Module 5: Cloud Manager Management Functionality

Exercise 2: Manage Cloud Volumes ONTAP

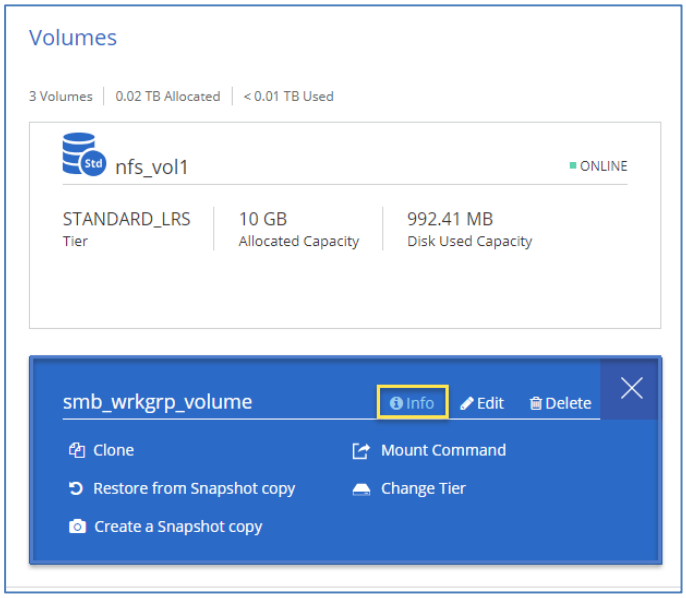
In this exercise, you use Cloud Manager to manage various aspects of a Cloud Volumes ONTAP system, including storage provisioning, modification, and movement. You also use other functions, such as configuring a Network Time Protocol (NTP) server, scheduling a shutdown schedule for Cloud Volumes ONTAP, and using Cloud Manager API commands to administrate Cloud Volumes ONTAP.

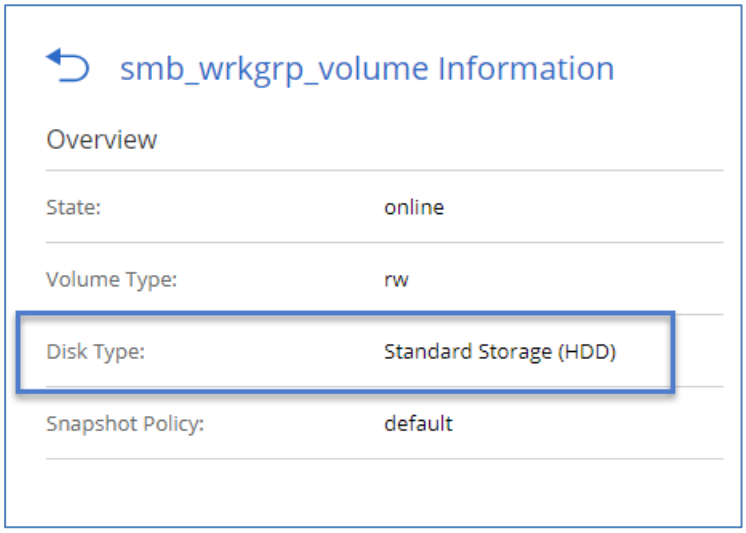
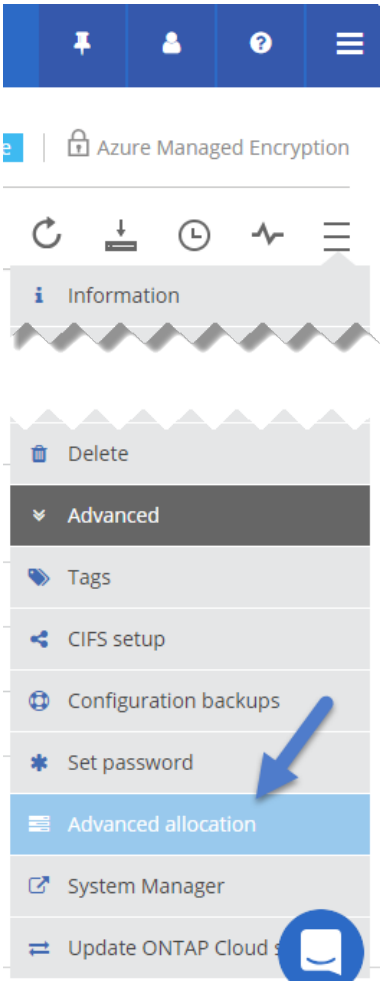
Objectives

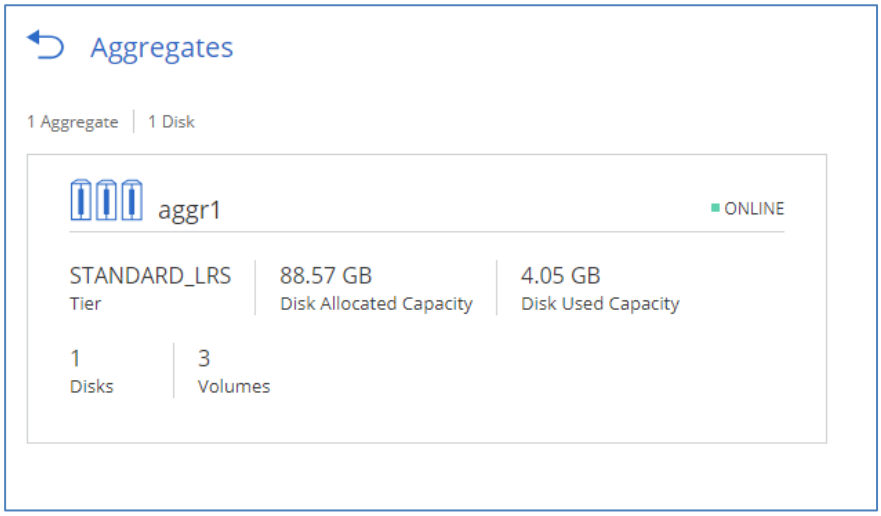
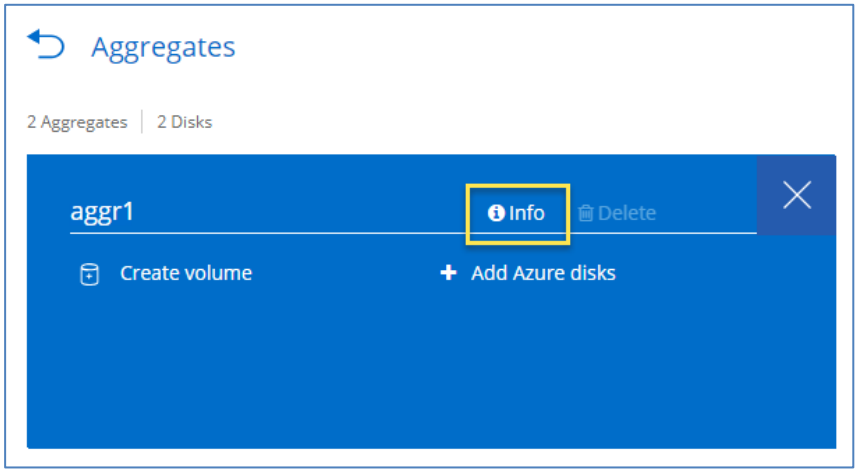
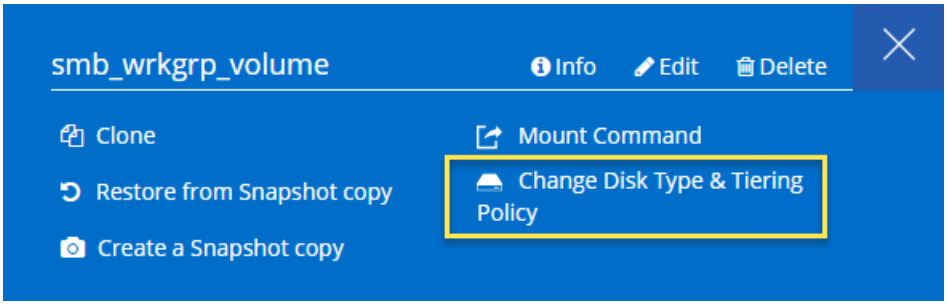
This exercise focuses on enabling you to do the following:

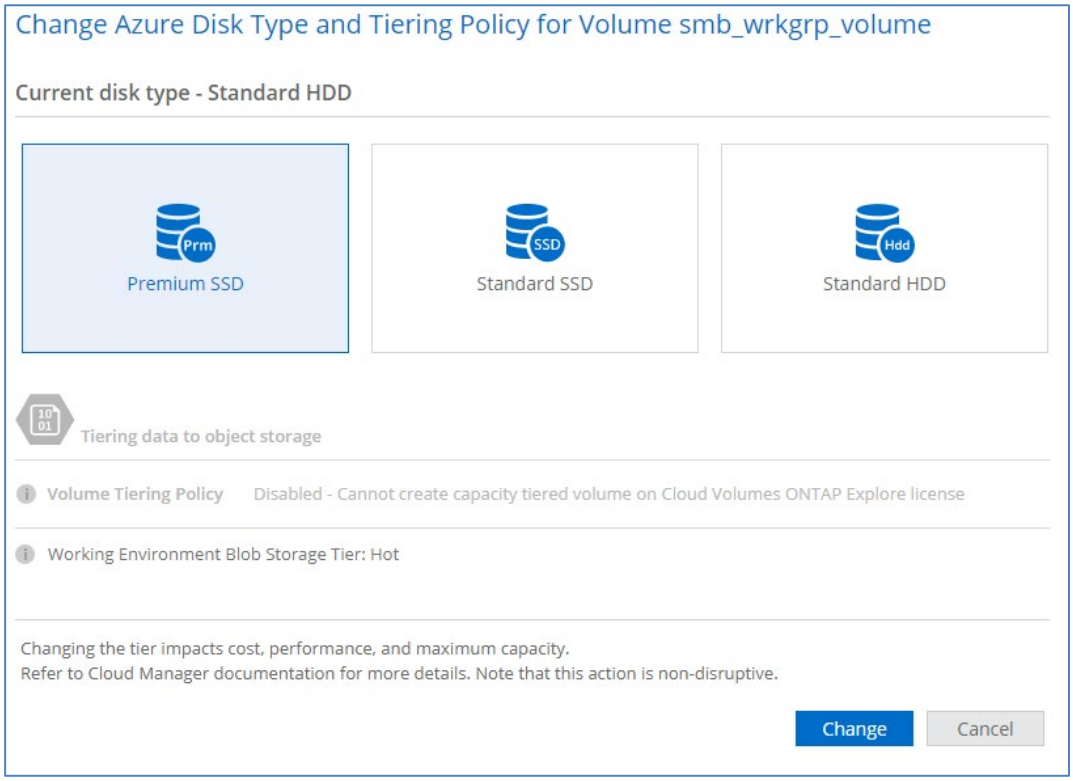
- Change the underlying disk type of a Cloud Volumes ONTAP volume
- Add disks to an aggregate
- Use System Manager to move volumes between aggregates
- Synchronize system time using NTP
- Schedule automatic shutdown of a Cloud Volumes ONTAP instance
- Use Cloud Manager API commands to administer Cloud Volumes ONTAP

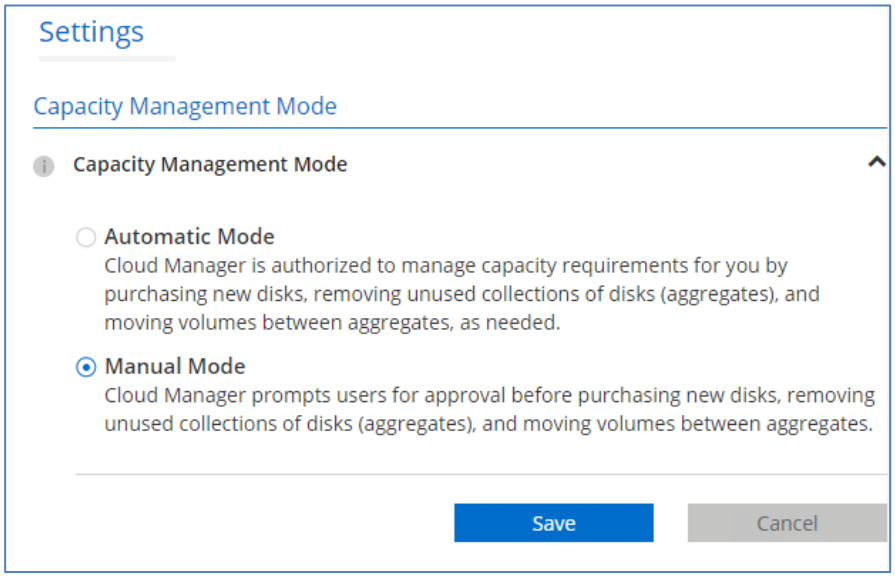
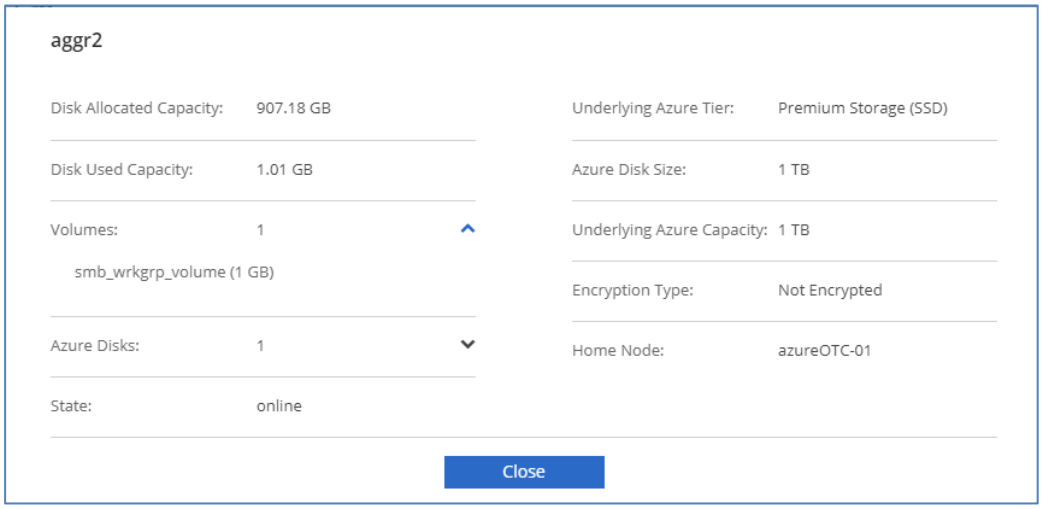
Task 1: Manage Volumes and Aggregates

