Monitoring and Reporting for an OnCommand Account

This chapter contains the following sections:

About Monitoring and Reporting for an OnCommand Account

Cisco UCS Director displays all managed and discovered components in a NetApp OnCommand account that manages the NetApp ONTAP accounts. These components can be hardware or software. You can also add a component and set up a component, and view reports for each of the discovered or added components.

Components You Can Monitor

The components in the NetApp OnCommand account are as follows:

- Filers

- VMs

- Aggregates

- Volumes

- Qtree

- Quotas

- LUNs

- Disks

- Initiator Groups

- Initiators

- License

- SnapMirrors

- vFilers

- IP Spaces

- Interfaces

- FC Adapters

- NFS Exports

- CIFS Shares

About Disks

Disks are grouped together in an aggregate. These aggregates provide storage to the volumes that are associated with the aggregate.

When you click **Disks**, all the disks that are available in that account are displayed. Click the row of the disk and then click **View Details** to view the summary details of the disk.

Managing Filers

The NetApp filer, known also as NetApp Fabric-Attached Storage (FAS), functions in an enterprise-class storage area network (SAN) as well as a networked storage appliance. It can use file-based protocols such as NFS, CIFS, FTP, TFTP, and HTTP. Filers can also serve data over block-based protocols such as Fibre Channel (FC), Fibre Channel over Ethernet (FCoE), and iSCSI. NetApp Filers implement their physical storage in large disk arrays.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Managing Virtual Machines

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **VMs**.

When you choose a VM, the following additional actions appear:

Action	Description
View Details	Displays summary and service request details of the VM.
Stack View	Displays the stack view of the VM.
Access VM Credentials	Displays the credentials of the VM. **Note** If permissions are given during VM creation, the details for the particular group/admin users will be displayed. An "Access denied" message is shown if access is not provided.
Launch VM Client	Launch the VM client through one of the following access scheme: • Web Access • Remote Desktop • VMRC Console **Note** Launch access can also be defined during VM creation. If permission is granted, you can launch the VM using any of the above options.

Action	Description
Assign VM	Assigns the VM to a user group and a user. To assign the VM to a user group and a user, complete the following fields: • **VM Name** field—*Display Only*. The name of the VM. • **User Group** drop-down list—Choose a user group to which you want to assign the VM. **Note** You can choose only groups with valid virtual data center (VDC). • **Assign to Users** check box—Check this check box to assign the VM to a user. Choose a user from the **User** drop-down list that appears when you choose the **Assign to Users** check box. • **vDC** drop-down list—Choose a vDC from the list. • **Category** drop-down list—Choose a category under which the VM needs to be categorized. • **VM User Label** field—The label for the VM user. • **Set Provision Time** check box—Check this check box to set the time at which the VM needs to be provisioned. Set the date and time in the **Provision Date/Time** field that appears when you choose the **Set Provision Time** check box. • **Comments** field—Comments, if any.
Configure Lease Time	Sets the lease time for configuring the VM.
Resize VM	Resizes the VM. To resize the VM, complete the following fields: 1. **VM Name** field—*Display Only*. The name of the VM. 2. **Current Allocated CPU** field—*Display Only*. The current size of CPU allocated to the VM. 3. **Current Allocated Memory (GB)** field—*Display Only*. The current allocated memory of the VM. 4. **New CPU Count** drop-down list—Choose the new CPU size of the VM. 5. **New Memory** drop-down list—Choose the new memory size of the VM.

Action	Description
Power ON	Turns on the VM.
	To turn on the VM, complete the following fields:
	1. **VM Name** field—*Display Only*. The name of the VM.
	2. **Task** field—*Display Only*. The task to be applied for the VM.
	3. **Comments** field—Comments, if any.
	4. **Schedule Action** Pane—Choose **Execute Now** or **Execute Later** to turn on the VM immediately or later.
	Note Once the VM is turned on, execute the VM level inventory collection to get the updated IP address.
Power OFF	Turns off the VM.
	To turn off the VM, complete the following fields:
	1. **VM Name** field—*Display Only*. The name of the VM.
	2. **Task** field—*Display Only*. The task to be applied for the VM.
	3. **Comments** field—Comments, if any.
	4. **Schedule Action** Pane—Choose **Execute Now** or **Execute Later** to turn off the VM immediately or later.

