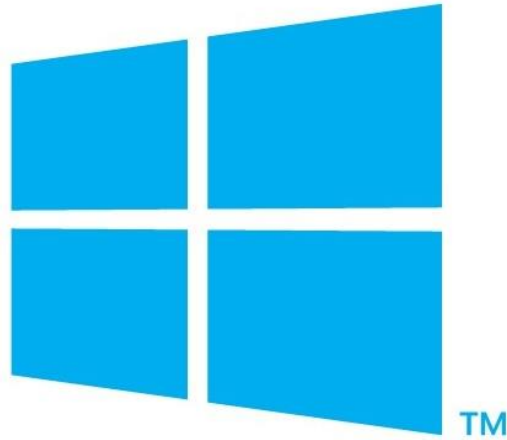




Department of Information Systems

Arkansas. A State of Technology.



VIRTUALIZE YOUR ENVIRONMENT INSTALL MANAGE MAINTAIN AND TROUBLESHOOT

Prepared By

DIS APSCN LAN Support

<ftp://disftp.state.ar.us/pub/APSCNLAN/Training Documents/>

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Going Virtual? What to do!

Things to consider before you virtualize your environment

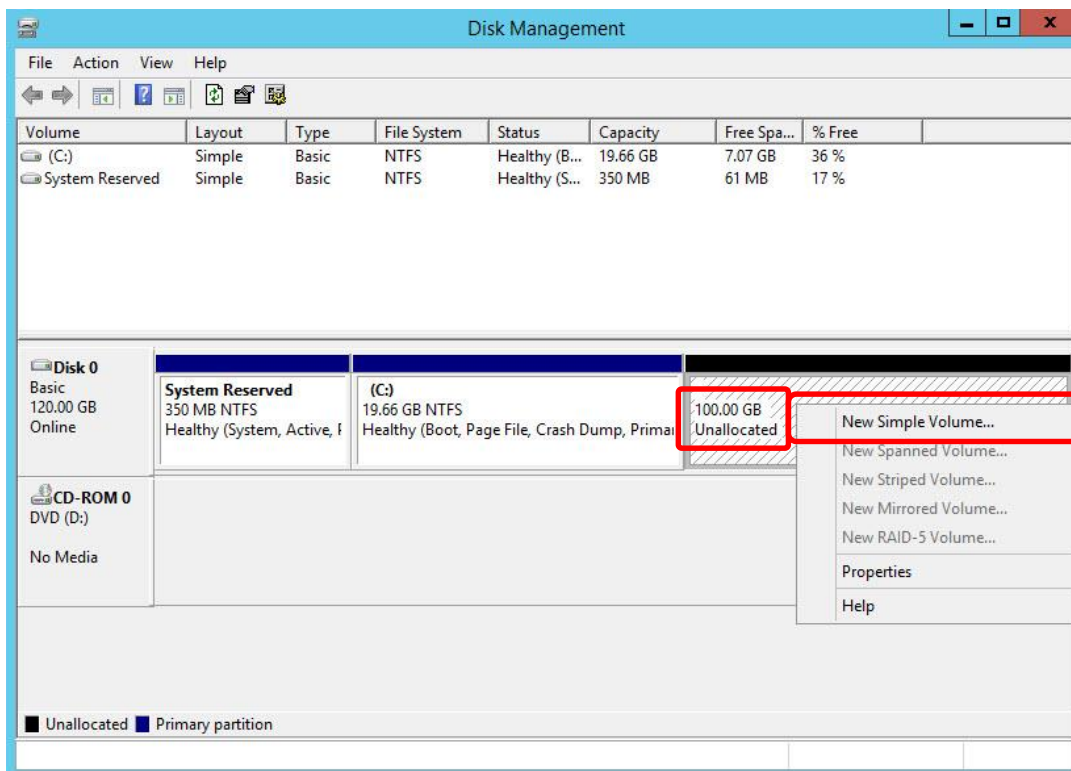
1. Decide which type of virtualization (Hypervisor) you will implement. **Type 1** native hypervisors run directly on the system hardware. **Type 2** hosted requires a host operating system.
 - a. Type 1 examples – VMware ESXi Server, Microsoft Hyper-V, Citrix/Xen Server
 - b. Type 2 examples – VMware Workstation, Microsoft Virtual PC, Oracle Virtual Box
2. Why are you moving to a virtualized network? There are many things to consider before you decide if virtualizing your environment is the right thing for you.
 - a. Cost
 - b. Performance
 - c. Scalability
 - d. Usability
3. Improve your disaster recovery plan. Utilize the virtual environment to create an affordable replication site, and TEST!!!
4. Manage your VM's using SCVMM, Corefig and other free products.
5. Extend the life of your older applications. Need to upgrade to Server 2012 but your program is only compatible on Server 2008?

Configuring Hyper-V

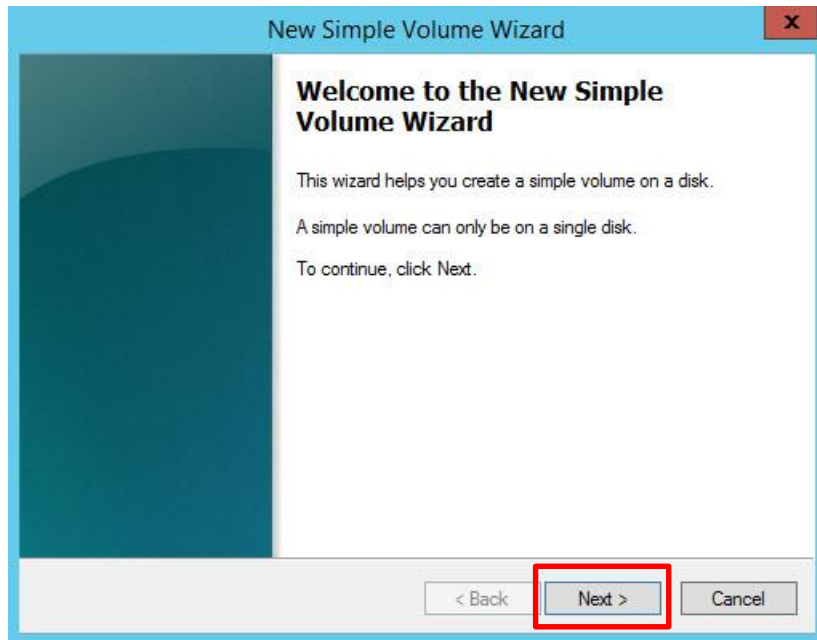
Pre-configuration for Hyper-V Installation

We will need to create a separate disk drive to hold the Virtual Machines and Configuration Files.

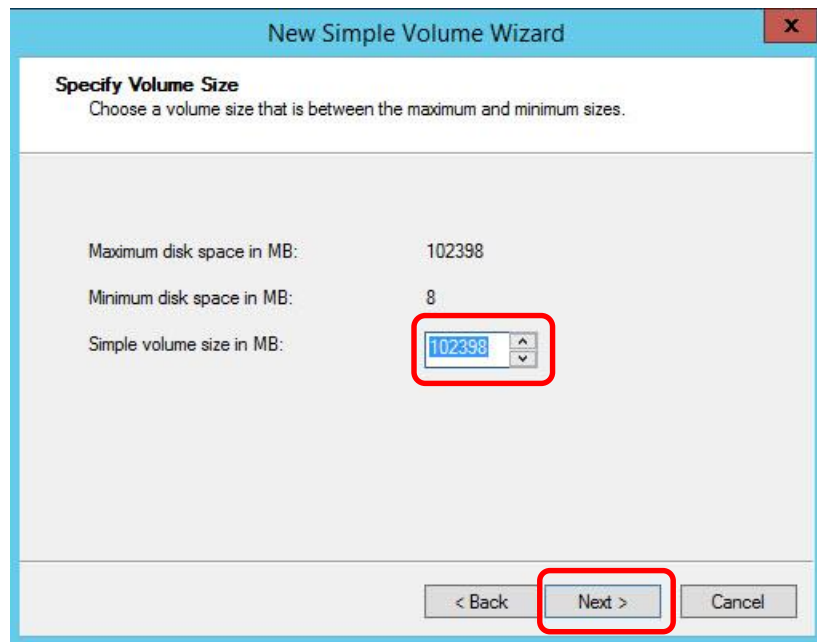
1. Bring up **Disk Management**. **Right click** on the unallocated drive space and Select **New Simple Volume**



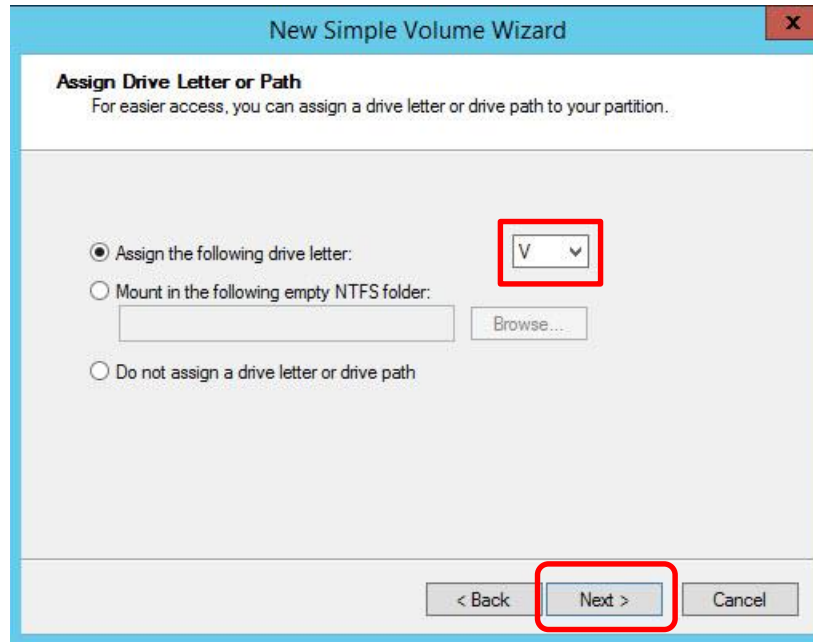
2. On **New Simple Volume Wizard** Page, Click **Next**



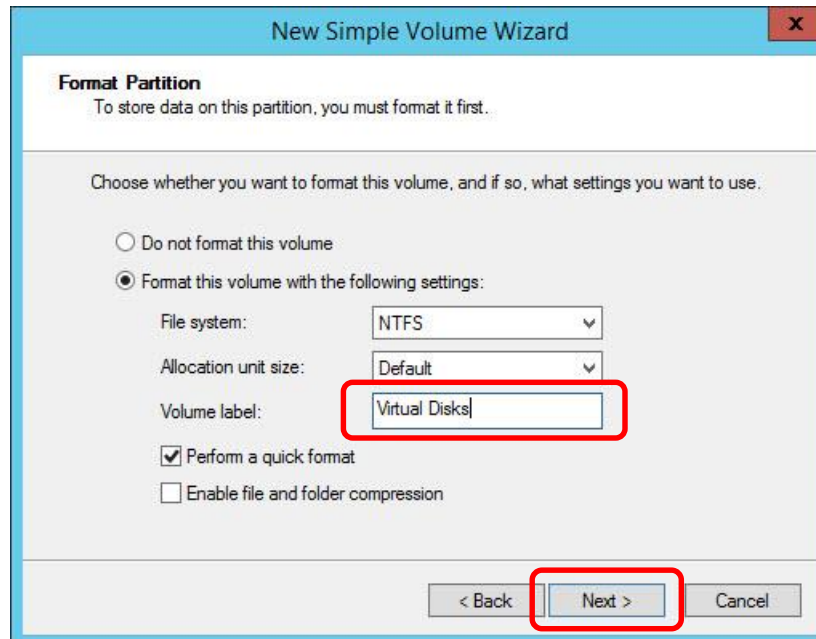
3. On **Specify Volume Size** Page, Enter Volume Size and Click **Next**



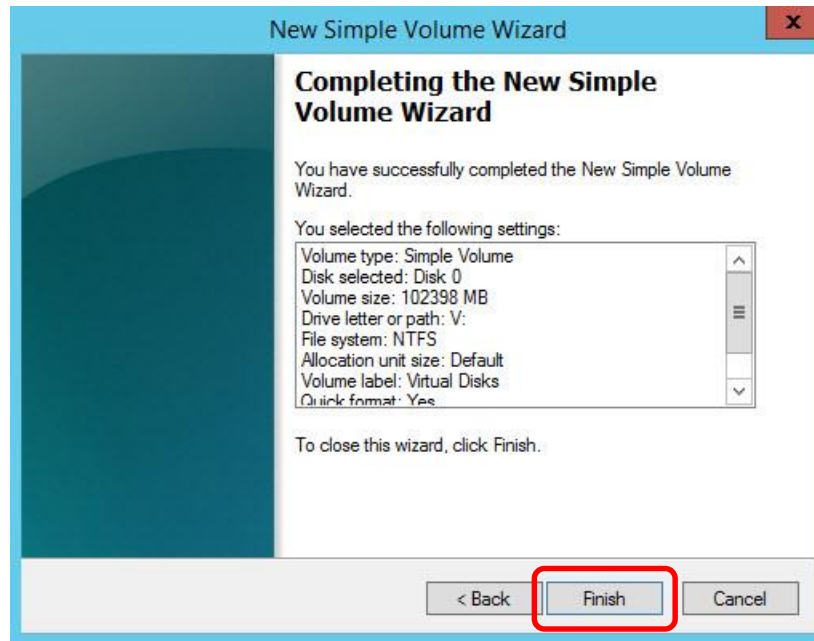
4. On **Assign Drive Letter or Path** Page, Choose a drive letter and Click **Next**



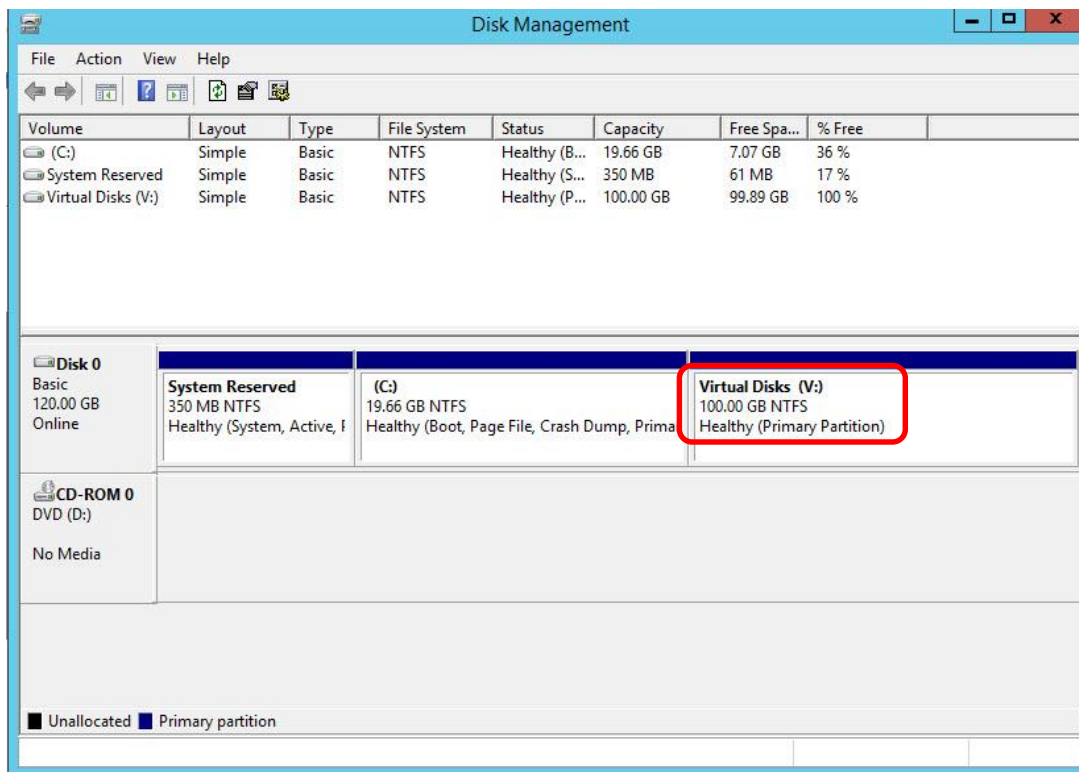
5. On **Format Partition** Page under Volume label, Enter **Virtual Disks** and Click **Next**



6. **Verify** your settings and click **Finish**



7. Your new volume should be created and ready to assign Virtual Disk

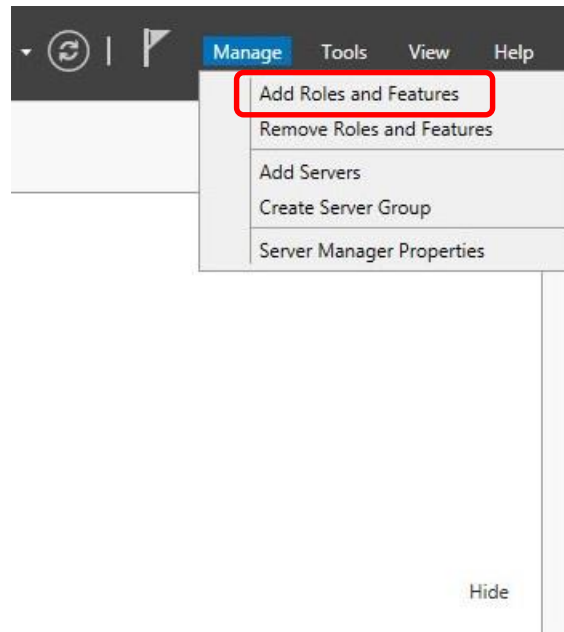


Installing Hyper-V

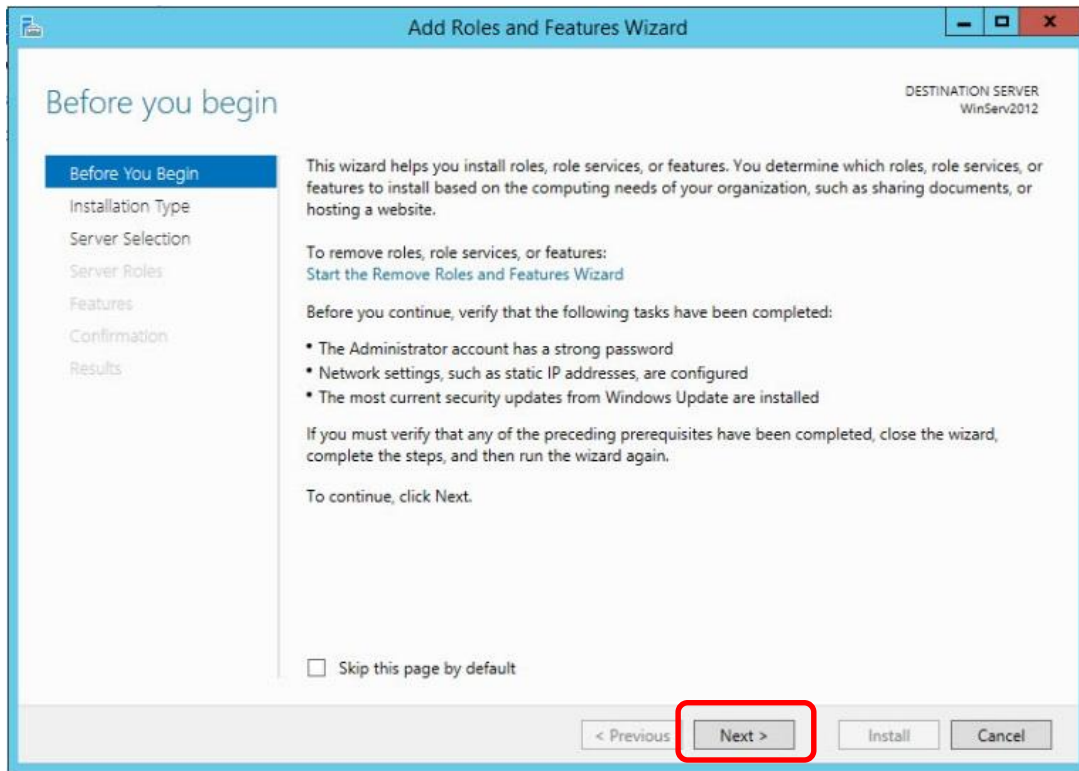
Installing Hyper-V as a Role in Windows Server

Pre-Installation Requirements

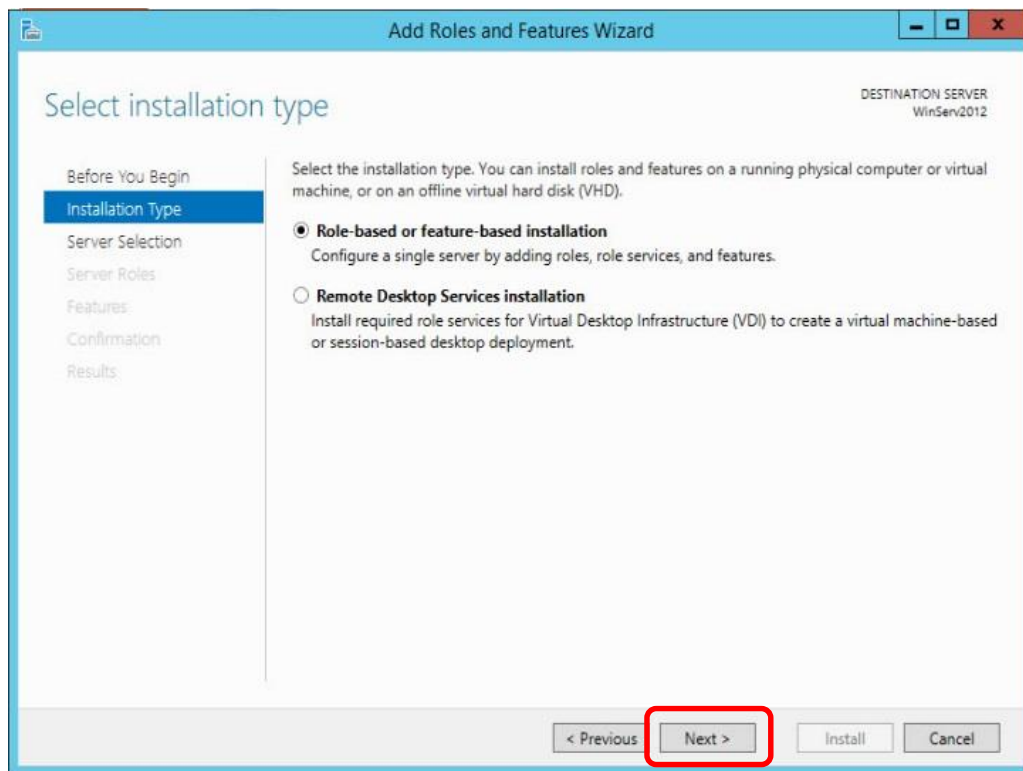
1. From the **Server Manager Dashboard** go to **Manage**, and then click **Add Roles and Features**



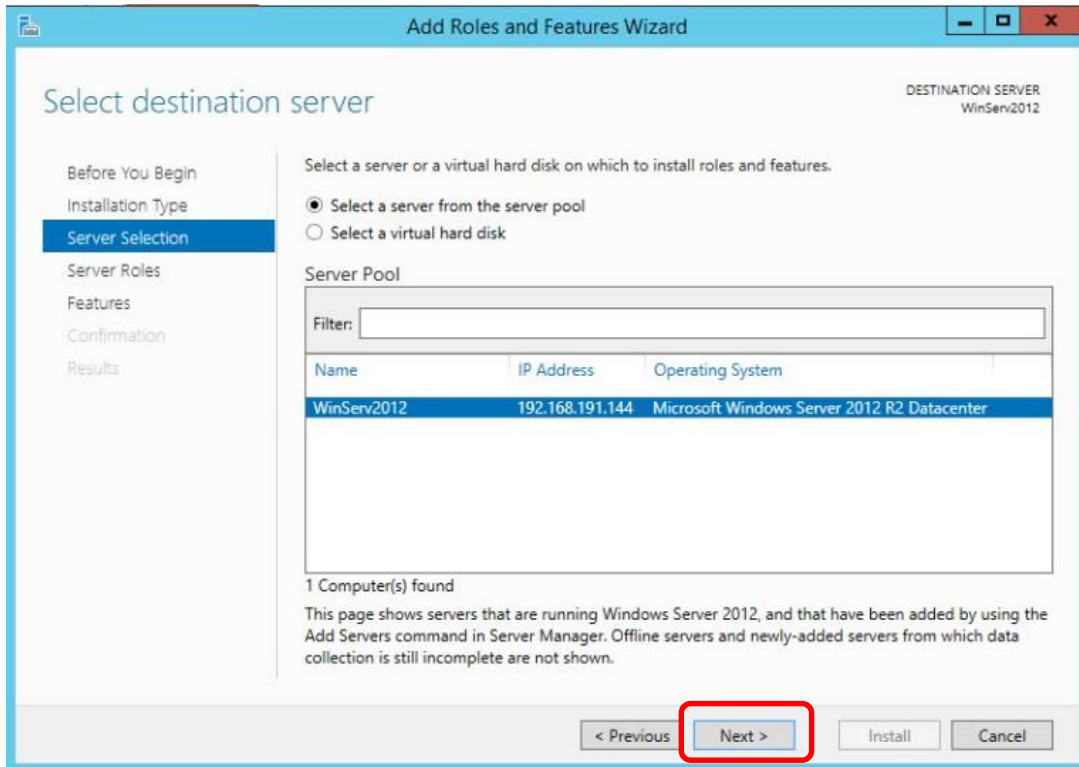
2. At **Before You Begin** page, Click **Next**



