

Lab 4 Managing VMFS Datastores

Objective: Create and manage VMFS datastores

In this lab, you perform the following tasks:

1. Create VMFS Datastores for the ESXi Host
2. Expand a VMFS Datastore to Consume Unused Space on a LUN
3. Remove a VMFS Datastore
4. Extend a VMFS Datastore
5. Create a Second Shared VMFS Datastore Using iSCSI

In this lab, you use vSphere Client to perform the tasks.

Task 1: Create VMFS Datastores for the ESXi Host

You set up VMFS datastores on iSCSI-based storage devices to be used as repositories by virtual machines.

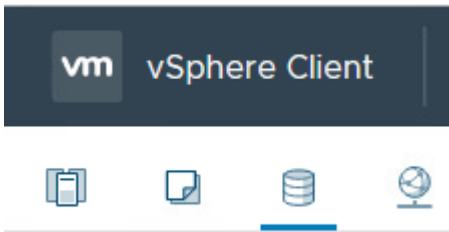
1. If vSphere Client is not active, open your Firefox web browser, click **vSphere Site-A Client** in the favorites bar, and select **vSphere Client (SA-VCSA-01)**.
2. Log in with the user name `administrator@vsphere.local` and the password `VMware1!`.
3. In vSphere Client, click the **Menu** icon and select **Hosts and Clusters**.
4. Right-click **SA-Datacenter** and select **Storage > New Datastore** to start the New Datastore wizard.
5. On the Type page, verify that **VMFS** is selected and click **Next**.
6. On the Name and device selection page, enter **vmfs-2** in the **Datastore name** text box.

7. From the **Select a host to view its accessible disks/LUNs** drop-down menu, select your first host **sa-esxi-01.vclass.local**.

A LUN list appears.

8. In the LUN list, select **LUN 2** and click **Next**.
9. On the VMFS version page, accept **VMFS 6** and click **Next**.
10. On the Partition configuration page, reduce the LUN size.
 - a. Move the **Datastore Size** slider to reduce the LUN size by 3 GB.
 - b. Click **Next**.
11. On the Ready to complete page, review the information and click **Finish**.
12. Right-click **SA-Datacenter** in the inventory and select **Storage > New Datastore**.
13. On the Type page, verify that **VMFS** is selected and click **Next**.
14. On the Name and device selection page, enter **vmfs-3** in the **Datastore name** text box.
15. From the **Select a host to view its accessible disks/LUNs** drop-down menu, select **sa-esxi-02.vclass.local**.

A LUN list appears.
16. From the LUN list, select **LUN 3** and click **Next**.
17. On the VMFS version page, accept **VMFS 6** and click **Next**.
18. On the Partition configuration page, accept the default (full capacity) and click **Next**.
19. On the Ready to complete page, review the information and click **Finish**.
20. Monitor the progress in the Recent Tasks pane until the task is completed.
21. In the Navigator pane, click the **Storage** icon.



22. Expand SA-Datacenter, verify that the VMFS-2 and VMFS-3 datastores are listed in the datastore inventory.

23. In the datastore inventory, click the **VMFS-2** datastore.
24. Click the **Summary** tab and record the value for storage capacity. _____

Task 2: Expand a VMFS Datastore to Consume Unused Space on a LUN

You dynamically increase the capacity of a VMFS datastore when more space is required by virtual machines.

1. In the Navigator pane, right-click the **VMFS-2** datastore and select **Increase Datastore Capacity** to open the Increase Datastore Capacity wizard.

2. On the Select Device page, select **LUN 2**.

Yes should appear in the Expandable column of LUN 2.

Increase Datastore Capacity

1 Select Device

2 Specify Configuration

3 Ready To Complete

Select Device

Select disk/LUN to be used to increase size of the datastore.

LUN	Capacity	Hardware...	Drive T...	Sector Format...	Expan...
2	10.00 GB	Not suppor...	HDD	512e	Yes
5	139.85 GB	Not suppor...	HDD	512e	No

3. Click **Next**.
4. On the Specify Configuration page, accept **Use “Free Space 3.00 GB” to expand the datastore** from the **Partition configuration** drop-down menu and click **Next**.
5. On the Ready to Complete page, review the information and click **Finish**.
6. When the task is completed, select the **VMFS-2** datastore in the Navigator pane.
7. On the **Summary** tab, verify that the datastore size is increased to the maximum capacity, minus the space required for system overhead.

The new capacity for the VMFS-2 datastore should be 9.75 GB.

Task 3: Remove a VMFS Datastore

You can delete any type of VMFS datastore, including the copies that you mounted without resignaturing. When you delete a datastore, it is destroyed and removed from all hosts.

1. In the Navigator pane, right-click the **VMFS-3** datastore and select **Delete Datastore**.
2. When the `Confirm Delete Datastore` message appears, click **Yes** and wait for the task to be complete.
3. In Recent Tasks, verify that the remove datastore task has completed.
4. Verify that the VMFS-3 datastore has been removed from the Navigator pane.