Creating a VLAN

You can partition a single layer-2 network to create multiple distinct broadcast domains, which are mutually isolated so that packets can only pass between them through one or more routers. This domain is referred to as a VLAN.

Step 1 Choose **Physical** > **Storage**.

Step 2 On the **Storage** page, choose the pod.

Step 3 On the **Storage** page, click **Storage Accounts**.

Step 4 Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5 Click **Filers**.

Step 6 Click the row of the filer you want to manage and then click **View Details**.

Step 7 Click **Interfaces**.

Step 8 Click **Create VLAN**.

Step 9   On the **Create VLAN** screen, complete the following fields:

Name	Description
Select Interface drop-down list	Choose a network interface from the list of interfaces that shows both the physical interface and interface groups.
vLAN ID field	ID of the VLAN. **Note** The VLAN ID must be in the range from 0 to 4094.

Step 10   Click **Create**.

Step 11   Click the VLAN to perform the following actions:

Name	Description
View Details drop-down list	Displays the service request details of the VLAN.
Delete field	Deletes the selected VLAN after confirmation.

What to do next

Assign an IP space to a VLAN where an IP space defines a distinct IP address space in which Filer units can participate.

Managing IP Spaces

An IP space defines a distinct IP address space in which vFiler units can participate. IP addresses defined for an IP space are applicable only within that IP space. A distinct routing table is maintained for each IP space. No cross-IP space traffic is routed.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click the **IP Spaces** tab.

When you choose an IP Space, the following additional actions appear:

Action	Description
Create	Creates an IP space in the filer.
View Details	Displays the service request details of the IP space.
Delete	Deletes the selected IP space after confirmation.

Action	Description
Assign	Assigns the IP space to a VLAN.

Creating an IP Space

Ensure that the VLAN interface is added to the filer.

Step 1	Choose **Physical** > **Storage**.
Step 2	On the **Storage** page, choose the pod.
Step 3	On the **Storage** page, click **Storage Accounts**.
Step 4	Click the row with the NetApp OnCommand account and then click **View Details**.
Step 5	Click **Filers**.
Step 6	Click the row of the filer you want to manage and then click **View Details**.
Step 7	Click **IP Spaces**.
Step 8	Click **Create**.
Step 9	In the **IP Space Name** field, enter the IP space name.
Step 10	Click **Create**.

What to do next

Assign an IP space to a VLAN.

Assigning an IP Space to a VLAN Interface

Before you begin

Ensure that the VLAN interface is added to the filer.

Step 1	Choose **Physical** > **Storage**.
Step 2	On the **Storage** page, choose the pod.
Step 3	On the **Storage** page, click **Storage Accounts**.
Step 4	Click the row with the NetApp OnCommand account and then click **View Details**.
Step 5	Click **Filers**.
Step 6	Click the row of the filer you want to manage and then click **View Details**.
Step 7	Click **IP Spaces**.
Step 8	Click the row of an IP Space to which you want to assign a VLAN interface.
Step 9	Click **Assign**.
	The **Assign IP Space to a vLAN** screen appears.

Step 10   From the **Select VLAN Interface** drop-down list, choose the VLAN interface.

Step 11   Click **Assign**.

Managing vFilers

vFilers are ONTAP 7-mode virtual containers that create separate virtual filer instances within a physical controller. Using vFiler, you can partition the storage and network resources of a single storage system so that it appears as multiple storage systems on the network.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **vFilers**.

