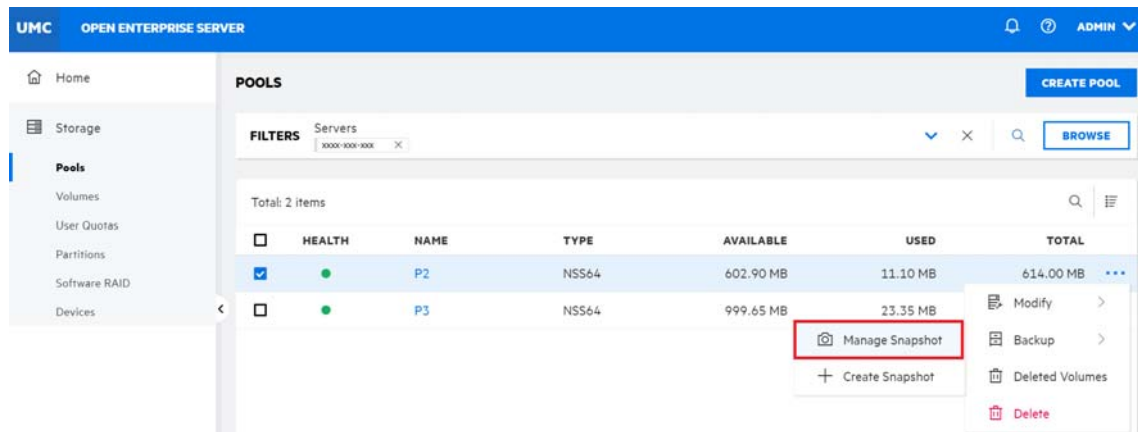
Minimum size required for a snapshot is 50MB. The newly created snapshot is available in the snapshot list with the status as offline. This snapshot is made online and accessed from the pool list for recovery.

## How to list pool snapshots?

- 1 In UMC, click **Storage > Pools**.
- 2 Search or browse the servers to list the pools associated with them.

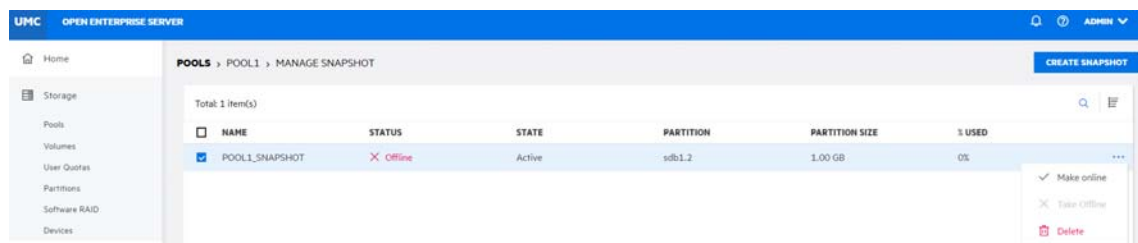


- 3 Select the pool, click More Options **⋮** icon, click **Backup**, and then select **Manage Snapshot**.



- 4 Select the snapshot, click More Options **⋮** icon, and then select the required action.

**NOTE:** If you select multiple snapshots, the More Options **⋮** icon is available at the top right corner of the table.



- ◆ **Make Online:** This option makes the selected pool snapshot online so that you can access the data on it for data retrieval and backup. After the pool snapshot is made online, it is displayed in the pool list and its snapshot volumes are displayed in the volumes list.
- ◆ **Make Offline:** This option makes the selected pool snapshots and its associated volumes inaccessible through the pool list. It does not delete the data in the volumes.
- ◆ **Delete:** This option permanently deletes the selected pool snapshots from the server.



# 6 Managing NSS Volumes

This chapter describes the procedures for creating and managing NSS volumes on a server.

- ♦ “What is an NSS volume?” on page 43
- ♦ “What are the features that can be enabled for a new volume?” on page 43
- ♦ “What are the prerequisites for creating an encrypted volume with AES256?” on page 44
- ♦ “How to create a new NSS volume?” on page 45
- ♦ “How to list NSS volumes?” on page 47
- ♦ “How to view volume dashboard?” on page 48
- ♦ “How to deactivate and activate NSS volumes?” on page 48
- ♦ “How to mount or dismount a volume?” on page 50
- ♦ “How to rename a volume?” on page 51
- ♦ “How to delete a volume? Can i restore or permanently delete it?” on page 52
- ♦ “What is a volume object?” on page 53
- ♦ “How to update volume objects?” on page 53

## What is an NSS volume?

The logical volumes created on NSS storage pools are called NSS volumes. The **CREATE VOLUME** option on the **VOLUMES** page allows you to create an NSS volume in a pool. Depending on the physical space available, you can create any number of NSS volumes for each pool.

## What are the features that can be enabled for a new volume?

The below features can be enabled while creating a new volume.

### ♦Salvage

The Salvage Files attribute enables deleted files to remain on the volume until the Purge Delay time expires or until space is needed on the volume for other data. Until the Purge Delay time expires, the Salvage feature tracks the deleted files and allows the deleted files to be salvaged and restored. If space is needed, the oldest deleted files are purged to clear space. Salvage is enabled by default. If the Salvage Files attribute is disabled, deleted files are purged immediately on deletion.

### ♦User Quotas

The User Quotas (user space restrictions) attribute enables you to assign a maximum quota of space that a user’s data can consume across all directories in the volume.

### ◆Directory Quotas

The Directory Quotas attribute enables you to assign a maximum quota of space that a directory can consume.

### ◆Active Directory

This option lets you enable access to the AD users for the selected volume. For a volume (both NSS32 and NSS64) to be accessible to the AD users, it should be part of a pool that is AD media upgraded, and it should be AD-enabled.

### ◆Compression

The Compression attribute activates file compression in NSS volumes. Compression can be activated at creation time only and this choice persists for the life of the volume. Data in the volume is stored normally or in compressed form, depending on how frequently it is used. Compression parameters can be set at the server level to control compression behaviour.

### ◆Encryption

Encryption provides password-protected activation of encrypted NSS volumes. Encryption can be activated at creation time only, and this choice persists for the life of the volume.

### ◆Event File List (EFL)

NSS uses the Event File List (EFL) feature to track files that have changed on a volume during an interval called an epoch. It logs changes that are made to data and metadata for each active epoch on a specific NSS volume. You can use the API commands in scripts to start and stop an epoch, reset the event list for an epoch, and to affect how long epochs are retained.

---

**NOTE:** The feature, Event File List (EFL) is selected by default and you cannot deselect it.

---

## What are the prerequisites for creating an encrypted volume with AES256?

To create encrypted volumes with an AES-256 encryption algorithm, use the NSS64 pool type with pool media upgraded to AES. Use the `nsscon` commands in this section to upgrade the existing NSS media to support AES or to enable all future NSS pool creation to be automatically created with the AES Index support.

### For the Existing NSS Pools

```
nss /PoolMediaUpgrade=poolname /MediaType=AES
```

Upgrades the specified pool to support AES media.

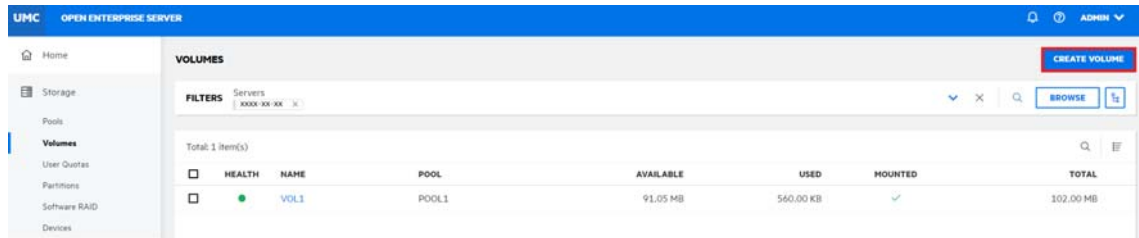
### For the Newly Created NSS Pools

The commands placed in the `nssstart.cfg` file persists across server reboots. If the NSS commands are added in the `nssstart.cfg` file, ensure those commands are not prefixed with `nss`.

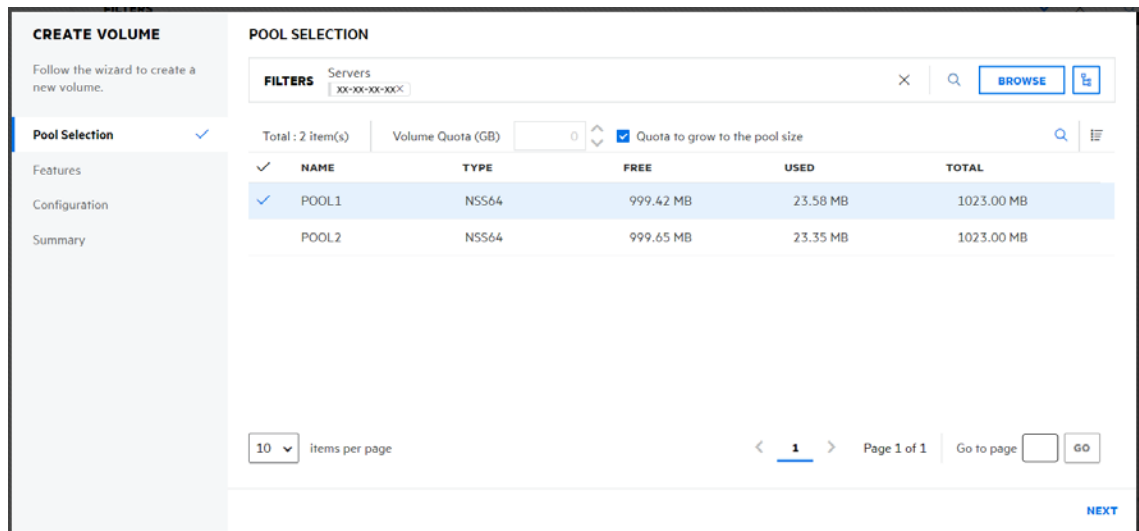
If these commands are issued from the command line, it persists only till a server reboot.

# How to create a new NSS volume?

- 1 In UMC, click  **Storage > Volumes**.
- 2 Click **CREATE VOLUME**.

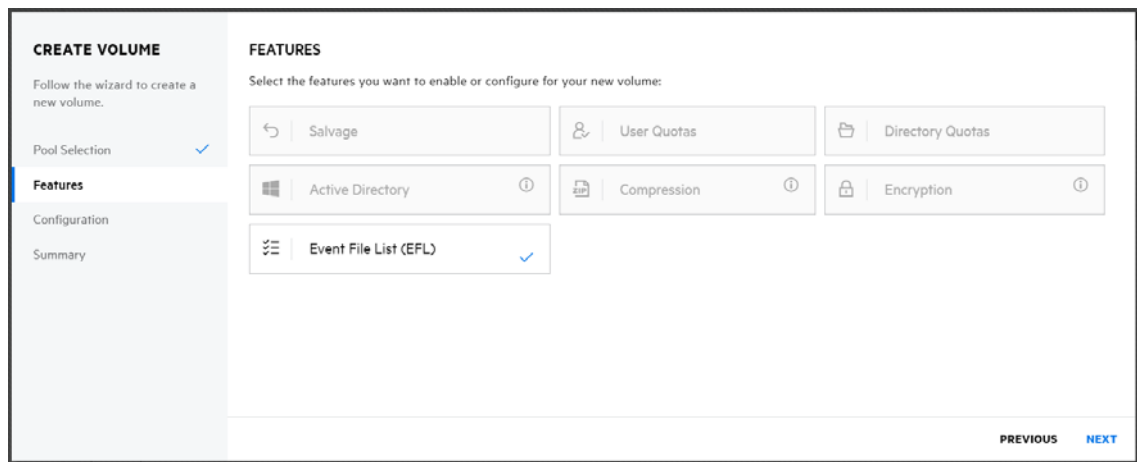


- 3 On the **POOL SELECTION** page, search or browse the server to select the pool where you want the new volume to reside, and click **NEXT**.



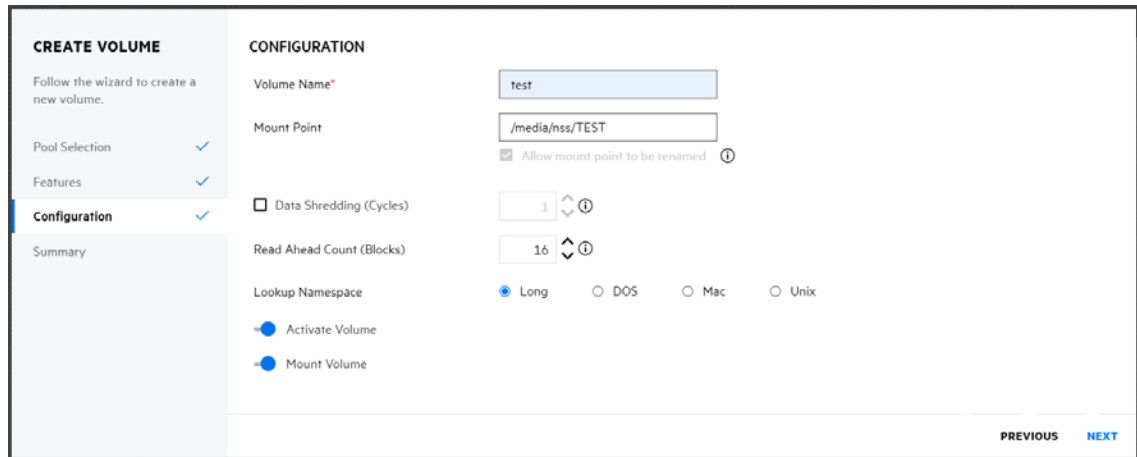
Specify the **Volume Quota** as required or select “**Quota to grow to the pool size**” checkbox to allow the volume to expand to the size of the pool.

- 4 On the **FEATURES** page, select the features you want to enable for the new volume, and click **NEXT**.

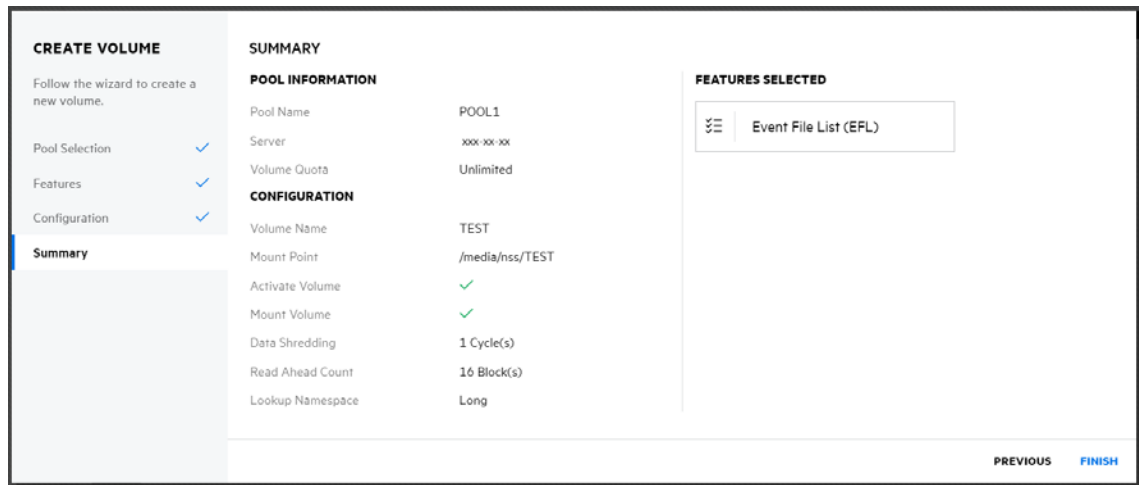


**NOTE:** The feature, Event File List (EFL) is selected by default and you cannot deselect it.

- 5 On the **CONFIGURATION** page, specify a name for the new volume, and click **NEXT**.  
Enable **Allow mount point to be renamed** to allow updates to the volume name or its path.