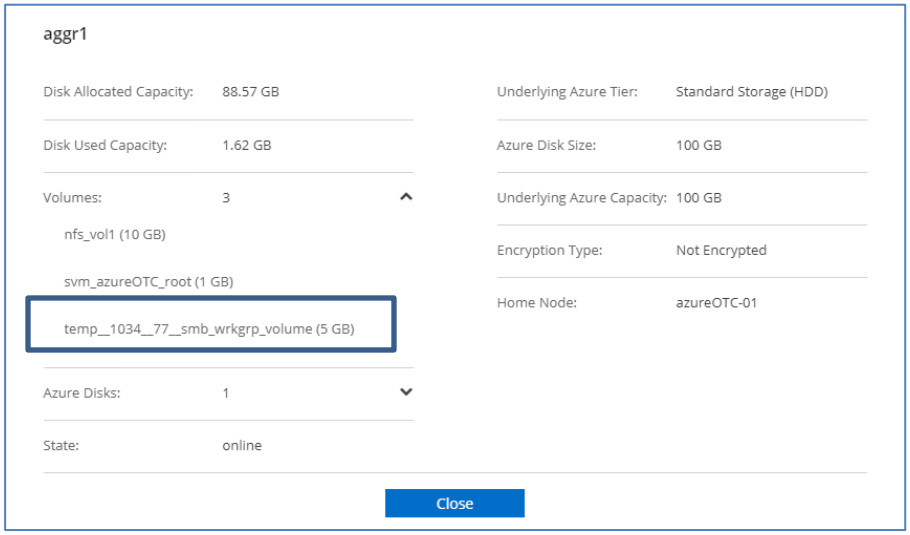
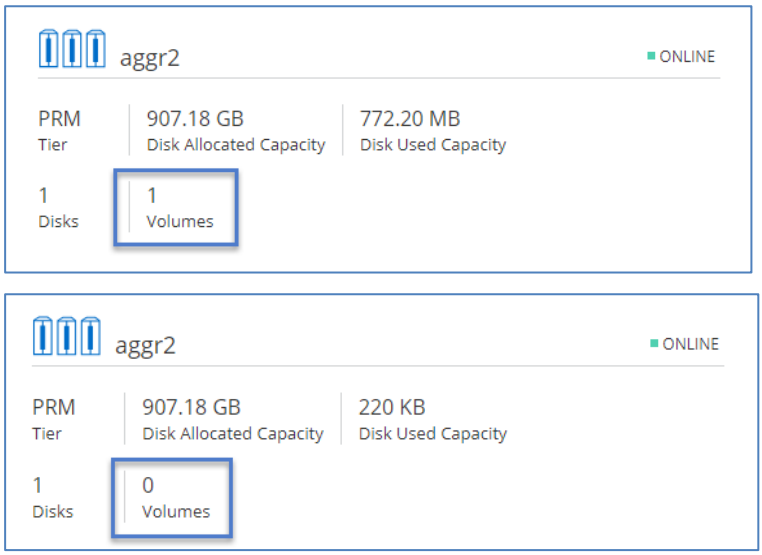
Step	Action
1-1	Return to the Cloud Manager interface.
1-2	In the smb_wrkgrp_volume menu bar, select **Info** to view the current disk type for the SMB volume. 

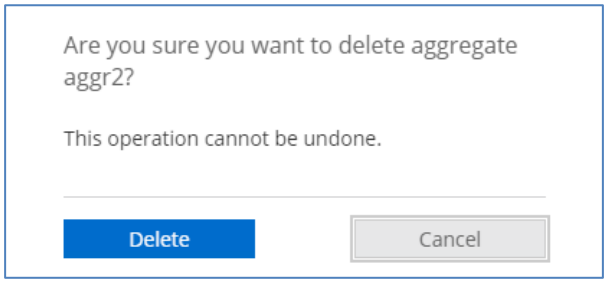
Step	Action
1-3	Verify that the underlying disks are currently HDD. 
1-4	In the far right drop-down menu, select **Advanced** > **Advanced allocation** to view the current data aggregate. 

Step	Action
1-5	Verify that there is one aggregate named aggr1 and that it is housing three volumes. 
1-6	In the aggr1 menu bar, select **Info**. 
1-7	Verify that the Underlying Azure Tier is Standard Storage (HDD).
1-8	Click **Close**.
1-9	Return to the Volumes tab.
1-10	Select the **smb_wrkgrp_volume** volume, and then click **Change Disk Type & Tiering Policy**. 

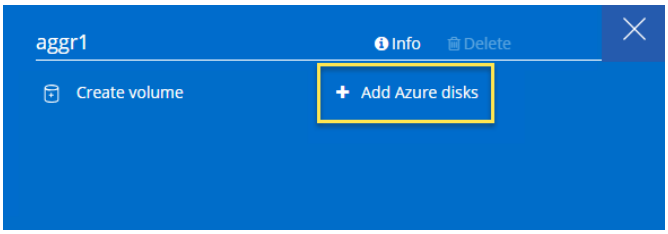
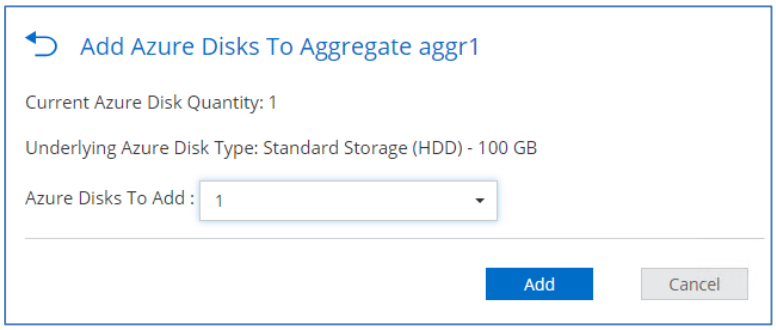
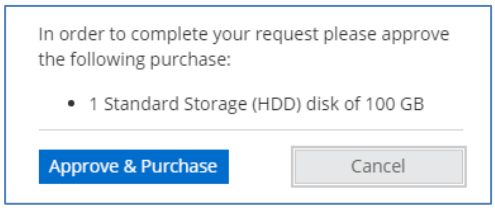
Step	Action
1-11	Select **Premium SSD**, and click **Change**. 
1-12	This option is nondisruptive. A new aggregate is automatically created, and the volume is moved to the new aggregate in the background. This process can take several minutes as the new disks are acquired for the new solid-state drive (SSD) aggregate.

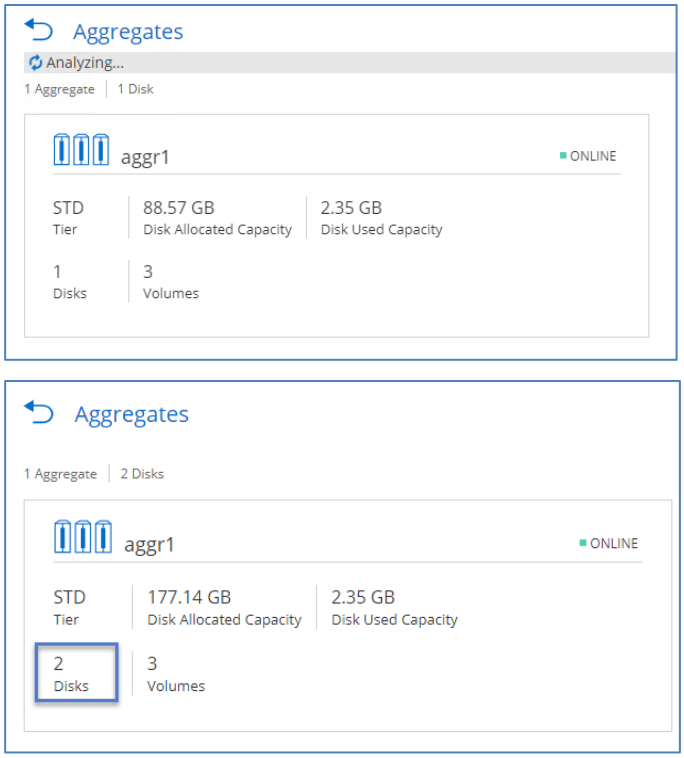
Step	Action
1-13	In the Cloud Manager settings, set the Capacity Management Mode to Manual Mode if you want to be prompted for approval before the following: • Purchasing any new disks • Removing unused collections of disks (aggregates) • Moving volumes between aggregates 
1-14	Return to the Advanced Allocation menu to see that a new aggr2 is created and that the smb_wrkgrp_volume has been moved to this aggregate. (It can take several minutes for the new aggregate to be created.) 
1-15	Change the smb_wrkgrp_volume back to the Standard HDD Tier.