When you choose a vFiler, the following additional actions appear:

Action	Description
Create	Creates a vFiler in the NetApp OnCommand account.
Setup	Sets up a vFiler.
Setup CIFS	Sets up a CIFS server for the vFiler.
Stop CIFS	Stops the CIFS service configured for the vFiler.
Delete	Deletes the vFiler.

Action	Description
View Details	Displays a storage summary of the vFiler. Click the tabs in the window for more details about the following vfiler components: • VMs • Volumes • LUNs • Qtrees • Quotas • Initiator groups • Initiators • SnapMirrors • NFS exports • CIFS shares • Service request details **Note** The **Service Request Details** tab is available for all components of the filer, which have been part of a service request. The components that are displayed in this tab are: aggregates, volumes, LUNs, IP spaces, initiator groups, vFilers, OnCommand datasets, and OnCommand groups. The **Service Request Details** tab displays the ID and change description of the service requests that have changed the state of the storage device or component selected. Any storage device or component that has been part of a task in an executed workflow is tracked based on the ID of the service request.
Assign Group	Assigns a vFiler to a group.
Add Hosts	Adds host to the vFiler.
Manage Tag	Adds a tag to the vFiler, edit the assigned tag, and delete the tag from the vFiler group. **Note** The tags that are assigned with the Taggable Entities as physical storage and network device when you create a tag are displayed. For more information on the tab library, see Cisco UCS Director Administration Guide.

Action	Description
Add Tags	Adds a tag to the vFiler. **Note** The tags that are assigned with the Taggable Entities as physical storage and network device when you create a tag are displayed. For more information on the tab library, see Cisco UCS Director Administration Guide.
Delete Tags	Deletes the tag(s) from the vFiler. **Note** The tags that are assigned with the Taggable Entities as physical storage and network device when you create a tag are displayed. For more information on the tab library, see Cisco UCS Director Administration Guide.

Creating a vFiler

Before you begin

Create an IP Space and assign it o a VLAN.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **vFilers**.

Step 8   Click **Create**.

Step 9   On the **Create vFiler** screen, complete the following fields:

Name	Description
Select IP Space Name drop-down list	Choose the IP space to control the configuration of multiple IP address spaces (ipspaces) on a vfiler.
vFiler Name field	A unique name that you assign to this vFiler.
IP Address field	The IP address of the vFiler.
Select Storage Unit field	Choose a storage unit.

Step 10   Click **Create**.

Setting up a vFiler

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **vFilers**.

Step 8   Click the vfiler and click **Setup**.

Step 9   On the **Setup vFiler** screen, complete the following fields:

Name	Description
Root Password field	The root password of the vFiler.
Subnet Mask field	The subnet mask of the vFiler.
Interface Name drop-down list	Choose a VLAN interface.
VLAN ID field	The VLAN ID.
Protocols field	Click **Select** and choose one or all of the protocols that the vFiler supports: • **NFS** • **CIFS** • **iSCSI**

Step 10   Click **Submit**.

Setting up a CIFS Server for a vFiler

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **vFilers**.

Step 8   Click the vfiler and click **Setup CIFS**.

Step 9   On the **Setup CIFS** screen, complete the following fields:

Name	Description
Authentication drop-down list	Choose the authentication style as Active Directory. The authentication style determines the method by which clients are authenticated when connecting to the CIFS server.
Security Style drop-down list	Choose the security style as **NTFS** or **Multiprotocol**. The security style determines whether the CIFS service will support multiprotocol access.
DNS Domain Name field	The name of the domain that the CIFS server will join. It can be NetBIOS or any fully qualified domain name, such as cifsdomain or cifs.domain.com.
Login User field	The name of the domain user who has the ability to add the CIFS server to the domain given in the **DNS Domain Name** field.
Login Password field	The password of the login user.
Organization Unit field	The distinguished name of the organizational unit that the CIFS service will become a member of. By default, the filer will join the 'CN=Computers' organizational unit.
Site Name field	The name of the site that the CIFS service will become a member of.
vFiler Root Password field	The root password of the vFiler.

