Deploying System Center Virtual Machine Manager – Step by Step

Volume 2

Featuring VMM Version 1711 & Windows Insider Build 17079

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Feedback Information

We’d like to hear from you! If you have any comments about how we could improve the quality of this book, please don’t hesitate to contact us by visiting www.checkyourlogs.net or sending an email to feedback@mvpdays.com.

Acknowledgements

From Dave

Cristal, you are my rock and my source of inspiration. For the past 20 + years you have been there with me every step of the way. Not only are you the “BEST Wife” in the world you are my partner in crime. Christian, Trinity, Keira, Serena, Mickaila and Mackenzie, you kids are so patient with your dear old dad when he locks himself away in the office for yet another book. Taking the time to watch you grow in life, sports, and become little leaders of this new world is incredible to watch.

Thank you, Mom and Dad (Frank and Audry) and my brother Joe. You got me started in this crazy IT world when I was so young. Brother, you mentored me along the way both coaching me in hockey and helping me learn what you knew about PC’s and Servers. I’ll never forget us as teenage kids working the IT Support contract for the local municipal government. Remember dad had to drive us to site because you weren’t old enough to drive ourselves yet. A great career starts with the support of your family and I’m so lucky because I have all the support one could ever want.

A book like this filled with amazing Canadian MVP’s would not be possible without the support from the #1 Microsoft Community Program Manager – Simran Chaudry. You have guided us along the path and helped us to get better at what we do every day. Your job is tireless and your passion and commitment make us want to do what we do even more.

Last but not least, the MVPDays volunteers, you have donated your time and expertise and helped us run the event in over 20 cities across North America. Our latest journey has us expanding the conference worldwide as a virtual conference. For those of you that will read this book your potential is limitless just expand your horizons and you never know where life will take you.

About the Authors

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Dave is a Microsoft Most Valuable Professional (MVP) with over 20 years of experience in the IT industry. His background includes data communications networks within multi-server environments, and he has led architecture teams for virtualization, System Center, Exchange, Active Directory, and Internet gateways. Very active within the Microsoft technical and consulting teams, Dave has provided deep-dive technical knowledge and subject matter expertise on various System Center and operating system topics.

Dave is well-known in the community as an evangelist for Microsoft, 1E, and Veeam technologies. Locating Dave is easy as he speaks at several conferences and sessions each year, including TechEd, Ignite, MVP Days Community Roadshow, and VeeamOn.

Recently Dave has been honored to take on the role of Conference Co-Chair of TechMentor with fellow MVP Sami Laiho. The lineup of speakers and attendees that have been to this conference over the past 20 years is really amazing. Come down to Redmond or Orlando in 2018 and you can meet him in person.

As the founder and Managing Principal Consultant at TriCon Elite Consulting, Dave is a leading technology expert for both local customers and large international enterprises, providing optimal guidance and methodologies to achieve and maintain an efficient infrastructure.

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He is an expert at scripting solutions and has an uncanny ability to reduce complexity and maximize the functionality of PowerShell. Allan has recently rejoined the TriCon Elite Consulting team again as a Principal Consultant.

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Cristal Kawula – MVP

Cristal Kawula is the co-founder of MVPDays Community Roadshow and #MVPHour live Twitter Chat. She was also a member of the Gridstore Technical Advisory board and is the President of TriCon Elite Consulting. Cristal is also only the 2nd Woman in the world to receive the prestigious Veeam Vanguard award.

Cristal can be found speaking at Microsoft Ignite, MVPDays, and other local user groups. She is extremely active in the community and has recently helped publish a book for other Women MVP's called Voices from the Data Platform.

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Cary's is a very active blogger at checkyourlogs.net and always available online for questions from the community. He passion about technology is contagious and he makes everyone around him better at what they do.

Blog:http://www.checkyourlogs.net

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Introduction

North American MVPDays Community Roadshow

The purpose of this book is to showcase the amazing expertise of our guest speakers at the North American MVPDays Community Roadshow. They have so much passion, expertise, and expert knowledge that it only seemed fitting to write it down in a book.

MVPDays was founded by Cristal and Dave Kawula back in 2013. It started as a simple idea; "There's got to be a good way for Microsoft MVPs to reach the IT community and share their vast knowledge and experience in a fun and engaging way" I mean, what is the point in recognizing these bright and inspiring individuals, and not leveraging them to inspire the community that they are a part of.

We often get asked the question "Who should attend MVPDays"?