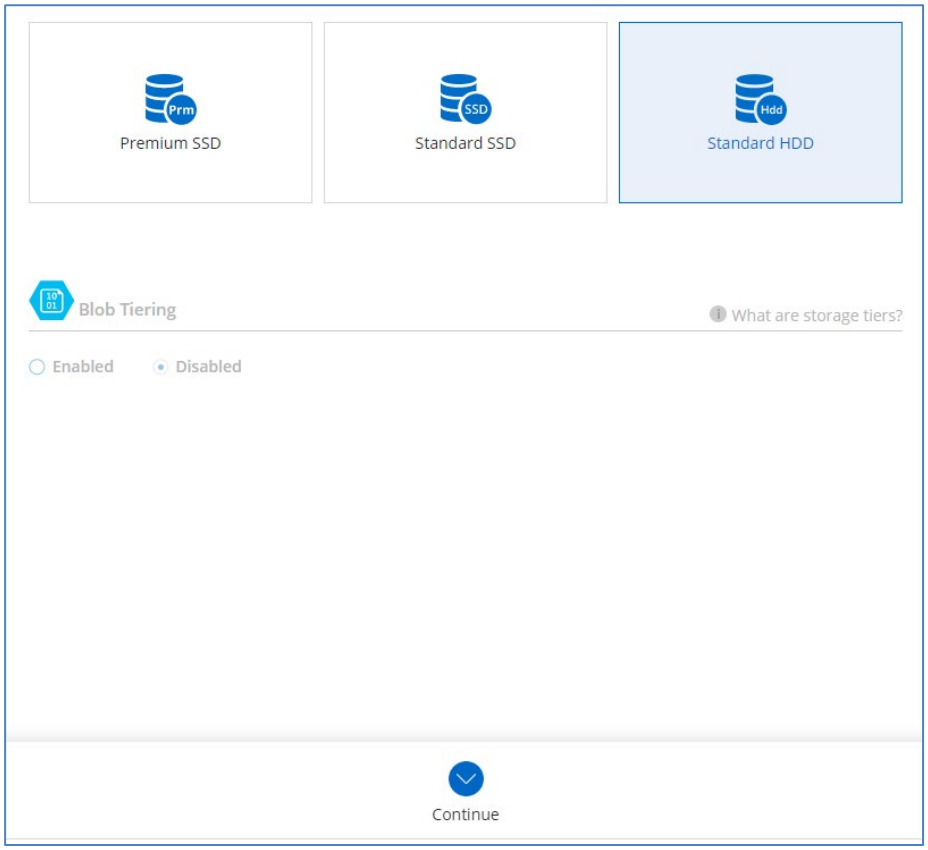
Step	Action
1-16	Return to the aggregate page and view the info for aggr1. Note: You can see a temp volume that is being used to transfer the volume back to HDD storage. 
1-17	Wait for aggr2 to indicate 0 Volumes. 
1-18	 Notice that aggr2 is not automatically deleted.
1-19	Select **aggr2**, and click **Delete**.

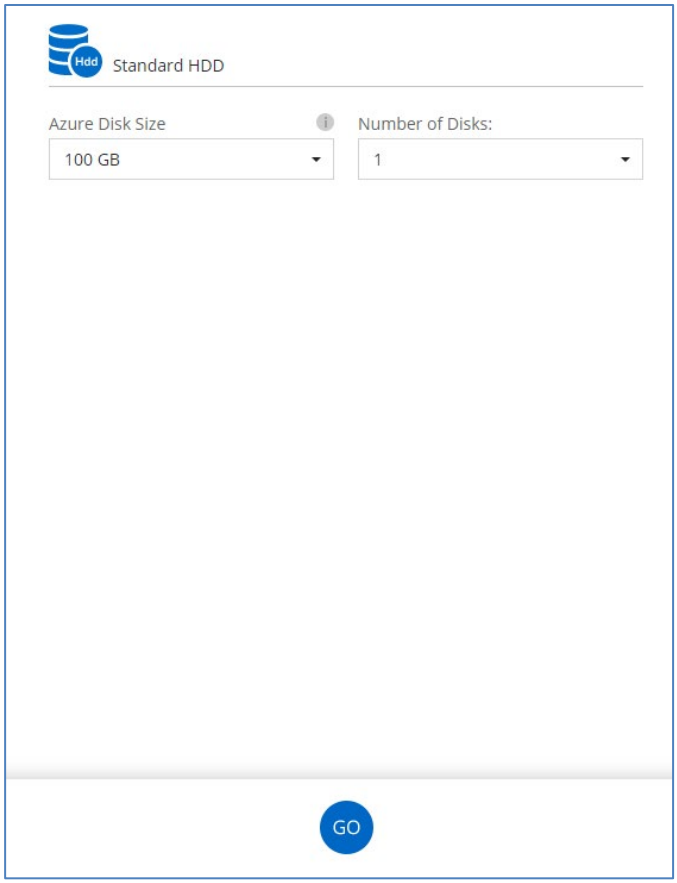
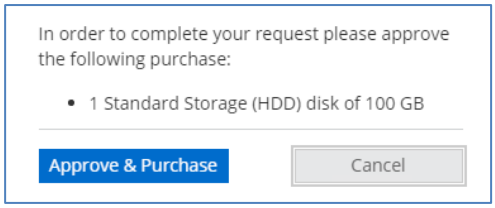
Step	Action
1-20	In the “Are you sure you want to delete aggregate aggr2?” dialog box, click **Delete**. 

Task 2: Add Disks to an Aggregate

Step	Action
2-1	
2-2	For the Azure Disks to Add, select **1**, and click **Add**. 
2-3	In the dialog box, click **Approve & Purchase**. 

Step	Action
2-4	Wait for the Analyzing… prompt to disappear, and verify that you now have two disks in the aggregate. It might take several minutes for the disk to be added and displayed. 
2-5	After you add a disk to an aggregate, the disk cannot be removed from the aggregate. The aggregate must be destroyed to remove disks from the aggregate. In the next exercise, you move volumes from one aggregate to another. This method reduces aggregate size by moving the volumes to a smaller aggregate and then deleting the larger aggregate.
2-6	Click **Add Aggregate**.
2-7	In the Aggregate Details page, enter the Aggregate name **aggr2**, and click **Continue**.