Step 10   Click **Submit**.
The CIFS service starts automatically when this configuration is completed. You can stop the CIFS service by clicking **Stop CIFS**.

Assigning a vFiler to a Group

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **vFilers**.

Step 8   Click the vFiler to which you want to assign a group and click **Assign Group**.

Step 9   On the **Select Group** screen, complete the following fields:

Name	Description
Assign to Users check box	Check this box to assign the vFiler to a user. Choose a user to which vFiler has to be assigned from the **User** drop-down list that appears when you check the **Assign to Users** check box.
Name drop-down list	Choose a group to which vFiler has to be assigned.

Name	Description
Label field	The label for the assigned group.

Step 10   Click **Submit**.

Managing Aggregates

An aggregate is a collection of one or two plexes, depending on whether you take advantage of RAID-level mirroring. A plex is a collection of one or more RAID groups that provide the storage for one or more file system volumes. If the aggregate is unmirrored, it contains a single plex.

Aggregates are used to manage plexes and RAID groups because these entities only exist as part of an aggregate. You can increase the usable space in an aggregate by adding disks to existing RAID groups or by adding new RAID groups. After disks are added to an aggregate, you cannot remove them to reduce storage space without deleting the aggregate.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **Aggregates**.

When you choose an aggregate, the following additional actions appear:

Action	Description
Create	Creates an aggregate in the NetApp OnCommand account.
Delete	Deletes an existing aggregate.
Online	Moves the aggregate to an online state.
Offline	Moves the aggregate to an offline state.
Add Disk	Adds a disk to the aggregate.
Manage Tag	Adds a tag to the aggregate, edits the assigned tag, and deletes the tag from the aggregate group. **Note** The tags for which the Taggable Entities are assigned as physical storage and NetApp aggregate are displayed. For more information on the tab library, see Cisco UCS Director Administration Guide.

Action	Description
Add Tags	Adds a tag to the aggregate. **Note** The tags for which the Taggable Entities are assigned as physical storage and NetApp aggregate are displayed. For more information on the tab library, see Cisco UCS Director Administration Guide.
Delete Tags	Deletes the tag(s) from the aggregate. **Note** The tags for which the Taggable Entities are assigned as physical storage and NetApp aggregate are displayed. For more information on the tab library, see Cisco UCS Director Administration Guide.

Managing Initiator Groups

An initiator group (igroup) specifies which initiators can have access to a LUN. When you map a LUN on a storage system to an initiator group, you grant all the initiators in that group access to that LUN.

Step 1 Choose **Physical** > **Storage**.

Step 2 On the **Storage** page, choose the pod.

Step 3 On the **Storage** page, click **Storage Accounts**.

Step 4 Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5 Click **Filers**.

Step 6 Click the row of the filer you want to manage and then click **View Details**.

Step 7 Click **Initiator Groups**.

When you choose an initiator group, the following additional actions appear:

Action	Description
Create	Creates an initiator group to the NetApp OnCommand account.
View Details	Displays the service request details of the selected initiator group.
Delete	Deletes the initiator group.
ALUA	Enables the Asymmetric Logical Unit Access (ALUA) protocol to identify optimized paths between a storage system and a host.

Creating an Initiator Group

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **Initiator Groups**.

Step 8   Click **Create**.

Step 9   On the**Create Initiator Group** screen, complete the following fields:

Name	Description
Initiator Group Name	A unique name that you assign to this initiator group.
Group Type drop-down list	Choose the type of the initiator group as one of the following: • **iSCSI** • **FCP**
OS Type drop-down list	Choose the OS type of the initiators within the group.
Portset field	Name of a current port set to bind to the newly created igroup.

Step 10   Click **Create**.

Managing Initiators

In a NetApp SAN environment, hosts are initiators and storage appliances are targets which have storage target devices that are referred to as LUNs.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **Initiators**.

The following action appears:

Action	Description
Create	Adds an initiator to the NetApp OnCommand account.