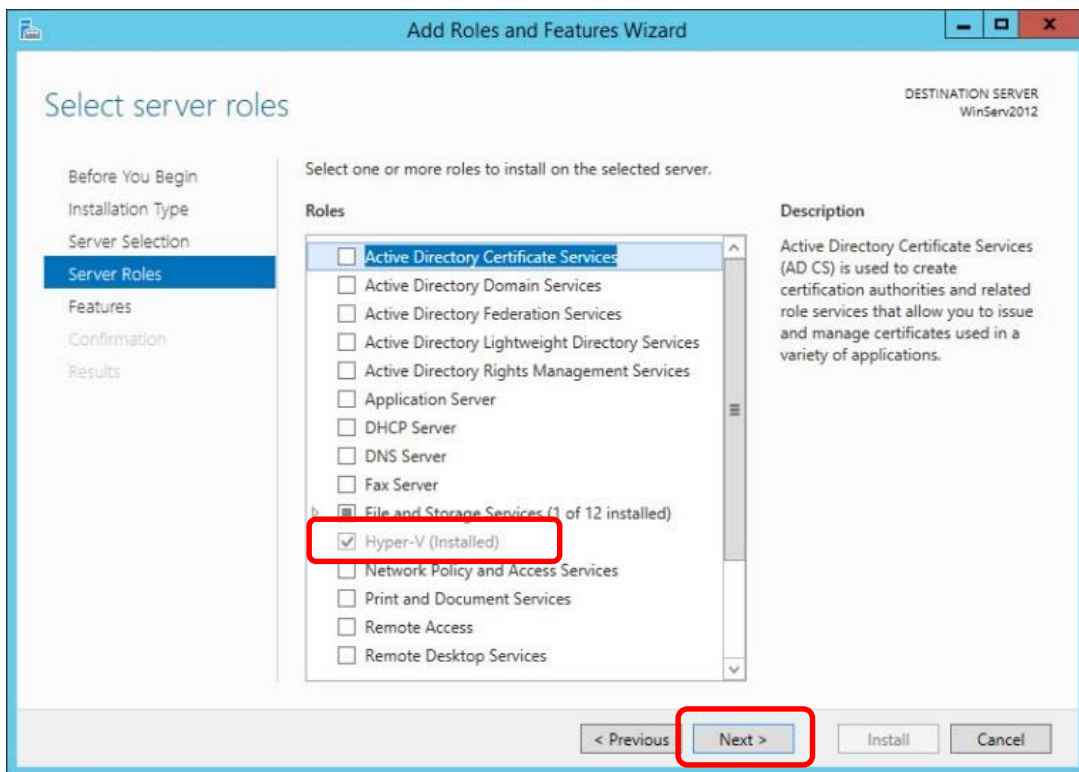
3. At **Installation Type** page, Click **Next**



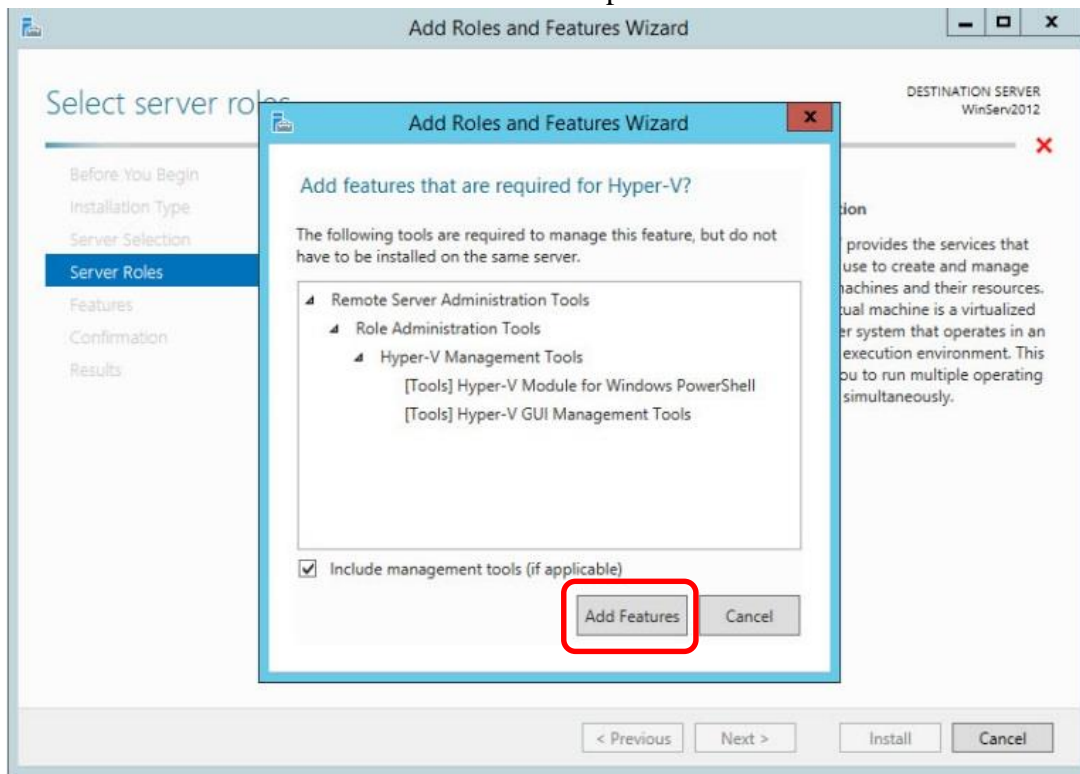
4. On the **Server Selection** page, Click **Next** or select the server you will install Hyper-V on



5. On the **Server Roles** page, Select **Hyper-V**

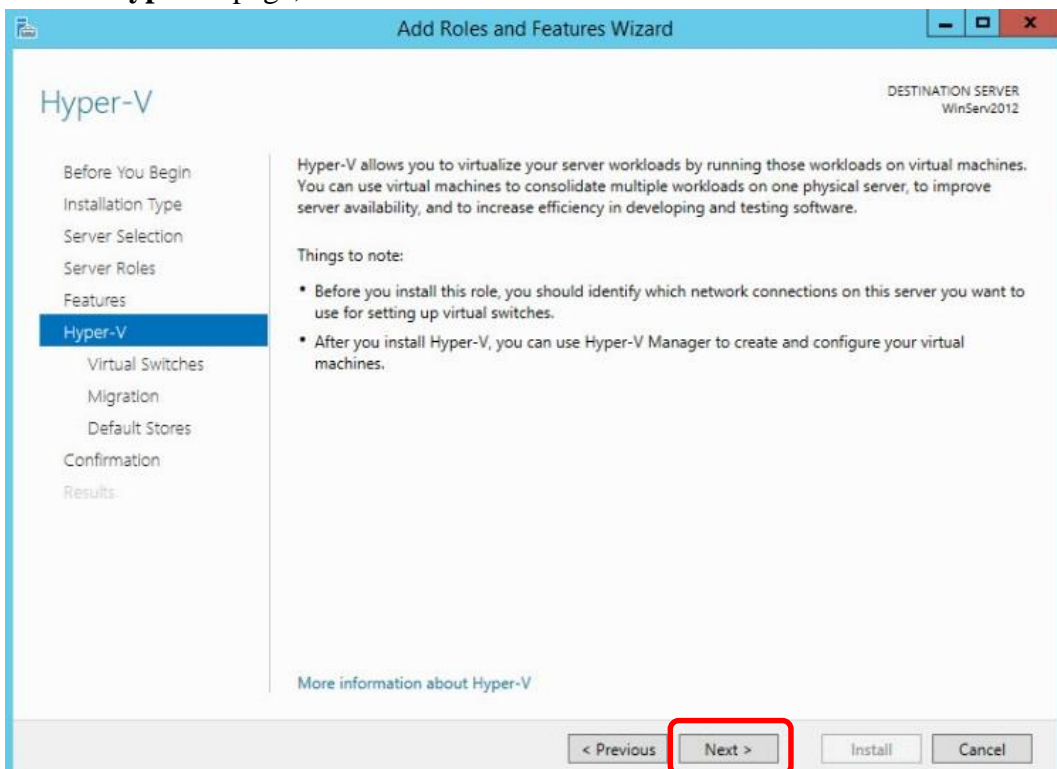


6. Click **Add Features** when the wizard comes up

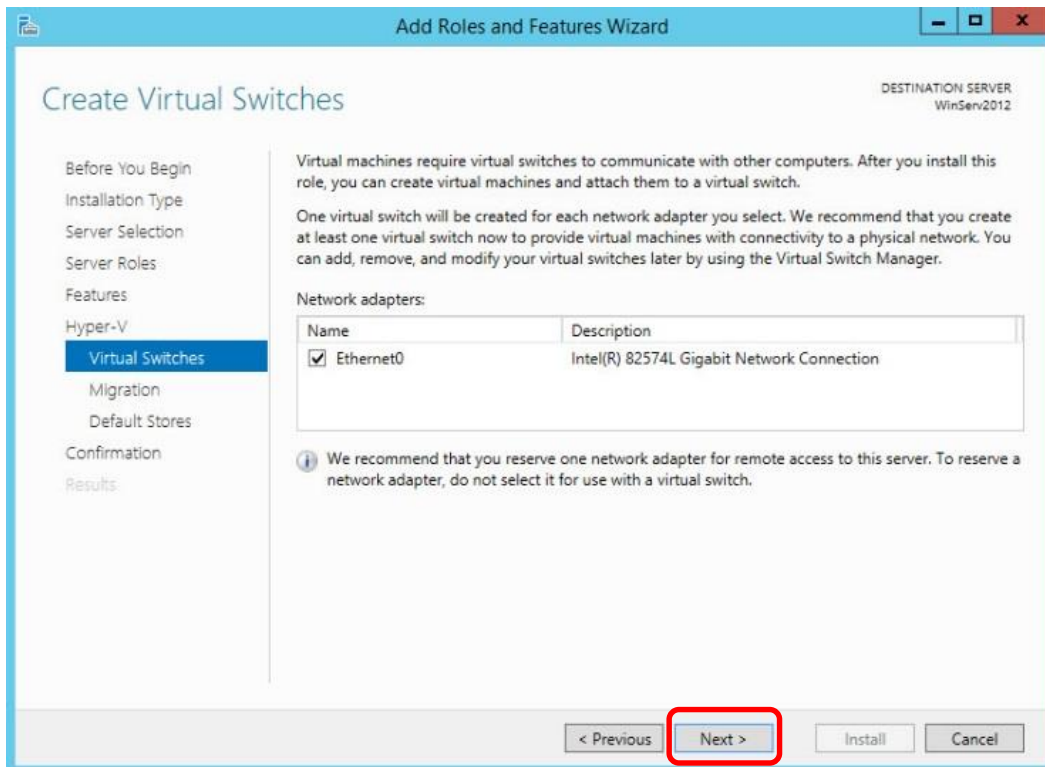


7. On the **Features** page, Click **Next**

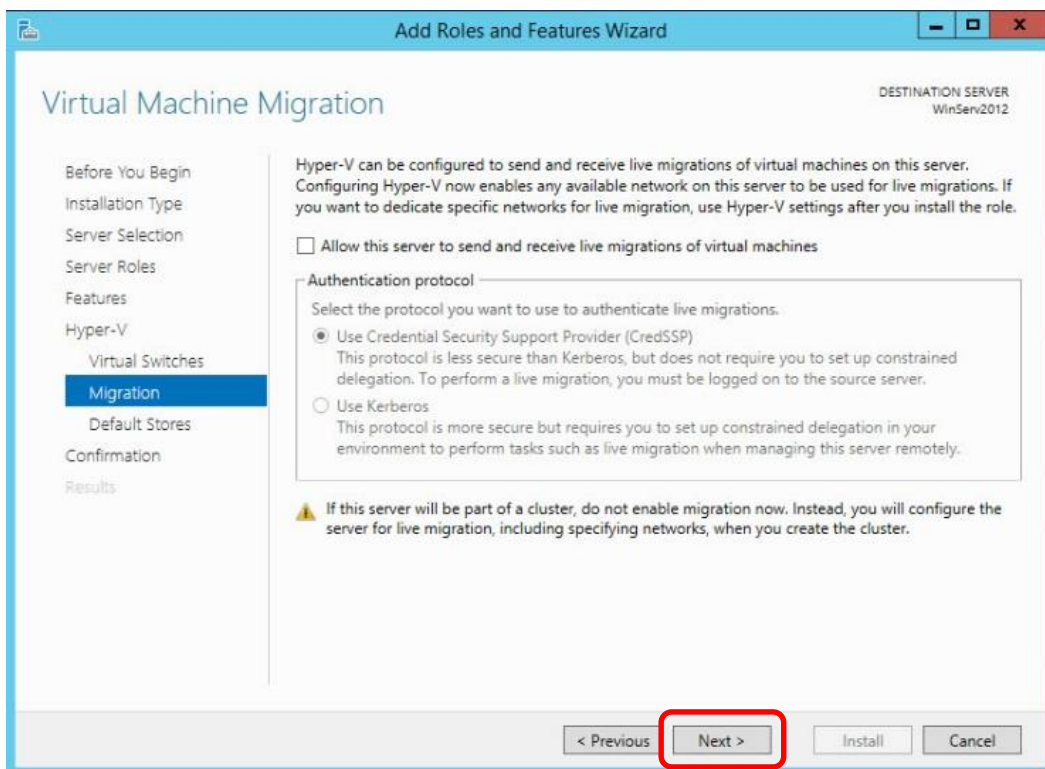
8. On the **Hyper-V** page, Click **Next**



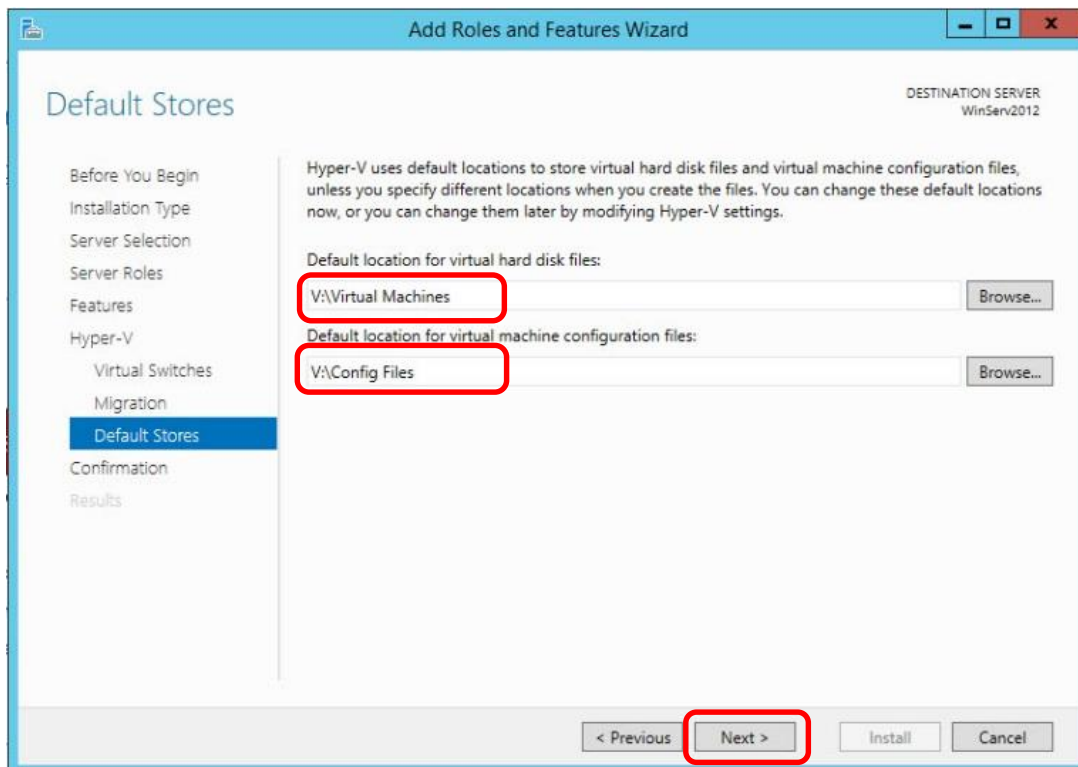
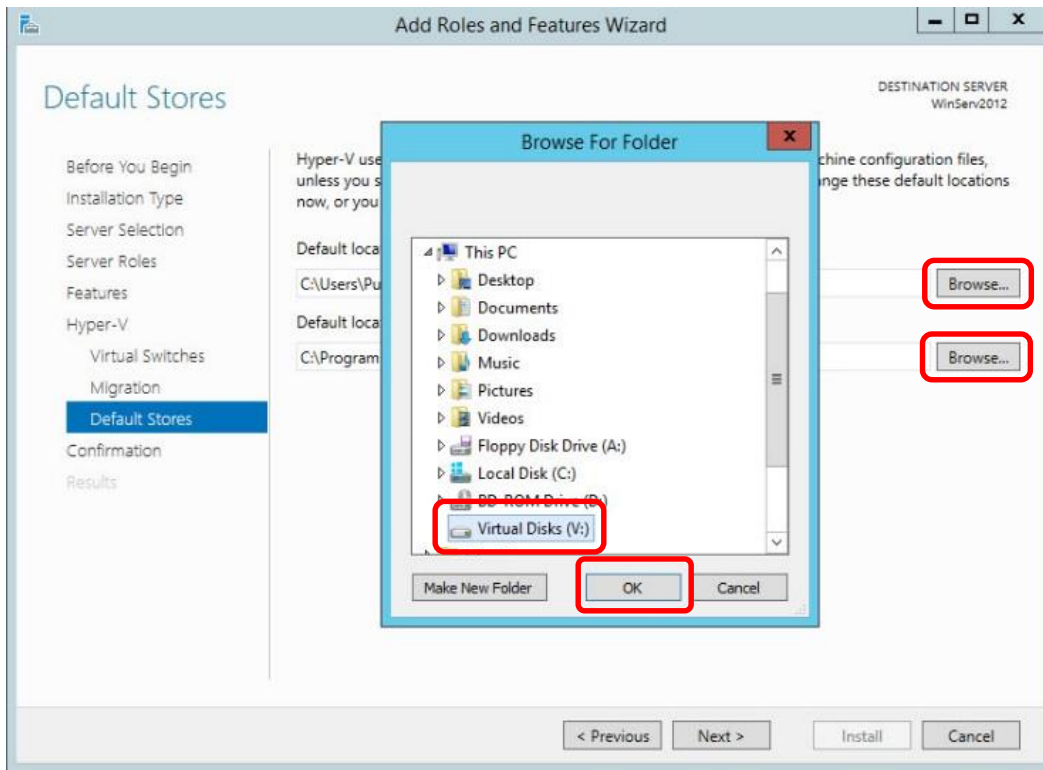
9. On the **Virtual Switches** page, Click on the NIC you will use to manage your Virtual Machines if you have multiple NICs



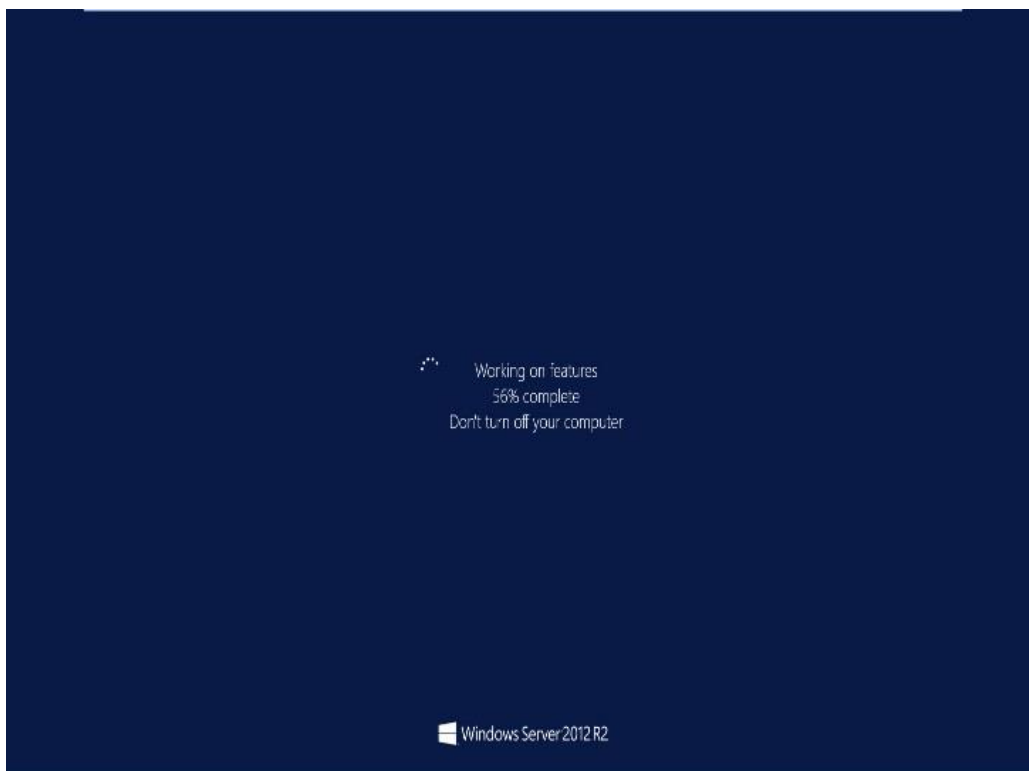
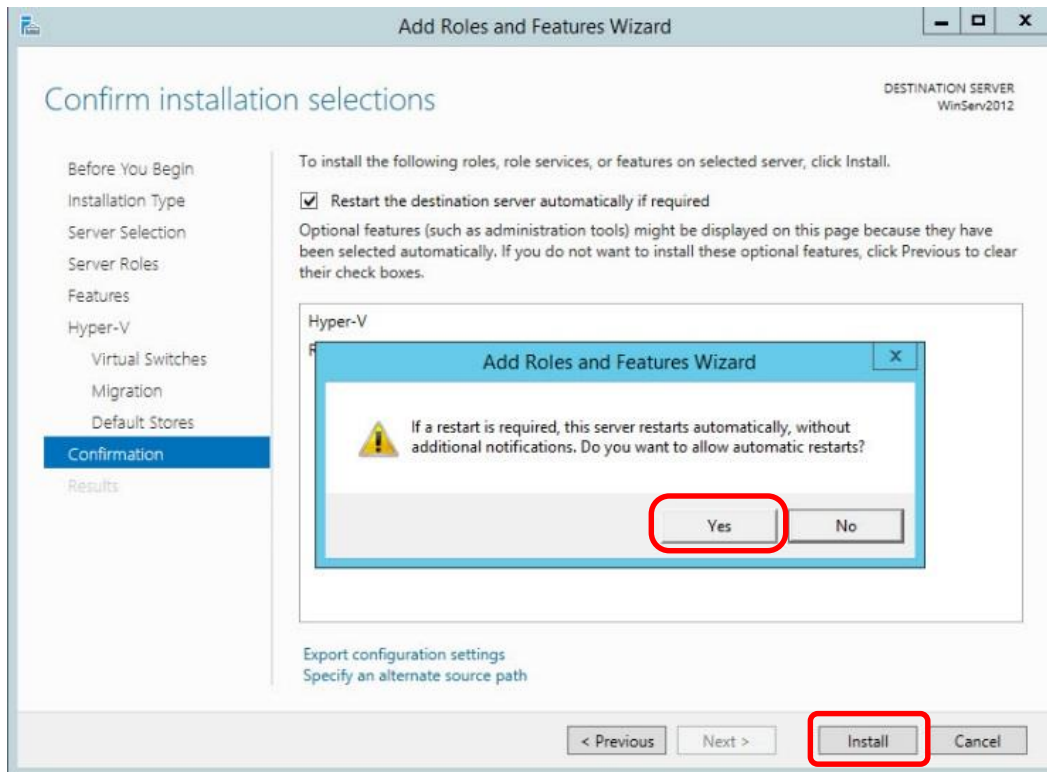
10. On **Virtual Machine Migration** page, Click Next



