Lab 1.1.2b Lab Environment Setup – Hyper-V

Introduction

A network lab environment can be used to test upgrades/patches, evaluate new features, or as a training environment for hands-on experience.

Objectives

In this lab the student will:

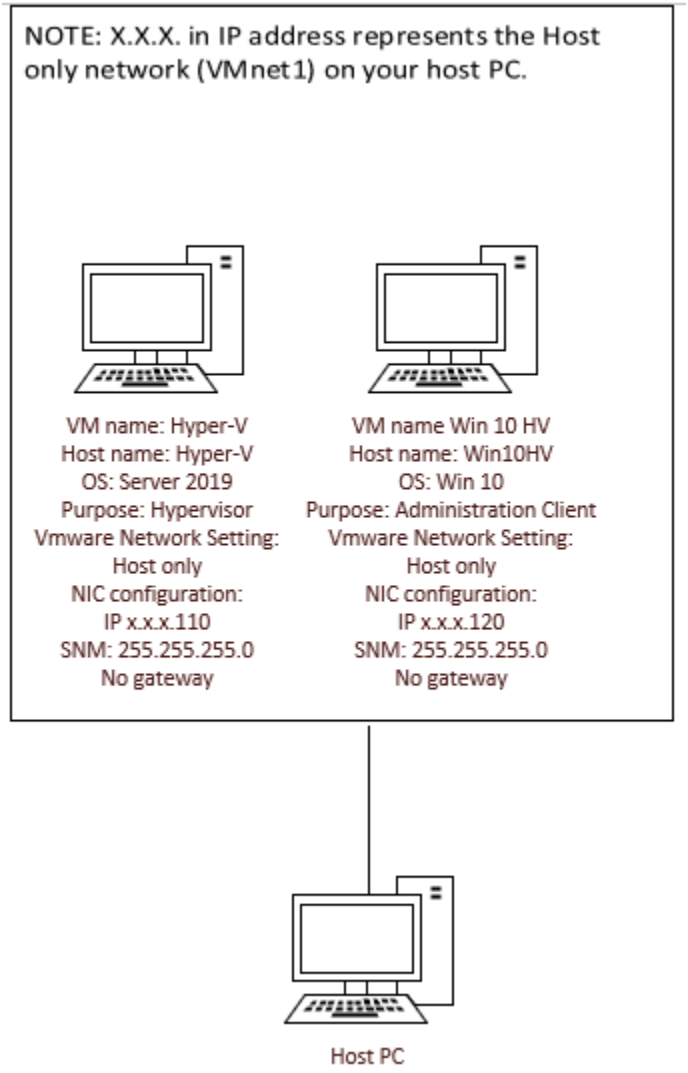
- Install, configure and manage virtual networking and storage [WECM]

Equipment/Supplies Needed

- Host Computer with VMware Workstation Pro
- Windows 10 **Installer disk Image file (ISO)**
- Windows Server 2019 Installer disk image file (ISO)

Assignment

Students will configure a Hyper-V Lab environment, as shown in figure below, for use in subsequent labs.
Key activities include creation of the following:
(1) A Windows 10 client Virtual Machine (VM)
(1) Windows Server 2019 Virtual Machine (VM)



Procedure

1. Create a Windows Server 2019 VM to service all Hyper-V VMs in this course. A separate Windows Server VM will be created for VMware VMs.
    a. Create the VM
        i. On a host PC running VMware Workstation Pro install a Windows Server 2019 VM.
        ii. In VMware Workstation Pro select the Home tab, click on 'Create a New Virtual Machine'.
        iii. Use the Typical (recommended) configuration.
        iv. Select 'Installer disc image file (ISO)' as the source and browse to the location of the iso as per your instructor's directions.
        v. Leave the product key blank.
        vi. If your instructor wants you to use a specific username and password you will be told. Otherwise, feel free to use your own. It is suggested that you use

the same password for all VMs in this course. That way you'll never forget what password you set for a VM.