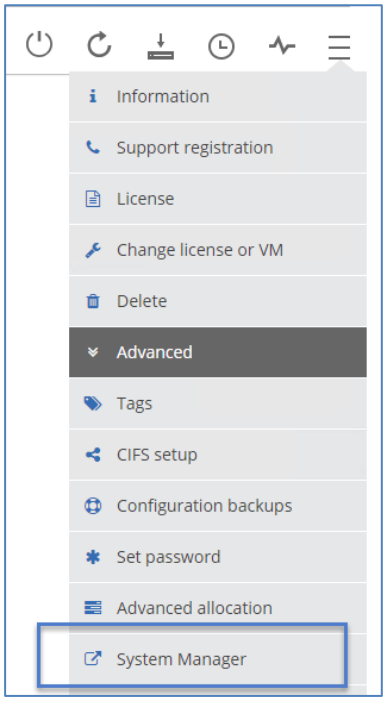
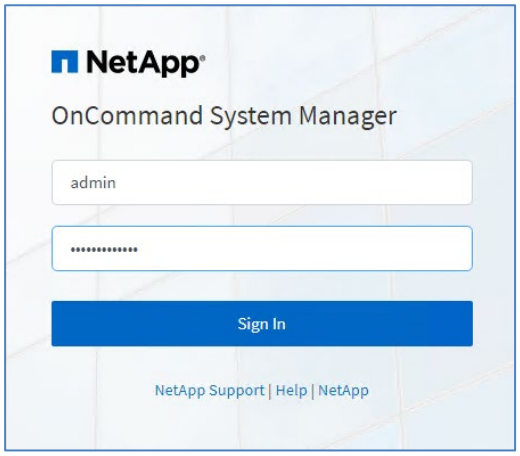
Step	Action
2-8	In the Aggregate Tier page, select **Standard HDD**, and click **Continue**. 

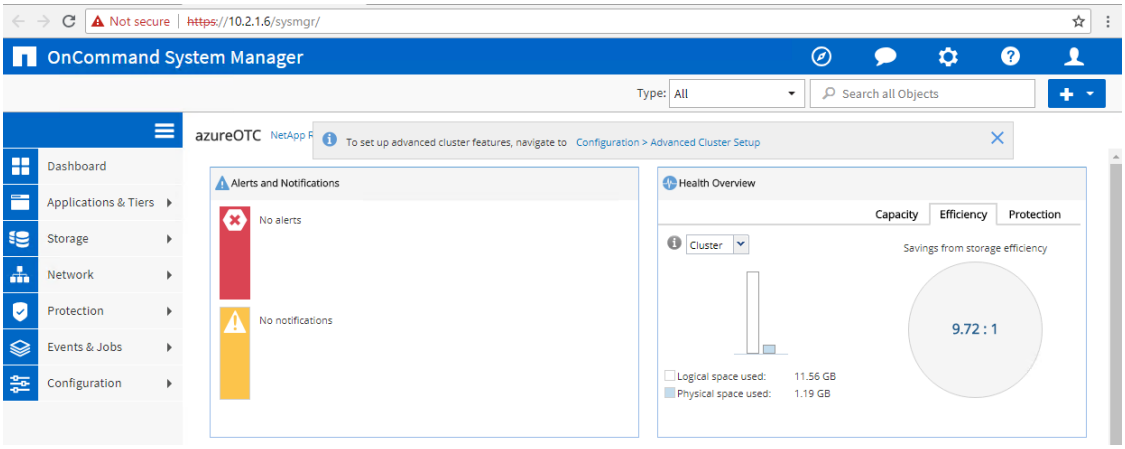
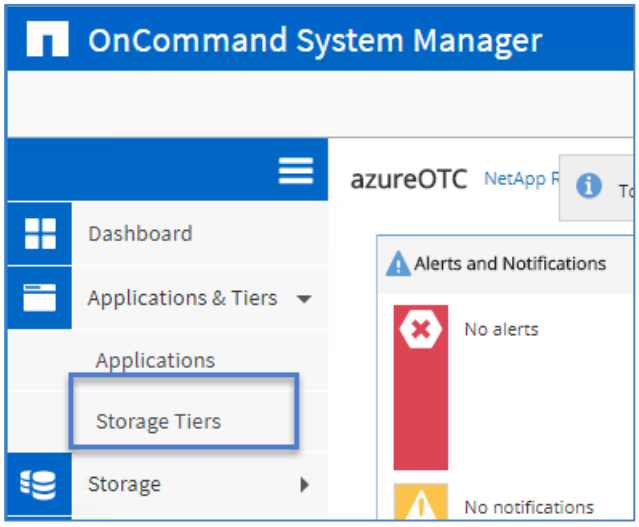
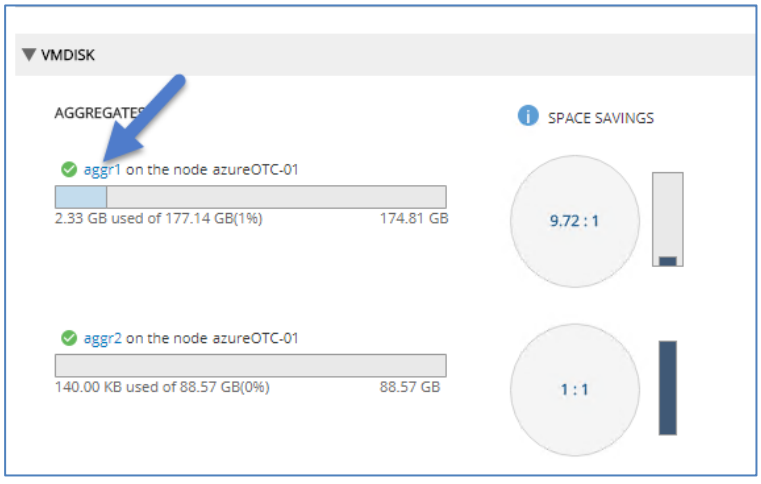
Step	Action
2-9	In the Aggregate Disks page, for the Azure Disk Size, select **100 GB**, and for the Number of Disks, select **1**. 
2-10	Click **GO**.
2-11	In the dialog box, click **Approve & Purchase**. 
2-12	Verify that aggr2 is created.

