Lab Environment for Windows Server 2019 Module

Welcome to J.B.H Enterprise where biology combines with technology.

You are the system administrator who in charge to create the enterprise computer and domain environment for our employees to work on.

The Domain JBH.Local will be implement in the following environment that you will create and the practice on

The minimum hardware requirements to create the LAB environment is:

- Processor. Minimum of 2.8 gigahertz (GHz) 64-bit processor (multi-core)
    - AMD:
        - Supports AMD Virtualization (AMD-V)
        - Supports Second Level Address Translation (SLAT)–nested page tables
    - Intel:
        - Supports Intel Virtualization Technology (Intel VT)
        - Supports SLAT–Extended Page Table
- Hard disk: free 256 GB solid-state drive (SSD) System Drive with one partition labeled drive C.
- RAM: Minimum of 16 gigabytes (GB).
- Network adapter.
- A stable internet connection that is running during the deployment
- Mouse or compatible pointing device.
- Windows server 2019 Standard or Windows 10 Pro/Ent installed on the host computer
- Windows server 2019 standard/Datacenter installation ISO file name WinServer2019.iso inside folder called **ISO** on drive C: (you need to download the Windows Server 2019 evaluation ISO file from Microsoft – you can use this link https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2019
  Make sure you download the ISO file only)

- Windows 10 Enterprise installation ISO file name Win10_Ent.iso inside folder called **ISO** on drive C: (you need to download the Windows 10 Enterprise evaluation ISO file from Microsoft – you can use this link https://www.microsoft.com/en-us/evalcenter/evaluate-windows-10-enterprise
  Make sure you download the ISO file only)
- Download the Zip file containing the Script and the base files for the lab environment from:
  https://drive.google.com/file/d/1FyvZQ7e78OTzxMgHoYKHAjzbsiTmdmMt/view?usp=sharing
  and extract the file to C:\scripts Directory on the host computer. (If the Directory does not exist then create it)

In the following exercise you will use Hyper-V to create and then practice on virtual machines.

After following this document you will have the following Hyper-V VMs to practice on.

Virtual Machine	Role
HQ-DC1	Domain controller for the JBH.Local Domain
HQ-SVR1	Windows Server 2019, member server in the JBH.local domain
HQ-SVR2 HQ-SVR3	Windows Server 2019 core, member server in the JBH.local domain
HQ-SVR4	Virtual machine with no operating system (OS) installed
HQ-RTR	Windows Server 2019 core, configure as a router for connection between LANS and internet
BR-SVR1	Windows Server 2019 Core, connected to the branch office network. A member server in the JBH.local domain
HQ-SA1	Windows 10 client Workstation Standalone (not join to a domain)
JBH-CL1	Windows 10 client Workstation joined the domain on the HQ network
JBH-CL2	Windows 10 client Workstation joined the domain on the Branch network

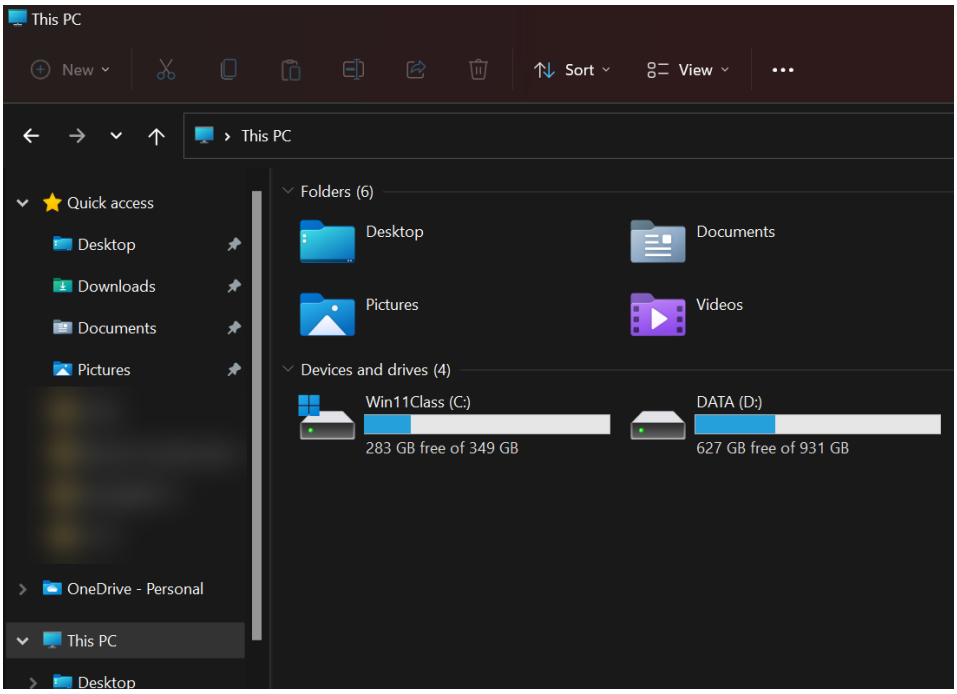
Environment Setup

On your host computer first install the hyper-V role: (Note: IF Hyper-V is already installed skip to step 5) If another Virtualization program is running on your host computer first uninstall it and then proceed to the hyper-v installation.

