Lab 7 Migrating Virtual Machines

Objective: Use vSphere vMotion and vSphere Storage vMotion to migrate virtual machines

In this lab, you perform the following tasks:

1. Migrate Virtual Machine Files from Local Storage to Shared Storage
2. Create a Virtual Switch and a VMkernel Port Group for vSphere vMotion Migration
3. Prepare Virtual Machines to Demonstrate vSphere vMotion Migration
4. Perform vSphere vMotion Migrations of Virtual Machines
5. Perform Compute Resource and Storage Migrations

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

Task 1: Migrate Virtual Machine Files from Local Storage to Shared Storage

With VMware vSphere® Storage vMotion®, you can migrate a virtual machine's disk files from one datastore to another while the virtual machine is running.

1. If vSphere Client is not active, open your Firefox web browser, select **vSphere Client (SA-VCSA-01)**.
2. Log in with the user name administrator@vsphere.local and the password VMware1!.
3. Click the **Menu** icon and select **VMs and Templates**.
4. Verify that the Win02 virtual machine is selected and powered on.
5. On the **Summary** tab, in the Related Objects pane, record the name of the storage on which the Win02 virtual machine resides. _____
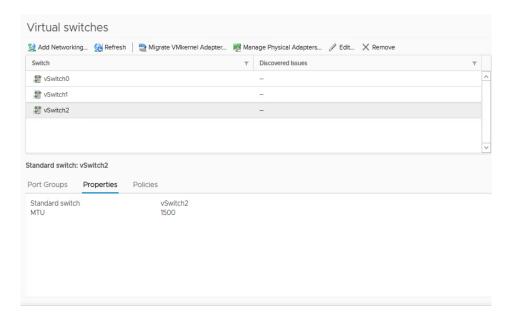
6. Right-click the **Win02** virtual machine and select **Migrate**.

   The Migrate wizard opens.

7. Select **Change storage only** on the Select a migration type page and click **Next**.

8. On the Select Storage page, select **iSCSI-Datastore** as the destination storage for the virtual machine files.

   In the Compatibility pane, the `Compatibility checks succeeded` message appears.

9. Click **Next**.

10. On the Ready to complete page, review the information and click **Finish**.

11. Monitor the Recent Tasks pane and wait for the virtual machine files relocation process to complete.

    This task takes several minutes to complete.

12. Repeat step 5 and step 6 to verify that the Win10-02 virtual machine is on the new datastore, which is iSCSI-Datastore.

Task 2: Create a Virtual Switch and a VMkernel Port Group for vSphere vMotion Migration

You create a VMkernel port group virtual switch to move virtual machines from one host to another while maintaining continuous service availability.

1. Click the **Menu** icon and select **Hosts and Clusters**.

2. In the Navigator pane, expand **SA-Datacenter > Lab Servers** and select the host **sa-esxi-01.vclass.local**.

3. Click the **Configure** tab.

4. In the middle pane, navigate to **Networking** and select **Virtual switches**.

5. Click the **Add Networking** icon to open the Add Networking wizard.

6. Accept **VMkernel Network Adapter** in the Select connection type page and click **Next**.

7. Select **New standard switch** in the Select target device page and click **Next**.

8. Click the **green + sign** in the Create a Standard Switch page to add a physical adapter to the switch.

9. Select **vmnic2** as the vmnic for the vSphere vMotion network and click **OK**.

10. Review the information shown and click **Next**.

11. On the Port properties page for connection settings, enter **vMotion** in the **Network label** text box.

12. Select the **vMotion** check box, and click **Next**.

13. On the IPv4 settings page, configure the IP address.

    a. Select **Use static IPv4 settings**.

    b. Enter `172.20.12.51` in the **IPv4 address** text box for the sa-esxi-01.vclass.local host.

    c. Enter `255.255.255.0` in the **Subnet mask** text box for the vMotion VMkernel port IPv4.

    d. Click **Next**.

14. On the Ready to complete page, review the information and click **Finish**.

15. In the Virtual Switches pane, verify that the new virtual switch for vSphere vMotion migration is listed.
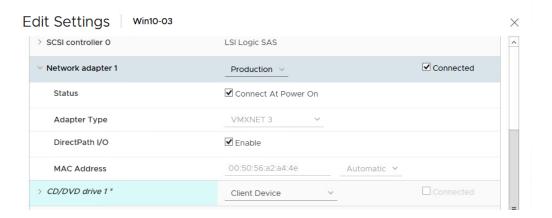

16. Repeat steps 2-15 for sa-esxi-02.vclass.local, using 172.20.12.52 for the vMotion VMkernel port IPv4 address in step 13 b. All other steps remain same.