Anyone that has an interest in technology, is eager to learn, and wants to meet other like-minded individuals. This Roadshow is not just for Microsoft MVP's it is for anyone in the IT Community.

Make sure you check out the MVPDays website at: www.mvpdays.com. You never know maybe the roadshow will be coming to a city near you.

The goal of this particular book is to bring you real world step-by-step guidance from our expert MVP Authors on Microsoft System Center Virtual Machine Manager. It has has been completely updated to feature Windows Server Insiders 17079 and the latest build of SCVMM. These are the same experts you come to see in person at the MVPDays Roadshow. This book is written in the format of a Step-by-Step learning guide. We really hope you find some immense value in what we have written.

Sample Files

All sample files for this book can be downloaded from www.checkyourlogs.net and www.github.com/dkawula

Additional Resources

In addition to all tips and tricks provided in this book, you can find extra resources like articles and video recordings on our blog http://www.checkyourlogs.net.

Chapter 1

Pre-Requisites

Lab Server Names

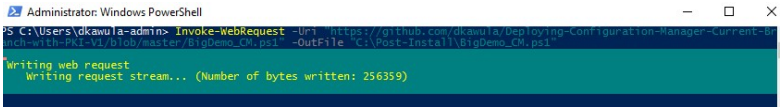
The follow table describes the required Virtual Machines to build this lab. This lab is designed to be built on a Hyper-V Host Server with a minimum of 16 GB of RAM. An automation script called BigDemo_Insider.PS1 has been used to provision this lab environment. *A copy of this script can be found in the appendicies.*

Hostname	Role	Operating System
VMM01	System Center Virtual Machine Manager 2016 with SQL Server 2016 will be installed locally	Windows Server 2016
DC01	Primary Domain Controller running Active Directory Certificate Services as an Enterprise Root	Windows Server 2016
S2D1	Storage Spaces Direct – Hyper-V Cluster Node – Server Core	Windows Server Insiders Build 17079
S2D2	Storage Spaces Direct – Hyper-V Cluster Node – Server Core	Windows Server Insiders Build 17079
S2D3	Storage Spaces Direct – Hyper-V Cluster Node – Server Core	Windows Server Insiders Build 17079
S2D4	Storage Spaces Direct – Hyper-V Cluster Node – Server Core	Windows Server Insiders Build 17079
Router01	Windows NAT Router for the LAB	Windows Server 2016

DHCP01	DHCP Server for the Lab	Windows Server 2016
Management01	Management01	Windows Server 2016
AZHVHost	DS8 Virtual Machine in Azure running Nested Virtualization and Hyper-V. This will be the host that we run the lab on. This could also be a Laptop or physical server in your environment.	Windows Server 2016

Building the Lab with BigDemo_Insider.PS1

For the purpose of this book we wanted to help you build a lab that you could easily follow along with. If you have read some of our other books you would have seen a script that we use called BigDemo. Basically, BigDemo is a PowerShell script that builds a lab environment including: AD, DHCP, Management Servers, Clients, Application Servers, and others. It is highly customizable and we have created a very special edition just for this book. Follow the instructions below to download the script from our Github Repository and start building your very own lab to follow along with.

Instructions	Screenshot (if applicable)
1. Logon to the AZHVHost machine in Azure as Administrator	
2. Open an administrative PowerShell prompt and type:	`Invoke-WebRequest -Uri "https://raw.githubusercontent.com/dkawula/Deploying-System-Center-Virtual-Machine-Manager-2016/master/BigDemo_Insider.ps1" -OutFile "C:\Post-Install\BigDemo_Insider.PS1"` 
3. Next Download a copy of Windows Server 2016 RTM from the Microsoft Eval Center. For our lab we have a drive on our Hyper-V Host F:\	https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2016/

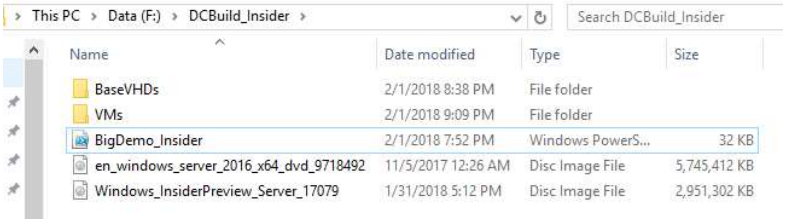
Save the ISO to
F:\DCBuild_Insider

4. Next Download a copy of Windows Server Insider 17079 Microsoft Eval Center. For our lab we have a drive on our Hyper-V Host F:\