When you choose an initiator, the **Delete** option appears. The **Delete** option is used to delete the initiator.

Creating an Initiator

An initiator is a part of an initiator group. You can add an initiator to an initiator group.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **Initiators**.

Step 8   Click **Create**.

Step 9   On the **Create Initiator** screen, complete the following fields:

Name	Description
Initiator Group Name drop-down list	Choose the initiator group under which the initiator is to be added.
Initiator Name field	A unique name that you assign to this initiator.
Force check box	Check this box to forcibly add the initiator.

Step 10   Click **Create**.

Managing LUNs

A logical unit number (LUN) is used to identify a logical unit, which is a device that is addressed by the SCSI protocol or similar protocols such as Fibre Channel or iSCSI. LUNs are central to the management of block storage arrays shared over a storage area network (SAN).

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **LUNs**.

When you choose a LUN, the following additional actions appear:

Action	Description
Create	Creates an LUN in the NetApp OnCommand account.
View Details	Displays summary and service request details of the LUN.
View Connectivity	Displays connectivity of the LUNs to Datastores. Cisco UCS Director provides the four types of view mode: Hierarchical, Concentric, Circular, and Force Directed. Depending on the view mode that you choose, you can adjust item spacing, distance, radius, rigidity, and force distance.
On/Off	Moves the LUN to the online or offline state.
Map iGroup	Maps the LUN to one of the existing initiator groups. Choose the iGroup from the **Initiator Group** drop-down list. Check the **Specify LUN ID** check box to specify the LUN ID. If not specified, the system generates a LUN ID automatically.
Unmap iGroup	Unmaps the iGroup from the selected LUN after confirmation.
Resize	Resizes the LUN. To resize the LUN, complete the following fields: 1. **LUN Name** field—*Display Only*. The name of the LUN. 2. **Current LUN Size** field—*Display Only*. The current size of the LUN. 3. **New Size** field—The required size of the LUN. 4. **Size Units** drop-down list—Choose the size of the LUN as **MB**, **GB**, or **TB**.
Move	Renames the LUN.
Clone	Clones the LUN in another destination.
Modify ID	Changes the LUN ID.
Delete	Deletes the LUN.

Creating a LUN

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **LUNs**.

Step 8   Click **Create**.

Step 9   On the **Create LUN** screen, complete the following fields:

Name	Description
Select Volume drop-down list	Choose the volume in which you want to add the LUN.
LUN Name field	The name of the LUN.
LUN Size field	The size of the LUN to be created.
Size Unit drop-down list	Choose the size of the volume as **MB**, **GB**, or **TB**.
OS Type drop-down list	Choose the OS type from the list.
Space Reserve check box	By default, the LUN has a reserved space. Check this box to manage the space usage manually and to create a LUN without any space being reserved.

Step 10   Click **Create**.

Managing Volumes

A volume is a logical file system whose structure is made visible to users when you export the volume to a UNIX host through an NFS mount or to a Windows host through a CIFS share. A volume is the most inclusive of the logical containers. It can store files and directories, qtrees, and LUNs.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **Volumes**.

When you choose a volume, the following additional actions appear:

Action	Description
Create	Creates a volume in the NetApp OnCommand account.
View Details	Displays a summary of the volume. Click the tabs in the window for more details about the following volume components: • Qtrees • LUNs • Snapshot • Service request details
Delete	Deletes the volume.
Resize	Resizes an existing volume. To resize the volume, complete the following fields: 1. **New Size** field—The required size of the volume. 2. **Size Units** drop-down list—Choose the size of the volume as **MB**, **GB**, or **TB**. 3. **File System Size Fixed** check box—Check this box to fix the file system size.
Offline	Moves the volume to the offline state.
Online	Moves the volume to the online state.
Dedup On	Enables data deduplication on the volume.
Dedup Off	Disables data deduplication on the volume.
NFS Export	Exports the volume as a file through NFS. To export the volume, complete the following fields: 1. **Export Path** field—The path where the volume should be mounted in the UNIX environment. 2. **Read-Write Hosts** field—The comma-separated list of hosts that have read-write access to the volume. 3. **Root Hosts** field—The comma-separated list of hosts that have root access to the volume. 4. **Security** drop-down list—Choose the security applicable for this export. 5. **Persists NFS Export Rule** check box—Check this box to persist the NFS export rule.