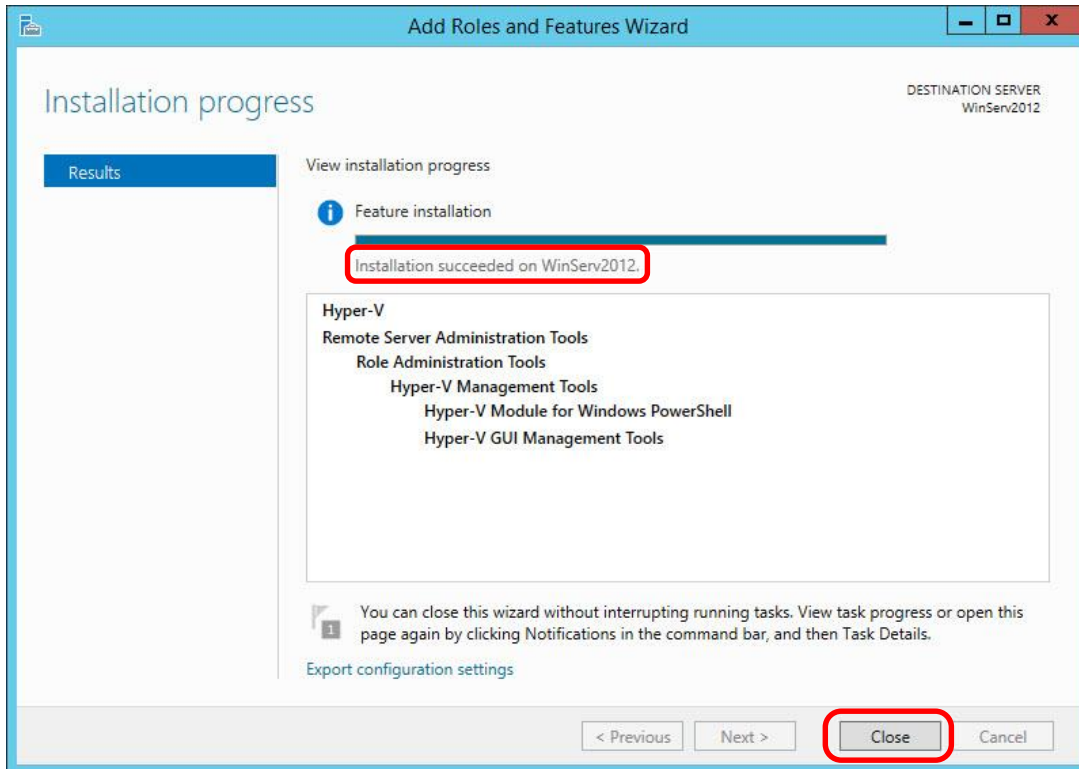
11. On **Default Stores** page, Click **Browse** and select the folder under the Drive you created for the Virtual Hard Disk and Virtual Machine Configuration Files then click **Next**



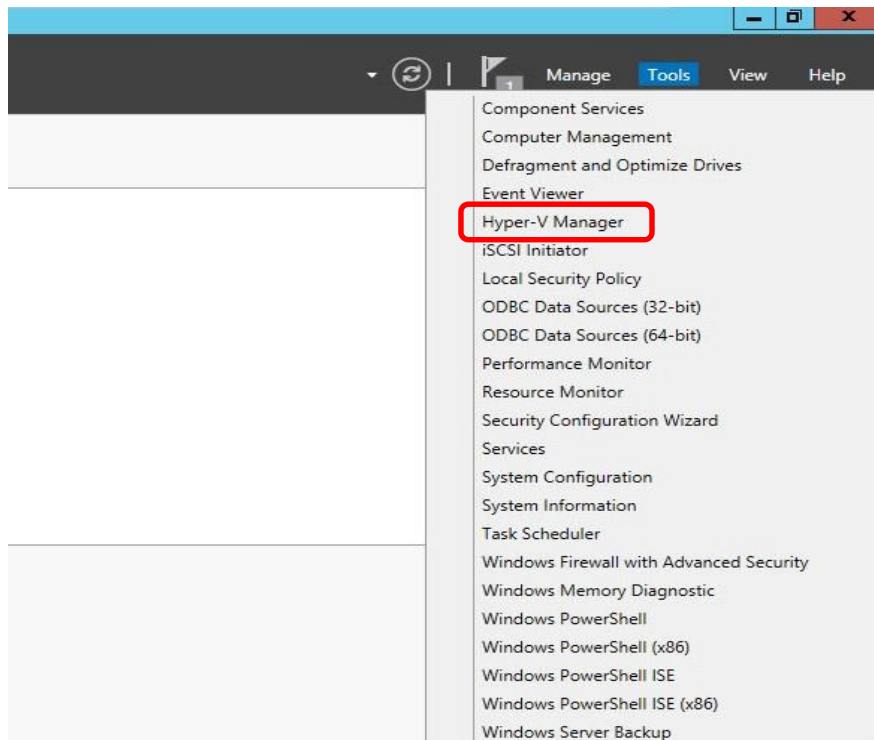
12. Check the Restart destination server... And choose **Yes**. Verify settings then click, **Install**. The Role will install and the server will automatically restart.



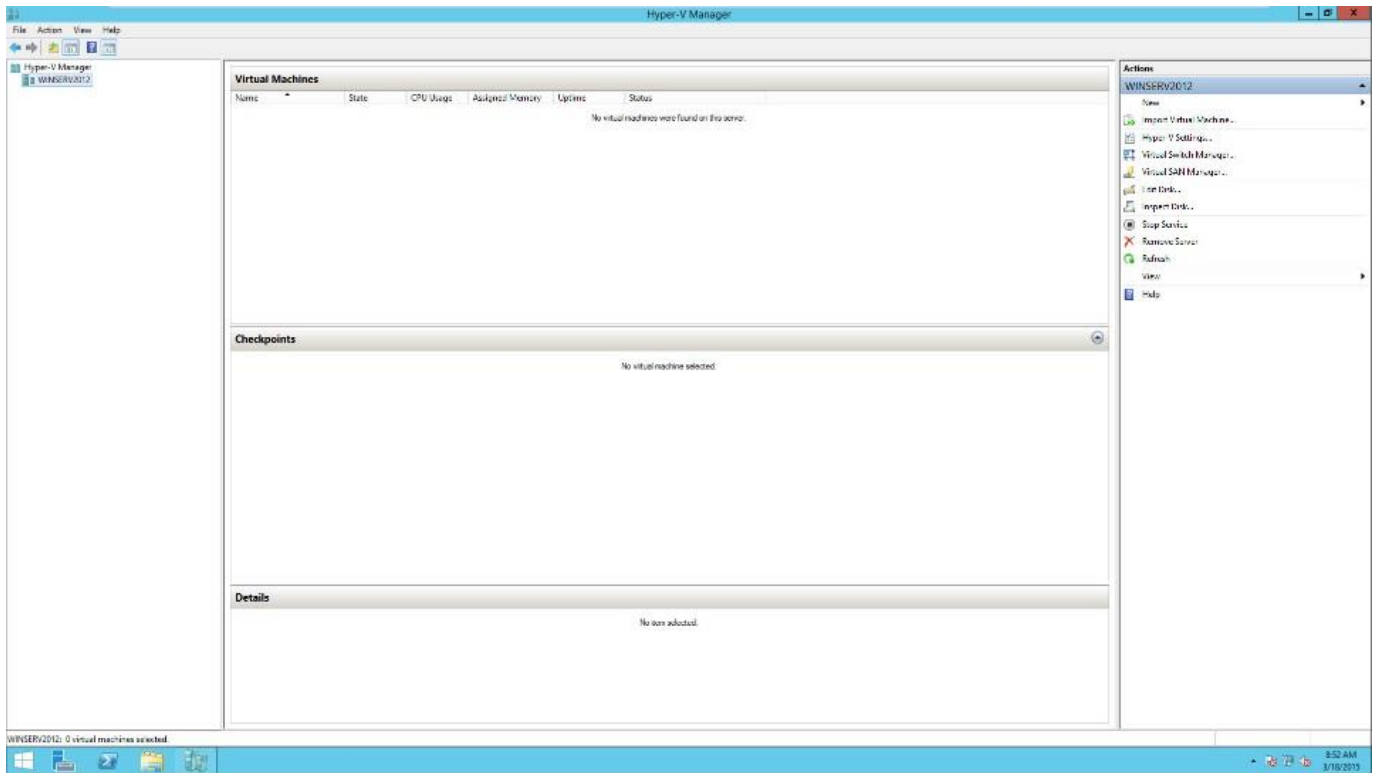
13. Once the server restarts and you login, the Installation progress will come up verifying Hyper-V has successfully installed. Click **Close**



14. Go to **Tools** and you will **Hyper-V Manager**. Click on **Hyper-V Manager** to bring up the Hyper-V Management Console



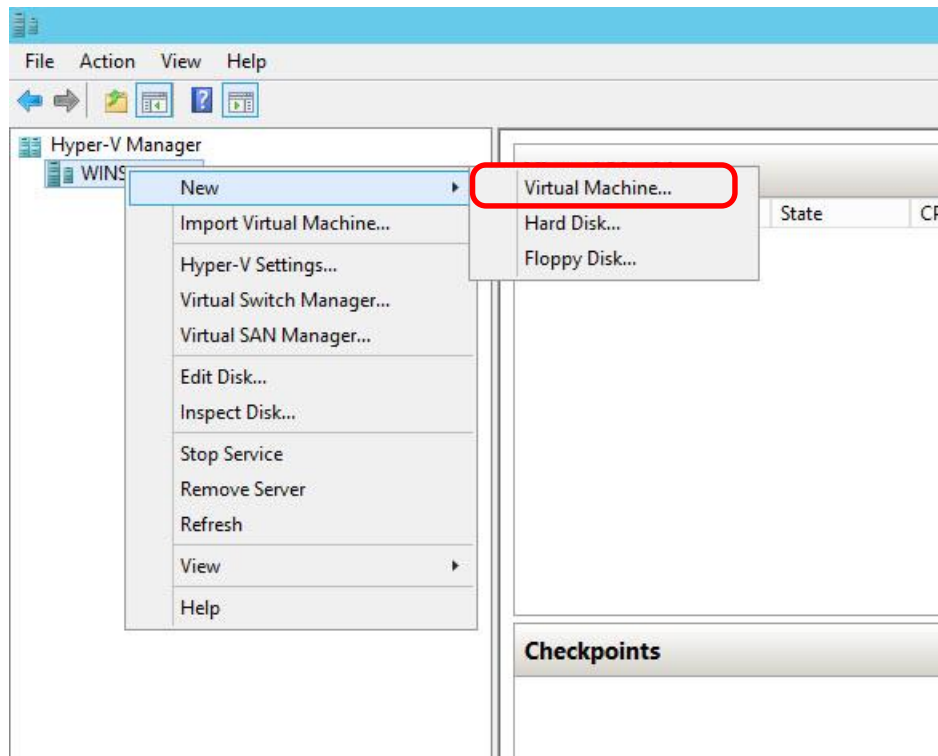
You will see the Hyper-V Manager. Now we will add our Virtual Machines to our Hyper-V Management Console



Manage Hyper-V

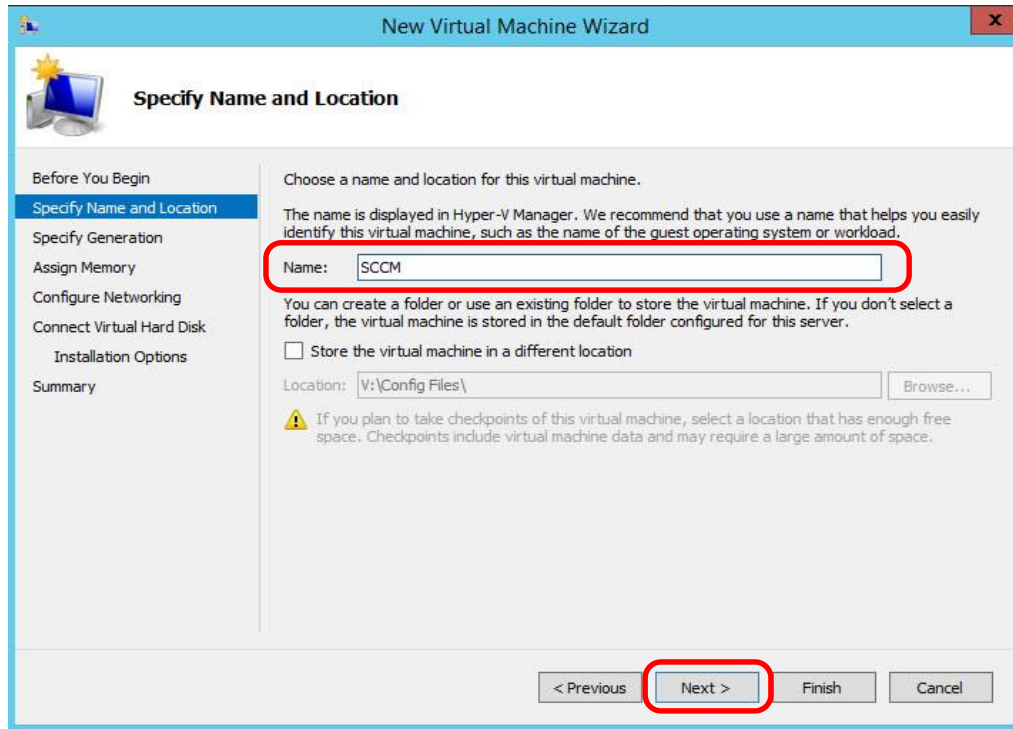
Installing Virtual Machines in Hyper-V

1. Bring up **Hyper-V Manager**. Under Actions Click **New** and select **Virtual Machine** or Right Click on your Hyper-V Host and Select **New > Virtual Machine**

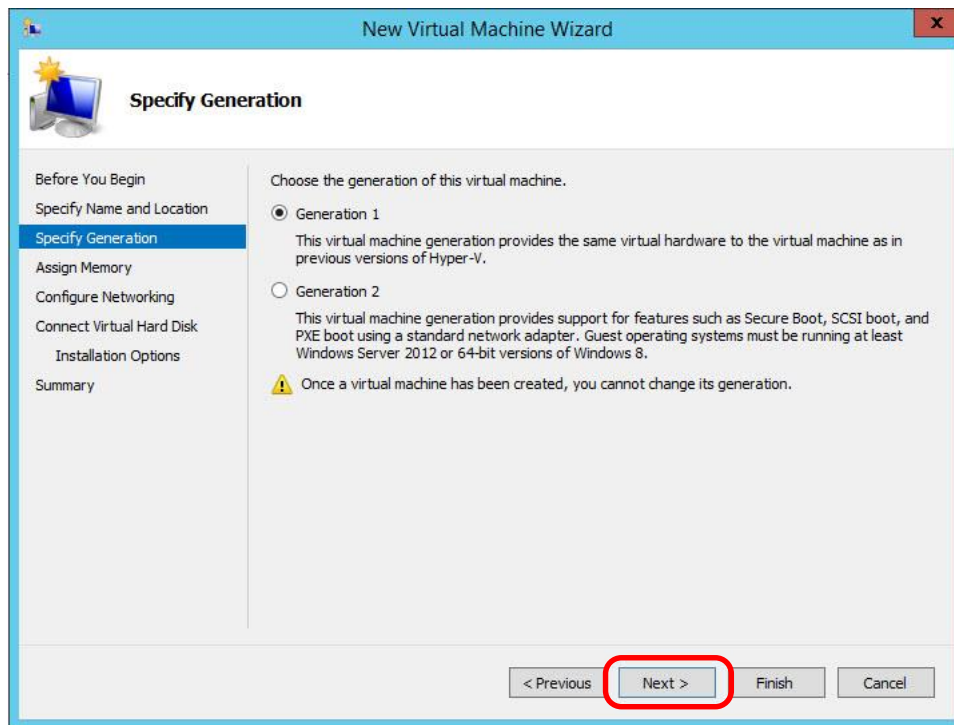


2. Click **Next** on **Before You Begin**.

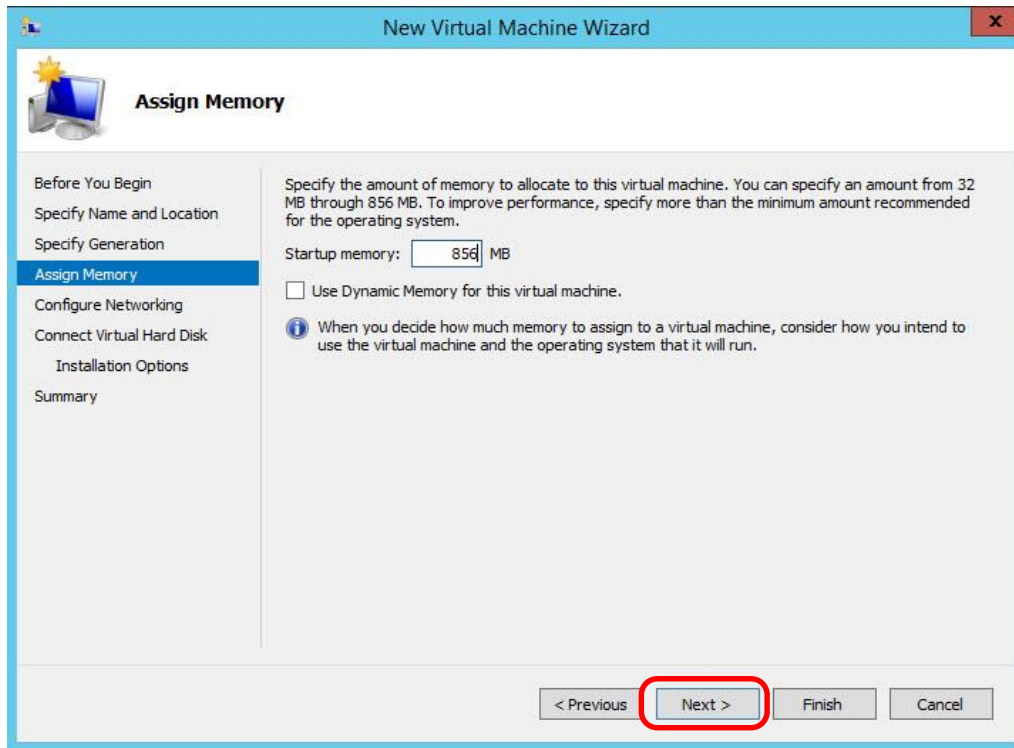
3. On **Specify Name and Location** page, Name your new Virtual Machine. Click **Next**
Do not change the Location as this was configured during the setup



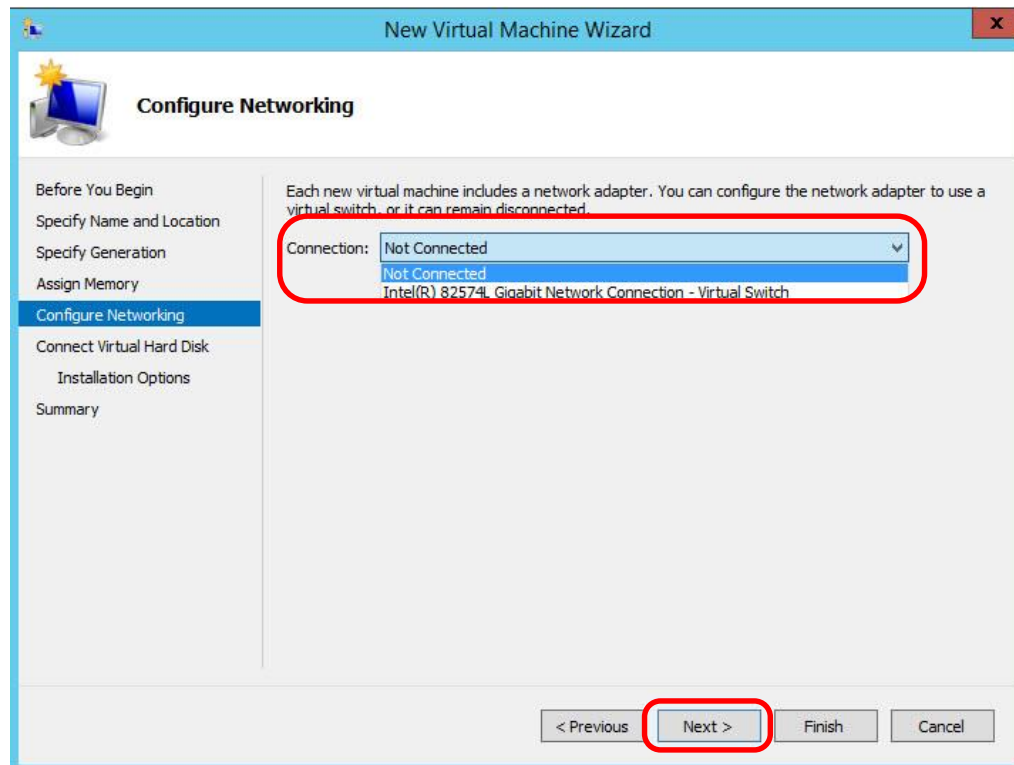
4. On **Specify Generation** Page, Click **Next**.



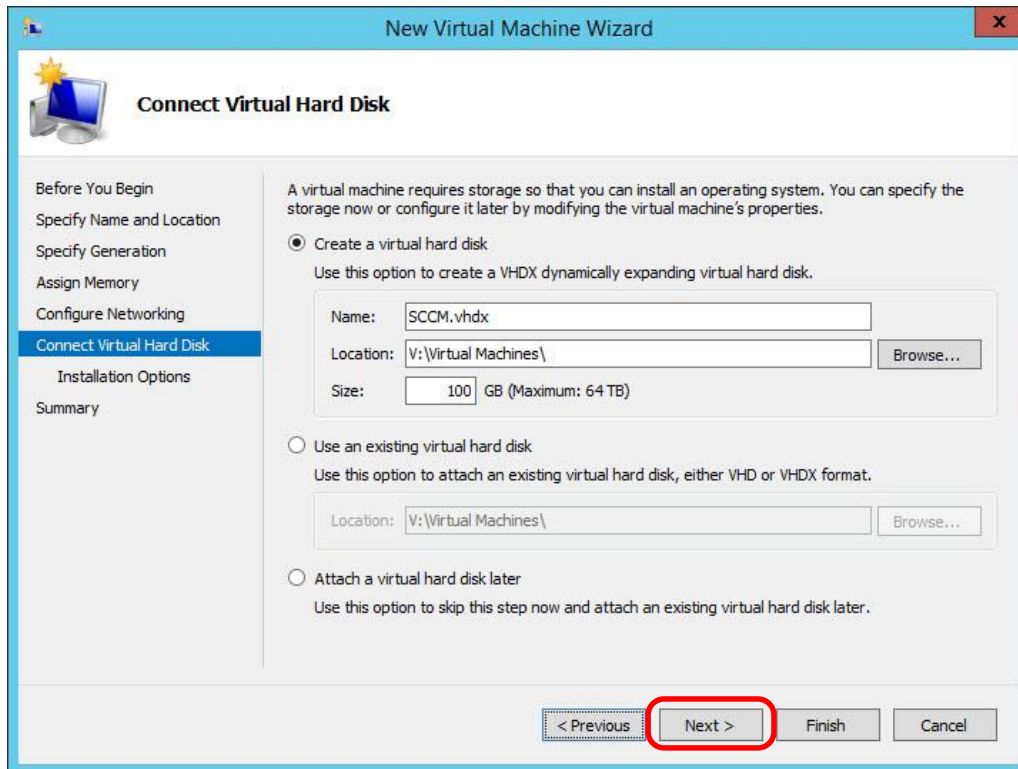
5. On **Assign Memory** page, assign the amount of memory to allocate to this virtual machine.