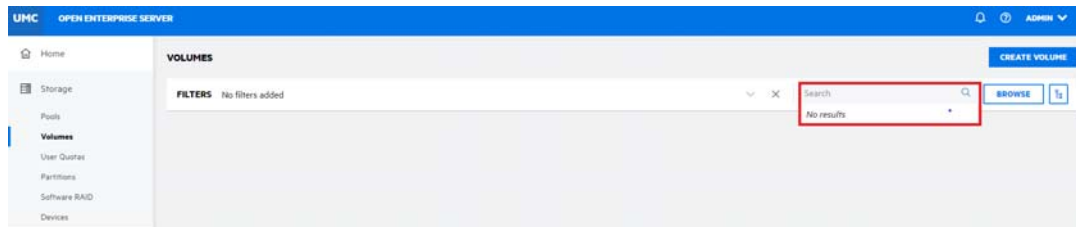
- 6 Review the details and click **FINISH**.



The new volume is available on the **VOLUMES** page.

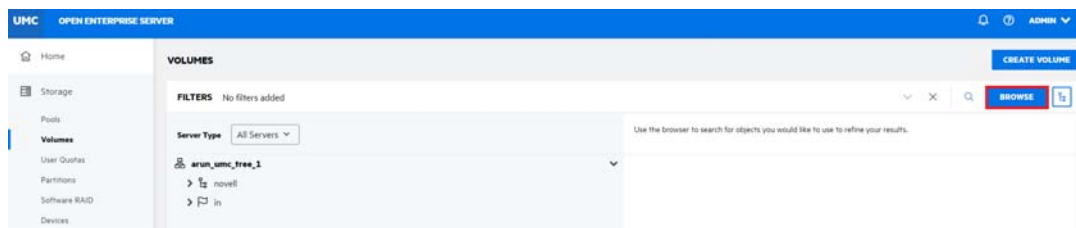
## How to list NSS volumes?


- 1 In UMC, click  **Storage > Volumes**.
- 2 Click the search Icon and specify the server name.



or



Click **Browse**, select **Server Type** to list the servers. Select the required servers from the list and click **APPLY**.

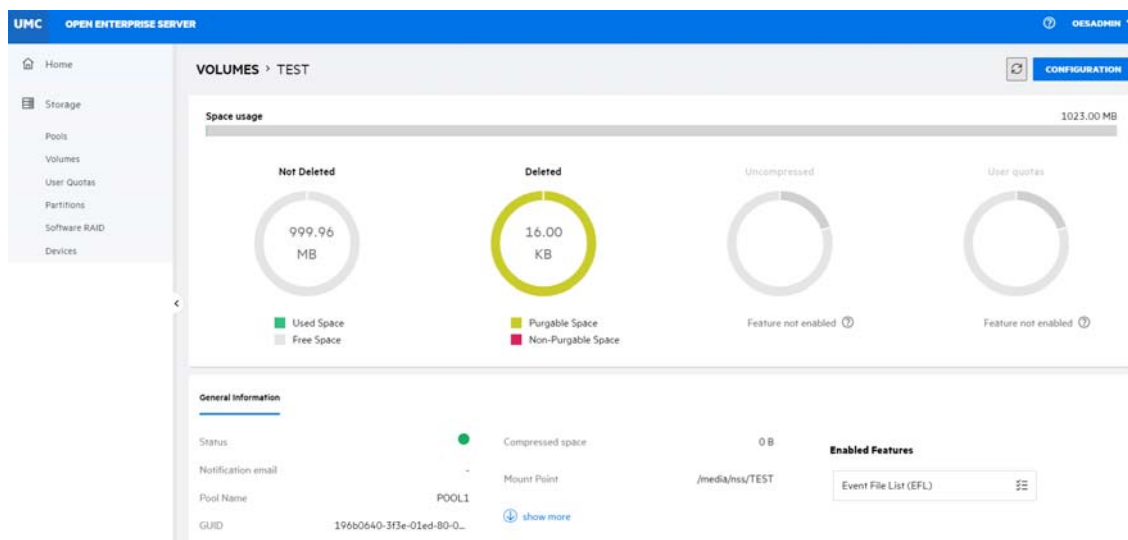


**NOTE:** When the **BROWSE** or tree view  icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.

## How to view volume dashboard?



You can view the details of a volume like space usage, general information of the volume, and enabled features on the volume dashboard page.

- 1 In UMC, click  **Storage > Volumes**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 Select the volume, click More Options  icon, and then select **Dashboard**.




## How to deactivate and activate NSS volumes?

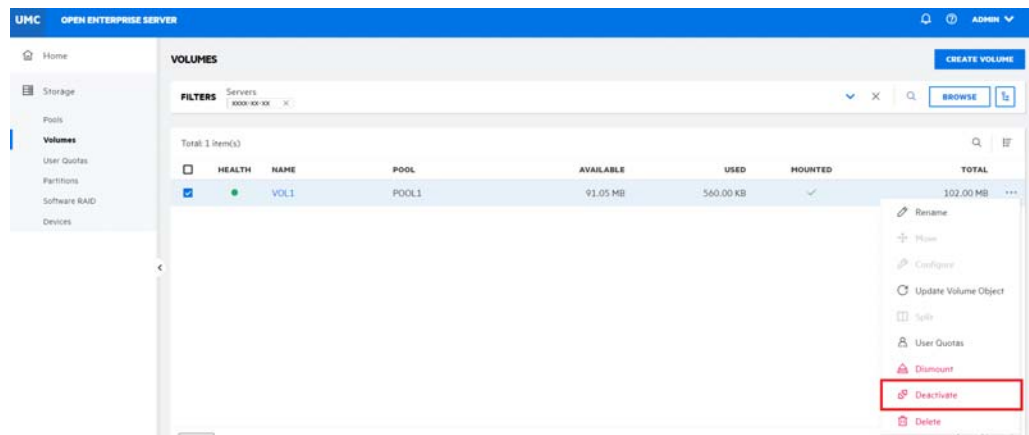
After configuring NSS volumes, you can activate and deactivate NSS volumes to make them available to users and applications. To view details of a volume, it must be active.

- 1 In UMC, click  **Storage > Volumes**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 **NOTE:** If you select multiple volumes, the More Options  icon is available at the top right corner of the table.

### 3a To Deactivate a Volume:

- 3a1 Select the volume, click More Options  icon, and then select **Deactivate**.





**3a2** Click **CONFIRM** to deactivate the selected volume.

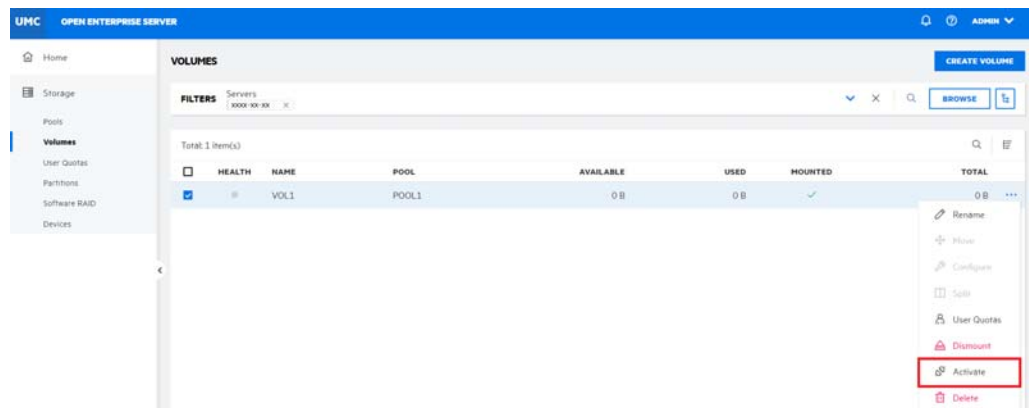


The deactivated volume details are not displayed on the **VOLUMES** page.

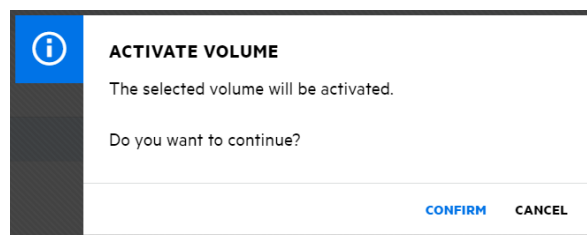
or

**3b To Activate a Volume:**

**3b1** Select the volume, click More Options **...** icon, and then select **Activate**.



**3b2** Click **CONFIRM** to activate the selected volume.



The activated volume details are displayed on the **VOLUMES** page.

After the page refreshes, each volume's state matches the state you specified. When a volume is already in the specified state, no change occurs.



## How to mount or dismount a volume?

After configuring the NSS volumes, you can mount and activate the volumes on the **VOLUMES** page to make them available to users and APIs. After mounting an NSS volume, it is only available to APIs until you activate it. Dismounting a volume makes it unavailable to the users and APIs.

---

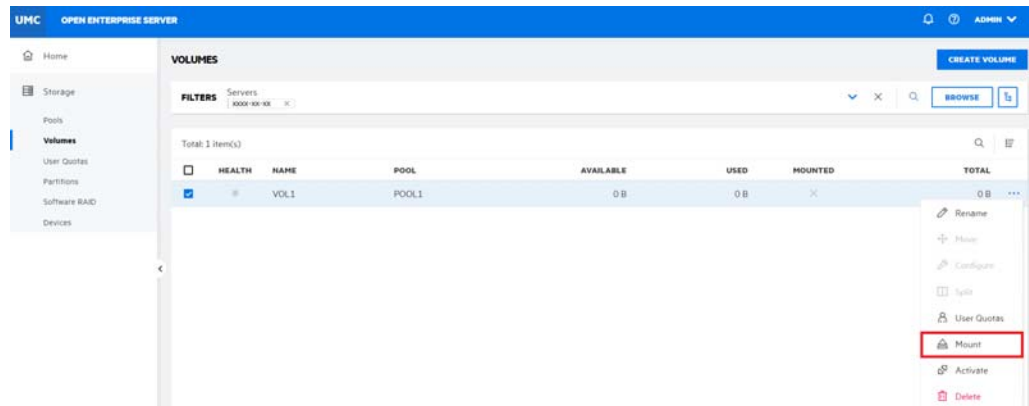
**NOTE:** If you **Mount** an encrypted volume, you are prompted for the related password.

---

- 1 In UMC, click  **Storage > Volumes**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 **NOTE:** If you select multiple volumes, the More Options  icon is available at the top right corner of the table.

### 3a To mount a Volume:

**3a1** Select the volume, click More Options  icon, and then select **Mount**.



**3a2** Click **CONFIRM** to mount the selected volume.




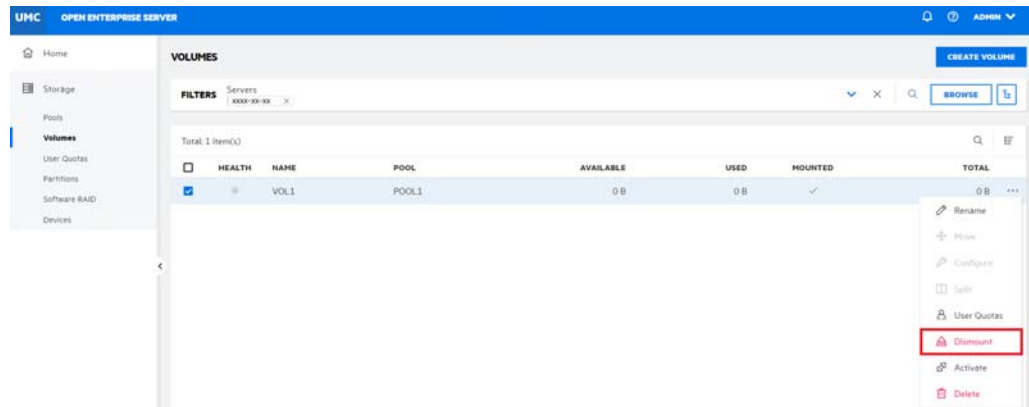
The page is refreshed and the **MOUNTED** state for the selected volume is changed to



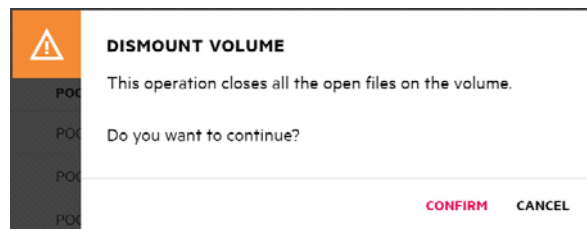
or


### 3b To Dismount a Volume:

3b1 Select the volume, click More Options , and then select **Dismount**.





3b2 Click **CONFIRM** to dismount the selected volume.

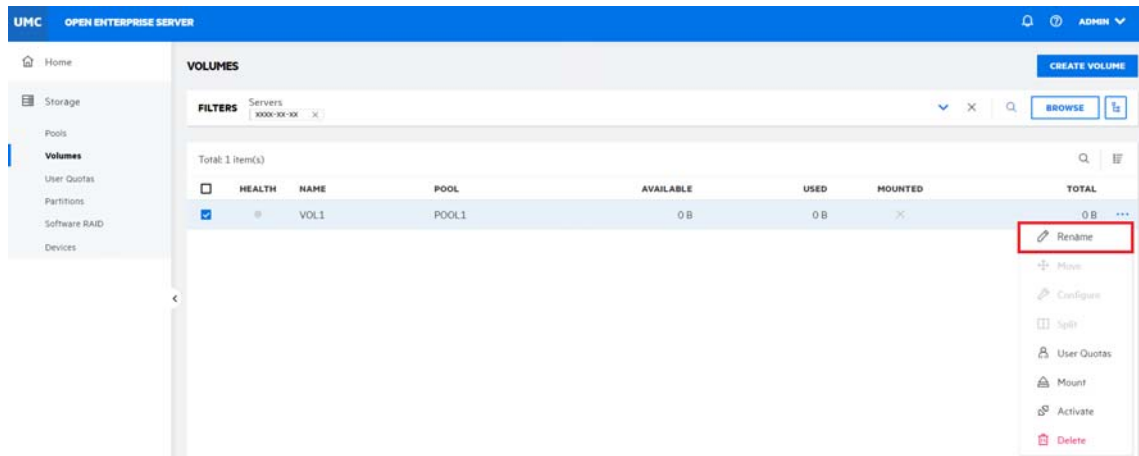


The page is refreshed and the **MOUNTED** state for the selected volume is changed to . The details of dismounted volumes are not displayed.

## How to rename a volume?

The **Rename** option on the **VOLUMES** page allows you to modify the name of the selected volume. For example, you want to change the name of a volume to reflect the department or organization name that uses it. Renaming a volume updates the corresponding eDirectory object.

- 1 In UMC, click  **Storage > Volumes**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 Select the volume to rename, click More Options , and then select **Rename**.



4 Specify the new name for the volume, and then click **CONFIRM**.



The dialog box is titled 'RENAME VOLUME'. It has two input fields: 'Name' with the value 'VOLUME\_7' and 'New name' with the value 'Volume\_8'. At the bottom right, there are two buttons: 'CONFIRM' and 'CANCEL'.

The page is refreshed and the new volume name appears in the volumes list.


## How to delete a volume? Can i restore or permanently delete it?

Deleting a volume removes the data in the volume and frees the space to be used by other volumes in the same pool. When a volume is deleted, it is salvageable until Volume Purge Delay times out or you manually purge the deleted volumes.