   Save the ISO to
   F:\DCBuild_Insider

   https://blogs.windows.com/windowsexperience/2018/01/23/announcing-windows-server-insider-preview-build-17079/

5. Copy **BigDemo_Insider.PS1** from **C:\Post-Install** to **F:\DCBuild_Insider**



6. Open **BigDemo_Insider.PS1** with the **PowerShell ISE** edit lines 425 and 434 putting in **Your Product key received with the EVAL Version of Windows Server 2016** Downloaded above

7. Edit line 422 **$ServerISO** with the actual path and name of your Server ISO Downloaded which should

have been downloaded to something like **F:\DCBuild_Insider**

Save **BigDemo_Insider.PS1**

8. Open an administrative PowerShell prompt. Run **BigDemo_Insider.PS1**

   For this book we have used the following parameters:

   WorkingDir: f:\DCBuild_Insider

   Organization: MVPDays Rockstarts

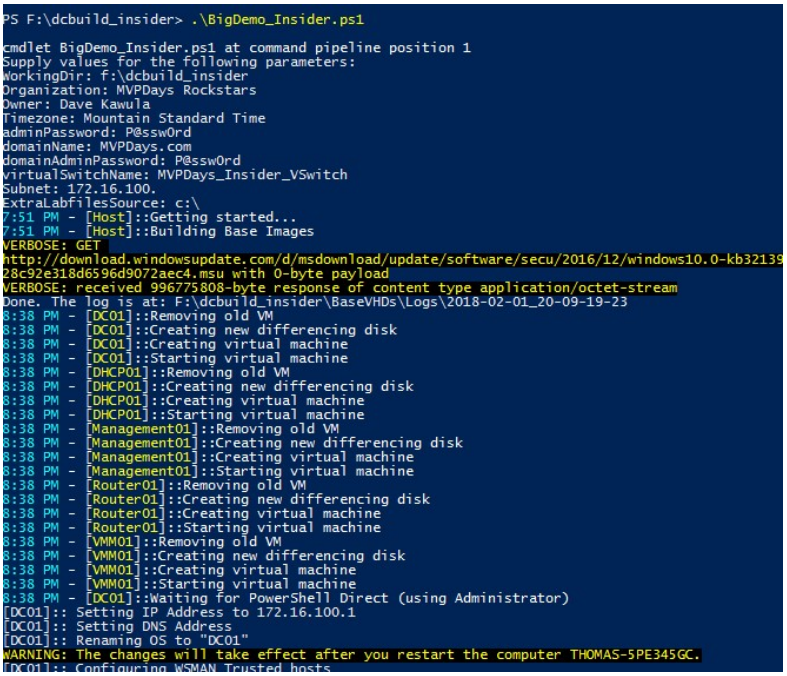
   Owner: Dave Kawula

   TimeZone: Mountain Standard Time

   AdminPassword: P@ssw0rd

   DomainName: MVPDays.com

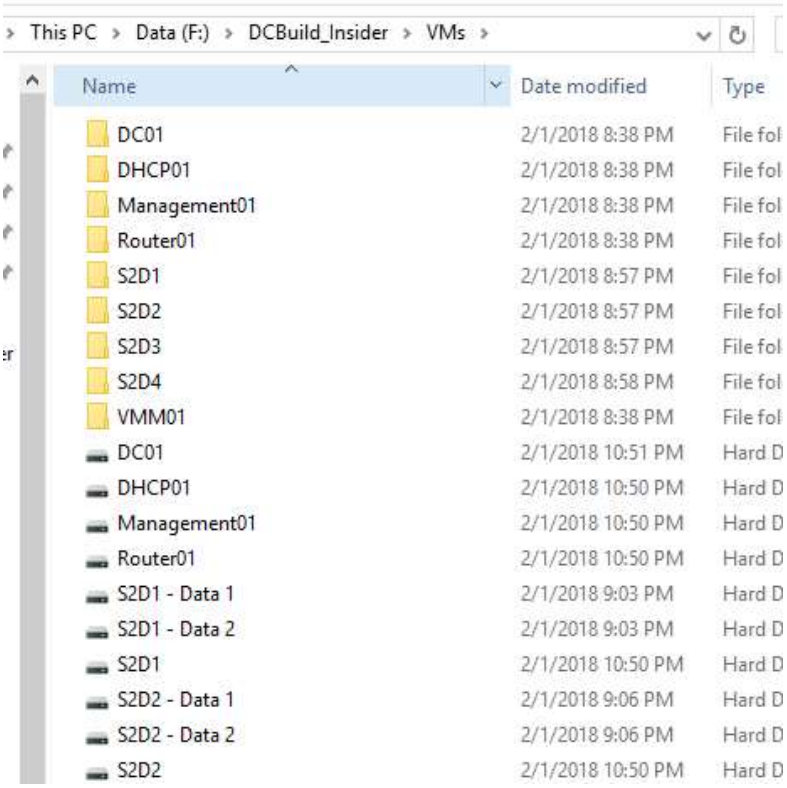
   DomainAdminPassword: P@ssw0rd



VirtualSwitchName:
MVPDays_VMM_VSwitch

Subnet: 172.16.100.
ExtraLabFiles: C:

9. It will take approximately 1 hour to build the Lab Environment

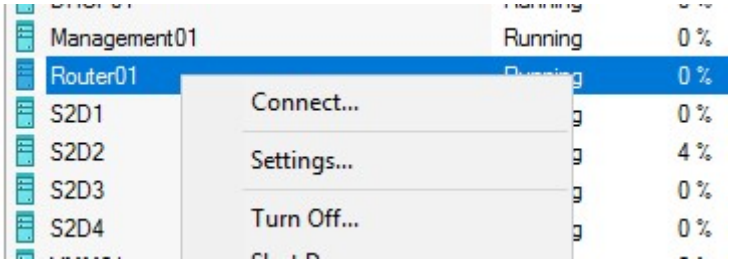