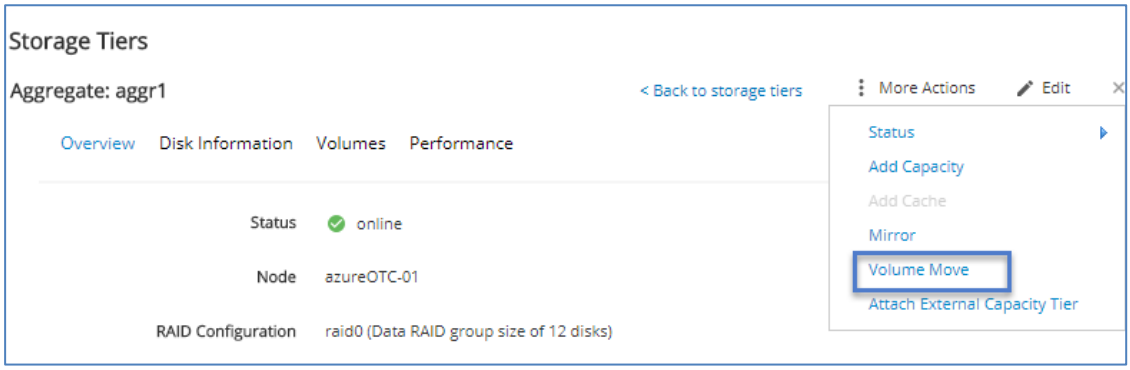
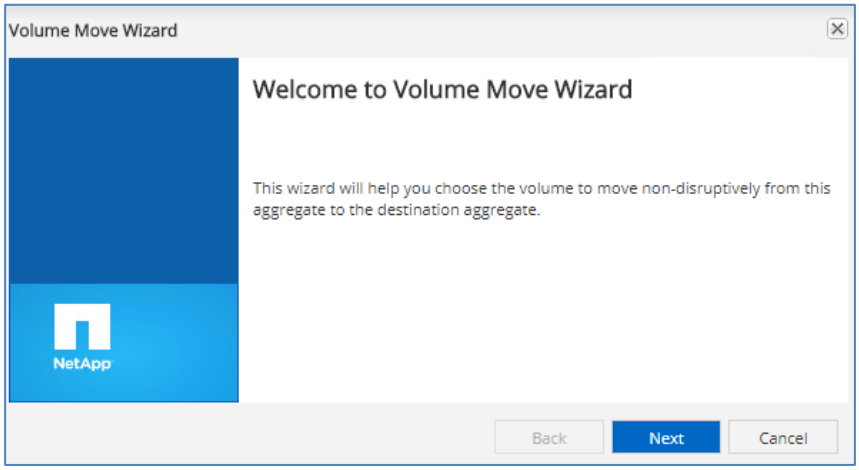
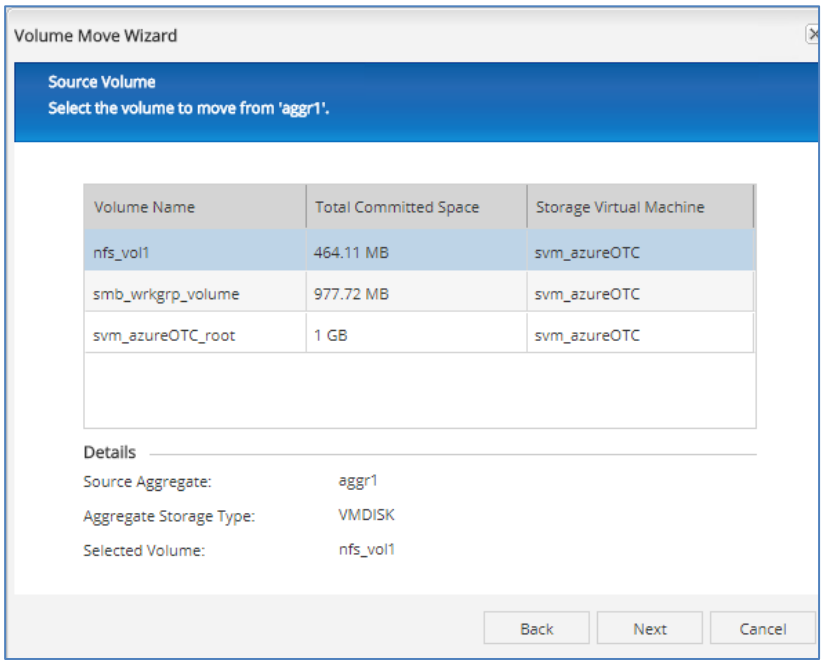
Task 3: Move Volumes Using System Manager

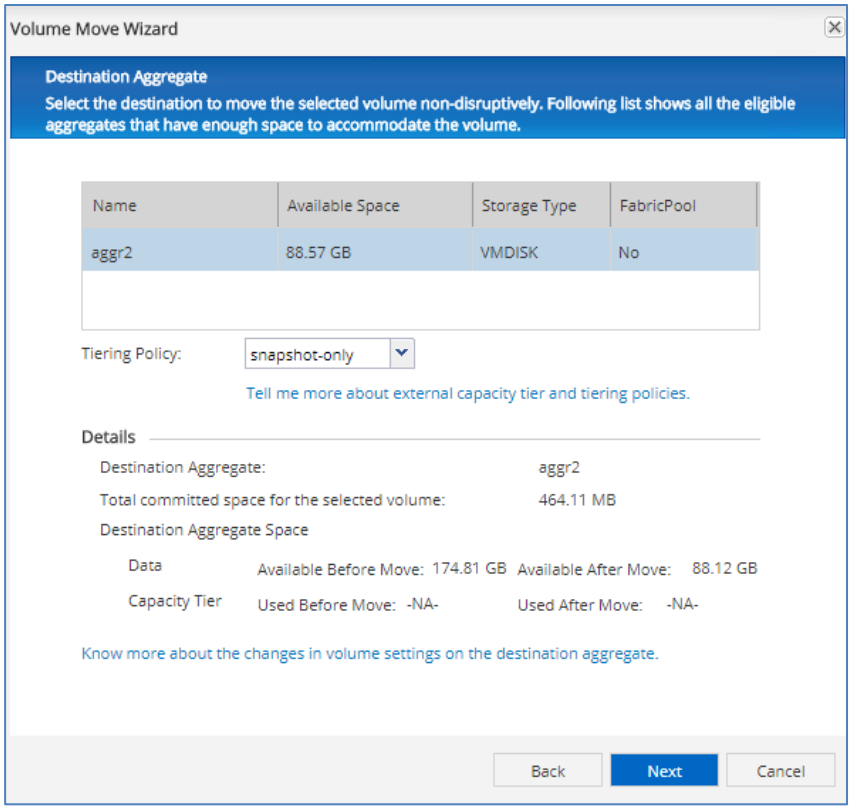
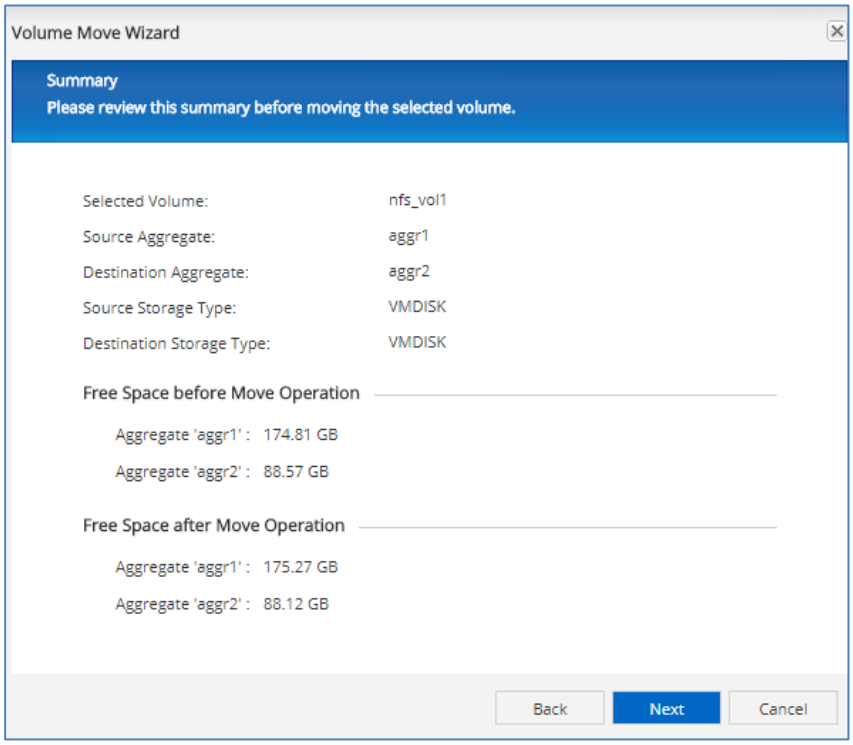
In this task, you move all your volumes from aggr1 to aggr2, and then you delete aggr1.