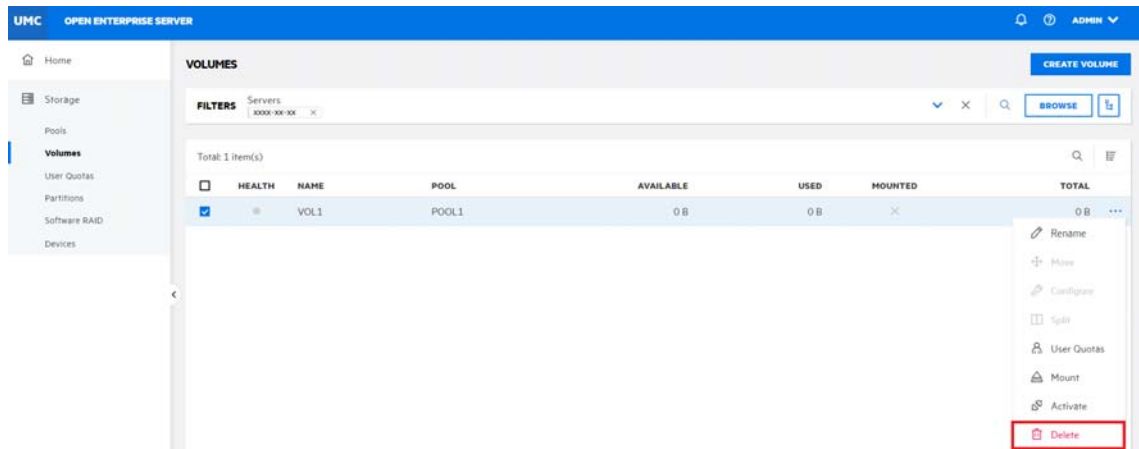
During the purge delay time, the deleted volume is salvageable, but the space belonging to the deleted volume is not available to other volumes. When the purging process begins, the volume is no longer salvageable.

- 1 In UMC, click  **Storage > Volumes**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 Select the volume, click More Options  icon, and then select **Delete**.

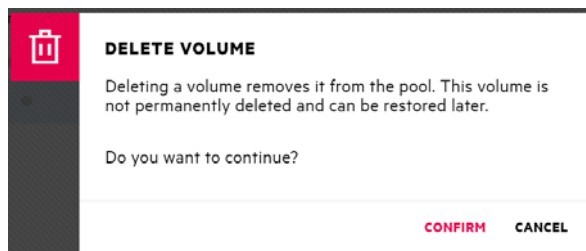
---

**NOTE:** If you select multiple volumes, the More Options  icon is available at the top right corner of the table.

---



4 Click **CONFIRM** to delete the selected volume.





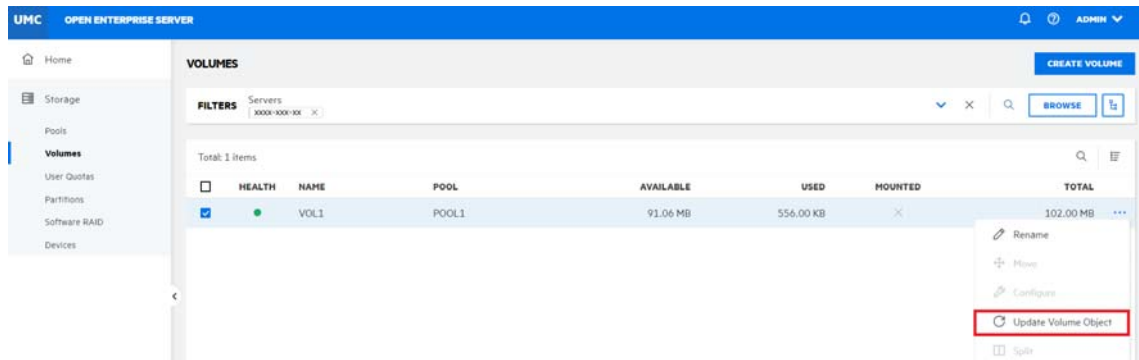
The deleted volumes are available in the **Deleted Volumes** list on the **Pools** page if the selected pool contains deleted volumes in it.

## What is a volume object?

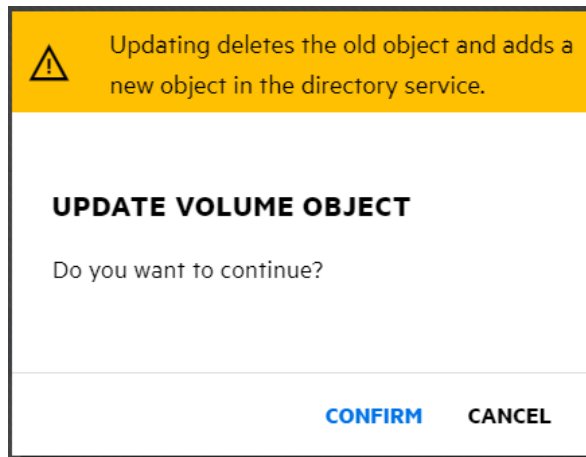
Volume objects represent a physical or logical volume on the network. Each NSS volume is represented by a volume object in eDirectory. The **Update Volume Object** option on the **Volumes** page allows you to add or replace a volume object for a volume at the same context level as the server.

## How to update volume objects?

- 1 In UMC, click  **Storage > Volumes**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 Select the volume, click More Options  icon, click **Modify**, and then select **Update Volume Object**.



4 Click **CONFIRM** to update the volume object of the selected volume.



If the volume object does not exist, NSS adds the volume object to the context level. If the volume object exists, NSS prompts to delete and replace the existing object or retain the existing object.

# 7 Managing User Quota


This chapter describes the procedure to view and manage user space restrictions for volumes on an OES server.

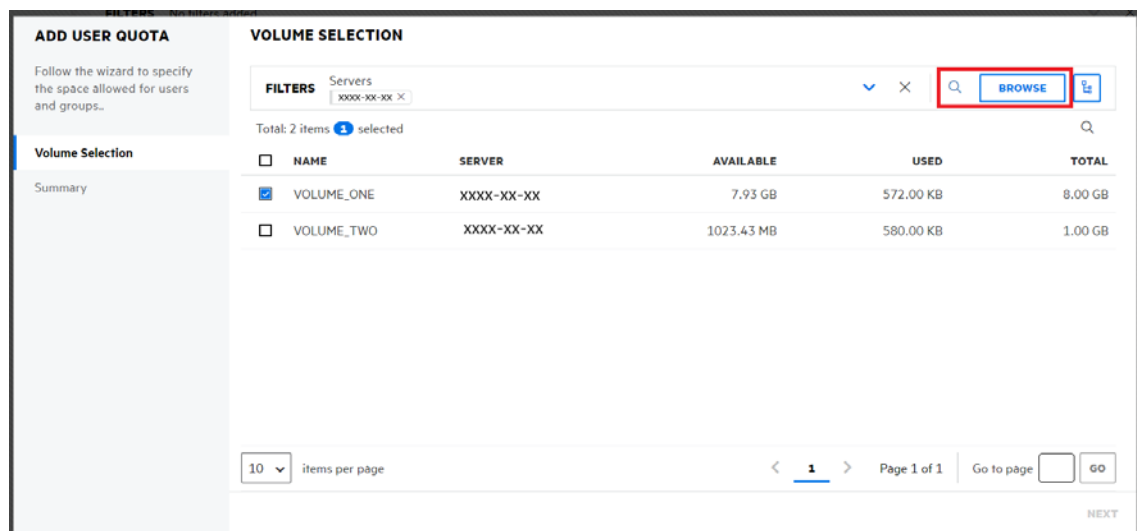
- ♦ “What are user quotas?” on page 55
- ♦ “How to add user quota?” on page 55
- ♦ “How to list user quotas?” on page 56
- ♦ “How to manage user quota?” on page 57
- ♦ “How to delete user quotas?” on page 58

## What are user quotas?

User Quotas are the space restrictions set for users of a volume on enabling the User Space Quotas attribute. A user quota specifies the maximum space a user’s data can consume in a volume. Space is allocated to users as required and user quota does not reserve the space for a user. You can overbook a volume and data can be set to grow to the size of the volume.

## How to add user quota?

- 1 In UMC, click  **Storage > User Quotas**, and click **ADD USER QUOTA**.
- 2 On the **VOLUME SELECTION** page, search or browse the servers, select the required volumes from the list, and then click **NEXT**.



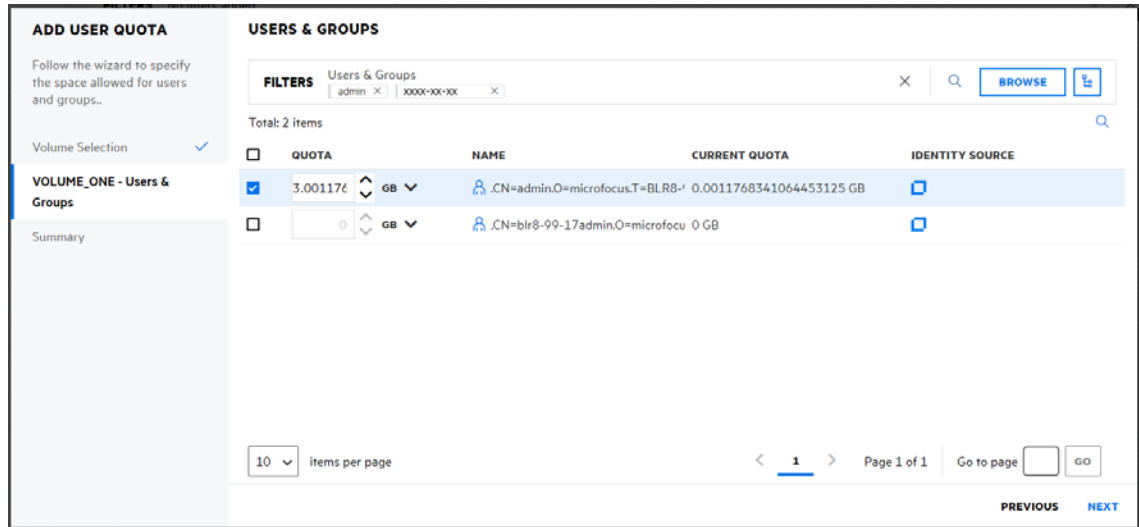
The screenshot shows the 'ADD USER QUOTA' wizard. On the left, there is a 'Volume Selection' sidebar with a 'Summary' section. The main area is titled 'VOLUME SELECTION' and features a search bar with a 'BROWSE' button highlighted in red. Below the search bar, it indicates 'Total: 2 items selected'. A table lists the available volumes:

<input type="checkbox"/>	NAME	SERVER	AVAILABLE	USED	TOTAL
<input checked="" type="checkbox"/>	VOLUME_ONE	XXXX-XX-XX	7.93 GB	572.00 KB	8.00 GB
<input type="checkbox"/>	VOLUME_TWO	XXXX-XX-XX	1023.43 MB	580.00 KB	1.00 GB

At the bottom, there is a pagination control showing '10 items per page', 'Page 1 of 1', and a 'Go to page' field. A 'NEXT' button is located at the bottom right corner.

- 3 On the **USERS & GROUPS** page, search or browse the users and groups to list the users.


- 4 Select the user(s), specify the storage space you want to assign to the selected user(s), and then click **NEXT**.

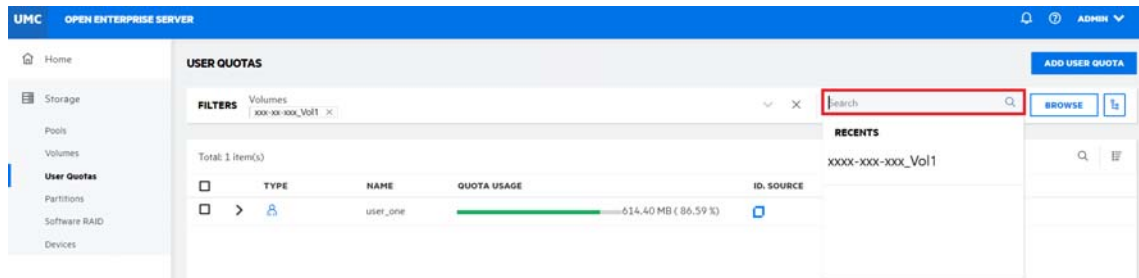


- 5 Review the details and click **FINISH**.

## How to list user quotas?

You can list the user quotas by selecting the volumes of a server.

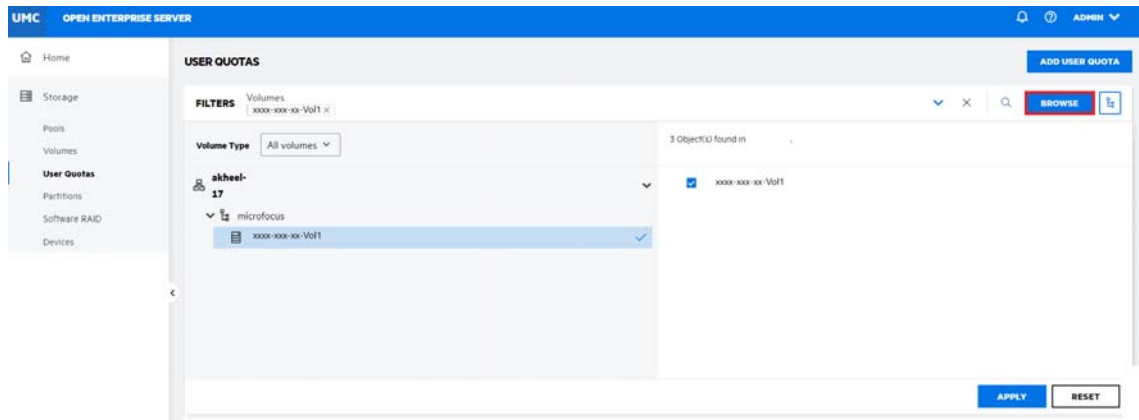
- 1 In UMC, click  **Storage > User Quotas**.
- 2 Click the Search Icon and specify the volume name.



or

Click **Browse** and select **Server Type** to list the volumes. Select the required volumes and click **APPLY**.





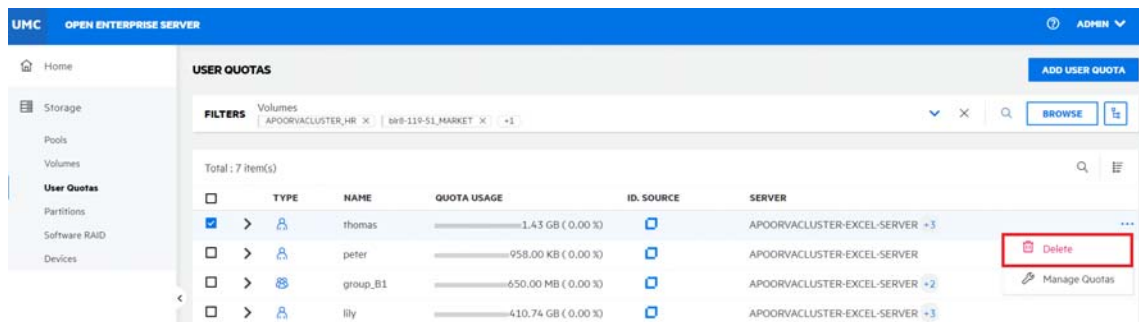
**NOTE:** When the **BROWSE** or tree view icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.

The list of the users with user quota assigned are displayed.