Task 4: Extend a VMFS Datastore

You extend the capacity of a VMFS datastore when extra storage space is needed. You use a second LUN to extend the size of a datastore based on the first LUN.

1. In Navigator pane, click the **VMFS-2** datastore.
2. Click the **Configure** tab.
3. Select **General** from the center pane and click **Increase**.
The Increase Datastore Capacity wizard starts.
4. On the Select Device page, select **LUN 3** and click **Next**.
5. On the Specify Configuration page, select **Use all available partitions** from the **Partition Configuration** drop-down menu and click **Next**.

The following message is expected: There is no extent of the datastore on this device. Selecting any configuration option will add a new extent to the datastore.

6. On the Ready to Complete page, review the information and click **Finish**.

- When the task completes, refresh the page and select **Device Backing** in the middle pane.
- Verify that two extent device names appear in the Extent Name pane.

The Extent Name pane should show both of your assigned devices.

You might need to adjust the size of the Extent Name pane to view all the extent names.

The screenshot shows the two extents listed in the Extent Name pane and the slider to adjust the size of the pane.

Extent Name (Device name:Partition number)	Capacity
MSFT ISCSI Disk (naa.60003ff44dc75adcbb800867fca825d3...)	10 GB
MSFT ISCSI Disk (naa.60003ff44dc75adcb859f1c7edb234ea...)	10 GB

- Click the **Summary** tab.
- Record the new value for Total Capacity in the **Summary** tab. _____

The value should be different from the value seen in task 2, step 7.

- On the Summary tab, click the **Hosts** tab in right pane.

The two hosts are connected, indicating that this new datastore is shared between your two ESXi hosts.

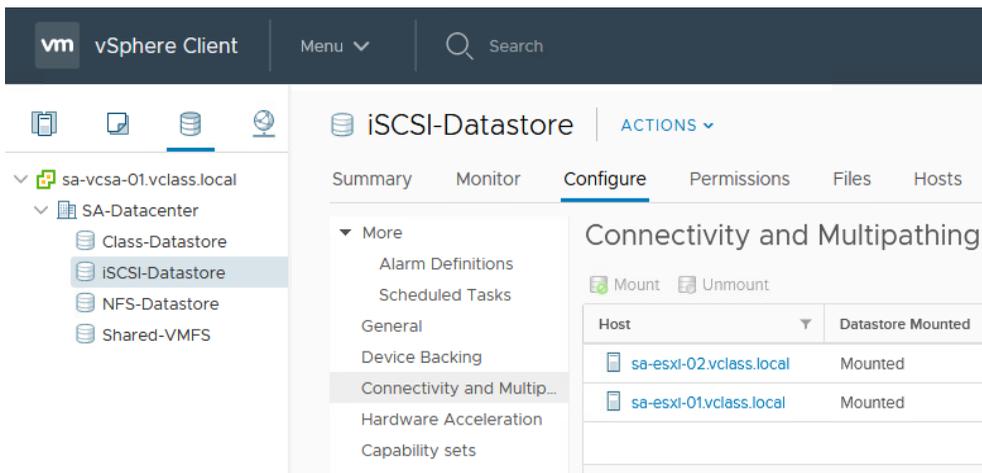
- Right-click your **VMFS-2** datastore in the Navigator pane and select **Rename**.
- In the **Enter the new name** text box, enter **Shared-VMFS**.
- Click **OK**.

Task 5: Create a Second Shared VMFS Datastore Using iSCSI

You use an iSCSI shared LUN to create a VMFS6 file system.

- In vSphere Client, click the **Menu** icon and select **Hosts and Clusters**.
- Right-click **SA-Datacenter** and select **Storage > New Datastore**.
The New Datastore wizard starts.
- On the Type page, verify that VMFS is selected and click **Next**.

4. On the Name and device selection page, in the **Datastore name** text box enter **iSCSI-Datastore**.
5. From the **Select a host to view its accessible disks/LUNs** drop-down menu, select **sa-esxi-01.vclass.local**.
A LUN list appears.
6. From the newly displayed LUN list, select **LUN 5** named **MSFT iSCSI Disk** (Capacity 139.85 GB) and click **Next**.
7. On the VMFS version page, accept **VMFS 6** and click **Next**.
8. On the Partition configuration page, accept **Use all available partitions** and click **Next**.
9. On the Ready to complete page, review the information and click **Finish**.
10. Click the **Storage icon** in the navigator pane.
11. Verify that iSCSI-Datastore is listed in the Storage view.
12. On the Configure tab, select **Connectivity and Multipathing** to verify that both hosts can see the datastore.



13. Leave vSphere Client open for the next lab.
14. Inform your instructor that you have completed this lab. If prompted, continue to the next lab.