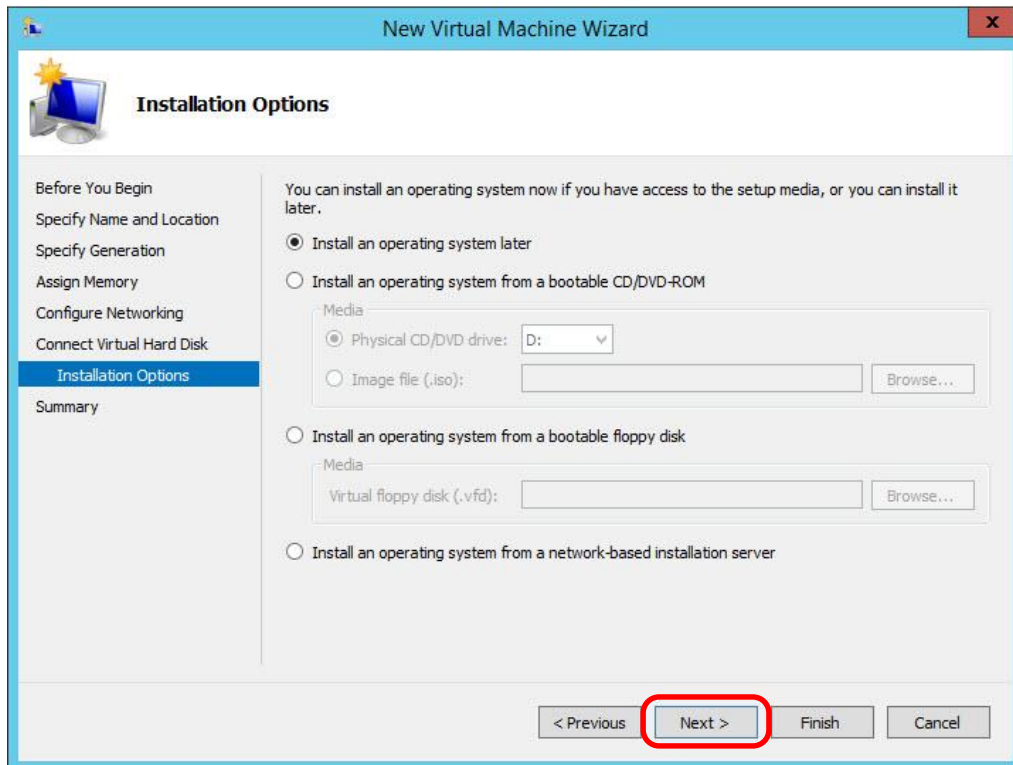
6. On **Configure Networking** page, select the NIC card from the list. Click **Next**



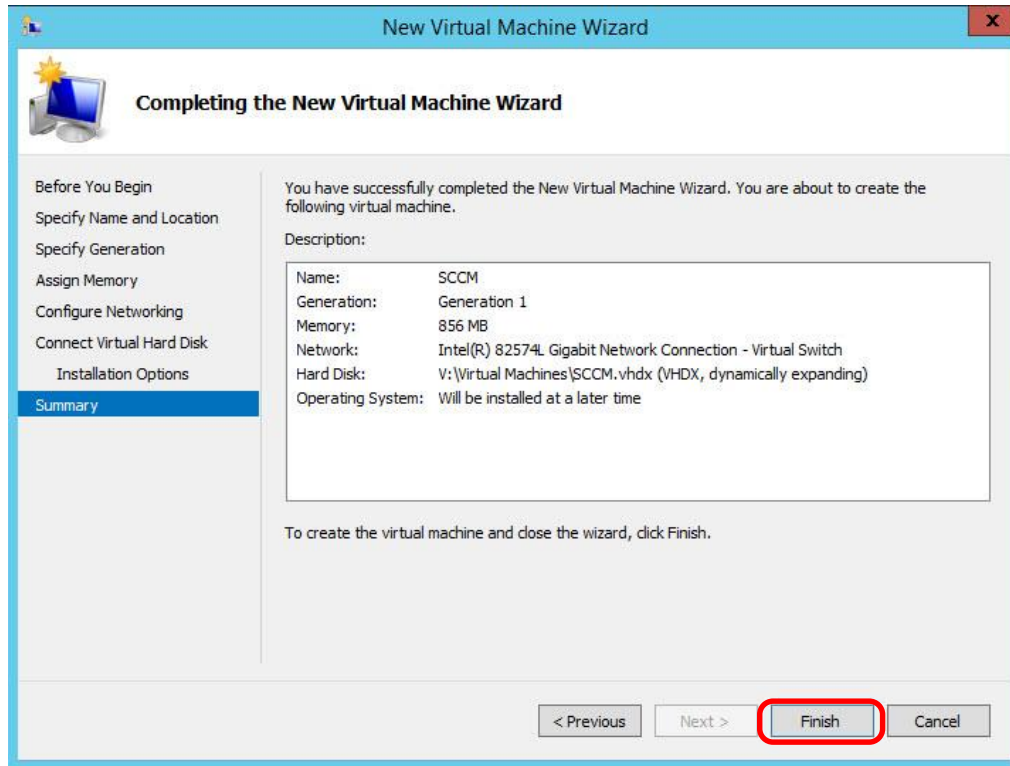
7. On **Create Virtual Hard Disk** page, click **Next**



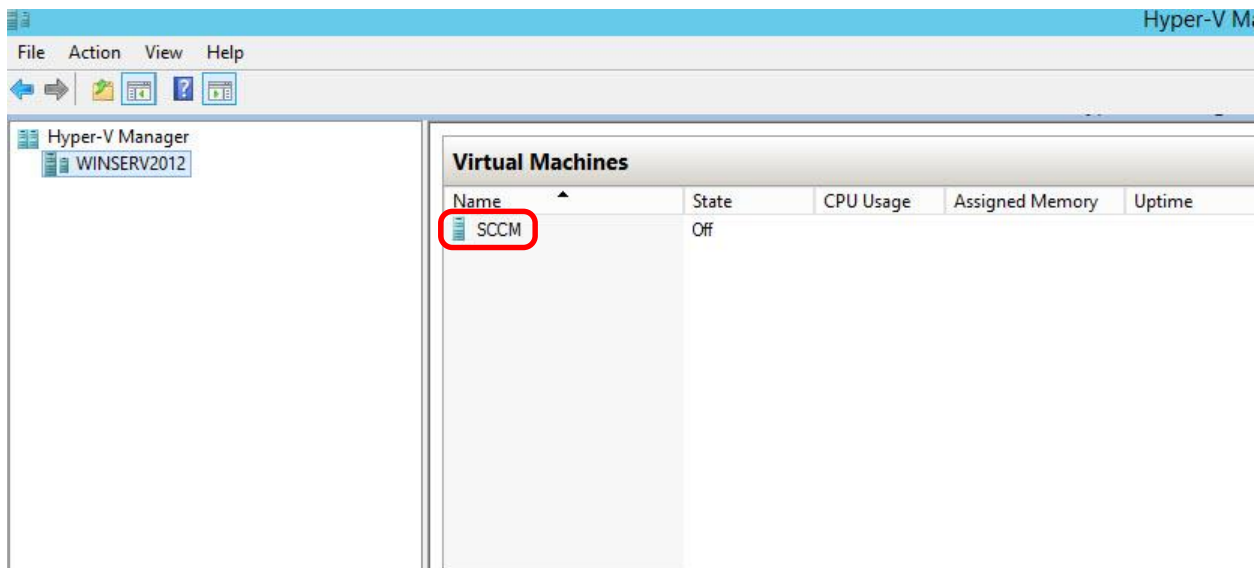
8. On **Installation Operating System Options** page, click **Next**



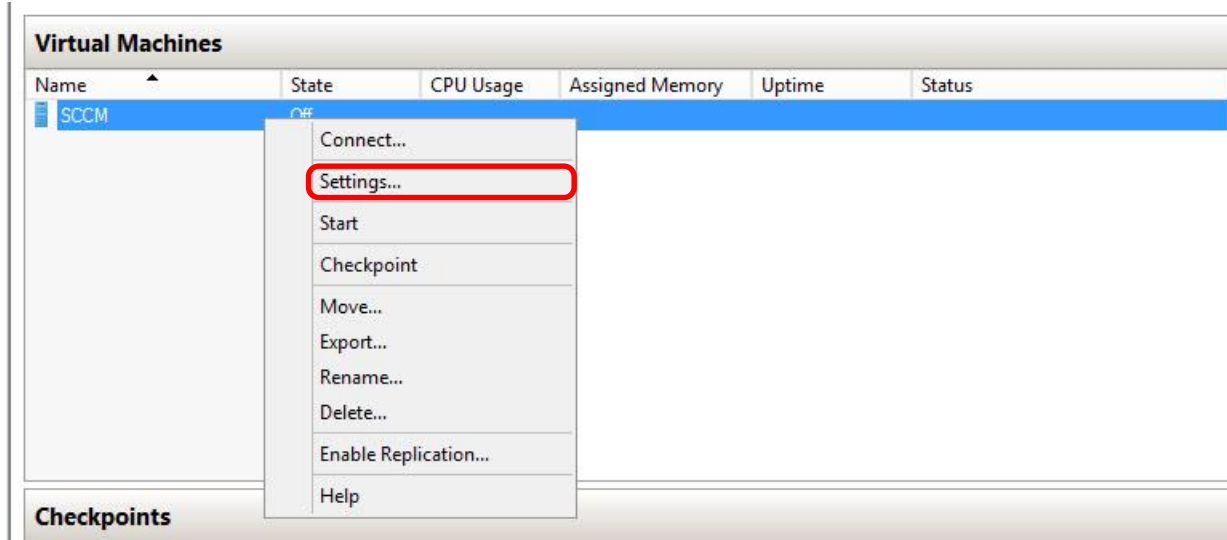
9. **Confirm configuration** and click **Finish**. The wizard will run through the installation and create the virtual disk.



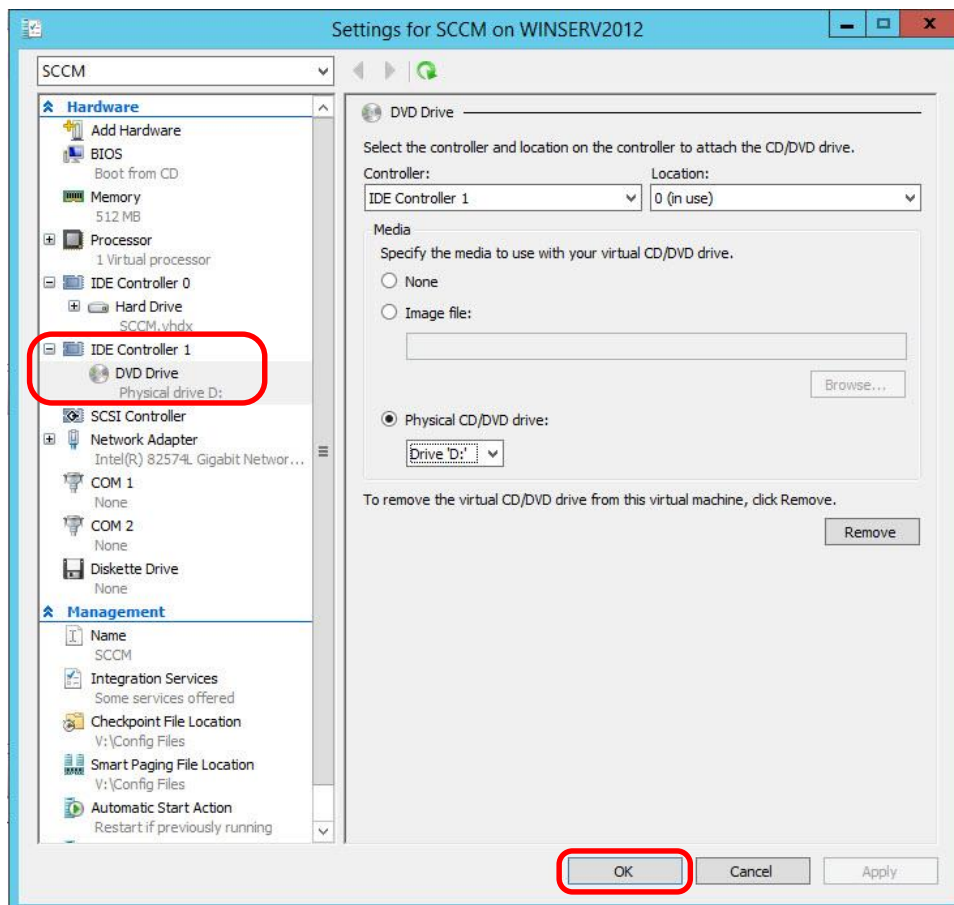
10. Click on the **Hyper-V** server and you will see the new **Virtual Machine** you just created.



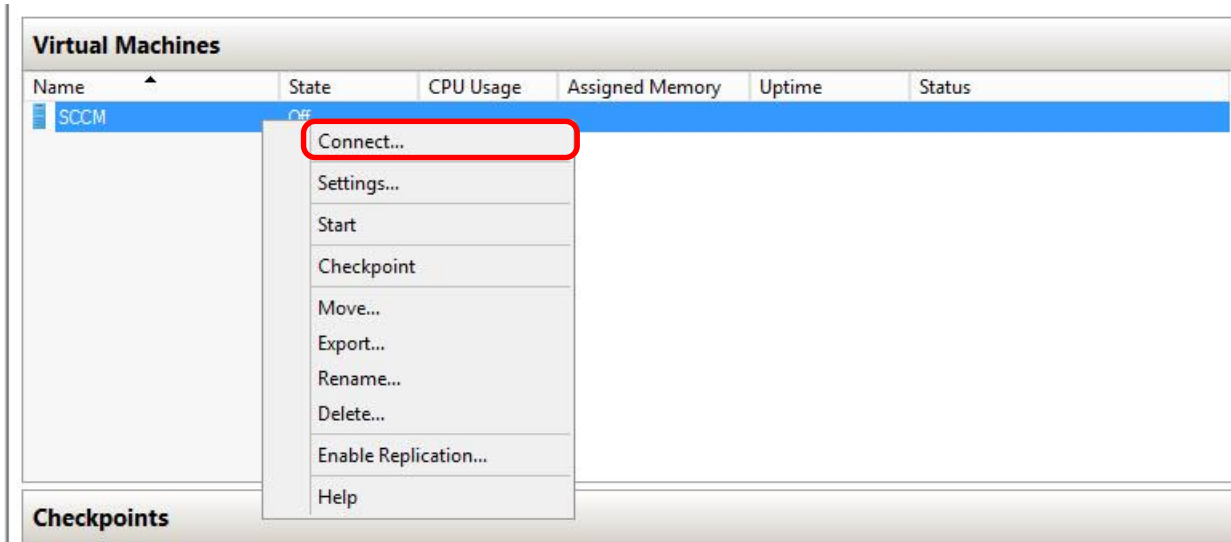
11. Right click on your VM and click on **settings**



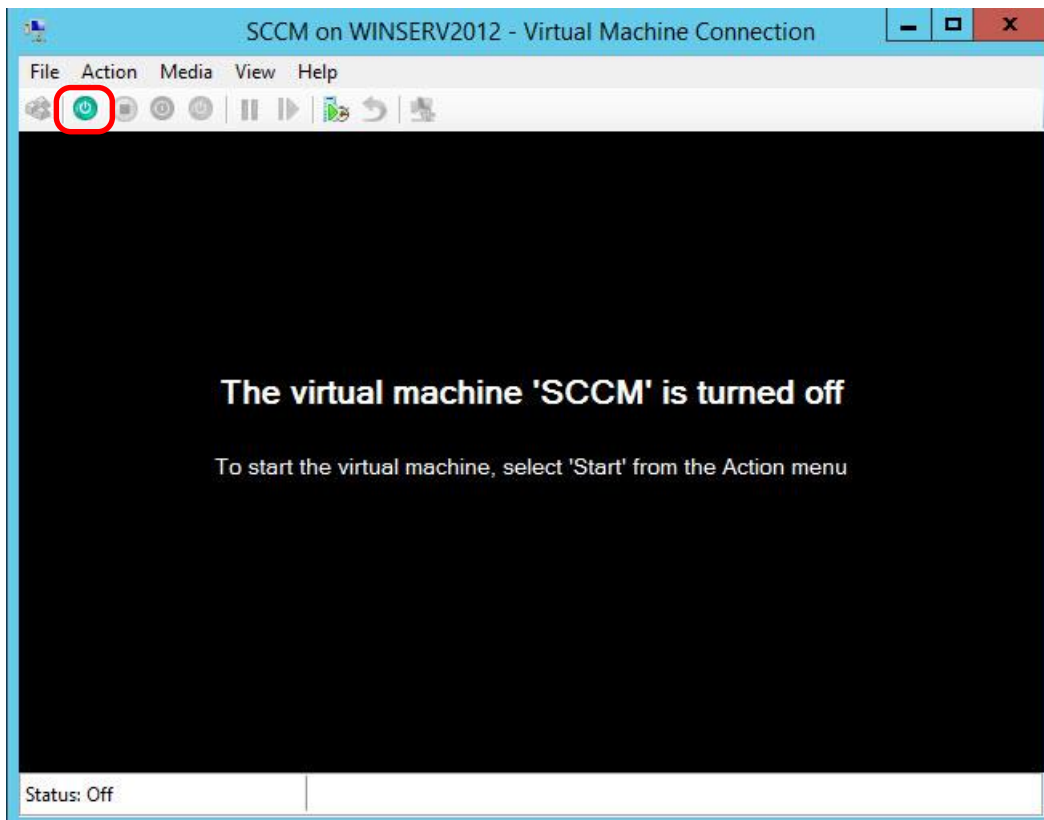
12. Under **IDE Controller 1**, select **DVD Drive**. Select either **Image File** or **Physical drive**. Click **OK** to close



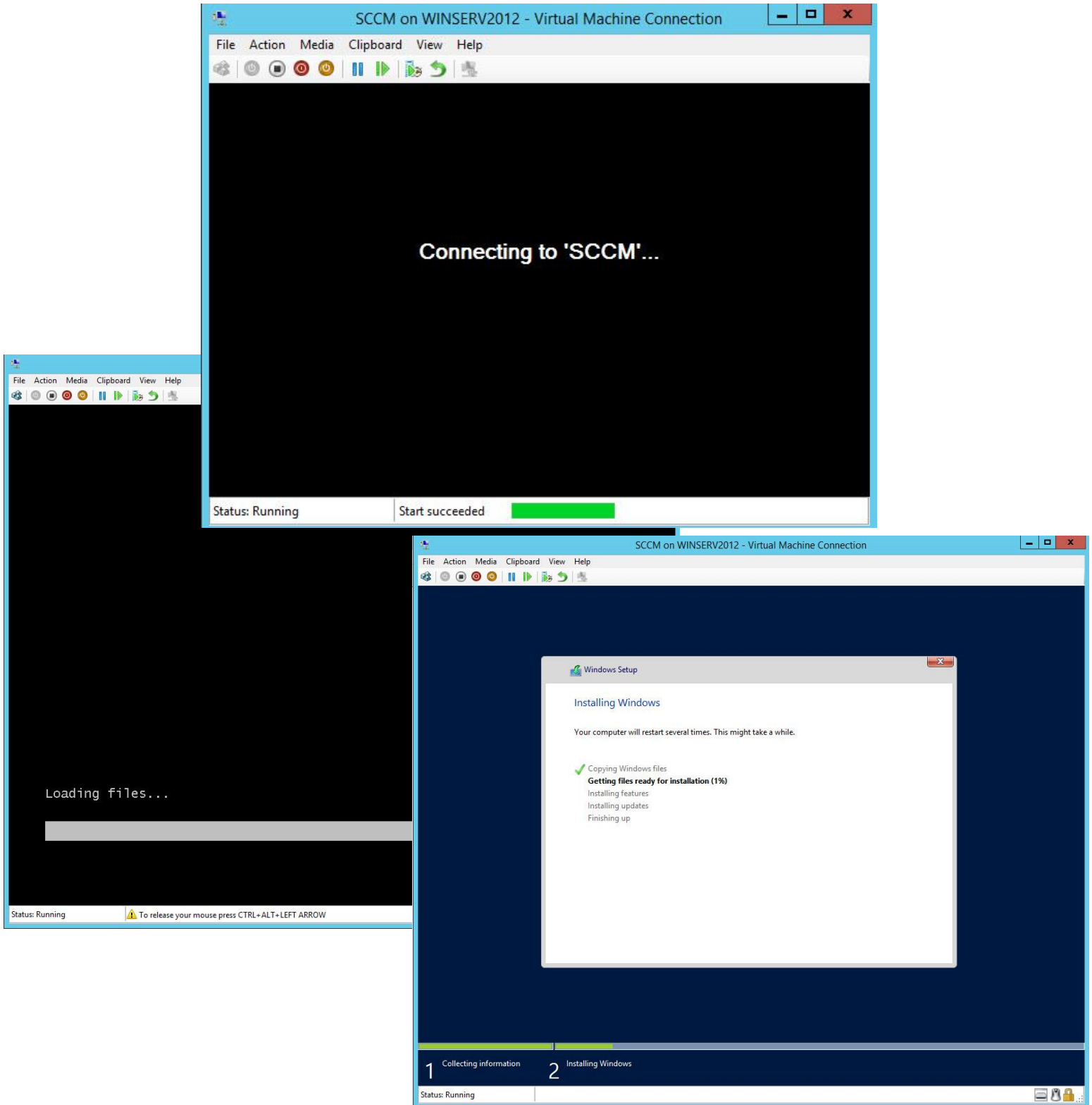
13. **Right click** on your VM and click on **Connect**



14. When the console screen pops up, click on the **Green Start Button** to power on the VM



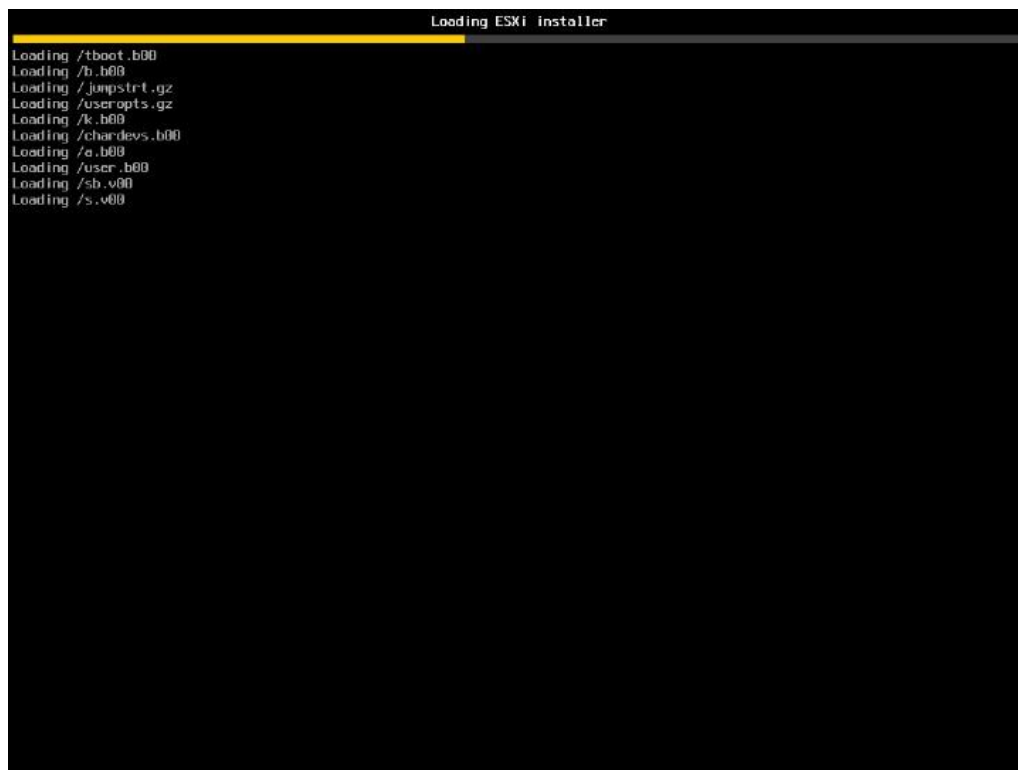
You will be able to install the operation system normally



Installing VMware ESXi

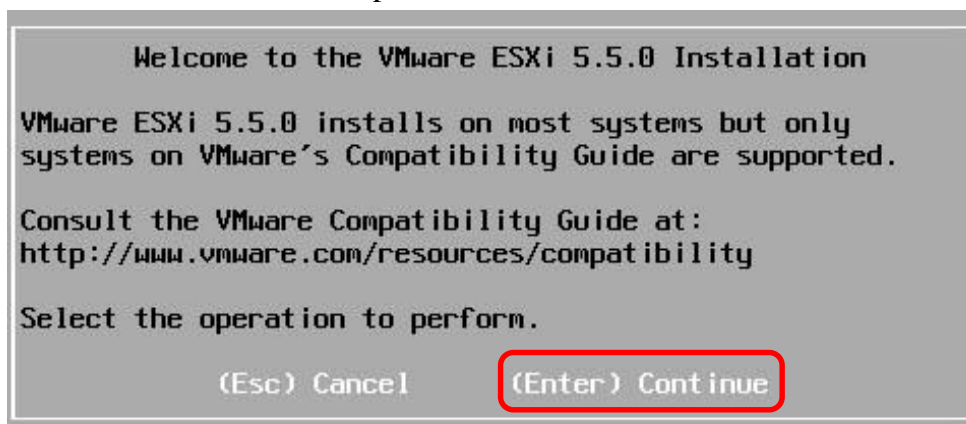
Installing ESXi on a host machine

1. Boot from ESXi Installation media and allow the 8 second timeout or Press **Enter** to select “**ESXi-xxxx-standard**”

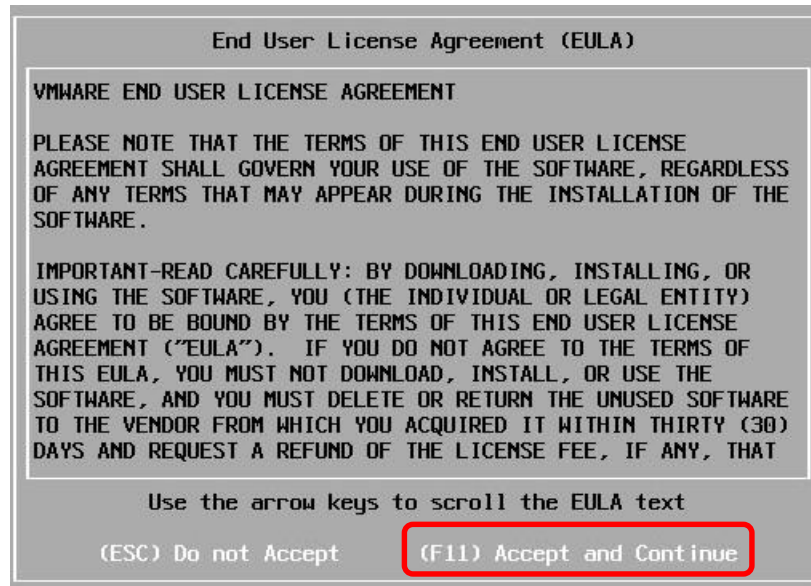




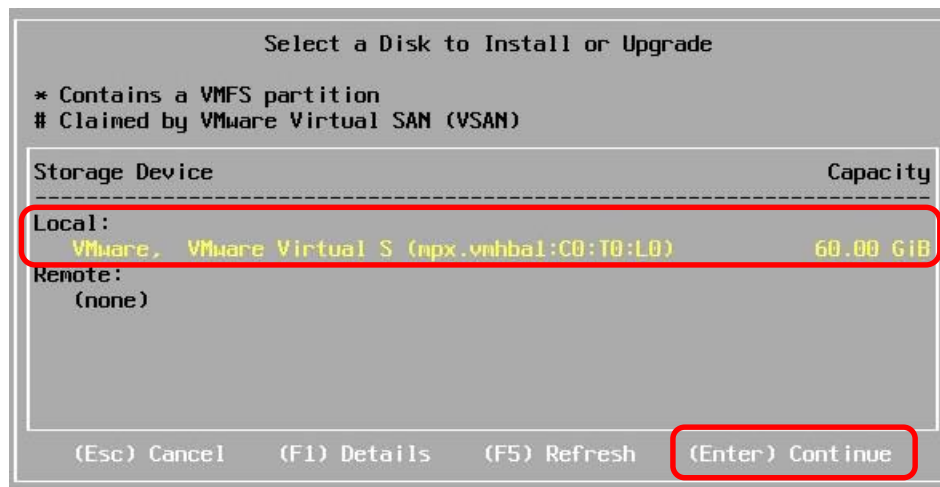
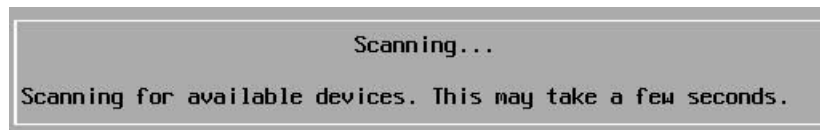
2. At the initial **Welcome** screen, press **Enter** to Continue the Install of ESXi