## How to manage user quota?

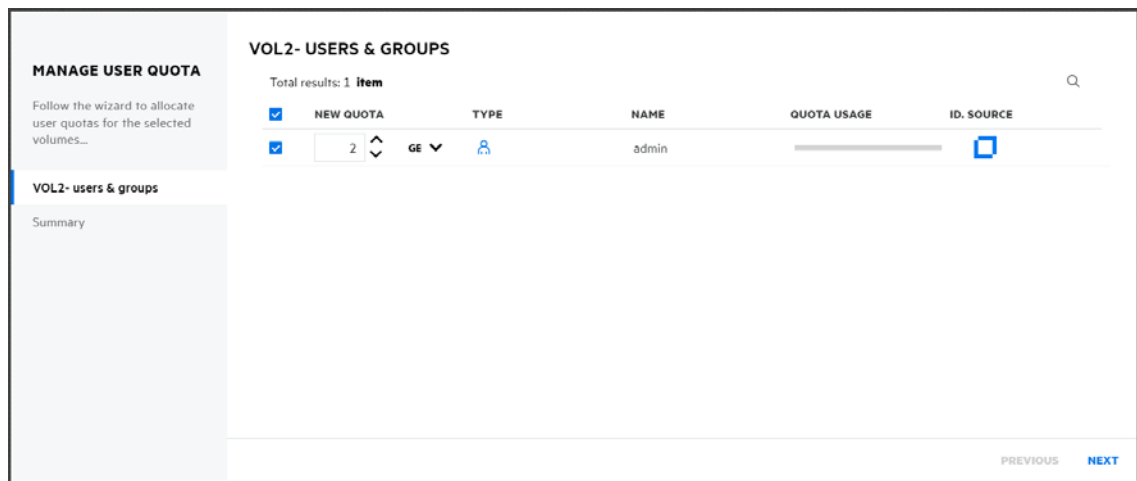
You can manage space restrictions of a user for a specific volume, regardless of whether the user has data on it or not.

- 1 In UMC, click **Storage > User Quotas**.
- 2 Search or browse the servers to list the volumes associated with them.
- 3 Select the required volumes from the list and click **APPLY**.
- 4 Select the user quota, click More Options **...** icon, and then select **Manage Quotas**.



**NOTE:** If you select multiple user quotas, the More Options **...** icon is available at the top right corner of the table.



- 5 On the **MANAGE USER QUOTA** page, specify the **NEW QUOTA** size, and click **NEXT**.

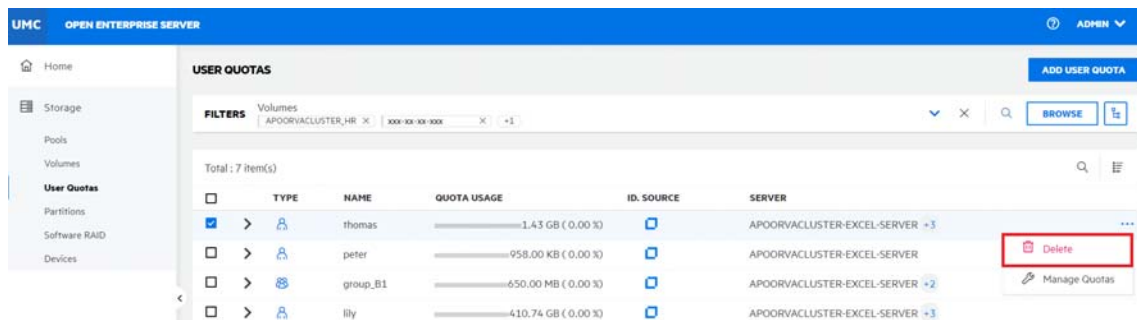



6 Review the details and click **FINISH**.

The new user quota is assigned to the user(s) for the selected volume(s).

## How to delete user quotas?

- 1 In UMC, click  **Storage > User Quotas**.
- 2 Search or browse the volumes to list the user quotas associated with them.
- 3 Select the user quota, click More Options  icon, and then select **Delete**.



**NOTE:** If you select multiple user quotas, the More Options  icon is available at the top right corner of the table.

- 4 Click **CONFIRM** to remove the user quota on the selected volume.

# 8 Managing NSS Partitions

This chapter describes the procedures for managing NSS partitions on a server.

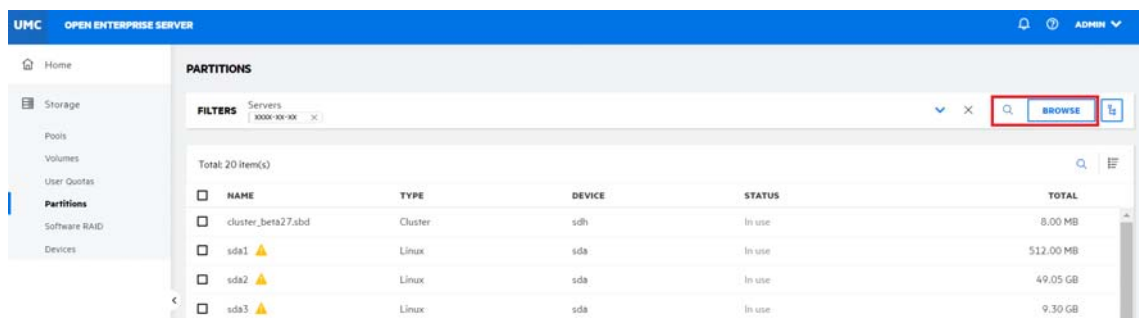
- ♦ “What is a partition?” on page 59
- ♦ “How to list NSS partitions?” on page 59
- ♦ “How to edit label of a partition?” on page 60
- ♦ “How to list volumes in a partition?” on page 60
- ♦ “What is NSS mirroring?” on page 61
- ♦ “How to mirror a partition?” on page 61
- ♦ “How to delete partitions?” on page 62



## What is a partition?

A partition is a logical division of a physical hard drive. NSS automatically creates the NSS partitions on the devices when you creates pools or RAID devices. You can view and label these NSS partitions from the **Partitions** page.

## How to list NSS partitions?

- 1 In UMC, click  **Storage > Partitions**.
- 2 Search or browse the servers to list the partitions associated with them.





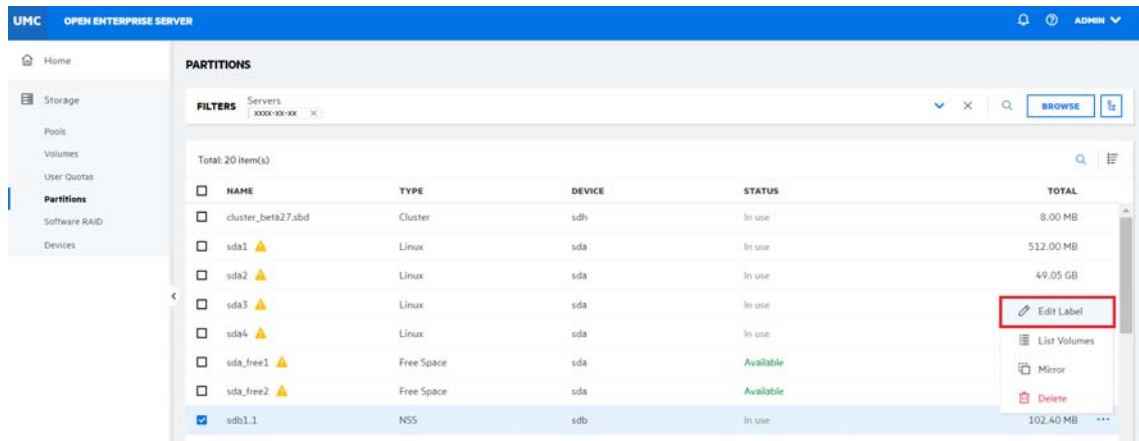
**NOTE:** When the  or tree view  icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.

The actions that are performed on partitions are specific to partition type and vary depending on the type of partition selected.


# How to edit label of a partition?

A Label is the partition name assigned by the administrator and must be unique on a server. You can edit label of a partition by using the **Edit Label** option.

- 1 In UMC, click  **Storage > Partitions**.
- 2 Search or browse the servers to list the partitions associated with them.
- 3 Select the partition, click More Options  icon, and then select **Edit Label**.





- 4 Specify a new label to the partition and click **CONFIRM**.

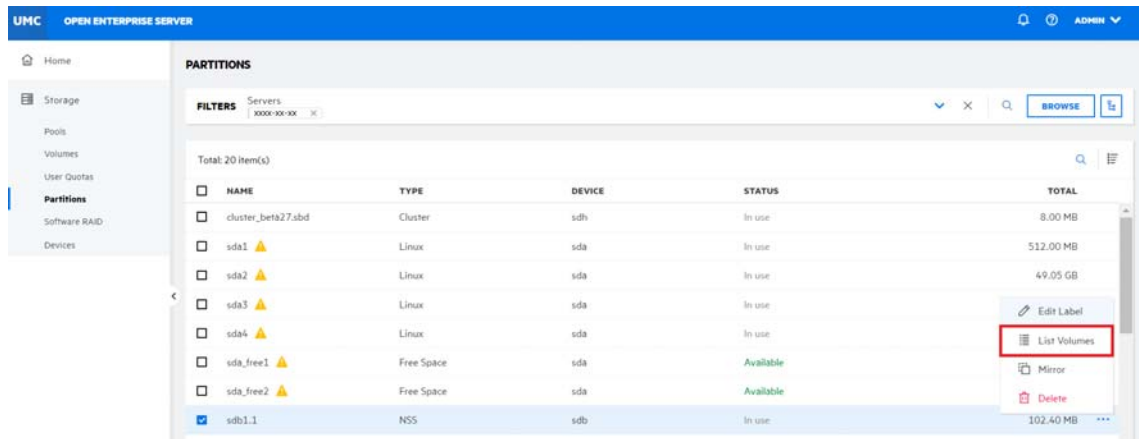


The 'EDIT LABEL' dialog box has a title bar 'EDIT LABEL'. It contains a 'Label' field with the text 'Label Example' entered. At the bottom right, there are two buttons: 'CONFIRM' and 'CANCEL'.

The updated label is displayed in the partition list.

# How to list volumes in a partition?

- 1 In UMC, click  **Storage > Partitions**.
- 2 Search or browse the servers to list the partitions associated with them.
- 3 Select the partition, click More Options  icon, and then select **List Volumes**.





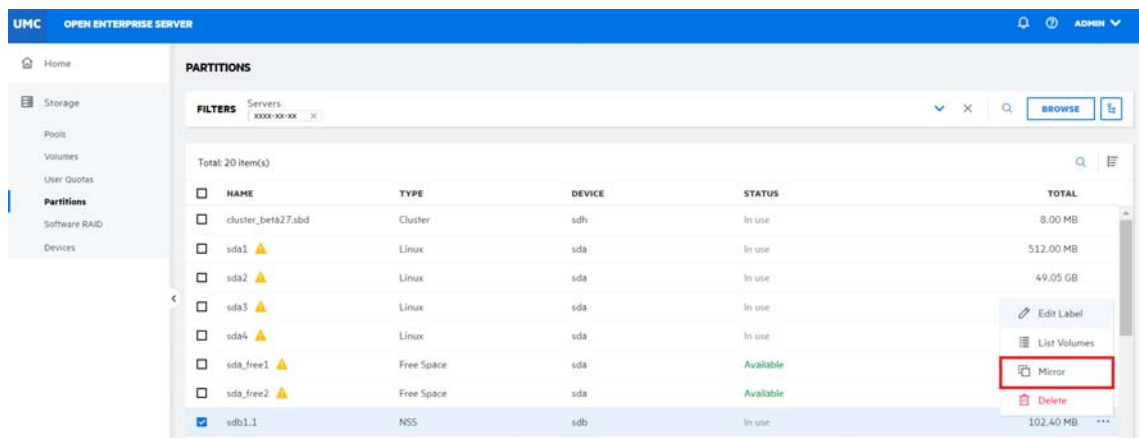
All the volumes available in the selected partition are listed.

## What is NSS mirroring?

NSS mirroring is a checkpoint-based synchronous mirroring solution. Data blocks are written synchronously to multiple storage devices. If the system crashes, data is still safe on the mirrored NSS volume on other servers.

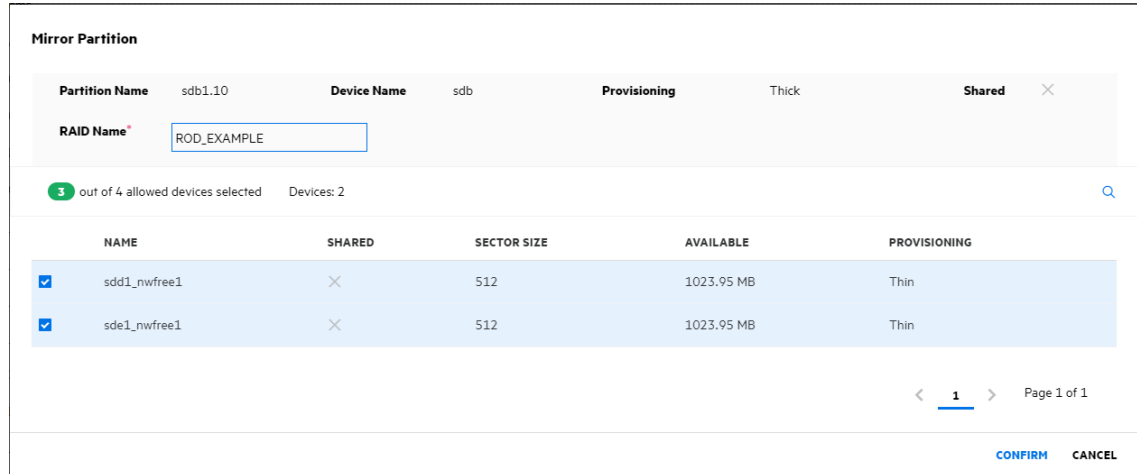
## How to mirror a partition?

- 1 In UMC, click  **Storage > Partitions**.
- 2 Search or browse the servers to list the partitions associated with them.
- 3 Select the partition, click More Options , and then select **Mirror**.



- 4 Specify the RAID name, select device(s) from the list, and then click **CONFIRM**.

**NOTE:** To create a mirror partition for a RAID device, the selected device(s) must have free space like the pool's size.

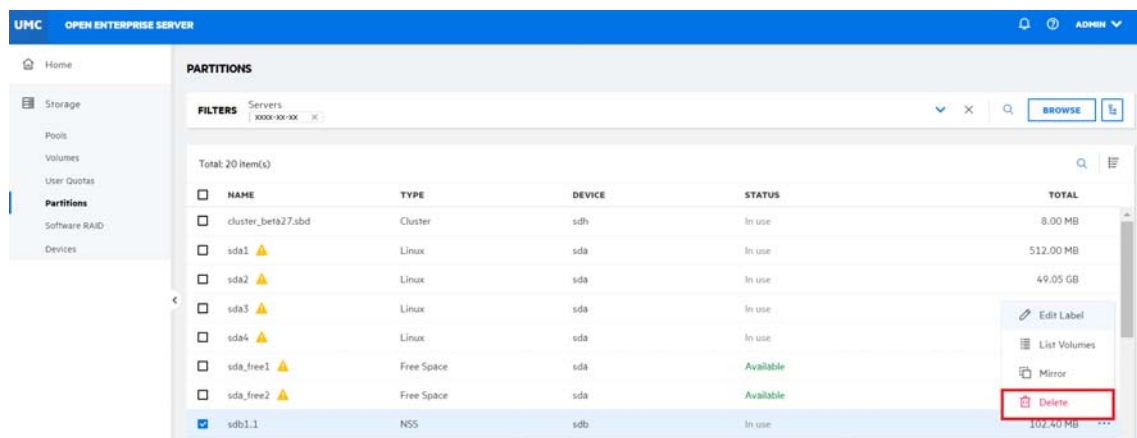


## How to delete partitions?

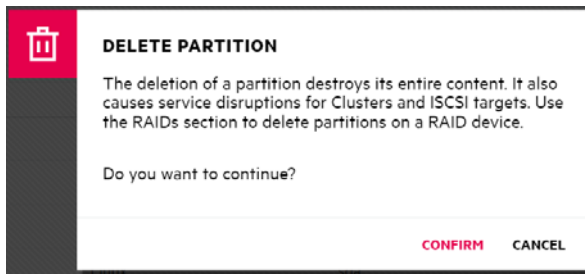
Deleting partitions deletes all the data in it. The delete option is only applicable for NSS partitions that are not part of RAID devices. For NSS software RAID devices, use the Software RAID's page to access and delete its partitions.