vii. Virtual machine names should match the diagram above.
viii. Location of virtual machine disk files is up to you. It is suggested that you use the default location. If your instructor wants you to store your VM files in a specific location you will be told.
ix. Store virtual disk as a single file.
x. Before clicking on 'Finish' click on 'Customize Hardware' button.
    1. Set Memory to 8GB.
    2. Set Processors to 1 with 2 cores.
    3. Set Network Adapter to Host-only (VMnet1).
xi. Click OK, Finish, then start VM.
xii. Follow prompts to install the VM's OS using either Standard or DataCenter edition.
xiii. After the OS is installed, set the static IP as per the diagram above.
xiv. Assign a password to the Administrator account.
xv. Ensure VMware Tools is installed.
xvi. **Screenshot VM's Local Server settings** to verify proper configuration.

b. Enable nested virtualization.
    i. Turn off the VM.
    ii. Right-click its name in the Library and select Settings.
    iii. Click Processors and enable the following options:
        1. Virtualize Intel VT-x/EPT or AMD-V/RVI
            a. NOTE: These settings cause conflicts in some BIOS/EUFI. If you have errors starting the VM, try unselecting the option.
        2. Virtualize CPU performance counters
            a. NOTE: This setting causes conflicts in some BIOS/EUFI. If you have errors starting the VM, try unselecting the option.
    iv. Click OK.
    v. Turn the VM back on.
c. Download and install the Chrome offline installer.
    i. Download Location
    ii. Copy the Chrome installer to the Windows Server 2019 VM.
    iii. Install Chrome.
d. Install Windows Admin Center
    i. On the host computer, download Windows Admin Center
    ii. Copy the Windows Admin Center installer into the Windows Server 2019 VM.
    iii. Launch the installer on the Windows Server 2019 VM.
        1. License Agreement: Accept the terms and click Next.
        2. Microsoft Update: Click Next.
        3. Gateway Server: Click Next.
        4. Trusted Hosts: Click Next.
        5. Port Specification:
            a. Check the "Redirect HTTP port 80 traffic to HTTPS" option.

b. Click Install.
6. Ready to Connect: Click Finish.

e. Verify installation:
   i. Navigate to https://Hyper-V
   ii. Provide the requested login information.
      1. User name: Administrator
      2. Password: <As decided above>
   iii. Click the only server in the list.
   iv. Select "Use another account for this connection" and enter the Administrator credentials again.
   v. **Take a screenshot** showing Windows Admin Center's Overview information.

2. Create Windows 10 Virtual Machine (VM).
   a. Install Windows 10
      i. On a host PC running VMware Workstation Pro install a Windows 10 VM. This VM will serve the Administrative role for the lab network environment.
      ii. Follow instructions in step 1 above to create the Windows 10 VM except for the following changes.
         1. Set Memory to 2GB.
         2. Select Windows 10 Pro as the OS version.
         3. Do not sign into a Microsoft account. Instead, create a local account by selecting the join domain instead.
         4. Username and password are as per instructor's directions.
         5. Decline Cortana Assistant.
         6. Set all default privacy settings to NO.
      iii. Install VMWare Tools if necessary.
      iv. Open a Command Prompt, enter the command "ipconfig /all", **and take a screenshot of the information**.

Assessment

Place all screenshots in a Word or PDF document and upload that document for grading. Submit the following items for grading as evidence of successful lab completion.

Concerns Working Towards Proficiency	Criteria Standards for this Competency	Accomplished Evidence of Mastering Competency
	Screenshot of Windows Server 2019's Server Manager Local Server Properties – 33.3 points.	1 screenshot; 33.3 pts
	Screenshot of Windows Server 2019's Windows Admin Center Overview window – 33.4 points.	1 screenshot; 33.4 pts

	Screenshot of Windows 10's "ipconfig /all" command output – 33.3 points.	1 screenshot; 33.3 pts