3. Press **F11** on the **End User License Agreement** screen



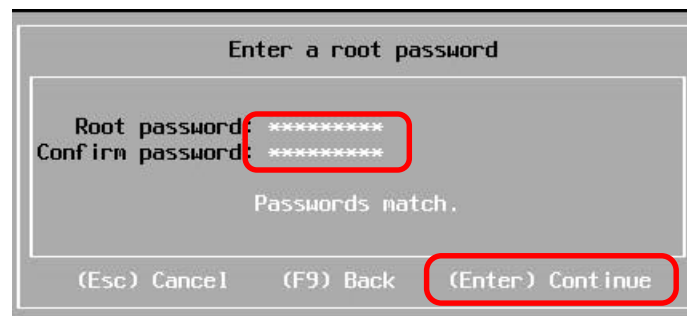
4. After scanning, Press **Enter** to select the default disk



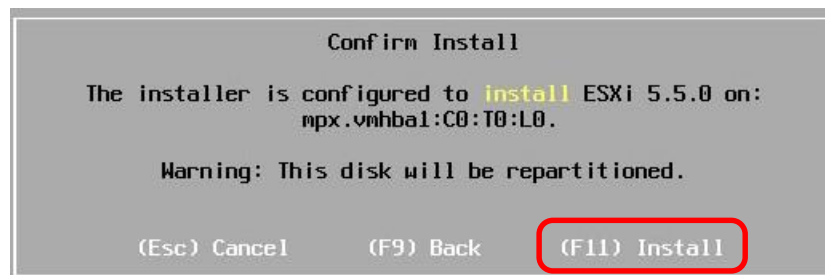
5. Press **Enter** to Select default keyboard



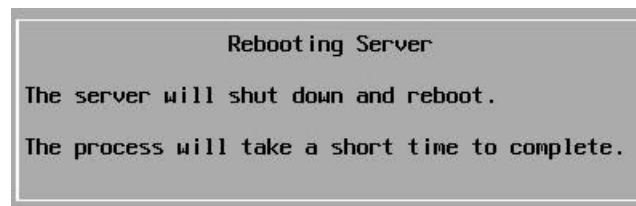
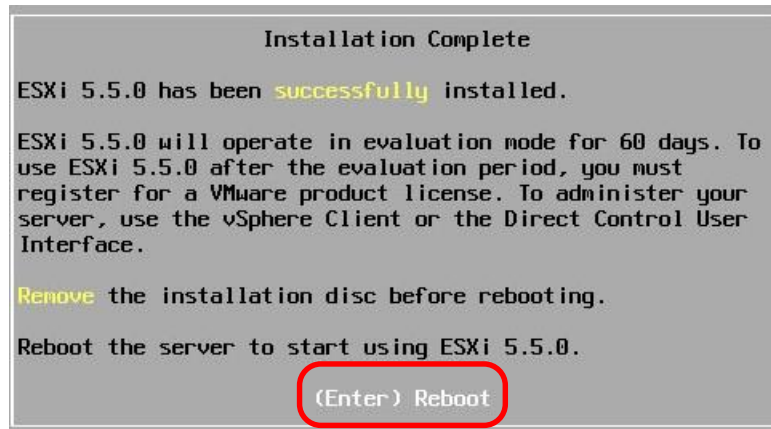
6. Type your **root password** and again to confirm it. Press **Enter**



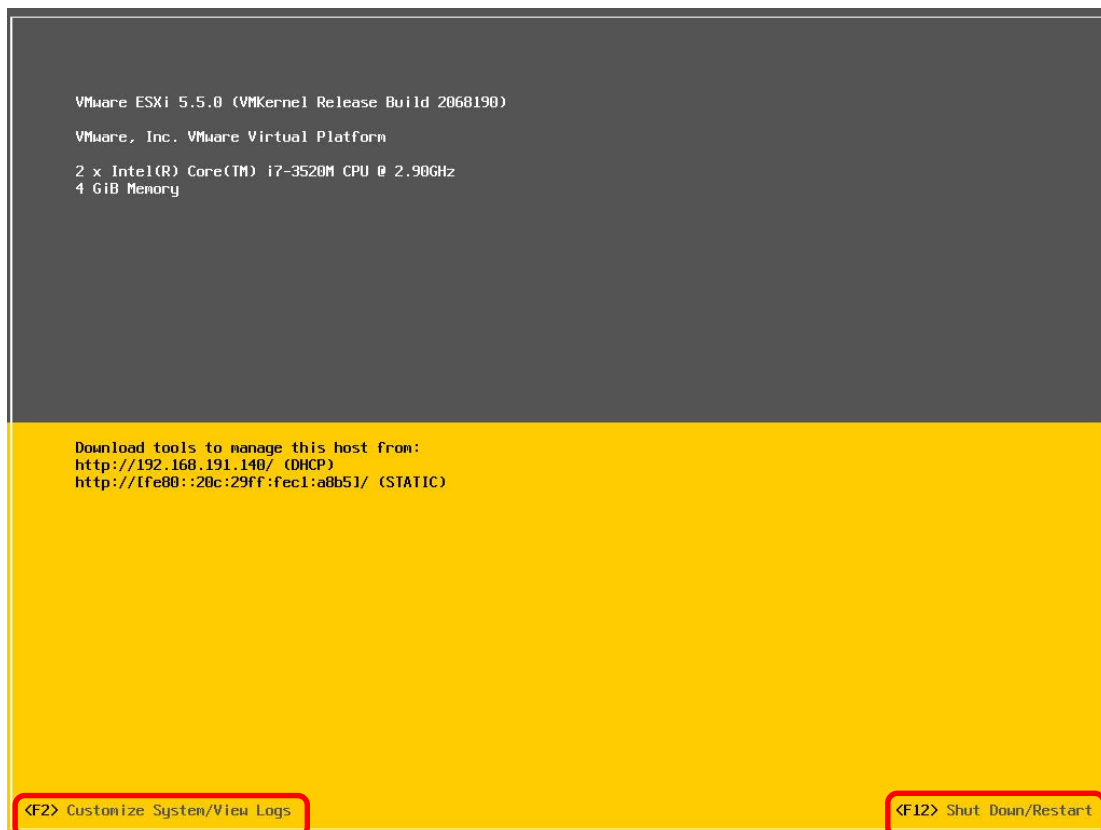
7. Press **F11** to Confirm Install



8. Allow the ESXi Server to install from the media. This will take several minutes. On the Installation complete console windows, Click **Enter** to Reboot the system



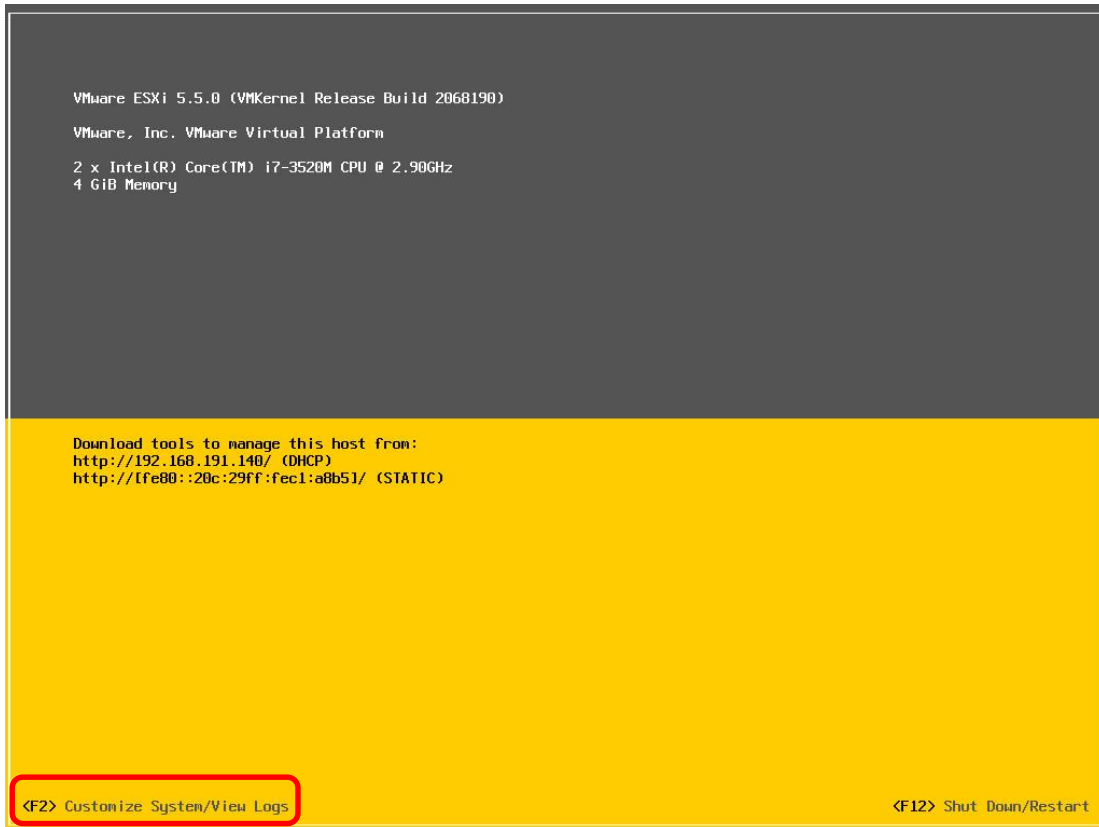
After rebooting, you will see a window with information about the ESXi configuration. Only two options are available. **<F2>** *Customize System/View Logs* and **<F12>** *Shutdown/Restart*



Configuring VMware ESXi

Setup custom configuration on ESXi host

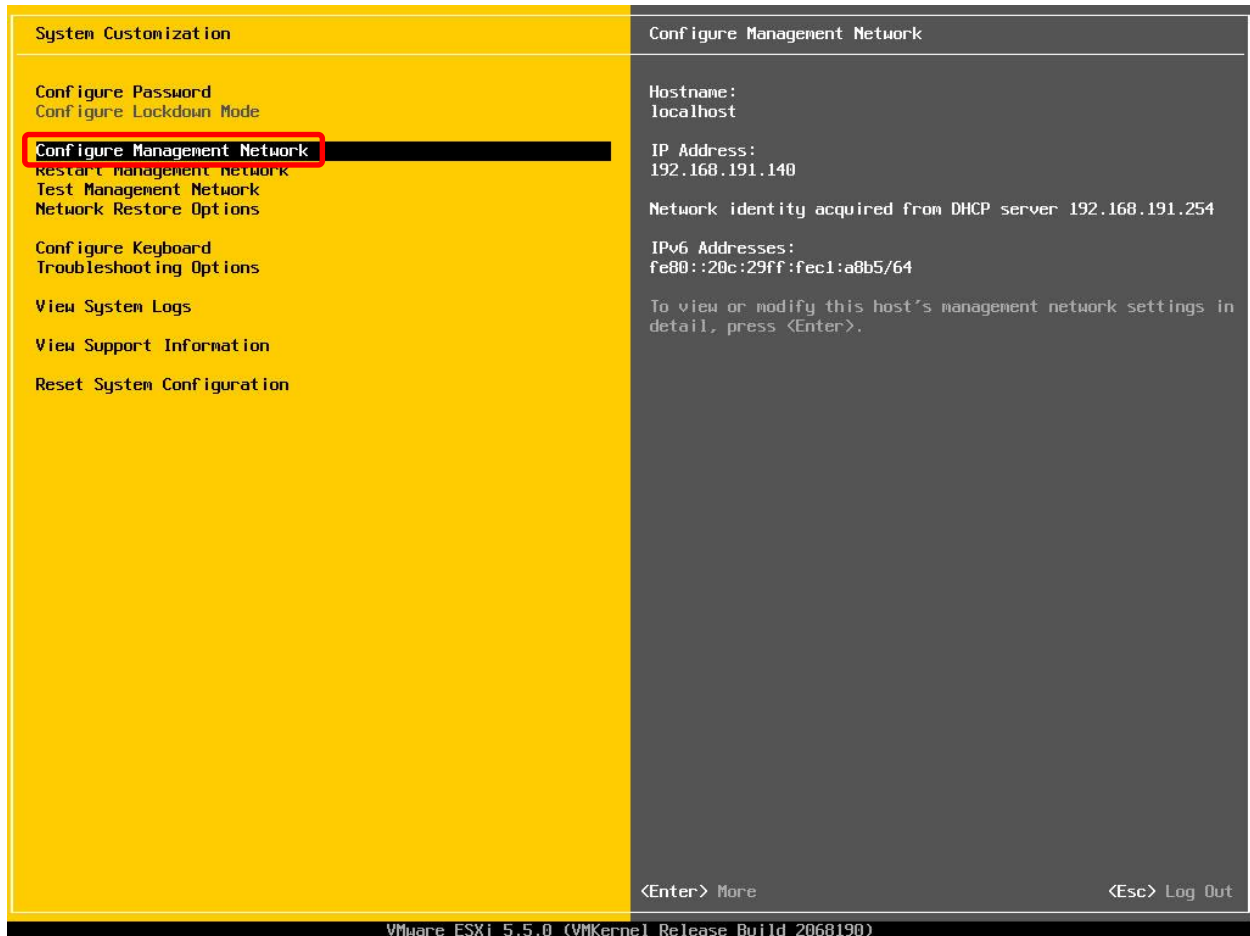
1. We will need to configure the IP address, DNS, and host name (optional) of the ESXi host. Press **F2** to Customize System/View Logs.



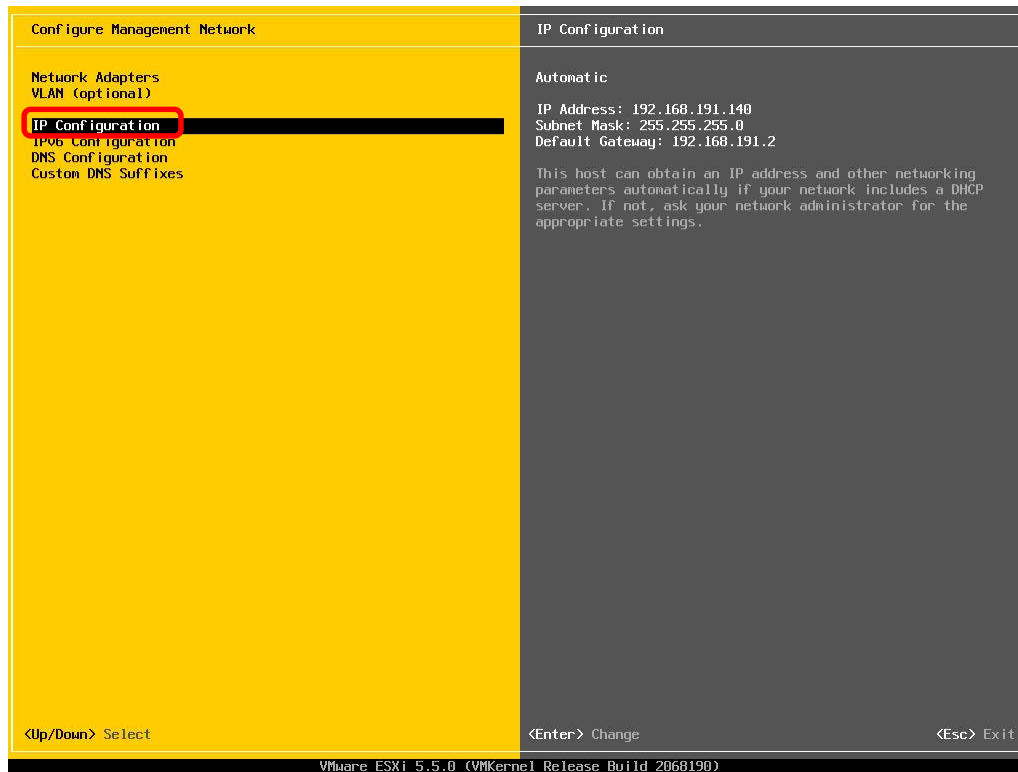
2. Enter your **root password** then Press **Enter** to log into the Customization Screen



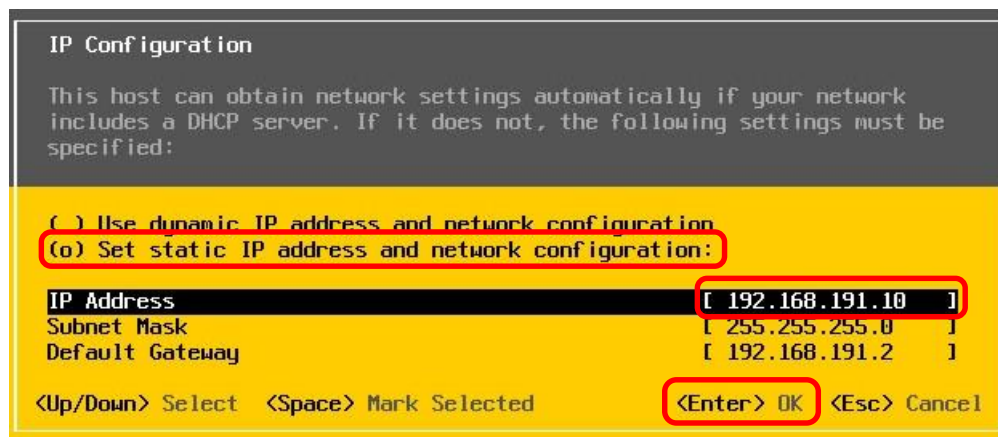
3. Select **Configure Management Network** and Click **Enter**



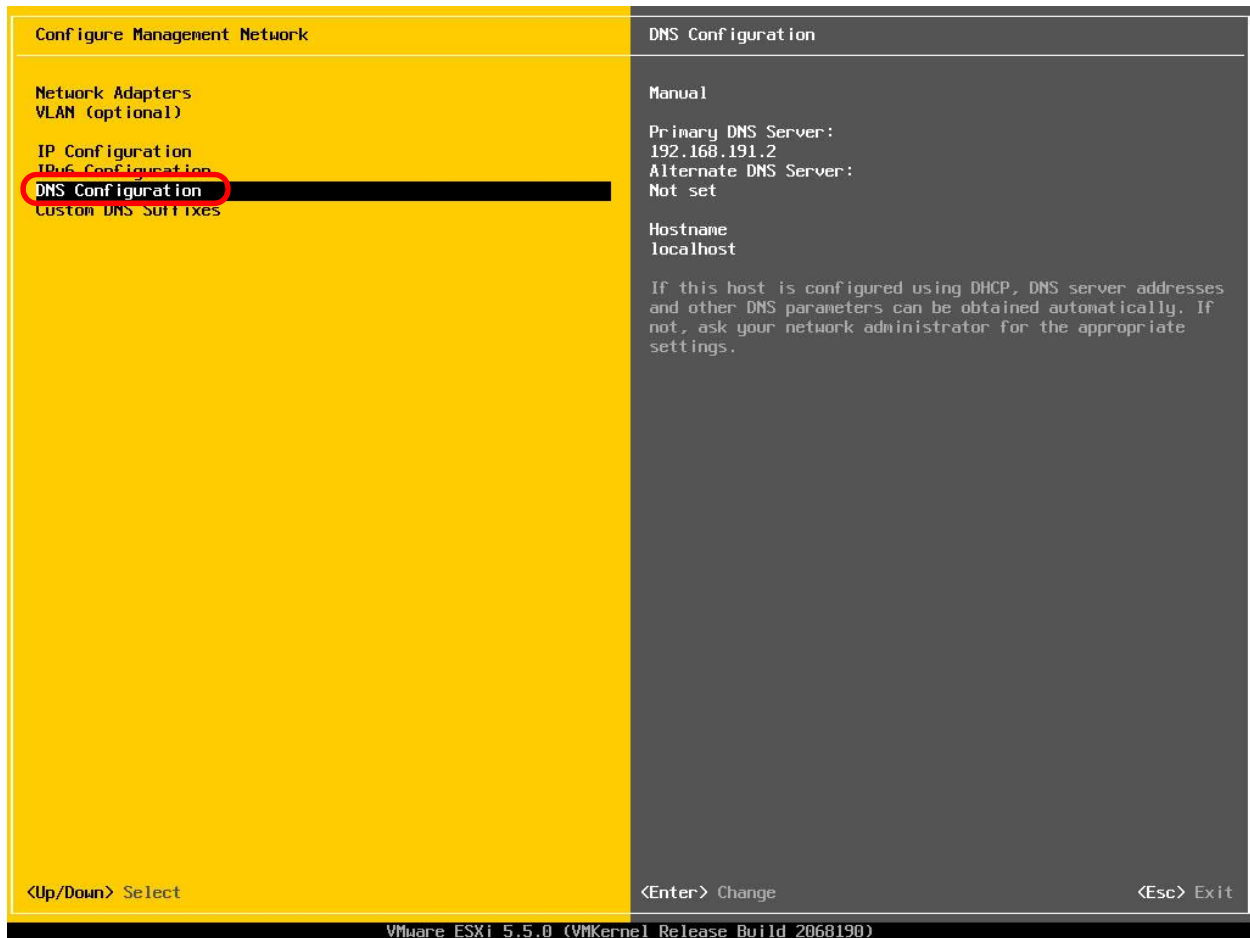
4. Select **IP Configuration** and Click **Enter**



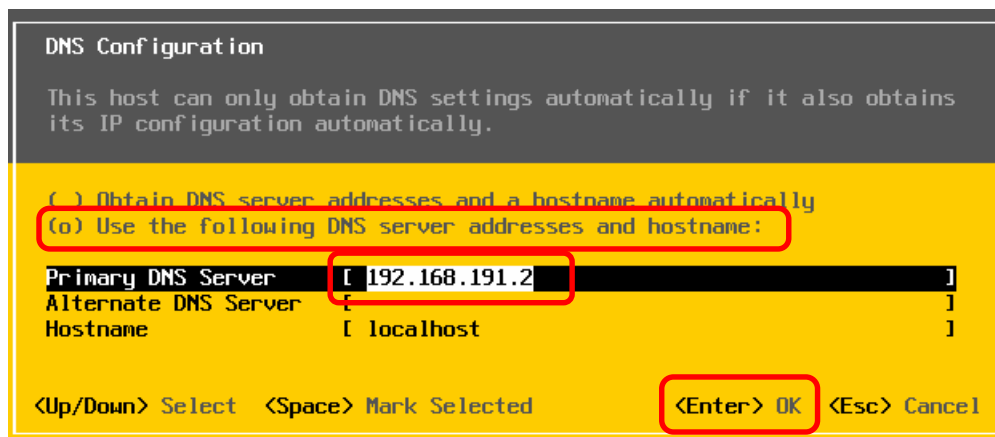
5. Change the IP configuration to **Set static IP** and assign the IP address. Press **Enter** to OK changes and return to the Configure Management Network screen



6. Select **DNS Configuration** and Click **Enter**

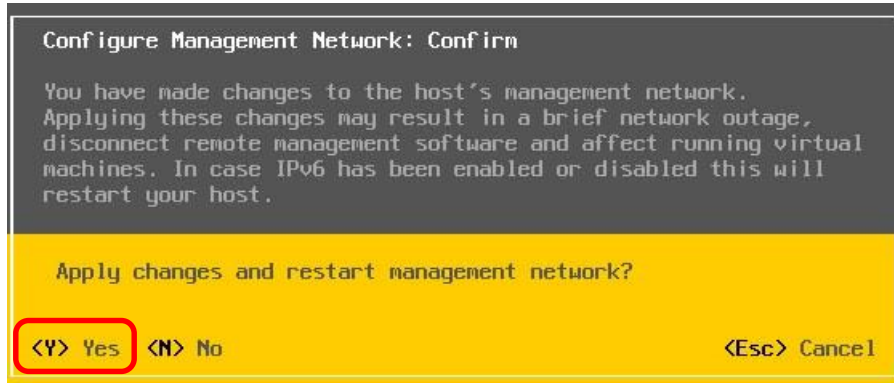


7. Change the option to **Use the following DNS server addresses and hostname** and configure the **Primary and Alternate DNS Server**. Change the hostname to *ESXihost*. Press **Enter** to Change and return to the Configure Management Network screen