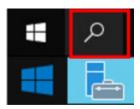## Task 3: Prepare Virtual Machines to Demonstrate vSphere vMotion Migration

You prepare virtual machines to demonstrate live migration between hosts using vMotion.

1. In the **Navigator** pane, expand the view of the inventory.

2. Right-click the **Win02** virtual machine and select **Edit Settings**.

3. On the **Virtual Hardware** tab, select **Client Device** from the **CD/DVD drive 1** drop-down menu.

4. Click the arrow next to **Network adapter 1** to expand the view.

5. Verify that **Production** is selected from the drop-down menu.

6. Verify that the **Connect At Power On** check box is selected for Network adapter 1.

7. Click **OK**.

8. Repeat steps 2 through 7 for the **Win03** virtual machine.

9. Verify that the **Win02** virtual machine is powered on.

10. Right-click the **Win02** virtual machine and select **Open Remote Console**.

11. You are logged in as vclass\administrator with the password VMware1!.

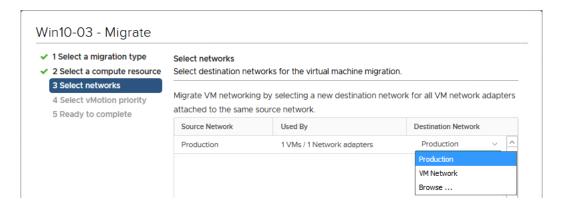12. Click the Search Windows icon in Windows Task bar and enter `cmd` to open a Command Prompt window.

13. When the Command Prompt window opens, enter the `ipconfig` command and record the virtual machine's default gateway IP address. _____

14. Enter `ping -t default_gateway IP address` on the command line to start a continuous ping.

Task 4: Perform vSphere vMotion Migrations of Virtual Machines

You perform live migration of virtual machines residing on a shared datastore that is accessible to both the source and the target ESXi hosts.

1. Leave the virtual machine console open and return to vSphere Client.

2. Migrate the Win02 virtual machine from host sa-esxi-01.vclass.local to host sa-esxi-02.vclass.local.

   a. In the Navigator pane, right-click the **Win02** virtual machine and select **Migrate**.

   b. On the Select a migration type page, accept **Change compute resource only** and click **Next**.

   c. On the Select a compute resource page, select **sa-esxi-02.vclass.local**.

   sa-esxi-02.vclass.local is the destination host to which you migrate the Win02 virtual machine. The migration requirements are validated. If the validation does not succeed, you receive warning or error messages. You cannot continue with the migration until the errors are resolved.

   d. Click **Next**.

e. On the Select networks page, ensure that **Production** is selected from the **Destination Network** drop-down menu and click **Next**.

f. Leave **Schedule vMotion with high priority (recommended)** selected on the Select vMotion priority page and click **Next**.

g. On the Ready to complete page, review the information and click **Finish**.

3. Return to the Win02 virtual machine console and monitor that no pings are dropped during the migration.

Monitor the console for 1 to 2 minutes. If the Win02virtual machine console is disconnected, reopen the console.

4. Press Ctrl+C to stop the ping.

5. Close the Command Prompt window.

6. Close the Win02 virtual machine console.

7. Verify that the Win03virtual machine is powered on.

8. In the Navigator pane, select **Win03**.

9. On the **Summary** tab, verify that Win03 is on the sa-esxi-02.vclass.local host.

10. Migrate the Win03 virtual machine from host sa-esxi-02.vclass.local to host sa-esxi-01.vclass.local.

a. In the Navigator pane, drag the **Win03**virtual machine from **sa-esxi-02.vclass.local** to **sa-esxi-01.vclass.local**.

The Migrate wizard opens.

b. On the Select a migration type page, select **Change compute resource only** and click **Next**.

c. On the Select a compute resource page, select **sa-esxi-01.vclass.local** and click **Next**.

   d. On the Select networks page, verify that **Production** is selected from the **Destination Network** drop-down menu and click **Next**.

   e. On the Select vMotion priority page, leave **Schedule vMotion with high priority (recommended)** selected and click **Next**.

   f. On the Ready to complete page, review the information and click **Finish**.

11. When the migration tasks are completed, view the Navigator pane to verify that Win03 is under sa-esxi-01.vclass.local and Win02 is under sa-esxi-02.vclass.local.