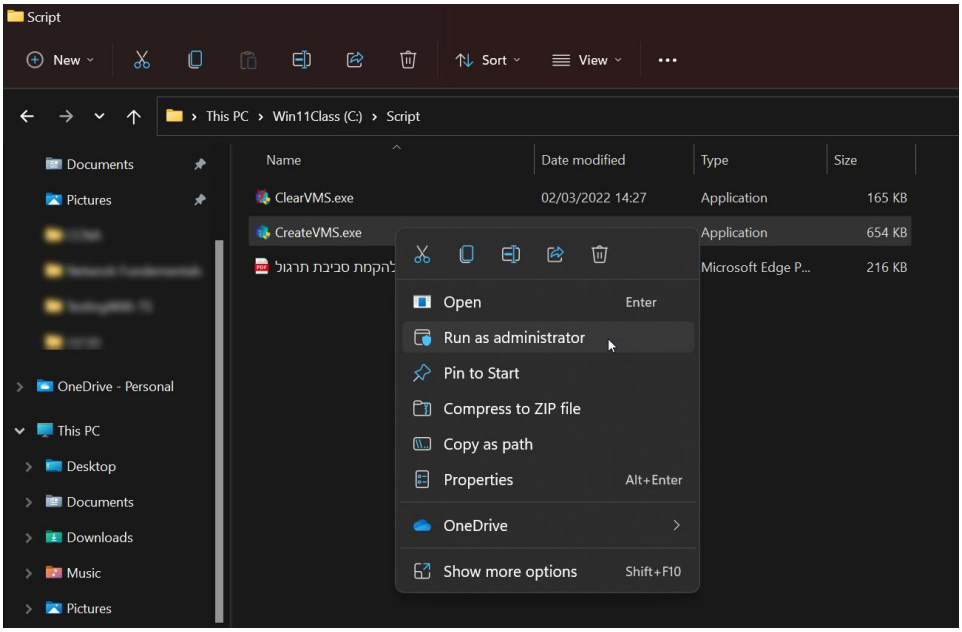
1. Right click on start button and then right click on powershell and choose **Run as Administrator**.
    a. If your host computer running windows server 2019 In the powershell type the following command and then press **Enter:**
    `Install-WindowsFeature –name Hyper-V –IncludeAllSubFeature –includeManagementTools -Restart`
    b. If your host computer running windows 10 pro/ent In the powershell type the following command and then press **Enter:**
    `Enable-WindowsOptionalFeature -Online -FeatureName:Microsoft-Hyper-V -All`
    Press on 'Y' and then press Enter to restart
2. Wait for the computer to restart
3. Click on the start button and extend **Windows Administrative Tools**
4. Open the **Hyper-V** management Console.

Create the LAB Environment for Windows Server 2019

1. On the host computer right click on start button and open file explorer.



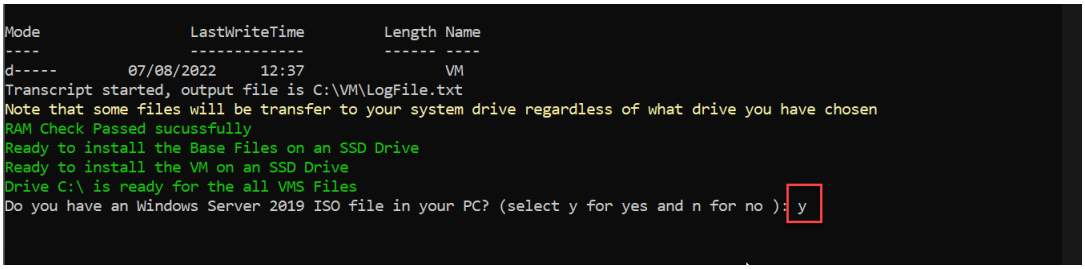
2. Navigate to C:\scripts and right click on **CreateVMS.exe** and choose **Run as** Administrator. If a warning massage appear approve it.