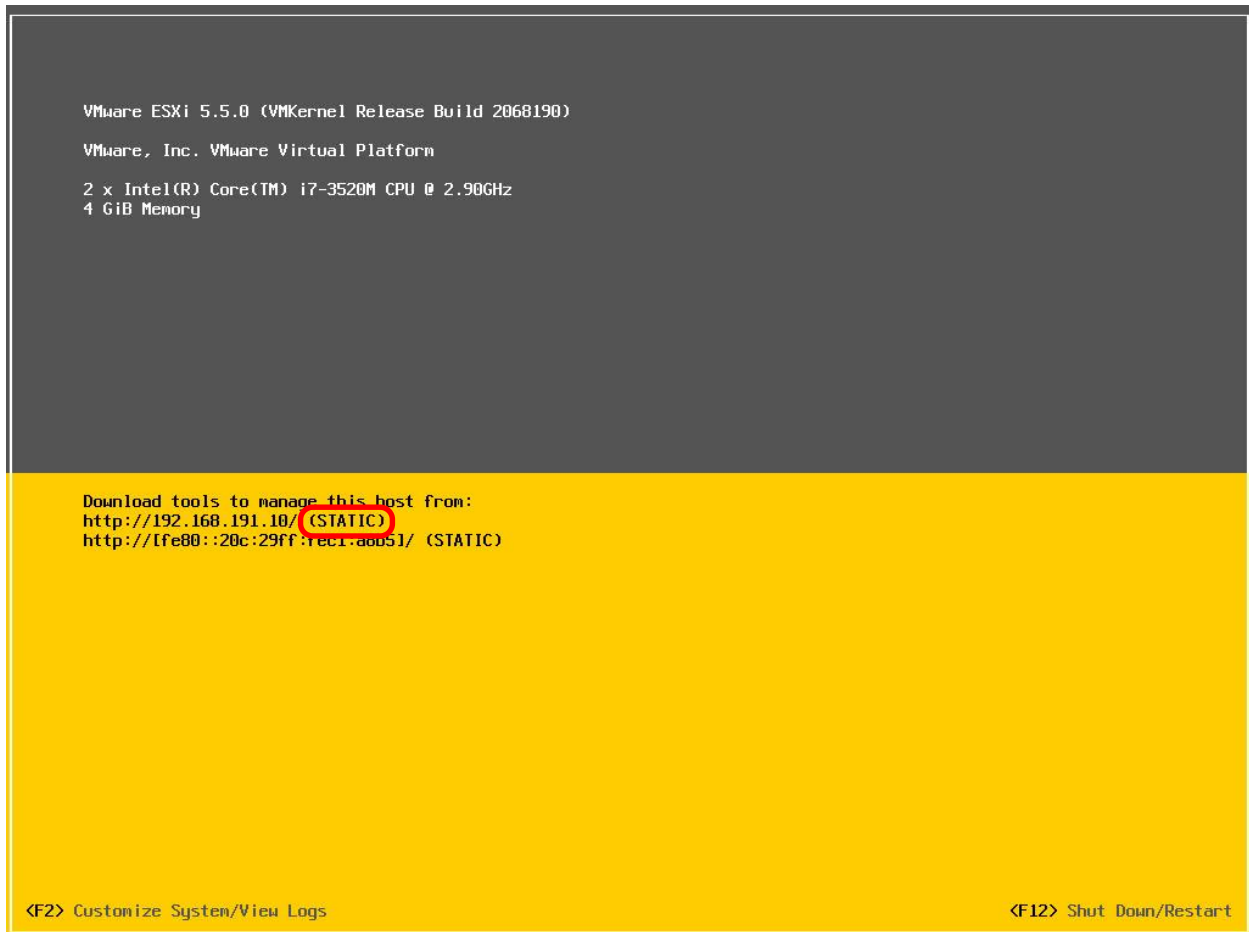
8. Press **Esc** to Exit the Management Network configuration.

9. Press **Y** to Confirm the Changes



10. Press **Esc** to Log Out of the System Customization screen

Notice the host IP address has changed and now shows **(STATIC)**. Now you are ready to vSphere Client.

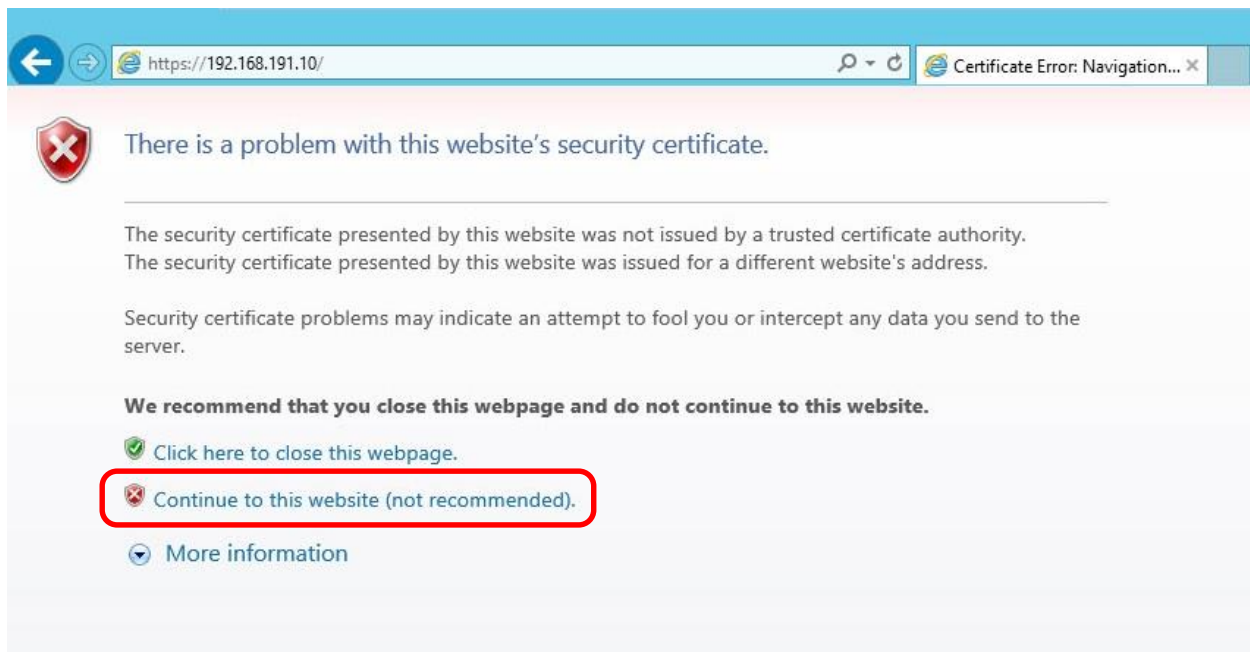


Manage VMware ESXi

Installing Virtual Machines using vSphere Client

You need to install the vSphere Client to manage your Virtual Machines

1. Open a browser and navigate to the **IP** or **hostname** of your ESXi host. Ignore the security certificate.



2. Click on the link **Download the vSphere Client and Install**

VMware ESXi
Welcome

Getting Started

If you need to access this host remotely, use the following program to install vSphere Client software. After running the installer, start the client and log in to this host.

Please note that the traditional vSphere Client does not support features added to vSphere in the 5.1 and 5.5 releases. The traditional vSphere Client is intended for use if you need to connect directly to an ESXi host, are performing certain vSphere Update Manager operations, or are running vCenter Plug-ins that support only the vSphere Client such as vCenter Site Recovery Manager or vCenter Multi-Hypervisor Manager.

You can take advantage of the fullest range of functionality introduced or updated in this release by using the vSphere Web Client.

- [Download vSphere Client](#)

To streamline your IT operations with vSphere, use the following program to install vCenter. vCenter will help you consolidate and optimize workload distribution across ESX hosts, reduce new system deployment time from weeks to seconds, monitor your virtual computing environment around the clock, avoid service disruptions due to planned hardware maintenance or unexpected failure, centralize access control, and automate system administration tasks.

- [Download VMware vCenter](#)

If you need more help, please refer to our documentation library:

- [vSphere Documentation](#)

For Administrators

vSphere Remote Command Line

The Remote Command Line allows you to use command line tools to manage vSphere from a client machine. These tools can be used in shell scripts to automate day-to-day operations.

- [Download the Virtual Appliance](#)
- [Download the Windows Installer \(exe\)](#)
- [Download the Linux Installer \(tar.gz\)](#)

Web-Based Datastore Browser

Use your web browser to find and download files (for example, virtual machine and virtual disk files).

- [Browse datastores in this host's inventory](#)

For Developers

vSphere Web Services SDK

Learn about our latest SDKs, Toolkits, and APIs for managing VMware ESX, ESXi, and VMware vCenter. Get sample code, reference documentation, participate in our Forum Discussions, and view our latest Sessions and Webinars.

- [Learn more about the Web Services SDK](#)
- [Browse objects managed by this host](#)

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VMware products may contain individual open source software components, each of which has its own copyright and

3. Accept the EULA and Click **Next**

VMware vSphere Client 5.5

End User License Agreement

Please read the following license agreement carefully.

VMWARE END USER LICENSE AGREEMENT

PLEASE NOTE THAT THE TERMS OF THIS END USER LICENSE AGREEMENT SHALL GOVERN YOUR USE OF THE SOFTWARE, REGARDLESS OF ANY TERMS THAT MAY APPEAR DURING THE INSTALLATION OF THE SOFTWARE.

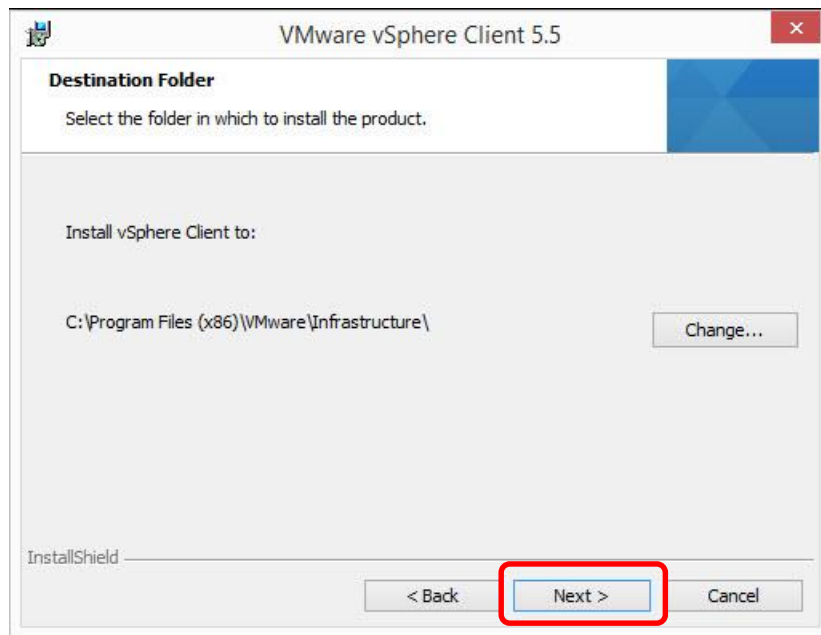
IMPORTANT-READ CAREFULLY: BY DOWNLOADING, INSTALLING, OR USING THE SOFTWARE, YOU (THE INDIVIDUAL OR LEGAL ENTITY) AGREE TO BE BOUND BY THE TERMS OF THIS END USER LICENSE AGREEMENT ("EULA"). IF YOU DO NOT AGREE TO THE TERMS OF THIS

I accept the terms in the license agreement
 I do not accept the terms in the license agreement

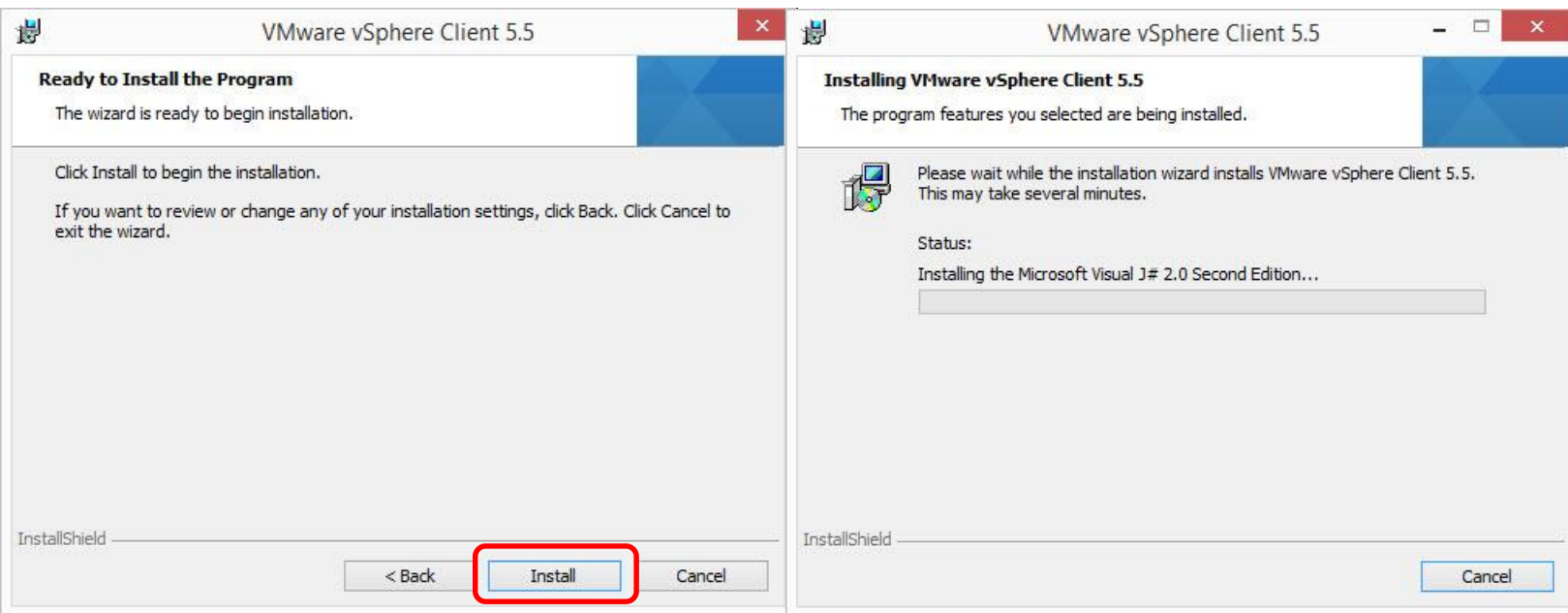
InstallShield

< Back **Next >** Cancel

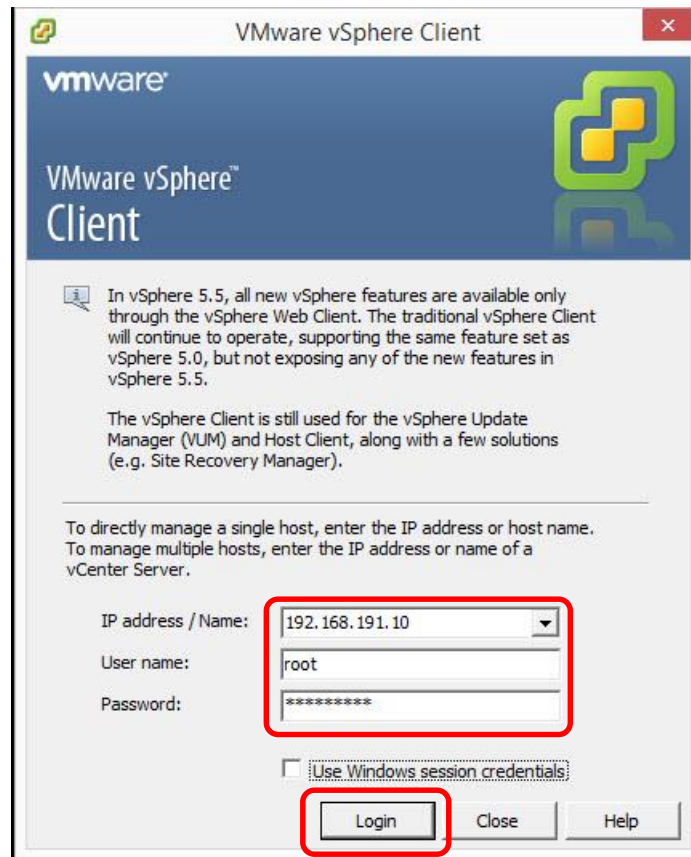
4. Click **Next** on Destination Folder



5. Click **Install**



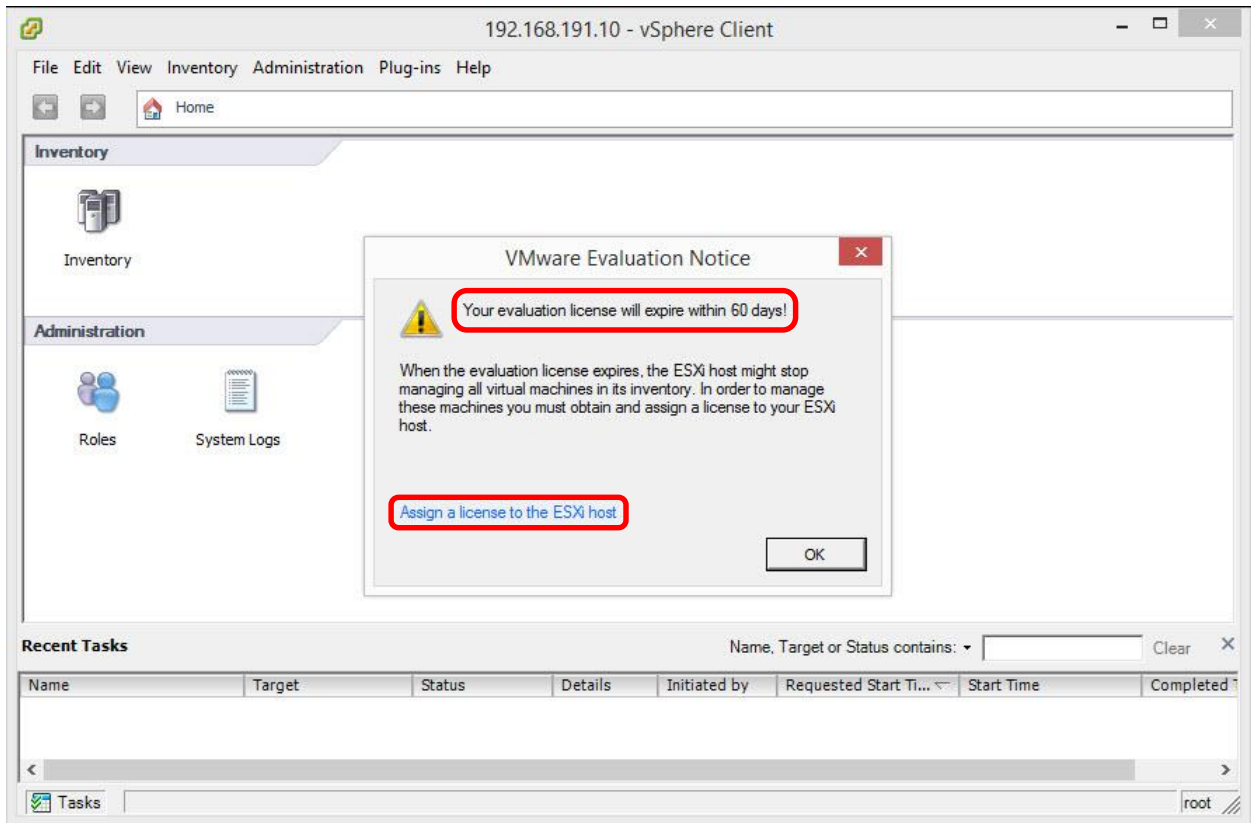
6. Run the vSphere Client. Enter **IP Address** or **Hostname Username** and the **Password**. Click **Login**.



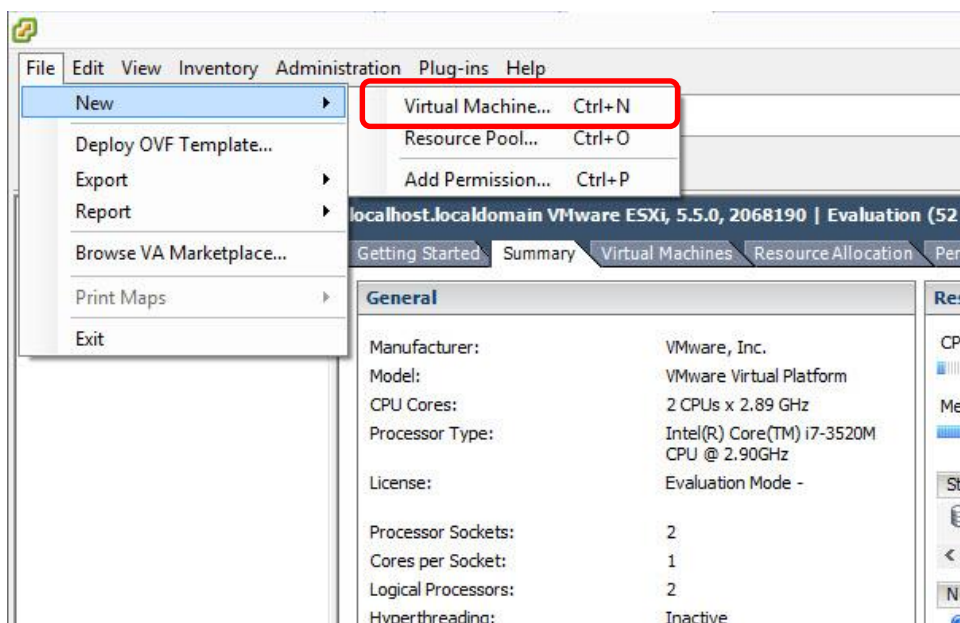
7. The first time opening the vSphere Client, you will be prompted with a security warning. **Select** the check box to **Install this certificate**, then **Click Ignore**.



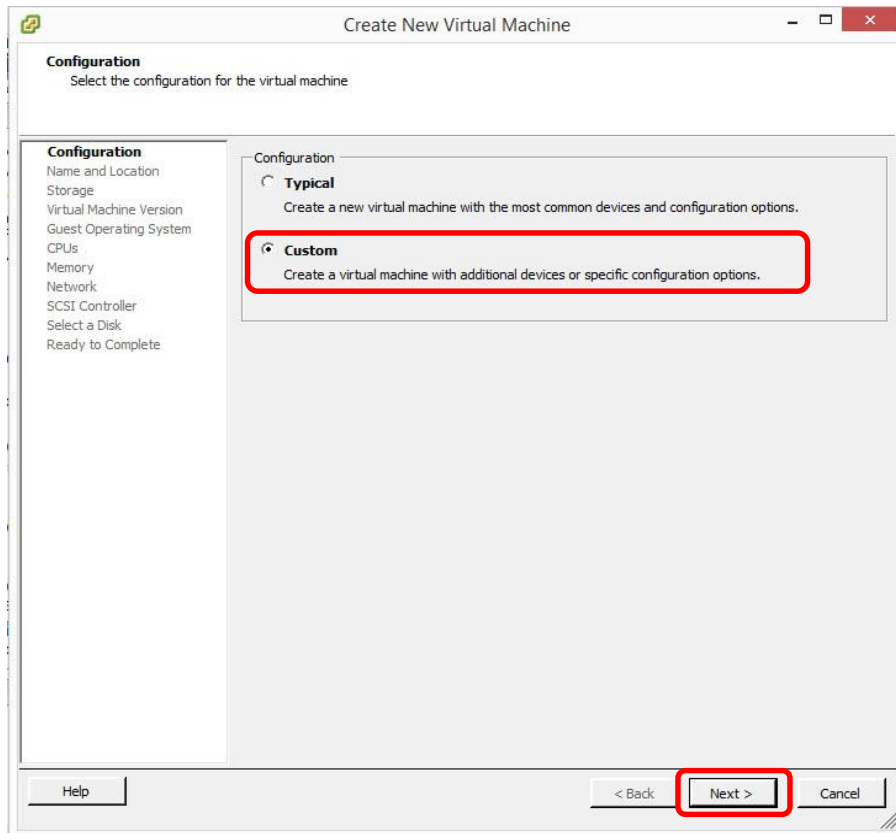
You will see the VMware Evaluation Notice screen. Although, VMware ESXi is free, it requires a valid license. You can enter your license from your VMware account by clicking on the **Assign a license link**.