- 1 In UMC, click **Storage > Partitions**.
- 2 Search or browse the servers to list the partitions associated with them.
- 3 Select the partition, click More Options icon, and then select **Delete**.

**NOTE:** If you select multiple partitions, the More Options icon is available at the top right corner of the table.



- 4 Click **CONFIRM** to delete the selected partitions.



The selected NSS partitions are removed from the **PARTITIONS** list.





# 9 Managing NSS Software RAID Devices

This chapter describes the procedures for creating and managing NSS software RAID devices on a server.

- ♦ [“What is a software RAID?” on page 65](#)
- ♦ [“What RAIDs do NSS support?” on page 65](#)
- ♦ [“How to create a RAID device?” on page 66](#)
- ♦ [“How to list the RAID devices?” on page 68](#)
- ♦ [“How to view RAID device dashboard?” on page 68](#)
- ♦ [“How to rename a RAID device?” on page 69](#)
- ♦ [“How to increase the size of a RAID device?” on page 70](#)
- ♦ [“What happens when i delete a software RAID device?” on page 72](#)
- ♦ [“What happens when i delete a RAID1 device?” on page 72](#)
- ♦ [“How to delete a software RAID device?” on page 72](#)
- ♦ [“What is disk mirroring or remirroring?” on page 73](#)
- ♦ [“How to mirror or remirror a RAID 1 device?” on page 73](#)
- ♦ [“How to deactivate or activate a RAID device?” on page 74](#)

## What is a software RAID?

A software RAID is a configuration for storage devices that emulates a hardware RAID device. A software RAID combines partitioned space from multiple physical devices into a single virtual device that can be managed like any device. Each member device contributes an equal amount of space to the RAID. You can create partitions, pools, and volumes on a RAID device.

## What RAIDs do NSS support?

*Table 9-1 NSS supports three type of RAIDs.*

Type of RAID	Number of Partitions	Definition	Advantages	Disadvantages
RAID 0	2 to 14	Data striping	Improves storage performance	Does not provide data redundancy
RAID 1	2 to 4	Data mirroring	Provides data redundancy for failover and instant recovery	Does not improve performance; writes occur in parallel

Type of RAID	Number of Partitions	Definition	Advantages	Disadvantages
RAID 5	3 to 14	Data stripping with parity	Improves storage performance and enables limited data recovery.	Slightly degrades performance for writes to parity

## How to create a RAID device?

To set up a RAID device, you should allocate free space from any of your physical storage devices. NSS transparently presents the allocated free space as virtual partitions that represent NSS-managed physical partition areas on the participating drives.

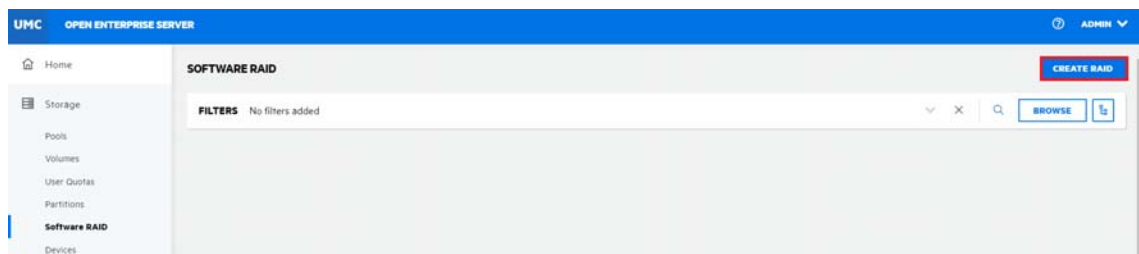
Partitions are the basic elements of a software RAID device. You can allocate partitions to the pools depending on the nature of the pools (shared or not shared for clustering) and the type of the RAID device.

### Guidelines for creating a software RAID device:

- ◆ Each partition in the RAID configuration should come from a different device. NSS lets you obtain RAID partitions from the same device, but this severely impedes the performance of your file system.
- ◆ Do not use space from a drive that contains your system partition (such as the root (/) or /boot partitions).
- ◆ You can use any combination of IDE or SCSI devices in a software RAID device. Make sure these devices have similar performance characteristics; otherwise, your performance might decrease.
- ◆ In a clustered solution using OES Cluster Services, for software RAIDs on shared disks:
  - ◆ You can have only one pool associated with that RAID device.
  - ◆ You must create an NSS pool and volume on that RAID device from the same server node before the pool can be migrated to other nodes in the cluster.

### To create a RAID device:

- 1 In UMC, click  **Storage > Software RAID**.
- 2 Click **CREATE RAID**.



- 3 On the **GENERAL INFORMATION** page, specify the RAID details, and click **NEXT**.

**CREATE RAID**

Follow the wizard to create a new RAID.

**General Information**

Devices

Summary

**GENERAL INFORMATION**

Name

Type RAID 0 ⓘ

Stripe Size (KB) 64 ⓘ

Partition Size (GB) 0 ⬆️⬆️

NEXT

- 4 On the **DEVICES** selection page, select the server to list the devices associated with them. Select the devices to obtain space from, and click **NEXT**.

**NOTE:** If the specified partition size exceeds the amount of free space available on the physical devices, the RAID creation fails and returns an error message.

**CREATE RAID**

Follow the wizard to create a new RAID.

General Information ✓

**Devices**

Summary

**DEVICES**

**FILTERS** Servers xxxx-xx-xxxx X ✕ 🔍 BROWSE 🔍

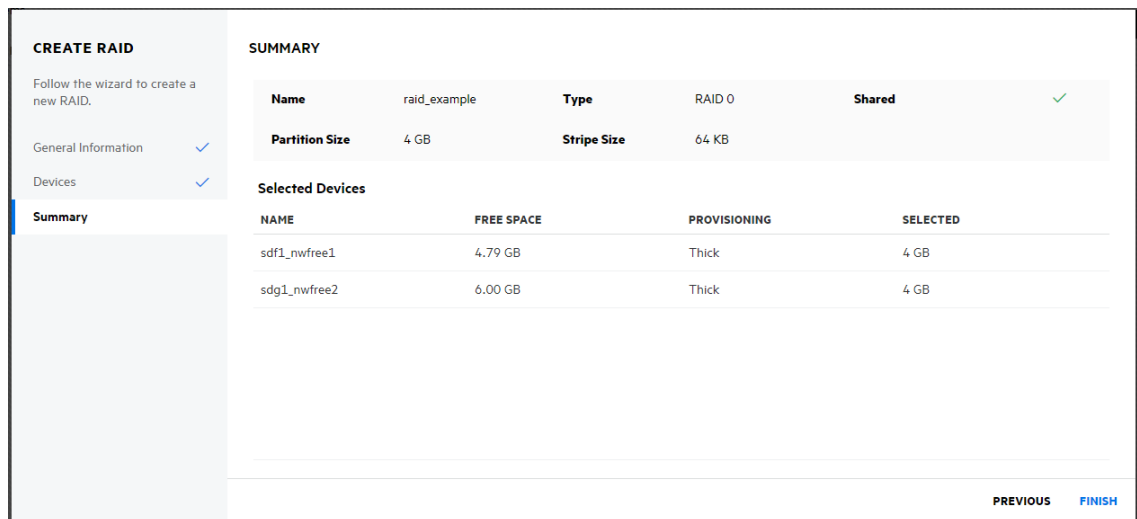
Total: **4 item(s)** 3 of maximum 14 items Partition Size (GB) 1 ⬆️⬆️ 🔍

NAME	AVAILABLE	SHARED	SECTOR SIZE	PROVISIONING
<input checked="" type="checkbox"/> sdd1_nwfre...	2.00 GB	✓	512	Thick
<input checked="" type="checkbox"/> sde1_nwfre...	2.00 GB	✓	512	Thick
<input checked="" type="checkbox"/> sdf1_nwfre...	3.00 GB	✓	512	Thick
<input type="checkbox"/> sdg1_nwfre...	3.00 GB	✓	512	Thick

10 items per page < 1 > Page 1 of 1 Go to page  GO


PREVIOUS NEXT

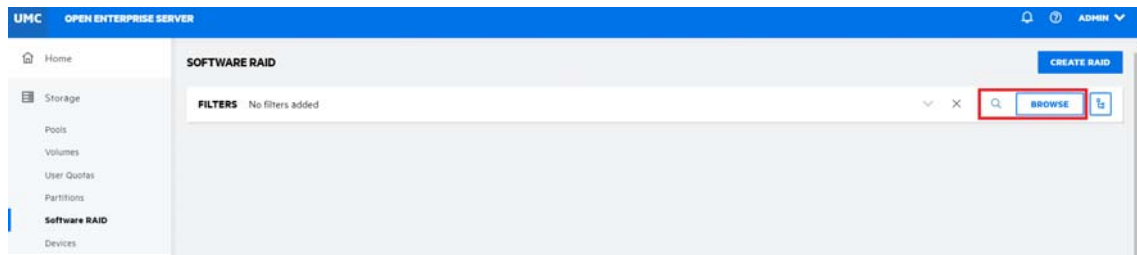
- 5 Review the details and click **FINISH**.





The **Software RAID** page displays the newly created RAID device.

## How to list the RAID devices?

- 1 In UMC, click  **Storage > Software RAID**.
- 2 Search or browse the servers to list the RAID devices associated with them.




**NOTE:** When the  or tree view  icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.

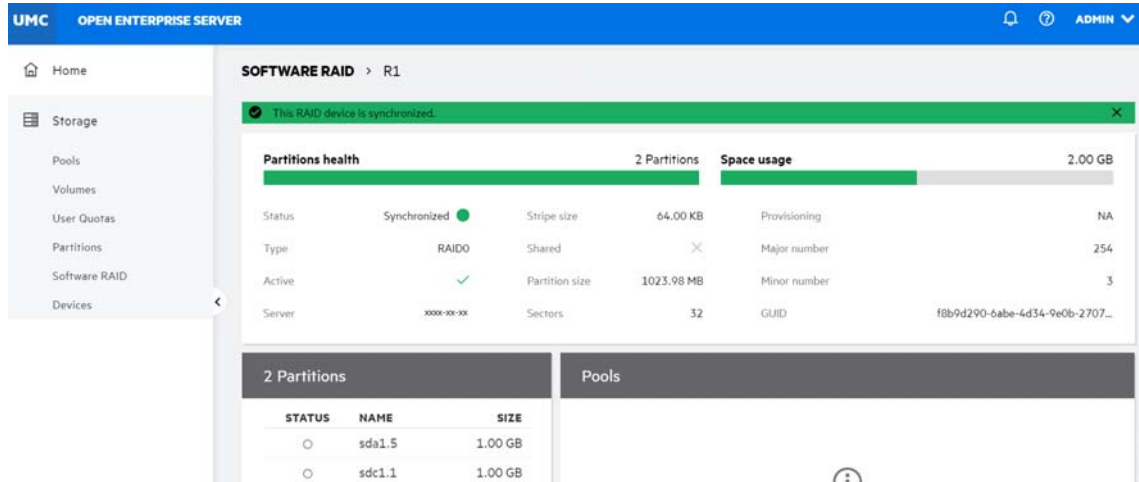
The list of the RAID devices available on the selected servers are displayed.

## How to view RAID device dashboard?



You can view the details of a RAID device like partition health, space usage, partitions, pools and general information on the **SOFTWARE RAID** dashboard page.

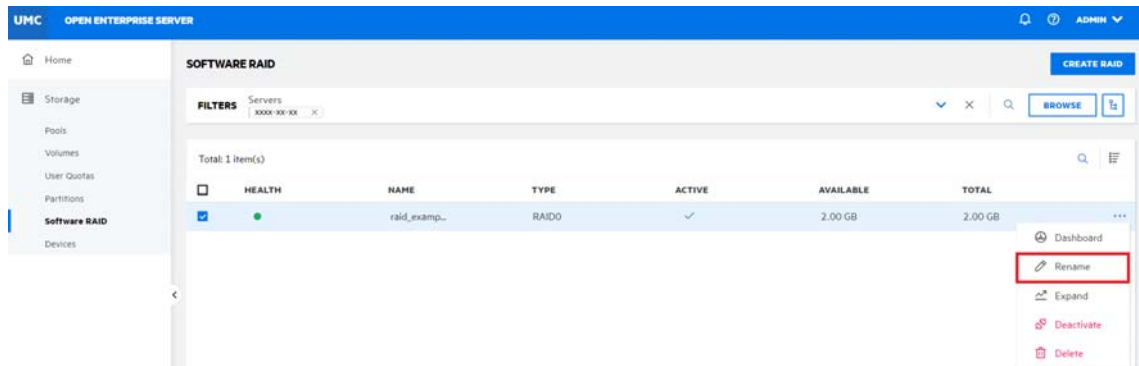
- 1 In UMC, click  **Storage > Software RAID**.
- 2 Search or browse the servers to list the RAID devices associated with them.

- 3 Select the RAID device, click More Options  icon, and then select **Dashboard**.



## How to rename a RAID device?

- 1 In UMC, click  **Storage > Software RAID**.
- 2 Search or browse the servers to list the RAID devices associated with them.
- 3 Select the RAID device, click More Options  icon, and then select **Rename**.



- 4 Specify a new name and click **CONFIRM**.

**RENAME RAID**

Existing Name    Example 3

New Name \*   

CONFIRM    CANCEL

The selected software RAID device is listed with its new name.

# How to increase the size of a RAID device?

You can increase the capacity of an existing software RAID 0, 1 or 5 device by adding partitions up to the maximum number for the type of RAID. You cannot modify the size of an individual partition after the device is created. The partition size is predetermined by the existing RAID.



Partitions can be added only if they match the shared state of current member devices. They must be all local or all shared and cannot be mixed.

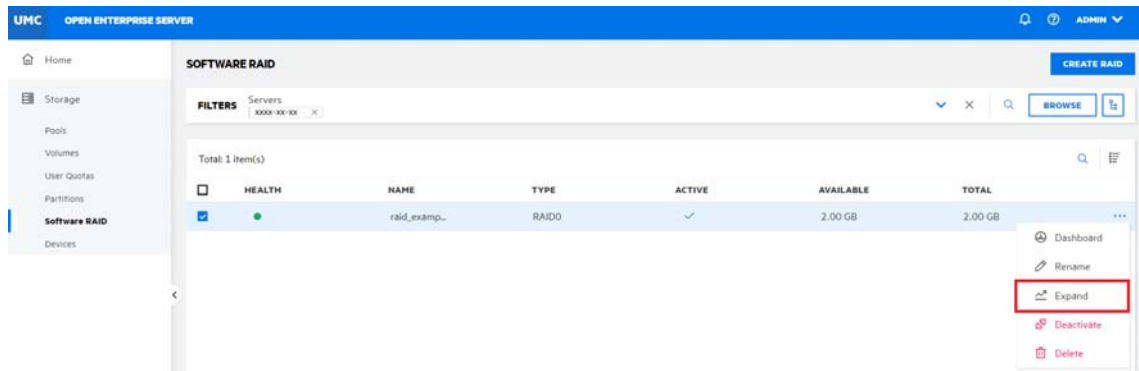
---

**IMPORTANT:** If the software RAID device is shared in a cluster, connect to the node where the RAID is currently active to manage the RAID and increase the size of the RAID.