This PC
Data (F:)
DCBuild_Insider
VMs
Name
Date modified
Type
DC01 2/1/2018 8:38 PM File fol
DHCP01 2/1/2018 8:38 PM File fol
Management01 2/1/2018 8:38 PM File fol
Router01 2/1/2018 8:38 PM File fol
S2D1 2/1/2018 8:57 PM File fol
S2D2 2/1/2018 8:57 PM File fol
S2D3 2/1/2018 8:57 PM File fol
S2D4 2/1/2018 8:58 PM File fol
VMM01 2/1/2018 8:38 PM File fol
DC01 2/1/2018 10:51 PM Hard D
DHCP01 2/1/2018 10:50 PM Hard D
Management01 2/1/2018 10:50 PM Hard D
Router01 2/1/2018 10:50 PM Hard D
S2D1 - Data 1 2/1/2018 9:03 PM Hard D
S2D1 - Data 2 2/1/2018 9:03 PM Hard D
S2D1 2/1/2018 10:50 PM Hard D
S2D2 - Data 1 2/1/2018 9:06 PM Hard D
S2D2 - Data 2 2/1/2018 9:06 PM Hard D
S2D2 2/1/2018 10:50 PM Hard D

Enable Routing in the Lab

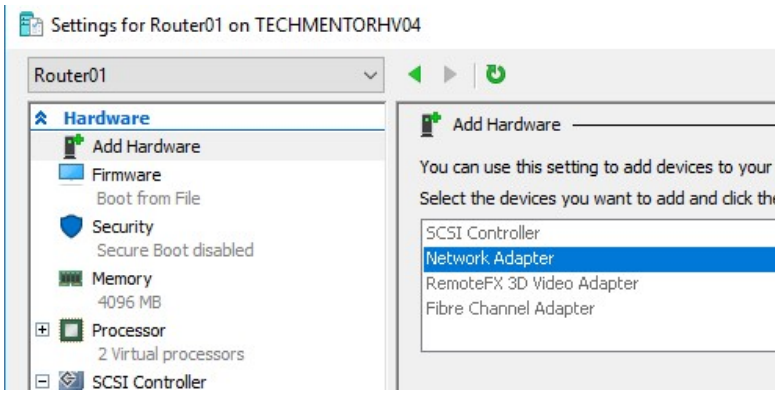
This step-by-step lab guide requires access to the Internet for configurations. To enable access to the internet from the Nested Hyper-V Host running in Azure run the following. This will create a Gateway IP Address of 192.168.0.1 which will be used by the Router VM to get out to the Internet. After the NAT Switch is created you will modify the DHCP Scope in the Lab to point to the IP Address of the Router and then configure Windows Routing and Remote Access on the Router VM.