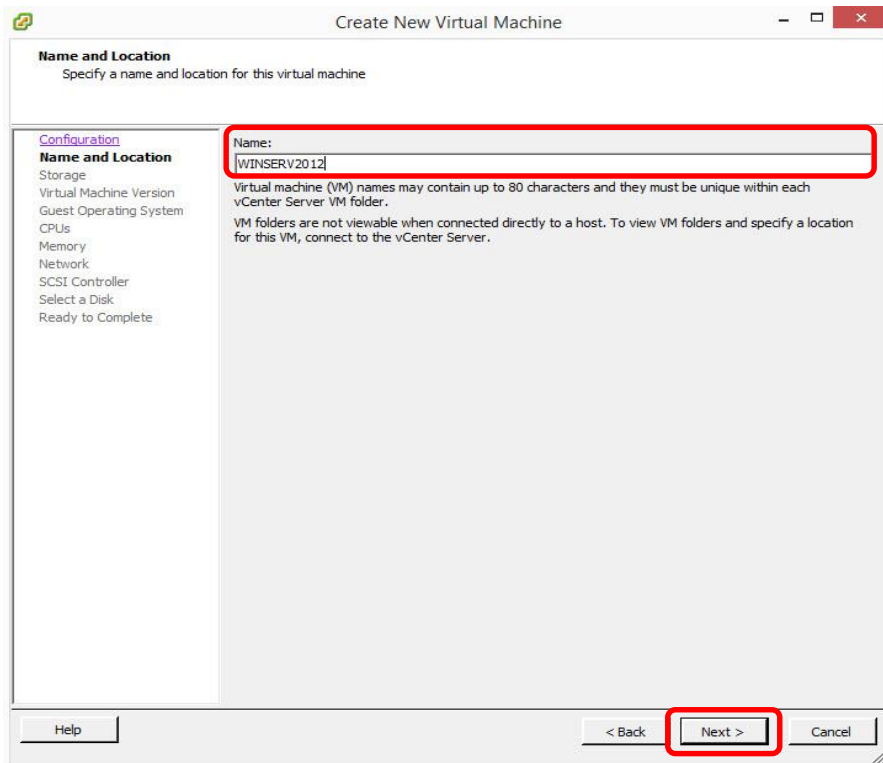
1. Go to **File > New > Virtual Machine**



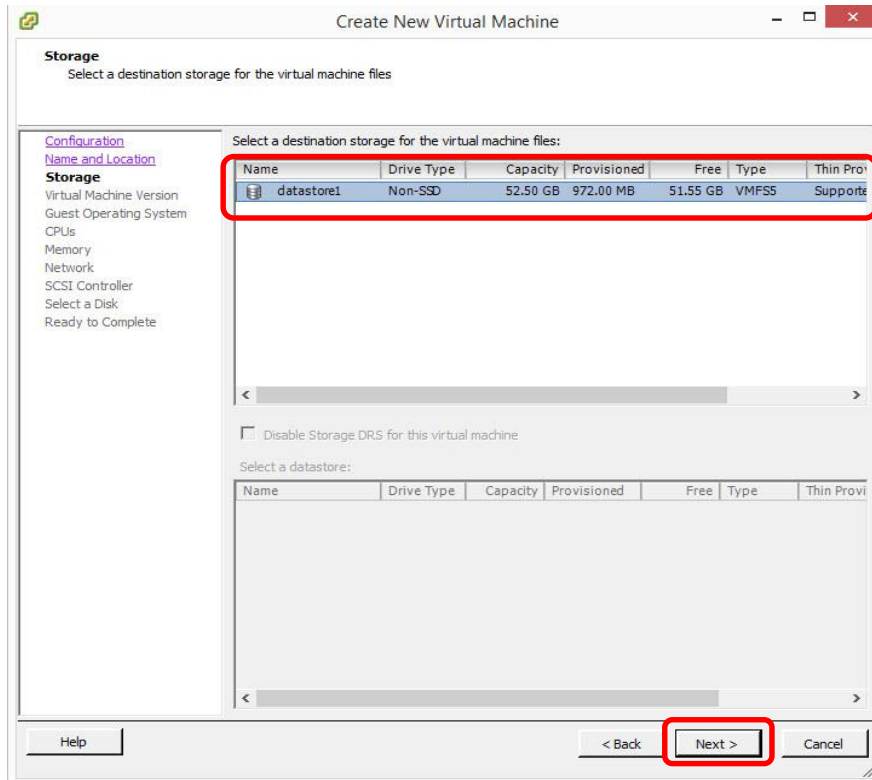
2. On **Configuration** page choose **Custom** and click **Next**



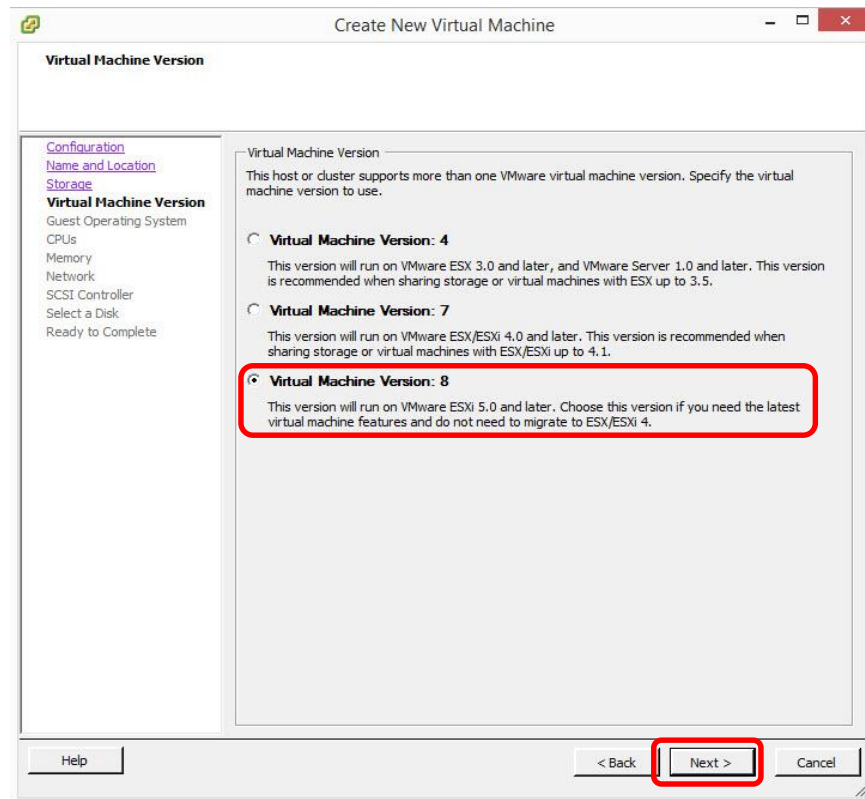
3. On **Name and Location** page enter the name of the server and click **Next**



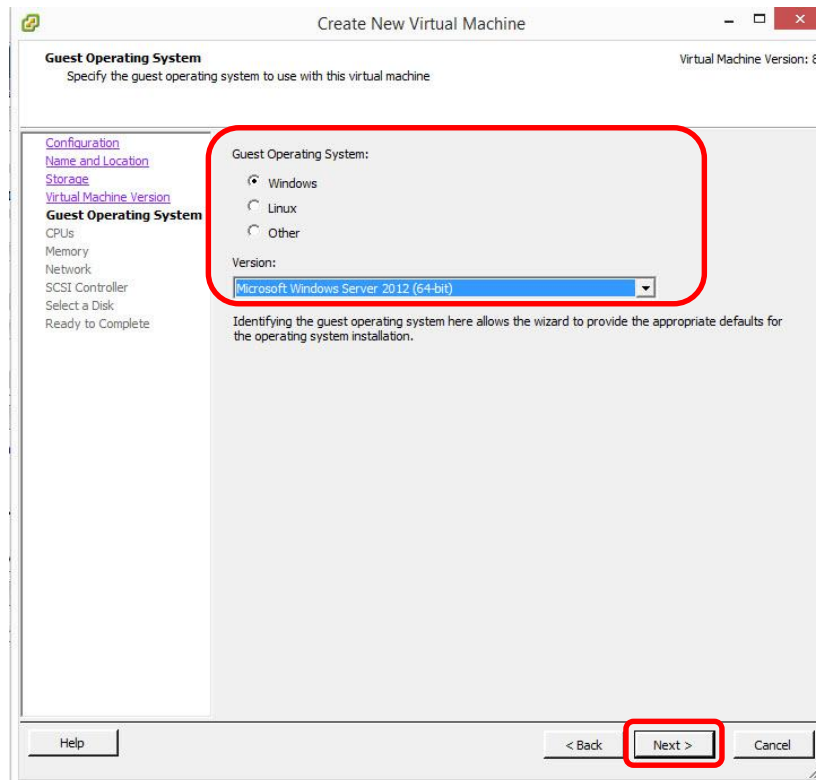
4. On **Storage** page select the datastore you want to install on and click **Next**



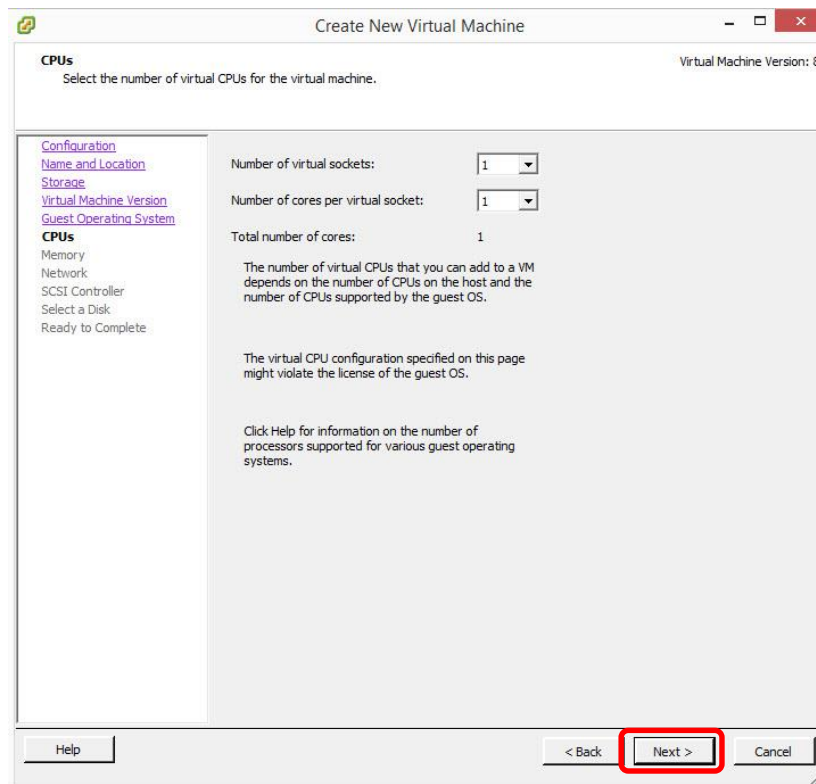
5. On **Virtual Machine Version** page choose the latest version and click **Next**



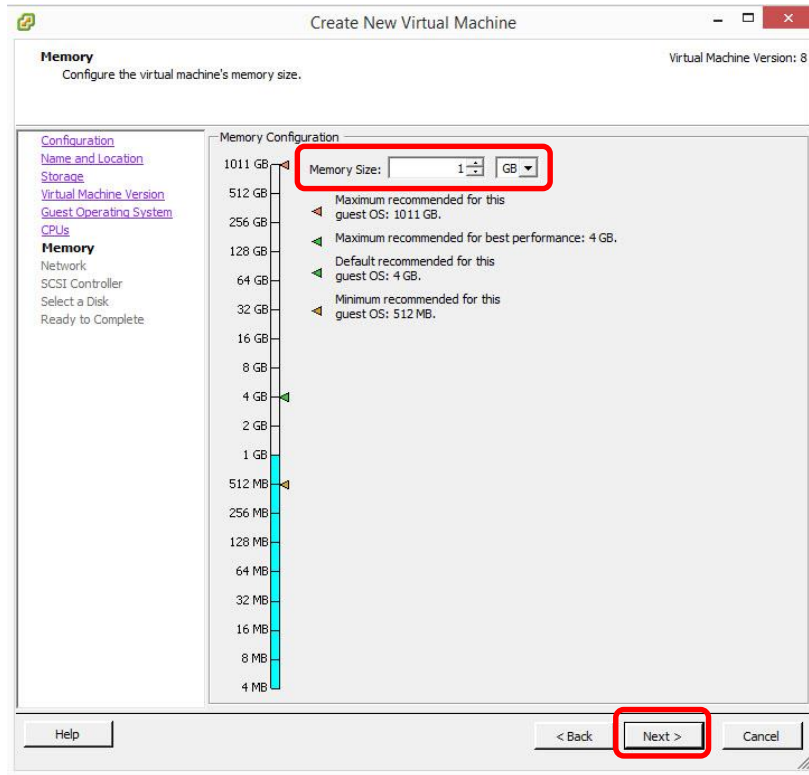
6. On **Guest Operating System** page choose the OS you are installing and click **Next**



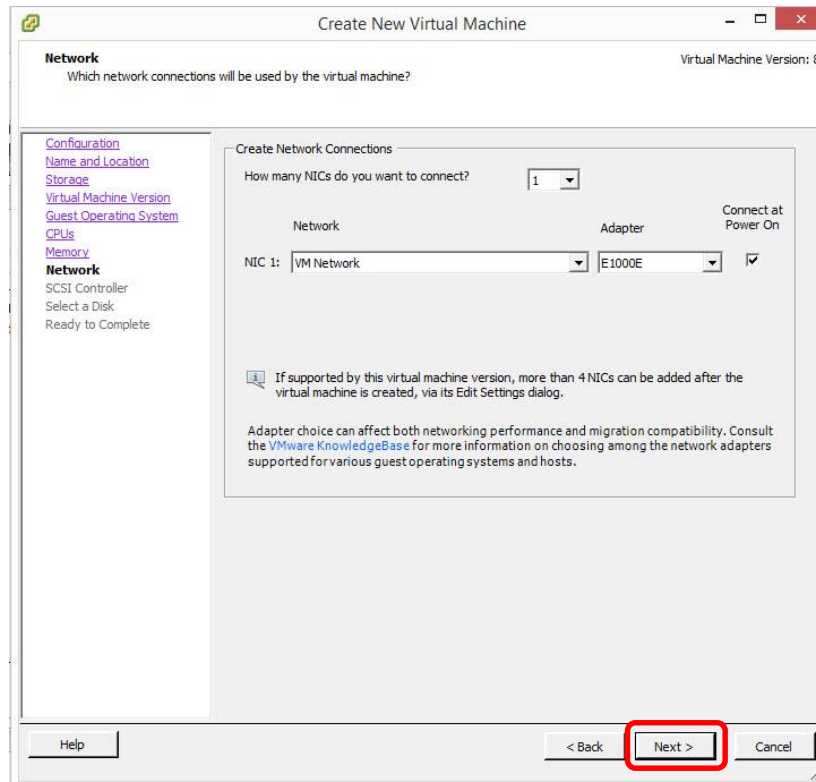
7. On **CPUs** page click **Next**



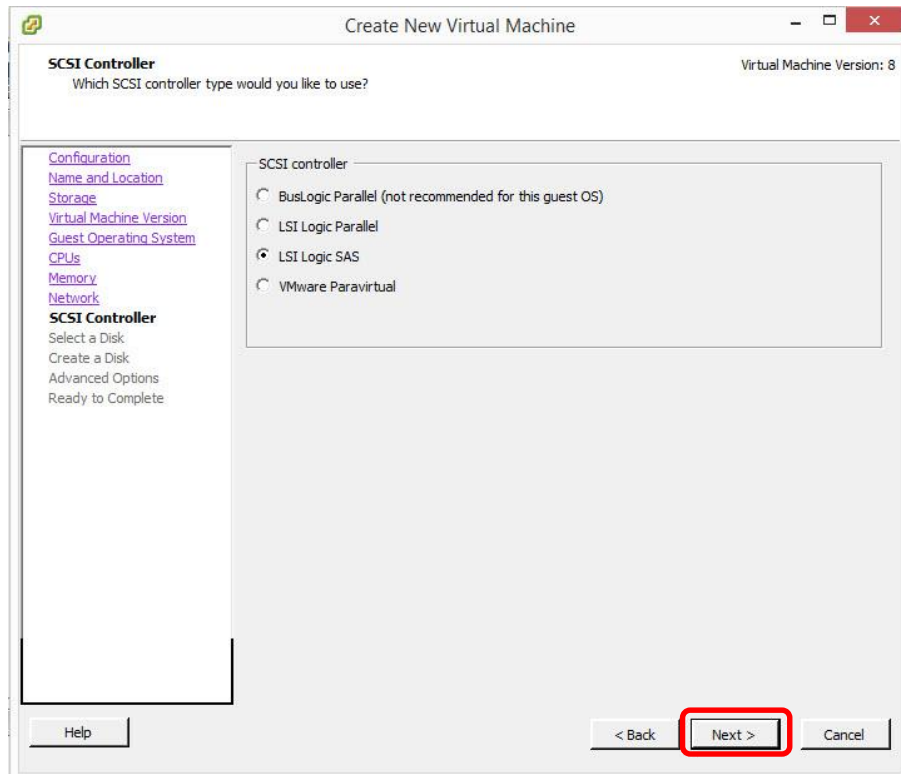
8. On **Memory** page set the amount of memory for the operating system and click **Next**



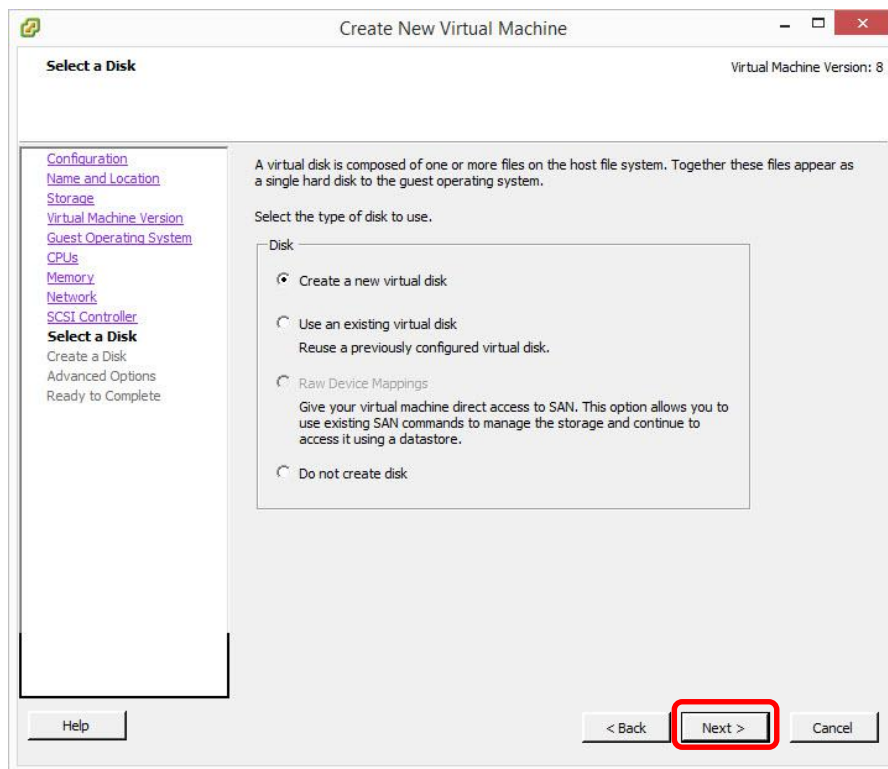
9. On **Network** page select the NIC you want assigned to this VM and click **Next**



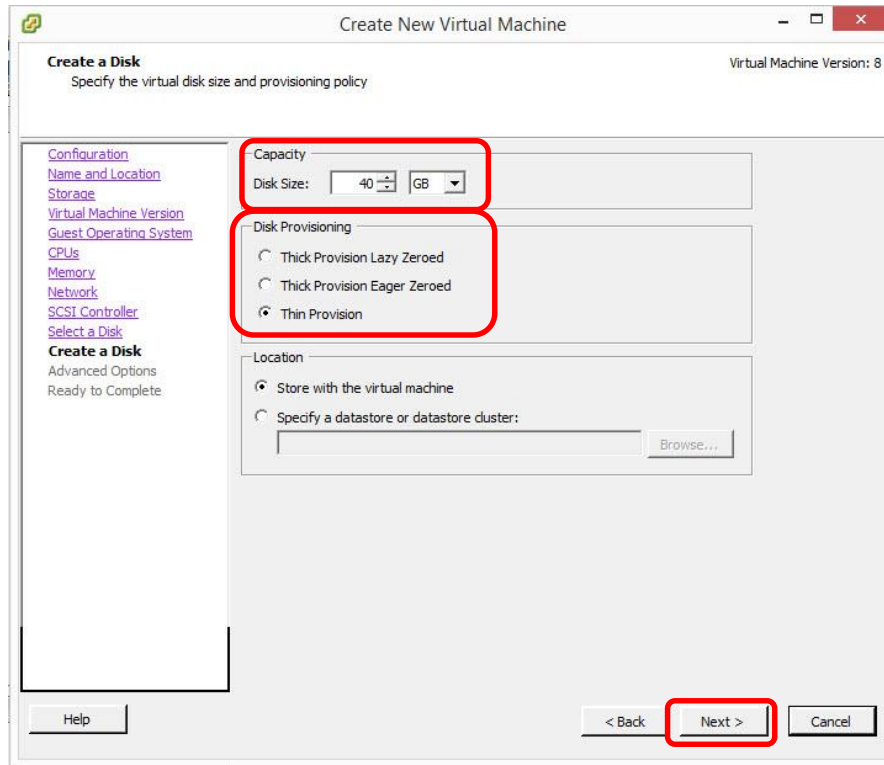
10. On **SCSI controller** page click **Next**



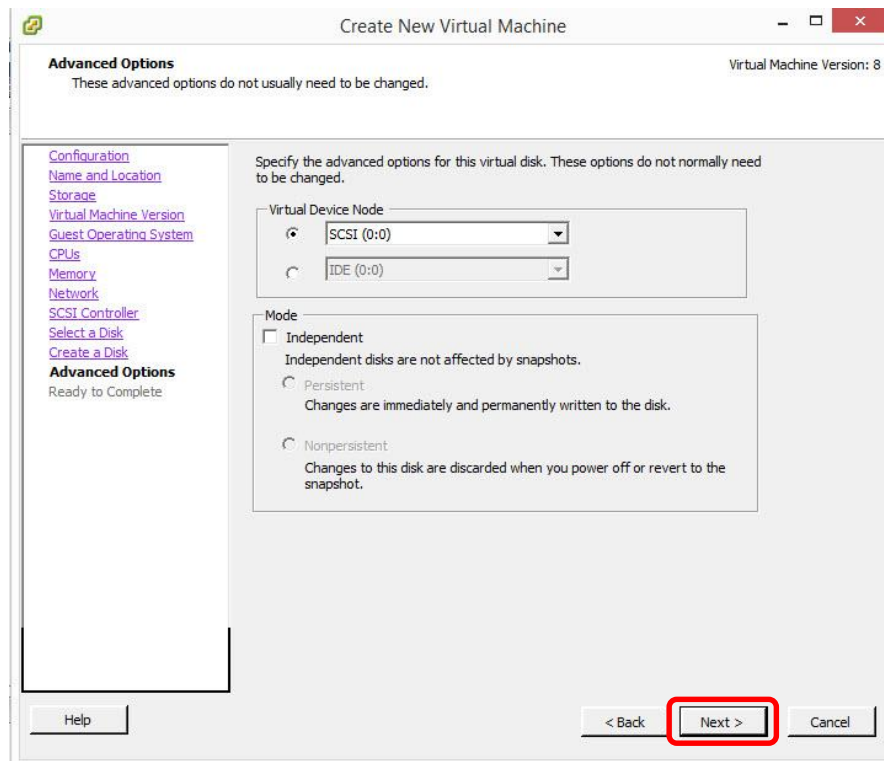
11. On **Select a Disk** page click **Next**



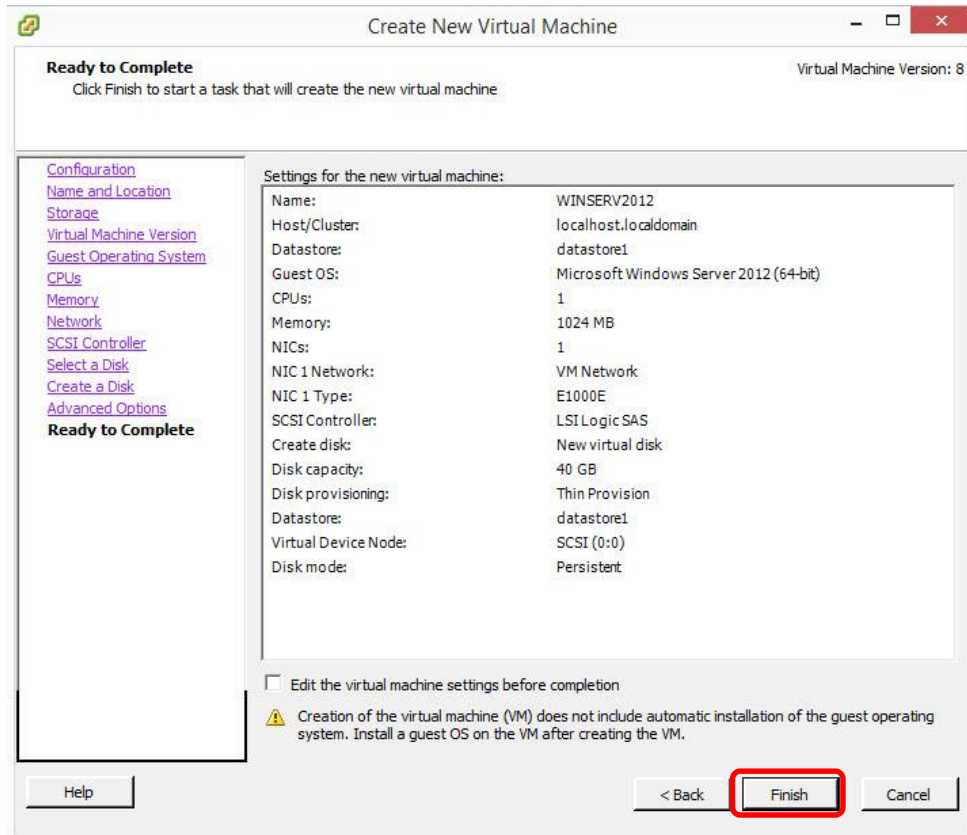
12. On **Create a Disk** page set the **Disk Size** allotted. Select **Thin Provision** and click **Next**