Action	Description
Snapshot	Creates a snapshot of the volume.
	To create a snapshot of the volume, complete the following fields:
	1. **Snapshot Name** field—The name of the snapshot.
	2. **Is Valid LUN Clone Snapshot** check box—Check this check box when the snapshot create has been requested by snapvault so that all backup snapshots for the LUN clones are locked.
	3. **Async** check box—Check this check box to create the snapshot asynchronously.
Resize Snapshot	Resizes the snapshot space allocated on a volume. The space within a volume can be defined for the snapshots taken on a volume in terms of percentage.
	1. **New Percentage (%)**—The percentage of volume space to be reserved for snapshots.

Creating a Volume

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **Volumes**.

Step 8   Click **Create**.

Step 9   On the **Create Flexible Volume** screen, complete the following fields:

Name	Description
Aggregate pane	Check the check boxes to choose an aggregate under which you want to create the volume.

Name	Description
Space Guarantee drop-down list	Choose one of the following as the type of volume guarantee the volume will use: • **Volume** • **File** • **None**
Volume Name field	Name of the volume.
Volume Size field	Size of the volume to be created.
Size Unit drop-down list	Choose the size of the volume as MB, GB, or TB.
Snapshot Size field	The snapshot size in percentage to be used by the volume.
Security Style NTFS check box	Check this box to set security style as NTFS.
NFS Export check box	Check this box to create NFS export path automatically.

Step 10   Click **Create**.

Managing SnapMirror Relationship

NetApp SnapMirror software is an enterprise-level disaster recovery and data distribution solution. SnapMirror mirrors data to one or more network filers at high speed over LAN or WAN connections.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **SnapMirrors**.

The following actions appear:

Name	Description
Create Connection	Set up a new connection or modify existing connection.
Delete Connection	Delete a SnapMirror Connection.
Remote Access	Provide access to remote filer (source filer) to the destination volume.

Name	Description
Schedules	Create SnapMirror schedule
Enable	Turn on SnapMirror.
Disable	Turn off SnapMirror.

On selecting a SnapMirror, the following additional actions appear:

Action	Description
Inventory	Runs a SnapMirror inventory.
View Details	Displays the Status History and allows you to edit, delete and run inventory on a schedule.
Initialize	Initializes a SnapMirror. After initializing a SnapMirror Relationship, you will get the following actions: • **Quiesce**—Pauses transfer to the destination. • **Break**—Breaks the SnapMirrored relationship. You cannot check whether the operation is legal, or whether it is successful. Result will be updated after the inventory collected in this task. • **Update**—Update the SnapMirror relationship.
Delete	Deletes the SnapMirror.

Configuring a SnapMirror Relationship

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **SnapMirrors**.

Step 8   Click **Create Connection**.

Step 9   On the **Configure** screen, complete the following fields:

Name	Description
Connection Name drop-down list	Choose the connection name to modify the connection. Choose **New Connection** to create a new connection.

Name	Description
New Connection Name field	If you have chosen to configure a new connection, enter the name of the connection in the field.
Mode drop-down list	Choose one of the following as the type of mode: • **Multi** • **Failover** **Note** In multi-mode, the first address pair provides a connection path. In failover mode, the first address pair provides the preferred connection path.
Source Address field	The source address in the form of the filer name or IP address in the **Address Pair 1** and **Address Pair 2**area.
Destination Address field	The source address in the form of the filer name or IP address in the **Address Pair 1** and **Address Pair 2**area.

Step 10   Click **Submit**.

