Create and Configure ESXi Nested VMs

# Overview

This exercise consists of several tasks that will result in two VMs running ESXi 7.0 in the program private cloud infrastructure.

# Preparation

Log into the program vSphere virtual infrastructure.

# Task 1: Create a VM Running ESXi

In this task, you will create and configure a VM in vSphere and install ESXi 7.0 as the guest operating system.

1. In vSphere, right-click your folder, and select New Virtual Machine...
2. On the select a creation type page, select Create a new virtual machine and click Next.
3. Enter <Concord\_ID>-ESXi-0 as your VM name and click Next. Example: if your Condor ID is jjones, your VM name would be jjones\_ESXi-0.
4. On the Select a compute resource page, ensure your resource pool is selected and click Next.
5. On the Select storage page, ensure your datastore is selected and click Next.
6. On the Select compatibility page, ensure ESXi 7.0 and later is selected from the Compatible with dropdown click Next.
7. On the Select a guest OS page, select Other from the Guest OS Family drop down, select VMware ESXi 7.0 or later from the Guest OS Version drop down and click Next.
8. On the Customize hardware page:
   1. Change the CPU count to 2
   2. Expand the CPU object and select the Expose hardware assisted virtualization to the guest checkbox and the Enable virtualized CPU performance counters check box
   3. Expand the New Hard disk object and select Thin provision from the Disk Provisioning drop down
   4. Click ADD NEW DEVICE and select Hard disk.
   5. Expand the New Hard disk object just created and select Thin Provision from the Disk Provisioning drop down.
   6. Click ADD NEW DEVICE and select Network Adapter three times so that you have a total of 6 network interface cards.
   7. Click the first New Network drop down and select Browse… Select the port group name ending in 01 and click OK.
   8. Click the second New Network drop down and select Browse… Select the port group name ending in 01 and click OK.
   9. The third and forth network interfaces, select Browse… Select the port group name ending in 02 and click OK.
   10. The fifth and sixth network interfaces, select Browse… Select the port group name ending in 03 and click OK.
   11. Select Datastore ISO file from the New CD/DVD Drive object drop down.
   12. In the Select File dialog, select the WTCSIT3ADS-ISOs datastore, select VMware-VMvisor-Installer-7.0.0-15843807.x86\_64.iso in the Contents pane and click OK.
   13. Expand the New CD/DVD Drive object and select the Connect At Power On checkbox
9. Click Next and then click Finish.
10. Select the new VM in the Navigator and click the Summary tab.
11. Click the Power On button and once it is available, click the Console button.
12. At the Welcome to the VMware ESXi 7.0.0 Installation prompt press <Enter>.
13. At the End User License Agreement prompt press <F11>.
14. At the Select a Disk to Install or Update prompt press <Enter>.
15. At the Please select a keyboard layout prompt press <Enter>.
16. At the Enter a root password prompt enter Vclass123$ twice and press <Enter> (do not change the selected disk in the list).
17. At the Confirm Install prompt press <F11>.
18. At the Installation Complete prompt press <Enter> to reboot.
19. Once rebooted, edit the VM settings, select Client Device from the CD/DVD drive drop down and click OK.

The ESXi host should reboot and present the console screen.

# Task 2: Deploy a Template to a VM Running ESXi

In this task, you will create a VM in vSphere by deploying a pre-configured template.

1. In vSphere, right-click your folder, and select New Virtual Machine/New Virtual Machine...
2. Select Deploy from Template and click Next.
3. On the Select a template page, click the Data Center tab, expand the datacenter object, expand the Template\_VMs folder, select the ESXi\_7.0\_Template object and click Next.
4. Enter <Condor ID>-ESXi-1 as your VM name and click Next. Example: if your Condor ID is jjones, your VM name would be jjones-ESXi-1.
5. On the Select a compute resource page, ensure your resource pool is selected and click Next.
6. On the Select storage page, ensure your datastore is selected and click Next.
7. On the Select clone options page, select the Customize this virtual machine’s hardware checkbox and click Next.
8. On the Customize hardware page, we want 6 network adapters:
   1. Network adapters 1 and 2, assign to VLAN\_0
   2. Network adapters 3 and 4, assign to VLAN\_1
   3. Network adapters 5 and 6, assign to VLAN\_2
9. Click Next and then click Finish.
10. Select the new VM in the Navigator and click the Summary tab.
11. Click the Power On button and once it is available, click the LAUNCH WEB CONSOLE button.