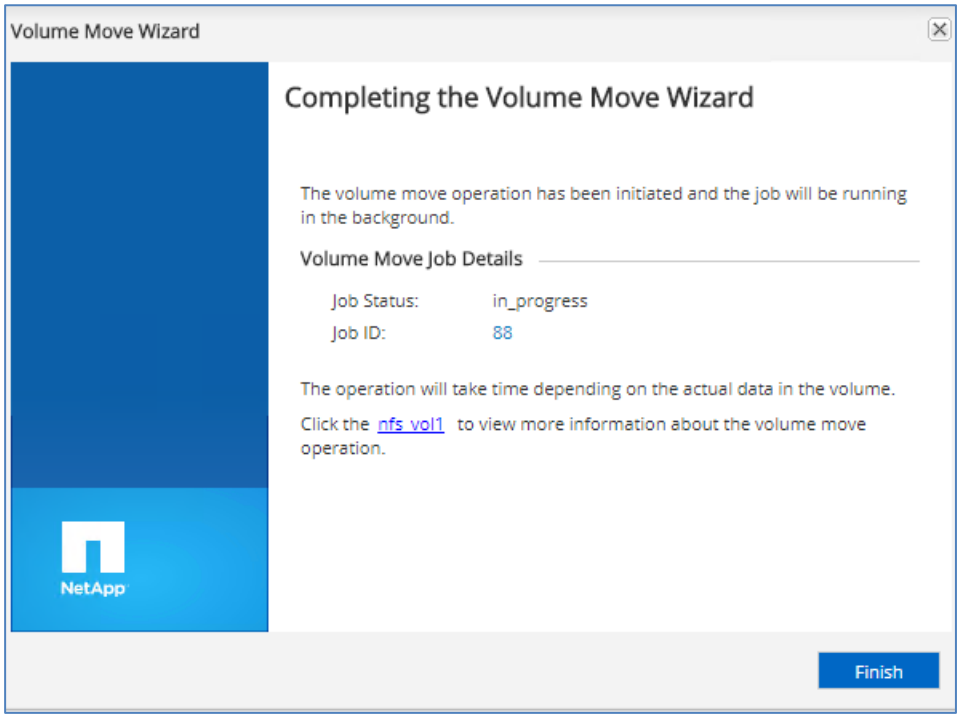
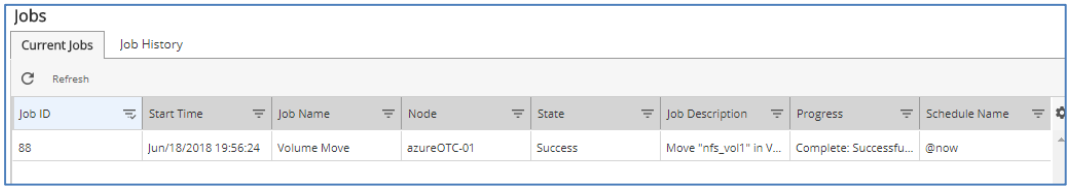
Step	Action
3-1	Return to your W2K16-jumphost Windows Server.
3-2	Connect to Cloud Manager from the web browser on the Windows Server. (Chrome or Firefox is recommended)

Step	Action
3-3	In the working environment, click the menu icon, and then click **Advanced > System Manager**. 
3-4	In the Launch System Manager dialog box, click **Launch**.
3-5	Ignore any security warnings (the appearance is different depending on the browser that you are using).
3-6	In the OnCommand System Manger login page, enter the following: • For User name, enter **admin**. • For Password, enter **HappyCloud123**. 

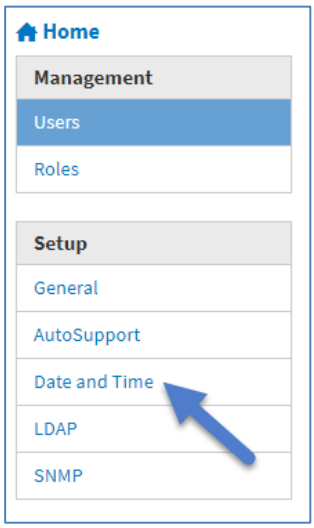
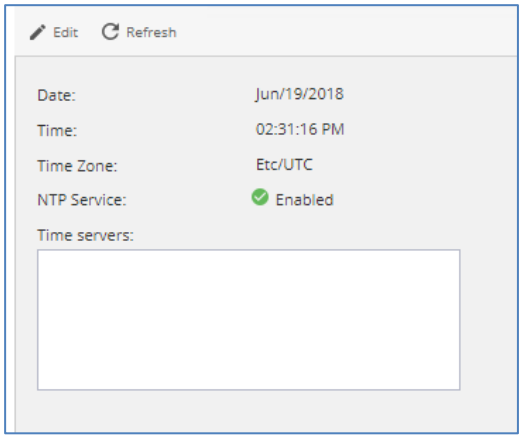
Step	Action
3-7	Verify that the dashboard appears. 
3-8	In the left navigation pane, select **Applications & Tiers** > **Storage Tiers**. 
3-9	In the VMDISK section, click **aggr1**. 

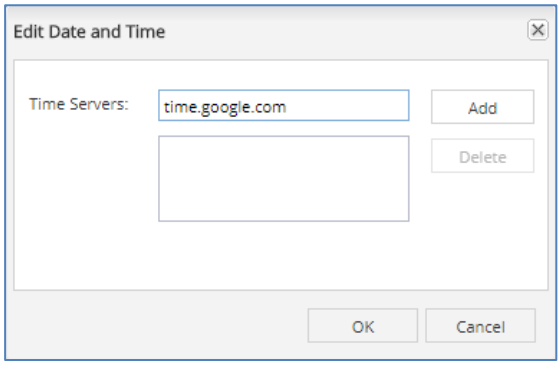
Step	Action
3-10	In the aggr1 page, select **More Actions** > **Volume Move**. 
3-11	In the Welcome to Volume Move Wizard page, click **Next**. 
3-12	In the Source Volume page, select the **nfs_vol1** row, and then click **Next**. 

Step	Action
3-13	In the Destination Aggregate page, select **aggr2**, leave all other values as the defaults, and click **Next**. 
3-14	In the Summary page, review the details, and click **Next**. 

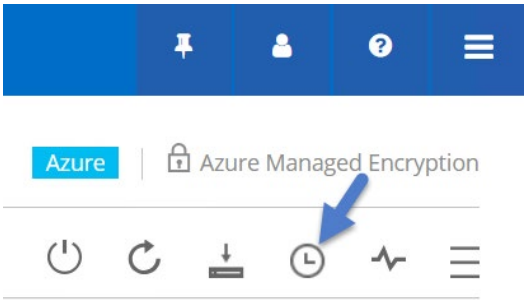
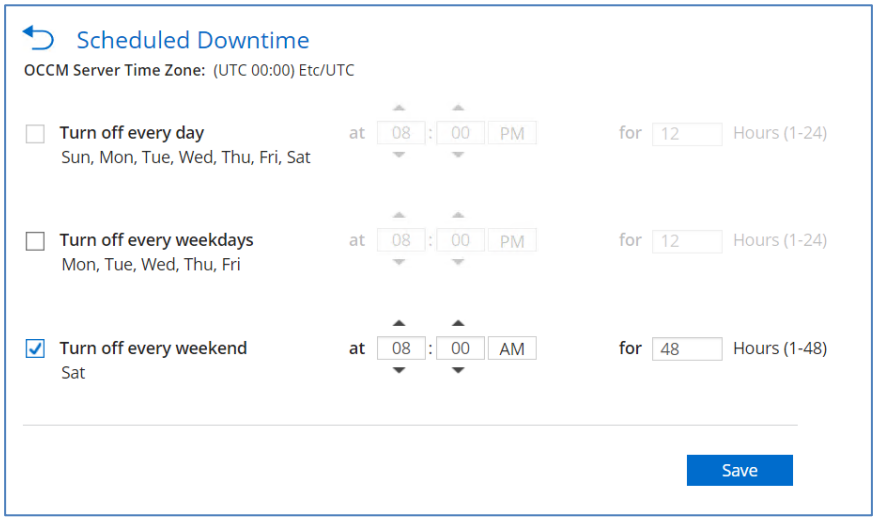
Step	Action
3-15	Record the Job ID: _____ 
3-16	Click **Finish**.
3-17	In the left Navigation pane, select **Events & Jobs** > **Jobs**.
3-18	Verify that the job ID for the Volume Move is Completed Successfully. 
3-19	Repeat the Volume Move Wizard for volumes smb_wrkgrp_volume and svm_azureCVO_root.
3-20	Return to Cloud Manager, and delete aggr1.