Scheduling a SnapMirror

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4   Click the row with the NetApp OnCommand account and then click **View Details**.

Step 5   Click **Filers**.

Step 6   Click the row of the filer you want to manage and then click **View Details**.

Step 7   Click **SnapMirrors**.

Step 8   Click **Schedules**.

Step 9   On the **Schedules** screen, do the following:

a)   Click the **Add** icon in the **Schedules** pane.

b)   On the **Add Entry to Schedule** screen, complete the following fields:

Name	Description
Source Location field	Click **Select** and choose the source locations of a schedule to set.

Name	Description
Select Option drop-down box	Choose one of the following options to choose either an existing volume or a new volume in the current filer or vfiler: • **Existing Destination** • **New Destination**
Destination Location drop-down box	Choose the destination location.
Minutes field	Minutes in the hour for which the schedule is set. Possible values are (-) = match nothing, (1) = match minute 1, (1,3) = match minute 1 and 3, and (*) = match all possible legal values.
Hours field	Hours in the day for which the schedule is set. Possible values are (-) = match nothing, (1) = match hour 1, (1,3) = match hour 1 and 3, and (*) = match all possible legal values.
Days of Month field	Days in the month for which the schedule is set. Possible values are (-) = match nothing, (1) = match day 1, (1,3) = match day 1 and 3, (2-5) = match day 2,3,4,5, and (*) = match all possible legal values.
Days of Week field	Days in the week for which the schedule is set. 0 represents Sunday, and 6 represents Saturday. Possible values are (-) = match nothing, (1) = match day 1 (Monday), (1,3) = match day 1 (Monday) and 3 (Wednesday), (2-5) = match day 2,3,4,5 (Tuesday to Friday), and (*) = match all possible legal values.
Max Transfer Rate (KB) field	Maximum transfer rate kilobytes per second.

    c) Click **Submit**.

Step 10   Click **Submit**.

Managing QTrees and Creating a Quota

A QTree is similar in concept to a partition. It creates a subset of a volume to which a quota can be applied to limit its size. As a special case, a QTree can be the entire volume. A QTree is more flexible than a partition because you can change the size of a QTree at any time.

Step 1   Choose **Physical** > **Storage**.

Step 2   On the **Storage** page, choose the pod.

Step 3   On the **Storage** page, click **Storage Accounts**.

Step 4	Click the row with the NetApp OnCommand account and then click **View Details**.
Step 5	Click **Filers**.
Step 6	Click the row of the filer you want to manage and then click **View Details**.
Step 7	Click **Qtrees**.

When you choose a QTree, the following additional actions appear:

Action	Description
Delete	Deletes a QTree.
Create Quota	Creates a quota in the QTree. 1. In the **Create Quota** window, complete the following fields: **Disk Space Hard Limit (GB)** field—The maximum disk space value in GB. **Disk Space Soft Limit (GB)** field—The soft limit disk space value in GB. **Files Hard Limit** field—The maximum number of files in the quota. **Files Soft Limit** field—The soft limit for the number of files in the quota. **Threshold (GB)** field—The threshold limit disk space value in GB. **Quota Type** drop-down list—Choose **Tree** from the drop-down list. 2. Click **Create**.

Creating a QTree

Step 1	Choose **Physical** > **Storage**.
Step 2	On the **Storage** page, choose the pod.
Step 3	On the **Storage** page, click **Storage Accounts**.
Step 4	Click the row with the NetApp OnCommand account and then click **View Details**.
Step 5	Click **Filers**.
Step 6	Click the row of the filer you want to manage and then click **View Details**.
Step 7	Click **Volumes**.
Step 8	Choose the volume in which you want to create the QTree.
Step 9	From the **More Actions** drop-down-list, choose **Create QTree**.

Step 10   On the **Create QTree** screen, do the following:

a) The selected volume name is displayed in the **Volume Name** field.

b) In the **QTree Name** field, enter the name of the QTree.

Step 11   Click **Create**.