---

## To add partitions on a RAID device:

- 1 In UMC, click  **Storage > Software RAID**.
- 2 Search or browse the servers to list the RAID devices associated with them.
- 3 Select the RAID device, click More Options  icon, and then select **Expand**.



If the software RAID device contains the maximum number of partitions, the **Expand** option is disabled.

- 4 On the **Devices** selection page, select the device(s), and click **NEXT**.

**Expand - RAID Device**

Follow the wizard to expand a RAID.

**Devices**

Summary

Type	RAID0	Provisioning	NA	Shared	Yes
Partition Size	102.38 MB	Stripe Size	64.00 KB	Sector Size	512 B

Total: 7 item(s) 4 of maximum 14 items

NAME	IN USE	AVAILABLE	SHARED	SECTOR	PROVISIONING
<input type="checkbox"/> sdb1_nwfree1	✓	29.90 GB	✓	512 B	Thin
<input type="checkbox"/> sdc1_nwfree1	✓	31.90 GB	✓	512 B	Thin
<input type="checkbox"/> sdd1_nwfree1	✓	15.90 GB	✓	512 B	Thin
<input type="checkbox"/> sde1_nwfree1	✓	15.90 GB	✓	512 B	Thin
<input checked="" type="checkbox"/> sdf1_nwfree1	✗	3.00 GB	✓	512 B	Thick
<input checked="" type="checkbox"/> sdg1_nwfree1	✗	5.00 GB	✓	512 B	Thick

10 items per page

< 1 > Page 1 of 1 Go to page  GO

[NEXT](#)

The wizard lets you select the partitions with free space to meet the RAID's current partition size and are not members of the RAID.

5 Review the details and click **FINISH**.

**Expand - RAID Device**

Follow the wizard to expand a RAID.

**Summary**

Devices ✓

Type	RAID0	Provisioning	NA	Shared	Yes
Partition Size	102.38 MB	Stripe Size	64.00 KB	Sector Size	512 B

**Selected Devices**

NAME	FREE SPACE	PROVISIONING	SELECTED
sdf1_nwfree1	3.00 GB	Thick	102.38 MB
sdg1_nwfree1	5.00 GB	Thick	102.38 MB

[PREVIOUS](#) [FINISH](#)

The selected partitions are added to the RAID device, increasing its size.

# What happens when i delete a software RAID device?



Deleting a software RAID device removes the RAID relationship between the member partitions and the underlying storage structures. All data on the member partitions is deleted and cannot be restored. Before deleting the software RAID device, backup your data or move it to a different location if required.


# What happens when i delete a RAID1 device?

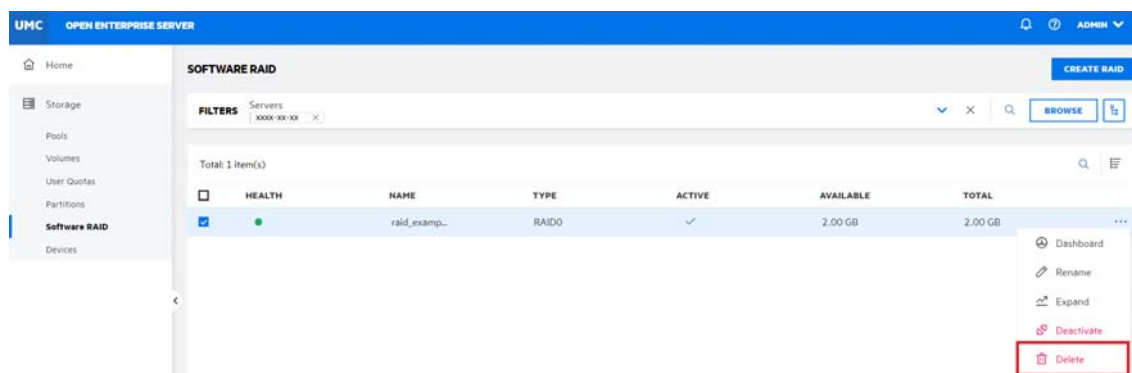
No data is lost and only the RAID1 device gets deleted under the following scenarios:

- When the RAID1 device has only one segment and if the device is consumed by a pool, deleting the RAID1 device deletes only the device. The segment is directly attached to the pool.
- When the RAID1 device has only one segment and if the device is an SBD mirror, deleting the RAID1 device deletes only the mirror. The mirror's segment becomes the SBD partition.

# How to delete a software RAID device?

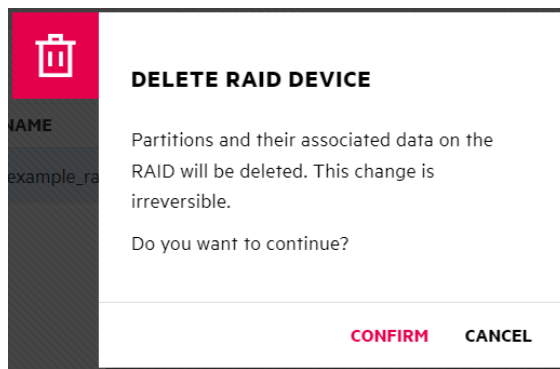
- 1 In UMC, click  **Storage > Software RAID**.
- 2 Search or browse the servers to list the RAID device associated with them.
- 3 Select the RAID device, click More Options  icon, and then select **Delete**.

**NOTE:** If you select multiple RAID devices, the More Options  icon is available at the top right corner of the table.



- 4 Click **CONFIRM** to delete the selected RAID device.





The deleted software RAID device is not accessible from the **SOFTWARE RAID** page.

## What is disk mirroring or remirroring?



Disk mirroring or remirroring is the replication of data to two or more disks. Disk mirroring is a good choice for applications that require high performance and high availability. Disk mirroring or remirroring a RAID 1 device creates a copy of the data contained in that device.

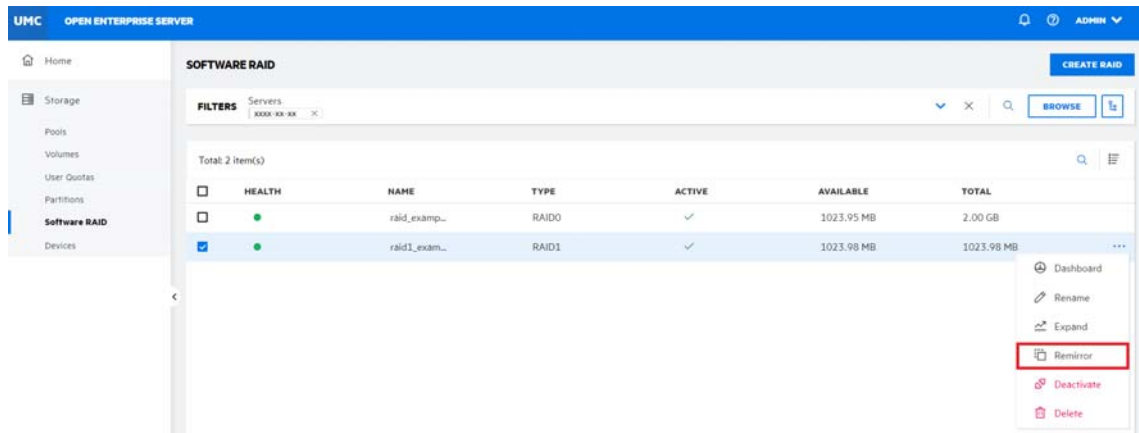
## How to mirror or remirror a RAID 1 device?

### Requirements for mirroring a software RAID 1 devices:

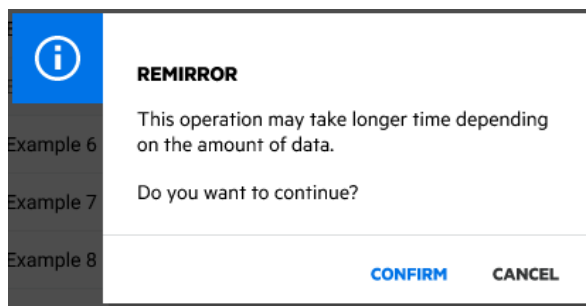
- ♦ Mirrored partitions must have the same partition type: NSS partitions to NSS partitions and traditional partitions to traditional partitions.
- ♦ Mirrored partitions should be set up on devices that have similar performance thresholds.
- ♦ You can mirror only partitions, each from its own OES partition. If a storage pool spans multiple devices, each of the individual partitions that make up that pool can be mirrored independently. The pool's partitions must be mirrored for the data in that pool to be fault tolerant.

### To Remirror a RAID 1 device:

- 1 In UMC, click  **Storage > Software RAID**.
- 2 Search or browse the servers to list the RAID device associated with them.
- 3 Select the RAID device, click More Options  icon, and then select **Remirror**.




4 Click **CONFIRM** to remirror the selected RAID device.



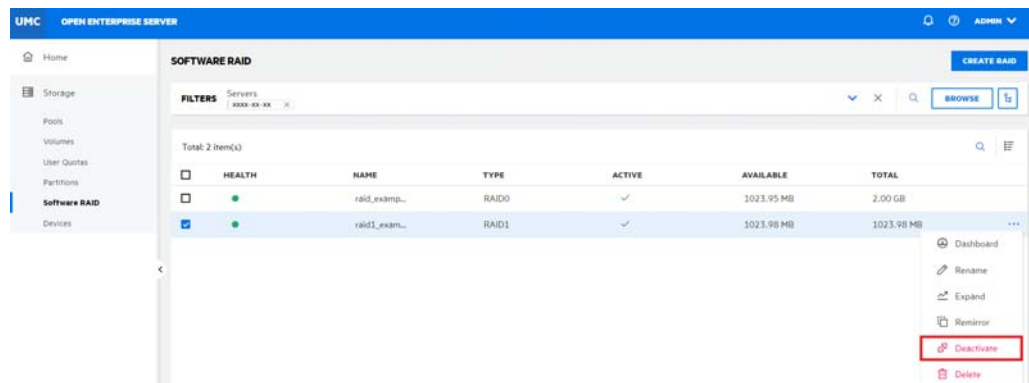
## How to deactivate or activate a RAID device?

You can activate and deactivate a RAID device to make them available to users. To view details of a RAID device, it must be active.

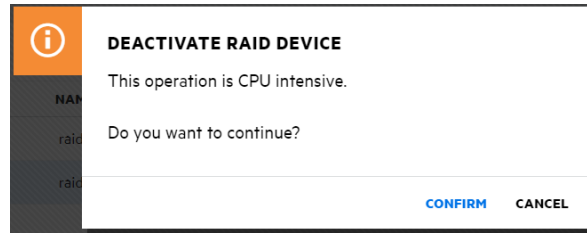
- 1 In UMC, click  **Storage > Software RAID**.
  - 2 Search or browse the servers to list the RAID devices associated with them.
- 
- 3 **NOTE:** Only one RAID device can be deactivated or activated at a time.

### 3a To Deactivate a RAID Device:

3a1 Select the RAID device, click More Options  icon, and then select **Deactivate**.



**3a2** Click **CONFIRM** to deactivate the selected RAID device.

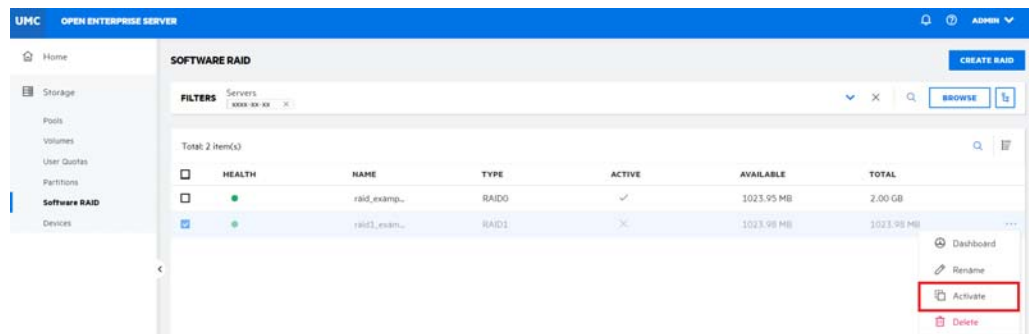


The deactivated RAID device details are not displayed on the **Software RAID** page.

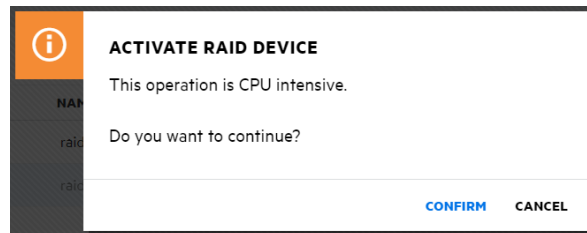
OR

**3b To Activate a RAID Device:**

**3b1** Select the RAID device, click More Options **⋮** icon, and then select **Activate**.



**3b2** Click **CONFIRM** to activate the selected RAID device.



The activated RAID device details are displayed on the **Software RAID** page.

After the page refreshes, each RAID device's state matches the state you specified. When a RAID device is already in the specified state, no change occurs.



# 10 Managing Devices


This chapter describes the procedures to manage devices connected to the servers.

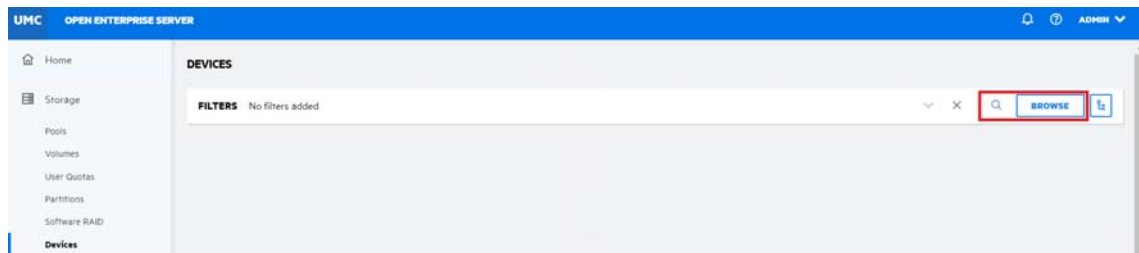
- ♦ “What is a device?” on page 77
- ♦ “How to list devices connected to the servers?” on page 77
- ♦ “What happens when a device is initialized?” on page 78
- ♦ “What happens when a device is shared?” on page 78
- ♦ “How can i initialize a device connected to a server?” on page 78
- ♦ “Why I need to reinitialize a device?” on page 79
- ♦ “How can i reinitialize a device?” on page 79
- ♦ “How to share or unshare an initialized device?” on page 80

## What is a device?



A device is a physical or virtual storage media available to a server. A device is directly attached to the server or connected via storage networking protocols.

## How to list devices connected to the servers?

- 1 In UMC, click  Storage > Devices.
- 2 Search or browse the servers to list the devices associated with them.



---

**NOTE:** When the  or tree view  icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.

---

The list of available devices is displayed.

# What happens when a device is initialized?

Initializing a device deletes the partitions and its associated data. If the pool on this device has partitions on other devices, then the entire pool is deleted from those devices.

# What happens when a device is shared?

Sharing a device containing pools set all the pools on the device to shareable. If any of these pools span multiple devices, ensure that each device has the same share setting, otherwise the entire pool may become unusable.