Task 4: Synchronize the System Time Using NTP

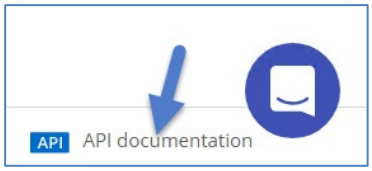
Step	Action
4-1	Return to the System Manager tab in the browser.
4-2	In the System Manager toolbar, click the settings icon. 
4-3	In the left panel, click **Date and Time**. 
4-4	Click **Edit**. 

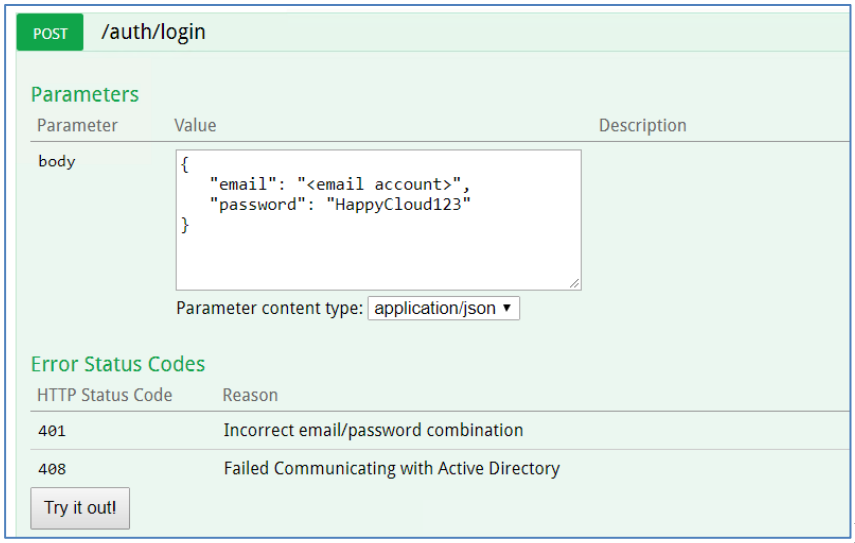
Step	Action
4-5	For the Time Server, enter **time.google.com**, and then click **Add**. 
4-6	Click **OK**.
4-7	To see the new time server, click **Refresh**.
4-8	You used the google NTP server because there is no dedicated NTP server for the class. Typically, a customer environment in Azure could use a domain controller in which the NTP server functionality is enabled or have a dedicated NTP server. The only requirement is that the NTP server is reachable from the Cloud Volumes ONTAP system.

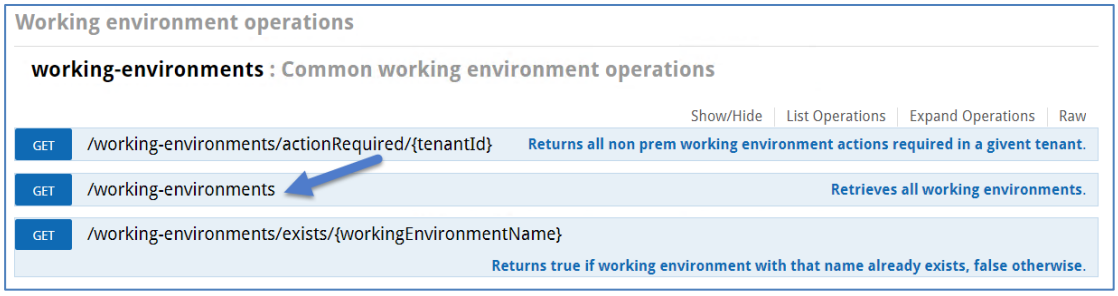
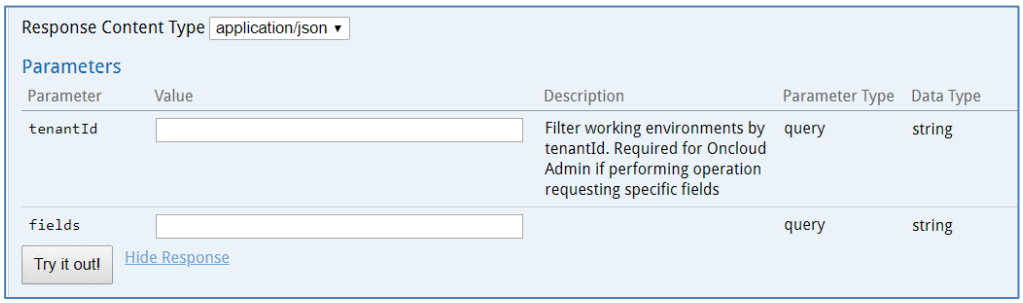
Task 5: Schedule Automatic Shutdown of a Cloud Volumes ONTAP Instance

Step	Action
5-1	Return to the Cloud Manager tab in the browser.
5-2	In the working environment, click the schedule downtime icon. 
5-3	In the Schedule Downtime window, select the **Turn off every weekend** checkbox, leave the other values as the defaults, and then click **Save**. 
5-4	This arrangement is for a scenario in which there is no activity needed on the Cloud Volumes ONTAP system during the weekend. Another possibility is one in which Cloud Volumes ONTAP is used as a backup system with backups that are scheduled for only the weekend. In that situation, you use the "Turn off every weekdays" setting.
5-5	Verify that the Schedule Downtime icon now has a check mark on it. 

Task 6: Use Swagger to Send API Commands to Cloud Manager

Step	Action
6-1	Return to the Cloud Manager tab in the browser.
6-2	At the bottom-right of the page, click **API documentation**. 
6-3	A new tab opens in the browser with the API Documentation. Wait for the page to populate. It might take several minutes.
6-4	Click **User management operations**. 
6-5	Select **auth** > **/auth/login**.
6-6	The authorization API needs to be run before any other API. This API logs you in to Cloud Manager. If the authorization API is not run first, you get an authentication error in any other API that you later use.

Step	Action
6-7	Enter the value as shown in the illustration, replacing <email account> with the email account and password that you use to log in to Cloud Manager.  H
6-8	Click **Try it out!**
6-9	Verify that the response code is 204. 
6-10	HTTP Status Code 204: The server has successfully fulfilled the request and there is no additional content to send in the response payload body.

Step	Action
6-11	Select **Working environment operations** > **working-environments** > **GET /working-environments.** 
6-12	At the bottom of the window, click **Try it out!** 
6-13	Record the publicId:_____ 
6-14	Select **ONTAP Cloud Azure working environments operations** > **azure-vsa/volumes** > **GET /azure/vsa/volumes**.

Step	Action
6-15	Enter the workingEnvironmentId as the public Id that you recorded previously. 
6-16	Click **Try it out!**
6-17	Verify that you see information about your volumes in the Response Body. 

End of Exercise