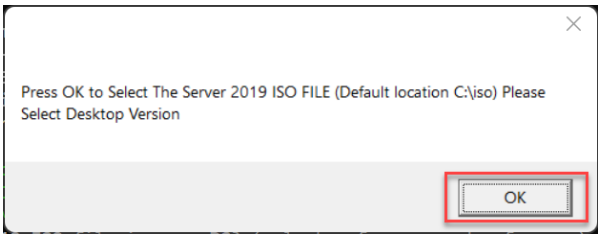


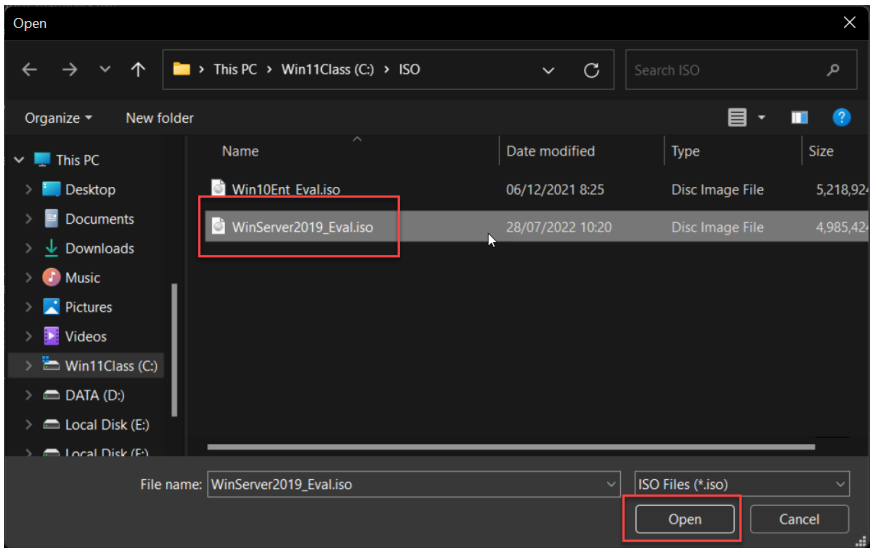
3. Type the drive you want the VMS to be installed on, Then follow the instructions in the script (**Note – the drive you install the VMS on must be an SSD drive**).

4. Choose the base resolution for your VMS from three options (Default is 1366 X 768) end press enter.

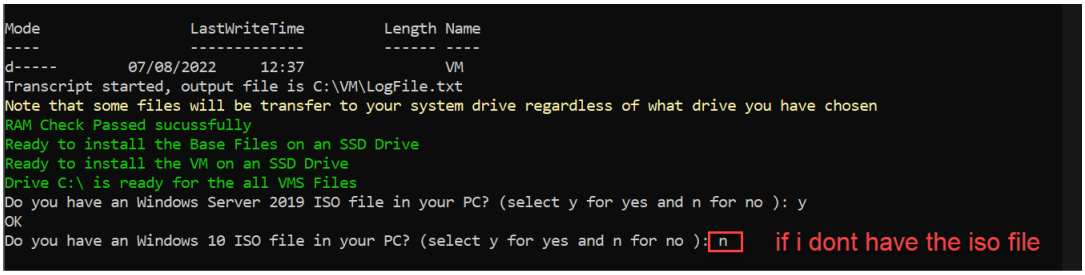
5. You will be promoted to download the windows server2019 ISO directly from the script, if you already downloaded the WinServer 2019 ISO file, type yes and then press enter to direct the script to the iso location. If you didn't download the ISO file already the type no and press enter, then the script will download the ISO file automatically and save it in your C drive.

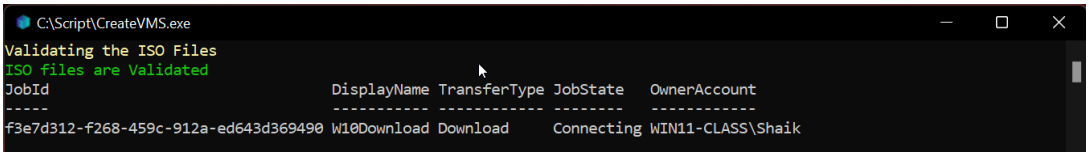






6. Next you will be promoted to download the Windows 10 ISO directly from the script, if you already downloaded the WIN 10 2019 ISO file, type yes and then press enter to direct the script to the iso location. If you didn't download the ISO file already the type no and press enter, then the script will download the ISO file automatically and save it in your C drive.





7. Wait for the process to complete depending on your host PC and your hardware it's can take between 60 – 70 minutes, then go to the hyper-V management console and verify that **There are 10** new virtual machines. **Note** during the deployment several drives will be deploy on your host machine with the letter **W** if you get a prompt to format them, click cancel, the script will do that automatically and then close the drive automatically.