The ESXi host should boot and present the console screen.

# Task 3: Configure IP on ESXi

In this task, you will configure IPv4 on the management interface of both of your ESXi host VMs.

1. In vSphere, open the console of your ESXi-01 VM.
2. Press <F2>, enter Vclass123$ for the password and press <Enter> to authenticate.
3. Arrow down to highlight the Configure Network Management and press <Enter>.
4. Arrow down to IPv4 Configuration and press <Enter>.
5. Arrow down to Set static IPv4 address and network configuration and press <space>.
6. Arrow down to IPv4 Address and enter the required IP address based on the lab schematic.
7. Arrow down to Subnet Mask and enter the required subnet mask.
8. Arrow down to Default Gateway and enter the required default gateway then press <Enter>.
9. Arrow down to DNS Configuration and press <Enter>.
10. Arrow down to Use the following DNS server addresses and hostname: and press <space>.
11. Arrow down to Primary DNS Server and enter the IP address of your course Windows infrastructure server.
12. Arrow down to Hostname, enter the name of your VM name and press <Enter>.
13. Arrow down to Custom DNS Suffixes and press <Enter>.
14. In Suffixes enter vclass.local and press <Enter>.
15. Press <esc> to exit management network configuration.
16. Press <y> to apply the changes.
17. Press <esc> to log out of the console.
18. Repeat the process for your ESXi-02 VM.

# Task 4: Enable Remote Command Line Admin on ESXi

In this task, you will enable SSH and the ESXi shell on both of your ESXi host VMs. This is a common practice to enable when executing tasks that require command line access – provided by an SSH connection, and the use of ESXi specific shell commands - provided by the ESXi shell. These services are not enabled by default and should only be enabled when required since leaving them enabled results in a security risk.

1. In Firefox, navigate to the IP address of your ESXi-01 host. You will be prompted with a security warning due to the self-signed certificate used by default on VMware systems. Accept the warning and proceed to the ESXi authenticate page.
2. Enter root as the User name, vClass123$ as the Password and click Log in to authenticate.
3. Click Manage in the Navigator pane.
4. Select the Services tab, right-click TSM-SSH and click Start.
5. Right-click TSM and click Start. Note that in both cases TSM is an abbreviation for Tech Support Mode.
6. Repeat steps one through five for your ESXi-02 host.
7. Leave your sessions open.

# Task 5: Configure First Datastore on ESXi

In this task, if necessary, you will configure the first VMFS datastore on both of your ESXi host VMs. Note that this may or may not be required depending on the configuration of the host.

1. Log into the WTCIST3AVC-VCSA03 cluster with your Conestoga credentials.
2. Select the compute element, and expand your student folder
3. Right mouse click on ESXi-01 host and select “Edit Settings”
4. Add a second disk to your ESXi-01 host and ensure the following:
   1. 100GB in size
   2. Thin Provisioned
5. If you have closed your session to your ESXi-01 host from the previous task, open a new one and authenticate as the root user.
6. In the Navigator pane on the left, note the number beside the option named Storage. If that value is 1, you are finished this part and you can proceed to the second last step to stop the remote command line management services. If the number is 0, complete the remaining steps.
7. Using Putty, open an SSH session to your ESXi-01 VM IP address and authenticate as the root user.
8. Enter the command esxcli storage core adapter rescan --all.
9. Exit out of the SSH session.
10. Return to the ESXi-01 web management page.
11. Right-click the Storage link in the Navigator pane and select New datastore.
12. On the Select creation type page click Next.
13. On the Select device page enter datastore1 in the Name text box and click Next.
14. On the Select partitioning options page click Next.
15. On the Ready to complete page click Finish.
16. On the Warning pop-up click Yes.
17. Stop the remote command line management services. If you are not still there, click Manage in the Navigator pane and select the Services tab. Right-click TSM-SSH and click Stop. Right-click TSM and click Stop.
18. Repeat the process for your ESXi-02 VM.

# Task 6: Explore an ESXi Host

In this task, you will explore your ESXi host to find information about it.

1. If you closed your session to your ESXi-01 host from the previous task, open a new one and authenticate as the root user.
2. Explore the user interface by clicking objects, tabs and information properties.

Q1. How many CPUs does this ESXi host have?

Q2. How much memory does this ESXi host have?

Q3. Is the NTP service running on this ESXi host?

Q4. How many virtual machines are on this host?