13. On **Advanced Options** page click **Next**

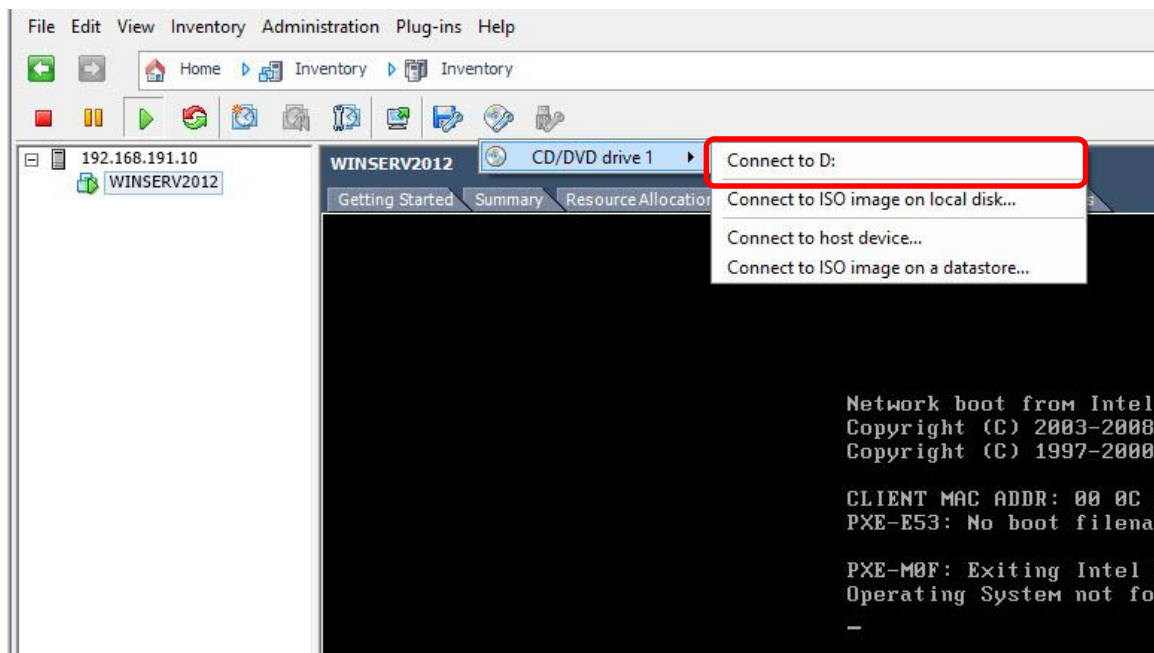


14. Confirm configuration and click Finish

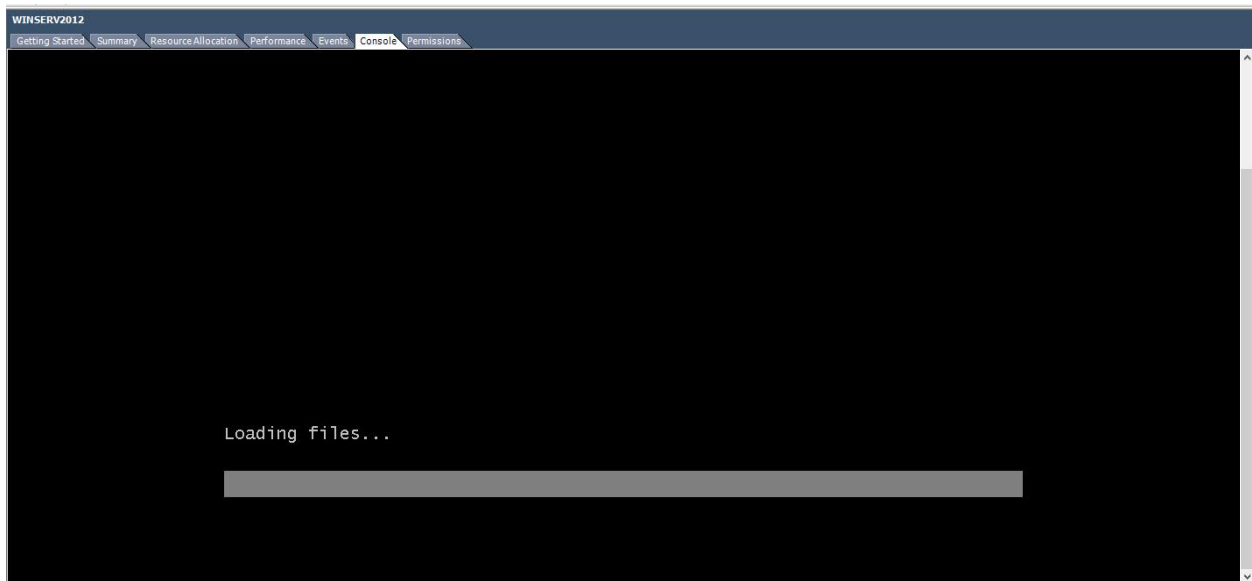


15. Select your VM and click the Green Play button to start the VM

16. Click the CD button to bring up CD/DVD drive and select the option to install the OS



You will be able to install the operation system normally

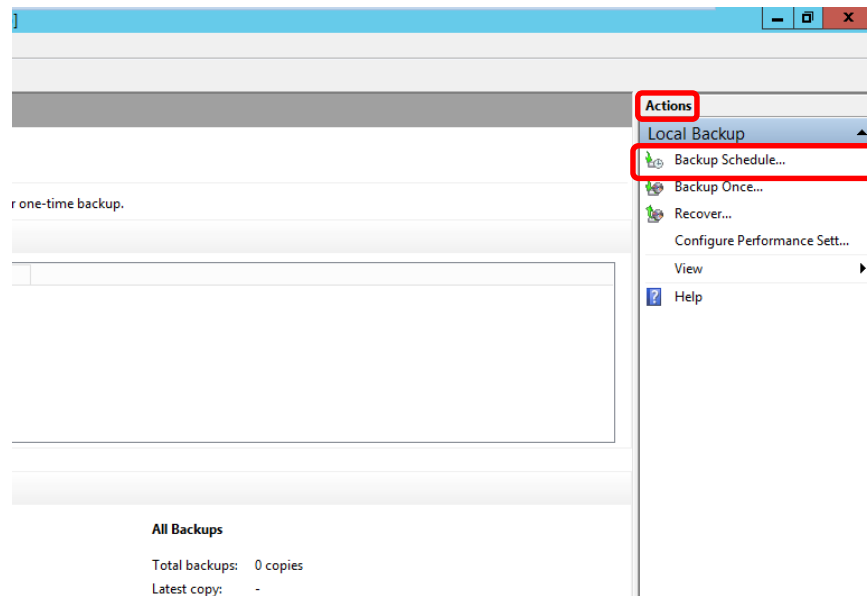


Troubleshooting Hyper-V

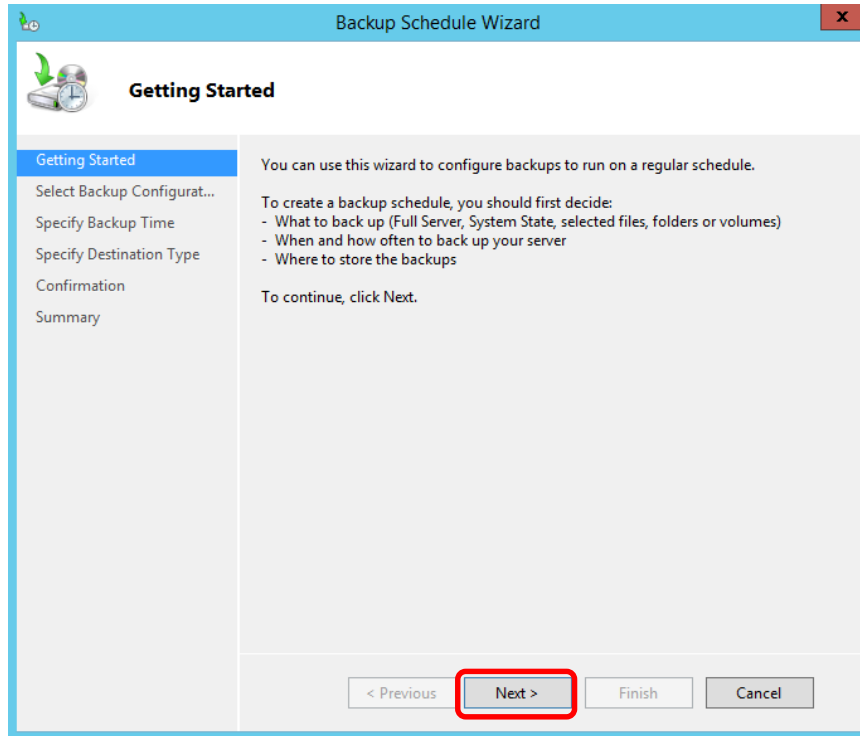
Tips for maintaining virtual machines with Hyper-V Manager

Backing up Hyper-V and VM's using Windows Server Backup

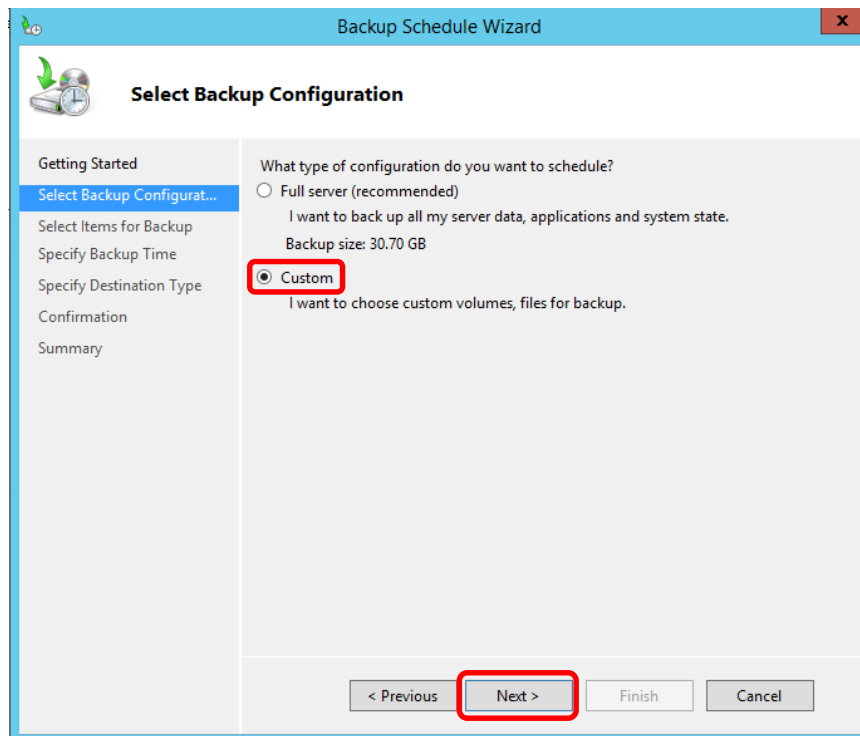
1. Make sure you have added the Windows Server Backup Feature before.
2. Open **Windows Server Backup**. Under Actions choose Backup Schedule



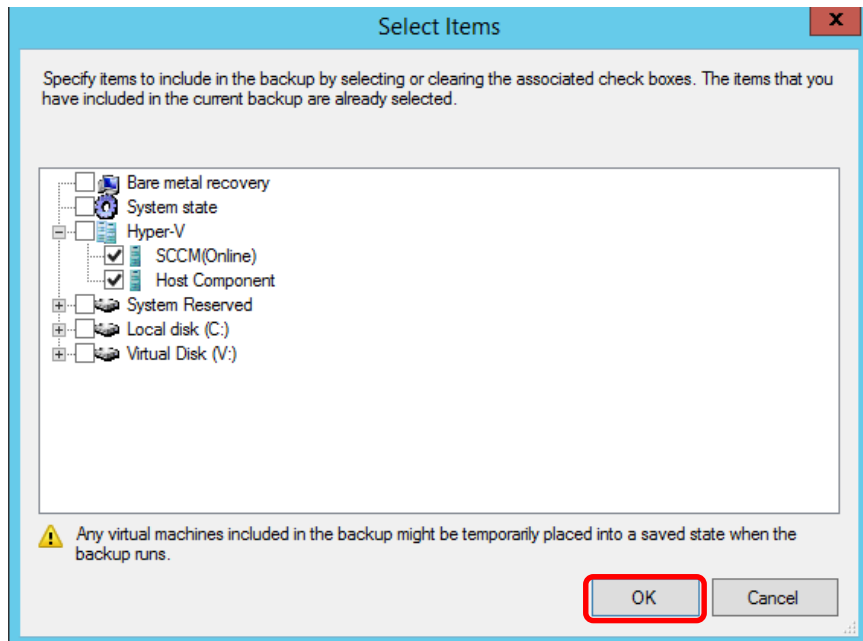
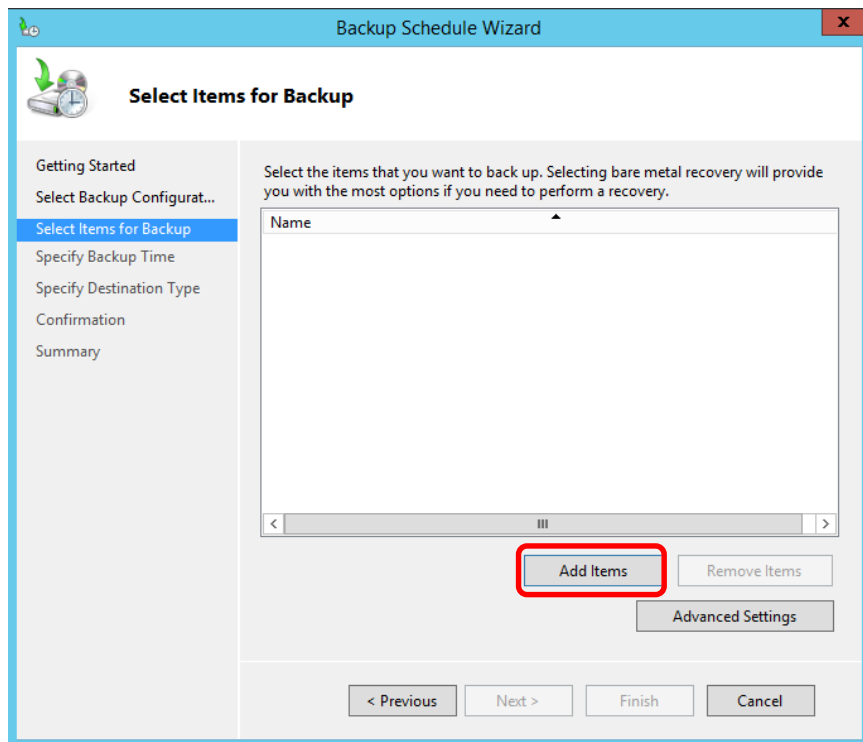
3. On Getting Started page, click **Next**

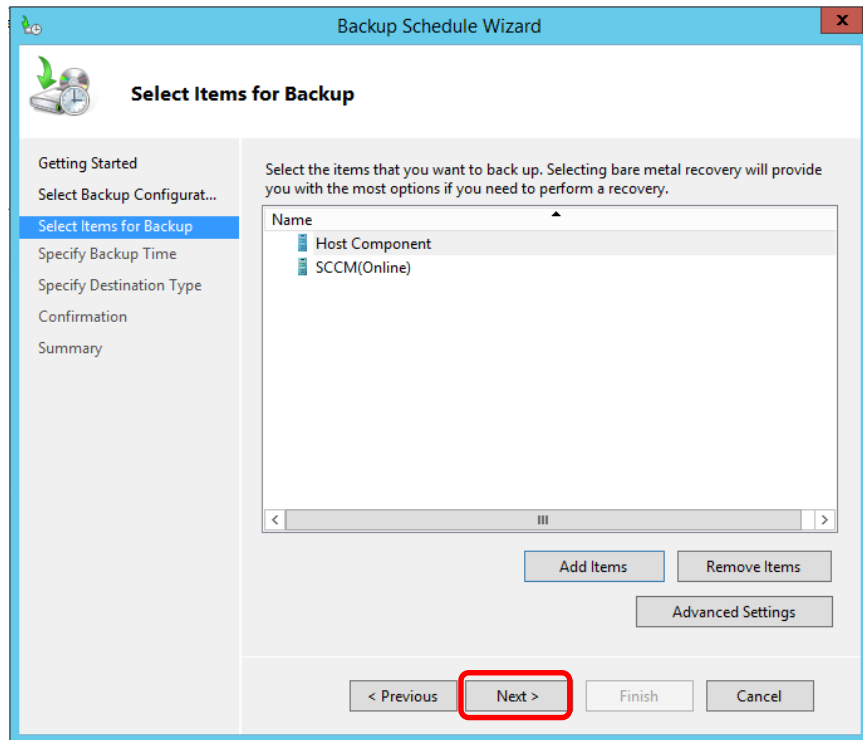


4. On Select **Backup Configuration** page, click on **Custom** and click **Next**

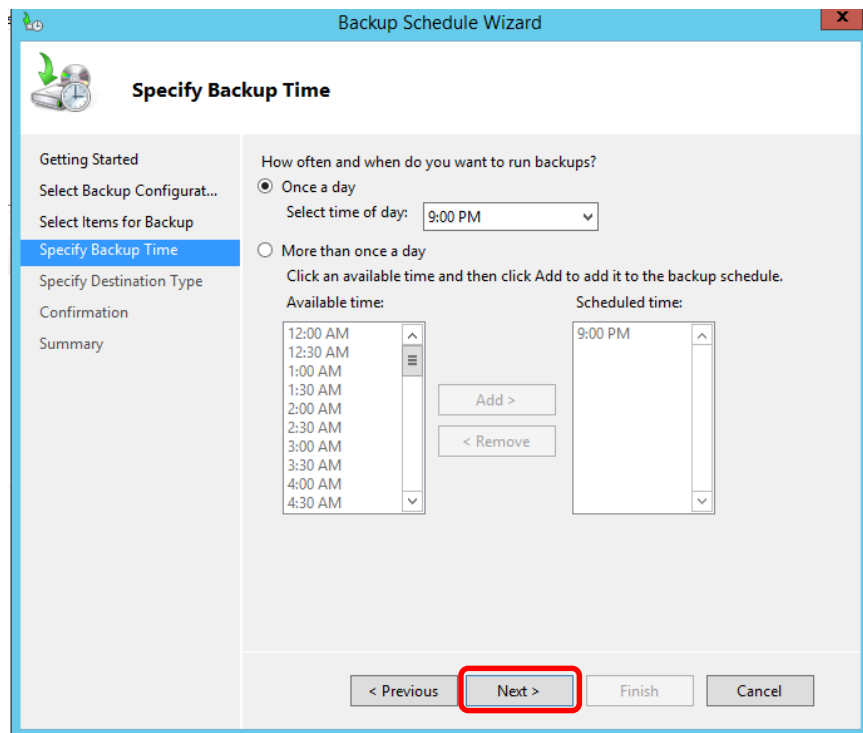


5. On **Select Items for Backup** page, click on **Add Items**. Select the items you wish to backup and click **OK**. Click **Next**

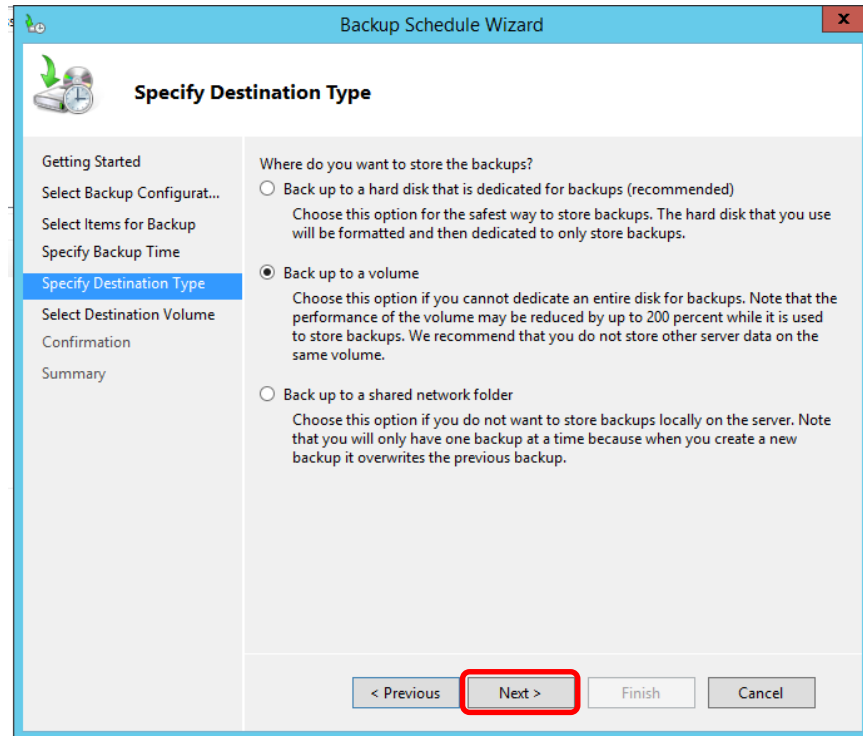




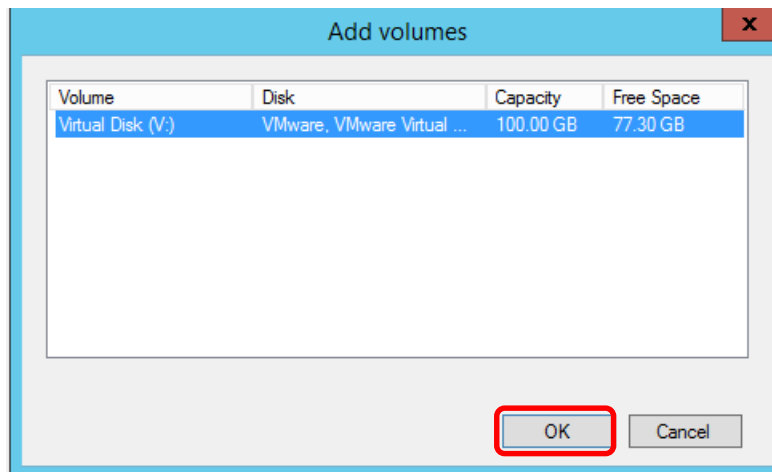
6. On **Specify Backup Time** page, select the specified time you want the backup to run. Click **Next**



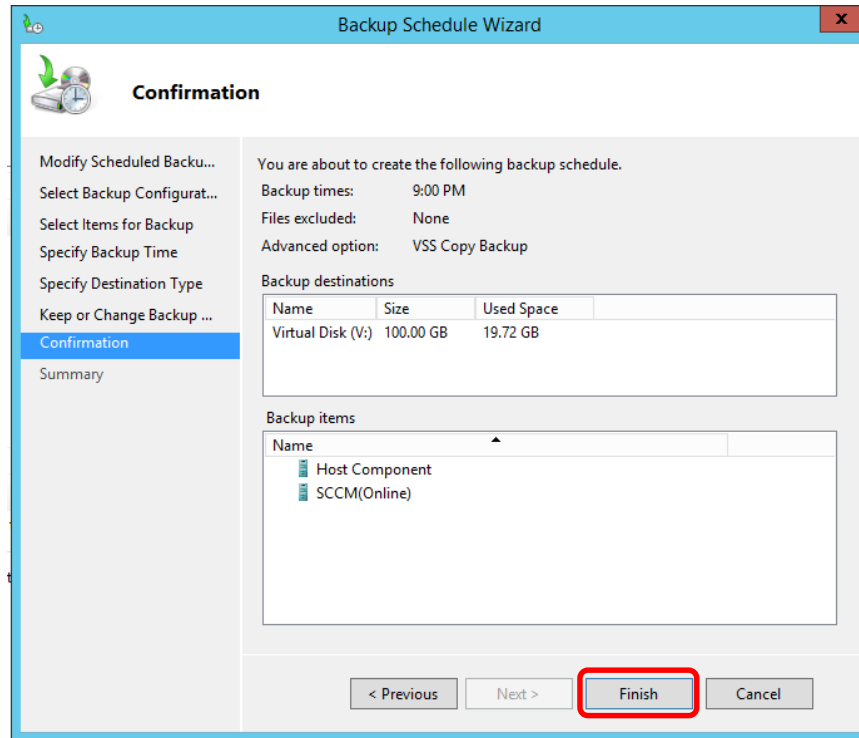
7. On **Specify Destination Type** page, choose where you want to store the backup and click **Next**



8. On the next page, click **Add** to add either the **Destination Volume, Disk, or Remote Share Folder**



9. Verify your settings and click **Finish**



10. Once your backup has been successfully created, click **Close**