Making a device shareable enables device sharing for those devices in high-availability clusters that you want to be part of a shared-disk storage solution. If the **Shareable for Clustering** option is enabled, the selected storage device can be shared by multiple computers in a cluster.



If a device is a member of a software RAID device, marking the device as shareable for clustering automatically sets all the other member devices of the RAID as shareable for clustering.

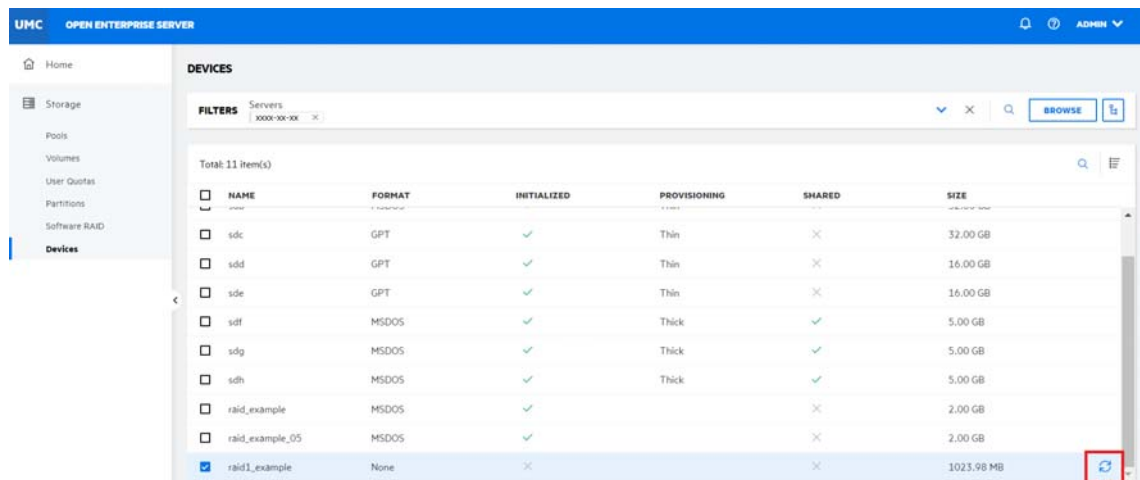
# How can i initialize a device connected to a server?

---

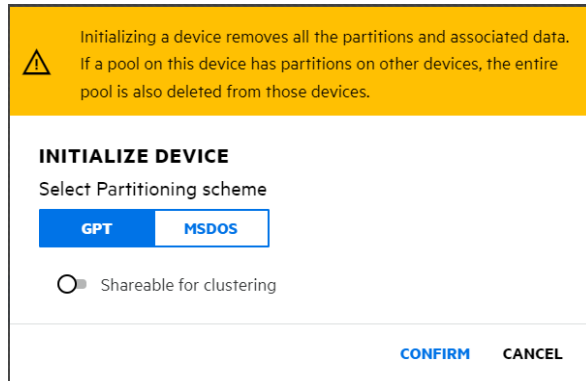
**WARNING:** Do not initialize the device that contains the operating system.

---

- 1 In UMC, click  **Storage > Devices**.
- 2 Search or browse the servers to list the devices associated with them.
- 3 Select the device, click More Options  icon, and then click **Initialize Icon**.



- 4 Select the partitioning scheme, click **Shareable for clustering** option for device sharing if required, and then click **CONFIRM**.
  - ◆ You can select the DOS partition table scheme that supports devices up to 2TB in size. It allows up to four partitions on a device.
  - ◆ You can select the GPT partition table scheme that supports device size up to 2E64 sectors (that is, up to 8388608petabytes (PB) based on the 512-byte sector size). It allows up to 128 partitions per disk. Each of its disks partitions is a logical device that is identified by a unique 128-bit (16-byte) GUID.



The status of the initialized device reflects in the device list.

## Why I need to reinitialize a device?



You can reinitialize an already initialized device if it is unusable. A device's reinitialization is an operation to clean up a device to start fresh in the event of a corruption or other similar event.

## How can i reinitialize a device?


---

**NOTE:** The **Reinitialize** option is available only if the device is already initialized.

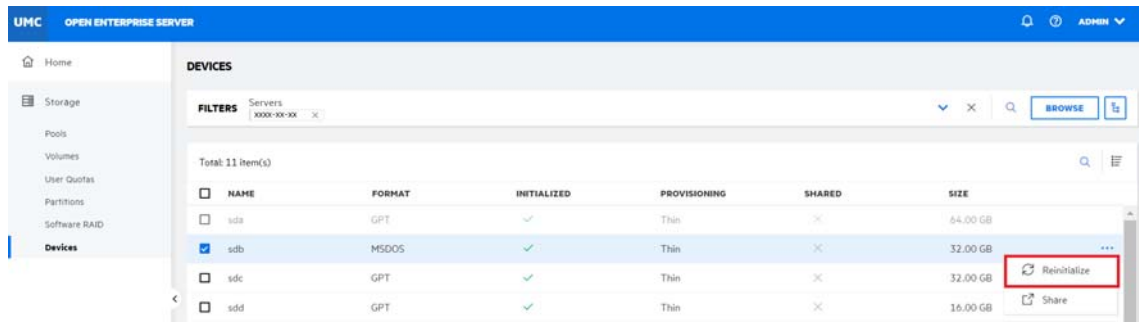
---

- 1 In UMC, click  **Storage > Devices**.
- 2 Search or browse the servers to list the devices associated with them.
- 3 Select an initialized device, click More Options  icon, and then select **Reinitialize**.

---

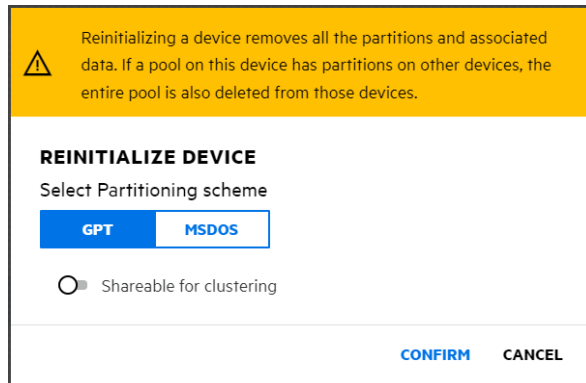
**NOTE:** If you select multiple devices, the More Options  icon is available at the top right corner of the table.

---



4 Select the partitioning scheme, click **Shareable of clustering** option if required, and then click **CONFIRM**.

- ◆ You can select the DOS partition table scheme that supports devices up to 2TB in size. It allows up to four partitions on a device.
- ◆ You can select the GPT partition table scheme that supports device sizes up to 2E64 sectors (that is, up to 8388608petabytes (PB) based on the 512-byte sector size). It allows up to 128 partitions per disk. Each of its disks partitions is a logical device that is identified by a unique 128-bit (16-byte) GUID.



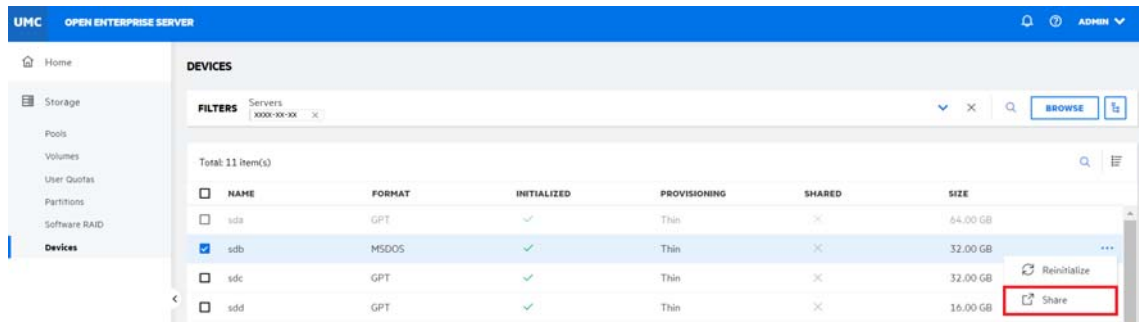
The status of the reinitialized device reflects in the device list.

## How to share or unshare an initialized device?

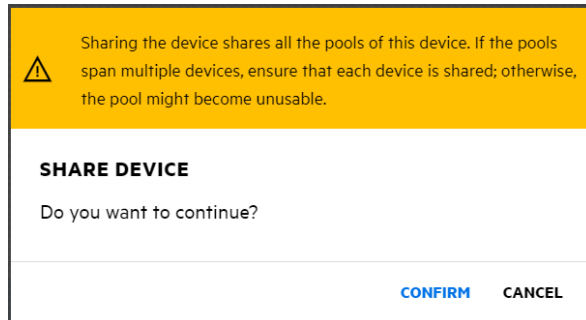
- 1 In UMC, click **Storage > Devices**.
- 2 Search or browse the servers to list the devices associated with them.
- 3 Select an initialized device, click More Options icon, and then select **Share**.

**NOTE:** If you select multiple devices, the More Options icon is available at the top right corner of the table.





4 Click **CONFIRM** to share the selected device.



The status of the selected device reflects in the device list.

---

**NOTE:** The device is unshared following the same procedure. Unsharing a device fails if the device contains a pool (or any segment of a pool) that is cluster-enabled.

---



# 11 Managing Files and Folders

This chapter describes the procedures for various file and rights management actions performed on files and folders that have objects defined in the eDirectory.

---

**NOTE:** Ensure that all the servers are updated to OES 2023 Update 3 to use the new files and folders plug-in.

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- ♦ [“File Management” on page 83](#)
- ♦ [“Rights Management” on page 91](#)


## File Management

You can create, list, move, change owner, set directory quota, modify attributes, rename, move, delete, list deleted files, salvage, and purge deleted files here.

- ♦ [“How to view files and folders?” on page 83](#)
- ♦ [“How to create a new folder?” on page 84](#)
- ♦ [“How to modify properties of a volume, file, or folder?” on page 84](#)
- ♦ [“How to modify directory quota of a volume or folder?” on page 86](#)
- ♦ [“How to modify owner of a volume, file, or folder?” on page 86](#)
- ♦ [“How to modify attributes of a volume, file, or folder?” on page 87](#)
- ♦ [“How to view deleted files and folders?” on page 88](#)
- ♦ [“How to delete files and folders?” on page 88](#)
- ♦ [“How to salvage the deleted files and folders?” on page 88](#)
- ♦ [“How to purge the files and folders?” on page 89](#)
- ♦ [“How to rename a file or folder?” on page 89](#)
- ♦ [“How to move files and folders in a volume?” on page 89](#)
- ♦ [“How to resolve file move conflicts?” on page 90](#)

## How to view files and folders?

To view files and folders in a volume, perform the following steps:



1. Click **Files and Folders**  and use any one option to select the servers.
  - ♦ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ♦ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click the Volume **Name** to view the files and folders in it.

## How to create a new folder?

Ensure to complete the following prerequisites before creating a folder in UMC.

- ◆ Users must have sufficient trustee rights to create folder at selected path.
- ◆ Target path or folder must be in the same tree as the logged-in user.


To create new folder in a volume, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click the volume **Name** > **Add New Folder**  to create a new folder at folder level.

---



**NOTE:** You can perform the same action in a folder to create new sub folder.

---

3. Specify the new folder name and click **Confirm**.
4. (Optional) Select the newly created folder, click **More Options**  > **Properties** to view the folder details and trustees.
5. (Optional) Set the directory quota, owner, attributes, and trustees for the selected folder.

## How to modify properties of a volume, file, or folder?

To modify the properties of a volume, file, or folder, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click the volume **Name** to select the required file or folder, click **More Options**  > **Properties**.

The properties page consists of **Details** and **Trustees** tabs.

### Details tab

On the **Details** tab, you can modify Quota, Created By, and Attributes.

- ◆ **Quota:** Modify the existing quota in the **New Quota** field, select KB, MB, GB, or TB from the Units drop-down list, and then click **Confirm**.

### Modify Directory Quota

Directory VOL1

Used quota 0 Byte

Current quota 8.00 EB

New quota\*

Adjustment 0 Byte

- ◆ **Modify Owner:** In this page, you can browse the server and select the required user or group to change the Owner.

### Modify Owner

Folder

Current User/Group

Identity Source   Object Type

9 Object(s) found in microfocus.

<input type="checkbox"/> blr8-	<input type="checkbox"/> OESCommonProxy_blr8-	<input checked="" type="checkbox"/> admin ✓	<input type="checkbox"/> admingroup
<input checked="" type="checkbox"/> > microfocus ✓	<input type="checkbox"/> blr8	<input type="checkbox"/> novxregd	<input type="checkbox"/> novksrvd
	<input type="checkbox"/> novxtier	<input type="checkbox"/> www	<input type="checkbox"/> wwwrun

- ◆ **Attributes:** Turn on or turn off the toggle switch and click **Save** to modify the required attributes.

### Attributes

Archive	<input type="checkbox"/>
Hidden	<input type="checkbox"/>
Immediate Compression	<input checked="" type="checkbox"/>
Immediate Purge	<input type="checkbox"/>
Inhibit Delete	<input type="checkbox"/>
Inhibit Rename	<input type="checkbox"/>
Read Only	<input type="checkbox"/>




## Trustees tab

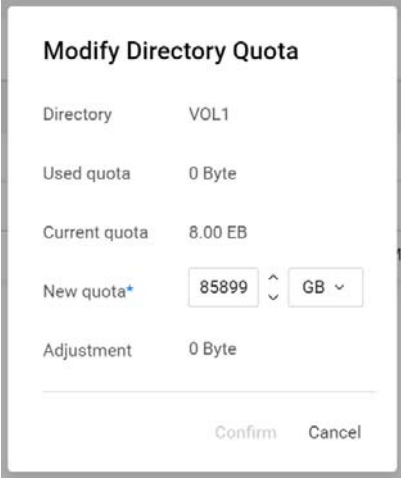
On the **Trustees** tab, you can view, add, and remove trustees with **Manage** option.






- ◆ **Refresh**: This option refresh the list of trustees for the selected volume, file, or folder.
- ◆ **Manage**: This action guides to right management page to manage trustee rights for the selected volume, file, or folder.

## How to modify directory quota of a volume or folder?

The directory quota for a volume or folder is not enabled by default. To modify the directory quota, perform the following steps:


1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click the volume **Name** to select the required folder, click More Options  > **Properties**.
3. On the **Details** tab > **Quota**, click **Modify Quota** .
4. In the **Modify Directory Quota** box, update the new quota details, and then click **Confirm**.





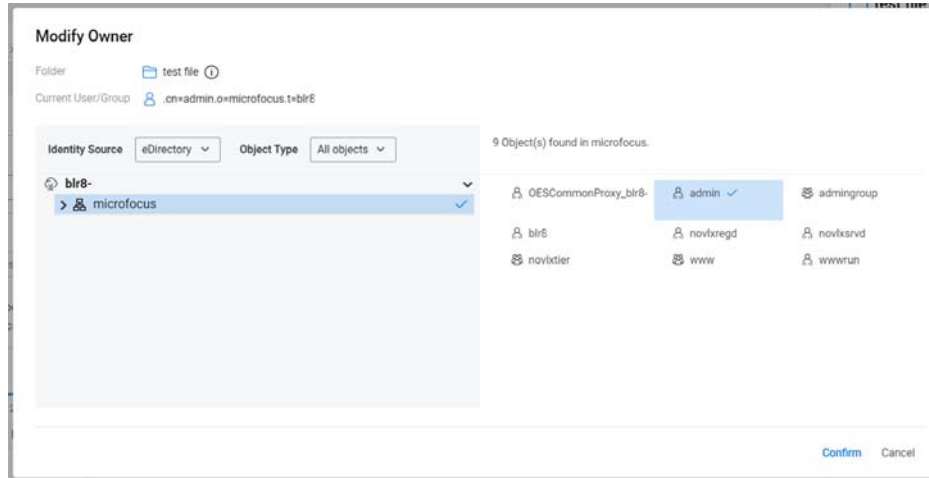
Modify Directory Quota	
Directory	VOL1
Used quota	0 Byte
Current quota	8.00 EB
New quota*	85899   GB 
Adjustment	0 Byte
<hr/>	
 	

## How to modify owner of a volume, file, or folder?

To modify owner of a volume, file, or folder, perform the following steps:



1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.

2. Select the volume or click the volume **Name** to select the required file or folder, click **More Options**  > **Properties**.
3. On the **Details** tab > **Created By**, click **Modify user/group** .
4. On the **Modify Owner** page, browse the server to select the required user or group, and then click **Confirm**.



## How to modify attributes of a volume, file, or folder?

To modify attributes of a volume, file, or folder, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click the volume **Name** to select the required file or folder, click **More Options**  > **Properties**.
3. On the **Details** tab > **Attributes**, turn on or turn off the toggle switch, and then click **Save**.

### Attributes



- |                       |                                     |
|-----------------------|-------------------------------------|
| Archive               | <input type="checkbox"/>            |
| Hidden                | <input type="checkbox"/>            |
| Immediate Compression | <input checked="" type="checkbox"/> |
| Immediate Purge       | <input type="checkbox"/>            |
| Inhibit Delete        | <input type="checkbox"/>            |
| Inhibit Rename        | <input type="checkbox"/>            |
| Read Only             | <input type="checkbox"/>            |

Save

Cancel

## How to view deleted files and folders?

To view deleted files and folders, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the folder in it, click **More Options** , and then select **Deleted Files & Folders**.



The list displays the deleted files and folders of the selected folder with the related information. You can salvage or purge these deleted files and folders if necessary.

- ◆ **Salvage:** You can restore the deleted files and folders using the **Salvage** option in **Deleted Files & Folders** location.
- ◆ **Purge:** You can permanently delete the deleted files and folders using the **Purge** option in **Deleted Files & Folders** location. Purged files and folders cannot be restored.

## How to delete files and folders?



The deleted files and folders can be restored or permanently deleted from the **Deleted Files & Folders** location if required.

To delete files and folders in a volume, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume name to select the required files and folders, click **More Options** , and then select **Delete**.
3. Click **Confirm** to delete the selected files and folders.

## How to salvage the deleted files and folders?

To salvage or restore the deleted files and folders, perform the following steps:



1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the folder in it, click **More Options** , and then select **Deleted Files & Folders**.
3. In the **Deleted Files & Folders** list, select the files and folders to restore, and then click **Salvage**.



The salvaged files and folders are restored to their respective locations.

## How to purge the files and folders?



To purge or permanently delete the files and folders, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the folder in it, click **More Options** , and then select **Deleted Files & Folders**.
3. In the **Deleted Files & Folders**, select the required files and folders to permanently delete, and then click **Purge**.

The purge permanently deletes the selected files and folders from the volume and cannot be restored.

## How to rename a file or folder?



To rename a file or folder, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume **Name** to select the file or folder in it, click **More Options** , and then select **Rename**.
3. Specify the New Name and click **Confirm**.


The list displays the selected file or folder with the new name.

## How to move files and folders in a volume?

To move files and folders in a volume, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume **Name** to select the files and folders in it, click **More Options** , and then select **Move**.
3. In **Move Files** wizard, the File Information page lists the selected files and folders for move, click **Next**.

4. In the Target Location page, select the folder to move the selected files and folders, and click **Next**.

(Optional) You can click **Add New Folder** , specify the new folder name, and click  option to create new destination folder.

5. In the Summary page, verify the **Source** and **Destination** location, and then click **Finish**.

---



**NOTE:** **Resolve Conflicts** window is displayed, if the same file name exists in the destination location. To resolve this issue, see [“How to resolve file move conflicts?”](#) on page 90.


---

The selected files and folders are moved to the new target location.

## How to resolve file move conflicts?

To resolve file move conflicts, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume **Name** to select the files and folders in it, click **More Options** , and then select **Move**.
3. In **Move Files** wizard, the File Information page lists the selected files and folders for move, click **Next**.
4. In the Target Location page, select the folder to move the selected files and folders, and click **Next**.

(Optional) You can click **Add New Folder** , specify the new folder name, and click  option to create new destination folder.

5. In the Summary page, verify the **Source** and **Destination** location, and then click **Finish**.

Note: If the same file or folder names exists in the target location, **Resolve Conflicts** window is displayed.

6. In the **Resolve Conflicts** window, **Keep both** is selected as default, specify the **Prefix** or **Suffix** to rename all the conflicting files and folders.

You can also use **Overwrite** to replace the conflicting files and folders or **Skip** to ignore them.

7. Click **Continue** to finish the process.



# Rights Management

In Rights Management, you can add users or groups as trustees, modify the rights of existing trustees, replicate user or group rights, enable all rights for user or group, and remove all rights for user or group. For eDirectory users and groups, to view and modify the file system rights, you should either be an eDirectory administrator or a user who has administrative privileges.

- ♦ [“How to add trustee\(s\) for a volume, file, or folder?” on page 91](#)
- ♦ [“How to modify trustee rights for users and groups?” on page 92](#)
- ♦ [“How to view trustee rights of a volume, file, or folder?” on page 92](#)
- ♦ [“How to enable all rights for users and groups?” on page 92](#)
- ♦ [“How to disable all rights for users and groups?” on page 93](#)
- ♦ [“What are the various trustee rights?” on page 93](#)
- ♦ [“What are effective rights?” on page 94](#)
- ♦ [“How to view effective rights of users and groups?” on page 94](#)
- ♦ [“What are inherited rights?” on page 95](#)
- ♦ [“How to view inherited rights of a user or group?” on page 95](#)
- ♦ [“How to use inherited rights filter?” on page 95](#)
- ♦ [“How to copy or replicate rights of a user or group to other users and groups in the context tree?” on page 96](#)
- ♦ [“How to remove trustees for a selected path?” on page 96](#)

## How to add trustee(s) for a volume, file, or folder?



To add trustee(s) for a volume, file, or folder, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ♦ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ♦ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume **Name** to select file or folder in it, click **More Options** , and then select **Manage Rights**.
3. On the **Manage Rights** page, click **Add Trustee**.
4. In the tree, select the servers to list the context users.
5. Select the users and groups, and then click **Confirm**.

The trustee rights for the newly added users and groups can be modified if necessary.

## How to modify trustee rights for users and groups?



To modify trustee rights for users and groups, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. On the **Manage Rights** page, select checkbox to modify the rights for the required users and groups, and then click **Apply Changes**.

S	R	W	C	E	M	F	A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## How to view trustee rights of a volume, file, or folder?



To view and manage trustee rights of a volume, file, or folder, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.

The list displays the trustees and their rights on the selected volume, file, or folder. You can view, modify, add, remove, and replicate trustee rights here.

## How to enable all rights for users and groups?

To enable all rights for users and groups, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. On the **Manage Rights** page, select the users and groups.

---

**NOTE:** Use **Add Trustee** option to add users and groups if necessary.



---

4. Click **More Options** , select **Enable all rights**, and then click **Apply Changes**.

All rights are enabled for the selected users and groups.

## How to disable all rights for users and groups?

To disable all rights for users and groups, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. On the **Manage Rights** page, select the users and groups.

---

**NOTE:** Use **Add Trustee** option to add users and groups if necessary.

---

4. Click **More Options** , select **Remove all rights**, and then click **Apply Changes**.

All rights are disabled for the selected users and groups.

## What are the various trustee rights?

The table shows the list of available file-system trustee rights.

File-System Trustee Rights	Description
Supervisor (S)	<p>Grants the trustee all rights to the directory or file and any subordinate items.</p> <p>The Supervisor right cannot be blocked with an IRF (Inherited Rights Filter) and cannot be revoked. Users who have this right can also grant other users any rights to the directory or file and can change its Inherited Rights Filter.</p> <p>Default = Off</p>
Read (R)	<p>Grants the trustee the ability to open and read files, and open, read, and execute applications.</p> <p>Default = On</p>
Write (W)	<p>Grants the trustee the ability to open and modify (write to) an existing file.</p> <p>Default = Off</p>
Create (C)	<p>Grants the trustee the ability to create directories and files and salvage deleted files.</p> <p>Default = Off</p>



File-System Trustee Rights	Description
Erase (E)	<p>Grants the trustee the ability to delete directories and files.</p> <p>Default = Off</p>
Modify (M)	<p>Grants the trustee the ability to rename directories and files, and change file attributes. It does not allow the user to modify the contents of the file.</p> <p>Default = Off</p>
File Scan (F)	<p>Grants the trustee the ability to view directory and file names in the file system structure, including the directory structure from that file to the root directory.</p> <p>Default = Off</p>
Access Control (A)	<p>Grants the trustee the ability to add and remove trustees for directories and files, to modify the rights assigned for trustees, and set the inherited rights filters.</p> <p>This right does not allow the trustee to add or remove the Supervisor right for any user. Also, it does not allow to remove the trustee with Supervisor right.</p> <p>Default = Off</p>

## What are effective rights?

The effective rights granted to a trustee are a combination of explicit rights set at volume root or rights set on the file or folder and the inherited rights. Inherited rights are overridden by rights that are assigned explicitly for the trustee on a given path. If there are no trustees listed for effective rights, then the effective rights are the same as the inherited rights.

## How to view effective rights of users and groups?

To view the effective rights of users and groups, perform the following steps:




1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. Select the **Effective & Inherited Rights** tab to list the users and groups, and their effective rights.

## What are inherited rights?

The inherited rights are trustee rights of subdirectories and files inherited from their parent directory. Typically, you set rights that you want to flow down to all users by assigning a Group object as the trustee of a directory located at the root of the volume. The trustee rights flow down through the file tree structure to its child subdirectories and files.

## How to view inherited rights of a user or group?

To view the inherited rights of a user or group, perform the following steps:



1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. Select the **Effective & Inherited Rights** tab to list the users and groups, select the user or group, click **View Inherited Rights** .

The page displays the details of the inherited rights filters and effective rights of the user or group for the source file.

## How to use inherited rights filter?




Enabling inherited rights applies all the rights of the parent directory to the child directory. Disabling it restricts the rights to flow from the parent directory to the child directory.


To use the inherited rights filter, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the server.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. Click **Inherited Rights Filter**, turn on or turn off the toggle switch to enable or disable inherited rights for all the selected users and groups for the file or folder.

## How to copy or replicate rights of a user or group to other users and groups in the context tree?

To copy or replicate rights of a user or group to other users and groups in the context tree, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. In **Manage Rights** page, select the user or group, click **More Options** , and then select **Replicate**.
4. In **Replicate Rights** wizard, search or browse to list users and groups from the context tree.
5. Select the users and groups, and then click **APPLY**.




The selected users and groups displayed in the list and can be removed using **Remove**  option if necessary.

6. In **Replicate Rights** wizard, click **Confirm**.

The selected users and groups from the context tree must have the same rights of the user or group selected in **Manage Rights** page.

## How to remove trustees for a selected path?

To remove trustees for a selected path, perform the following steps:

1. Click **Files and Folders**  and use any one option to select the servers.
  - ◆ Click the **Search** icon, specify the required server name and select it from the drop-down list to view the available volumes.
  - ◆ Click **BROWSE**, select the required servers from the tree, and then click **APPLY**.
2. Select the volume or click volume **Name** to select the file or folder in it, click **More Options** , and then select **Manage Rights**.
3. In **Manage Rights** page, select the users and groups, click **More Options** , and then select **Remove**.
4. In **Remove Trustee** box, click **Remove**.

The access for the trustees are removed for the selected path.





# 12 Troubleshooting

This section presents the information on some of the troubleshooting issues in UMC.

- ♦ [“Known Issues” on page 97](#)
- ♦ [“Login Failures” on page 98](#)
- ♦ [“Failing to List Pools or Volumes” on page 98](#)
- ♦ [“Unable to Perform Storage Operations as an Admin Equivalent User” on page 98](#)
- ♦ [“Action to Perform in case of Cache-Related Issues” on page 98](#)
- ♦ [“Creating Volume with AES 256 Encryption Failed” on page 98](#)
- ♦ [“Renaming Cluster Pool or Volume Failed” on page 98](#)

## Known Issues

- ♦ Creating a pool on a shared device is not allowed if the setup is not cluster configured.
- ♦ If the pool object already exists, joining the pool to an AD domain will fail. Clean up the object in the active directory and try again.
- ♦ When the  or tree view  icon is clicked, you cannot perform other actions outside the browse area. Click the same button again to close the browse or tree view area.
- ♦ Modifying the identity source and object type filters in the object browser may not work during the users and groups selection.
- ♦ Configuring UMC on OES 2023 removes any existing Postgres database configuration. Therefore, if an OES server is upgraded from OES 2018 SP3 or earlier on which the Postgres database is already configured and is being used by any of the customer applications, it is recommended not to configure UMC on such an upgraded OES 2023 server.
- ♦ If you cannot login to UMC after a system crash, restart the docker service and edirapi container service using the following commands:

```
systemctl restart docker.service
systemctl restart docker-edirapi.service
```
- ♦ If you cannot browse through UMC after logging into it, ensure that the Compare, Read, and Write permissions on **All Attributes Rights** and the Browse permission on **Entry Rights** are enabled at the tree level for the logged-in users.
- ♦ If the UMC screen is not properly displayed or scaled on the web browser, ensure to set the display resolution to 1920 x 1080 or 1920 x 927 and the zoom level to 100%.

## Login Failures

Ensure that edirapi container, micro focus UMC server, and postgres services are working properly.

Use the commands `systemctl status docker-edirapi.service`, `systemctl status microfocus-umc-server.service`, and `systemctl status postgresql.service`.

## Failing to List Pools or Volumes

Make sure that micro focus backend service is working properly. Use the command `systemctl status microfocus-umc-backend.service`.

## Unable to Perform Storage Operations as an Admin Equivalent User

Try performing `/ForceSecurityEquivalenceUpdate` from the NSS console.

## Action to Perform in case of Cache-Related Issues

Make sure to clear the browser cookies or perform UMC operations from a private window.

## Creating Volume with AES 256 Encryption Failed

Before creating a volume, perform `/PoolMediaUpgrade=pool_name /MediaType=AES` from NSS console.

## Renaming Cluster Pool or Volume Failed

Renaming a cluster pool or volume may show inconsistent behavior. If you are unable to list pools or volumes after renaming, open UMC from another window in incognito mode.

# A Appendix

This section provides some additional information on UMC.

- ♦ [“Log Files” on page 99](#)
- ♦ [“Service details” on page 99](#)

## Log Files

Check the below-mentioned logs for UMC issues related to debugging.

- ♦ UMC Server Details:

```
/var/opt/novell/log/umc/apps/umc-server/server.log
```

```
/var/opt/novell/log/umc/apps/umc-server/error.log
```

- ♦ OES-REST related messages:

```
/var/log/messages
```

## Service details

To resolve the service issues, use the following commands:

- ♦ To check details of edirapi service - `systemctl status docker-edirapi.service`
- ♦ To check details of PostgreSQL database server - `systemctl status postgresql.service`
- ♦ To check details of UMC REST API backend services - `systemctl status microfocus-umc-backend.service`
- ♦ To check details of UMC REST API Server service - `systemctl status microfocus-umc-server.service`
- ♦ To check details of Apache Webserver - `systemctl status apache2.service`
- ♦ To check details of Tomcat Servlet Container for OES services - `systemctl status novell-tomcat.service`