Instructions	Screenshot (if applicable)
1. Logon to the AZHVHost machine in Azure as Administrator	

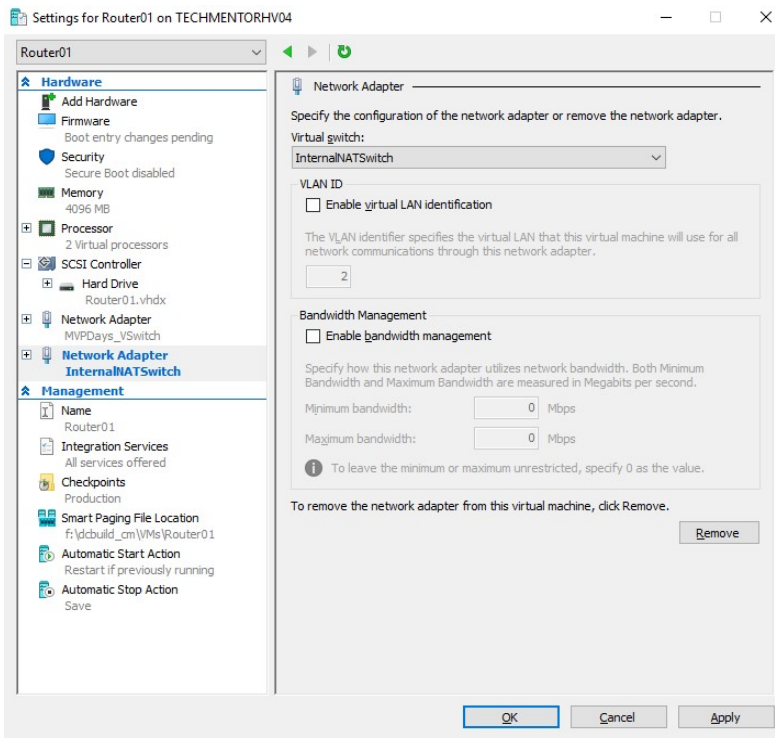
2. Open an administrative PowerShell prompt	`New-VMSwitch -SwitchName "InternalNATSwitch" -SwitchType Internal`
	`Get-NetAdapter`
	`New-NetIPAddress 192.168.0.1 -PrefixLength 24 -InterfaceIndex 23`
	`New-NetNat -Name "InternalNat" -InternalIPInterfaceAddressPrefix 192.168.0.0/24`

3. Open the Hyper-V Management Console, Right-Click on **Router01,** and click **Settings**	

4. Click on **Add Hardware**, **Network Adapter,** click **Add**



5. Click the newly added Network Adapter, Click on **Virtual Switch**, and Select **Internal Nat Swtich¸**and click **OK**



6. Logon to **Router01** with using **Administrator** and a password of **P@ssw0rd**

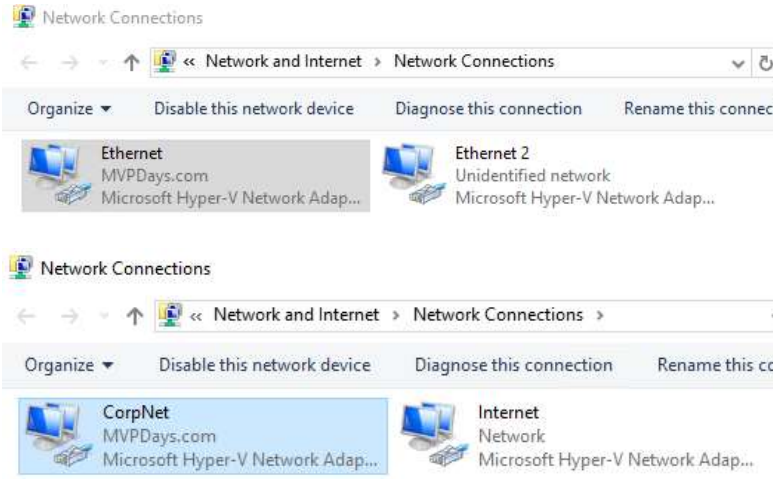
7. Open an administrative PowerShell prompt and run the command

   This will install the Routing and Remote Access Feature

```
Add-WindowsFeature -Name RemoteAccess,Routing,RSAT-RemoteAccess-Mgmt -verbose
```

8. Right-Click **Start**, click **Run,** type **ncpa.cpl**

   Rename the Adapters:
   Ethernet to **Corpnet**
   Ethernet 2 to **Internet**



9. Configure the following IP Address settings:

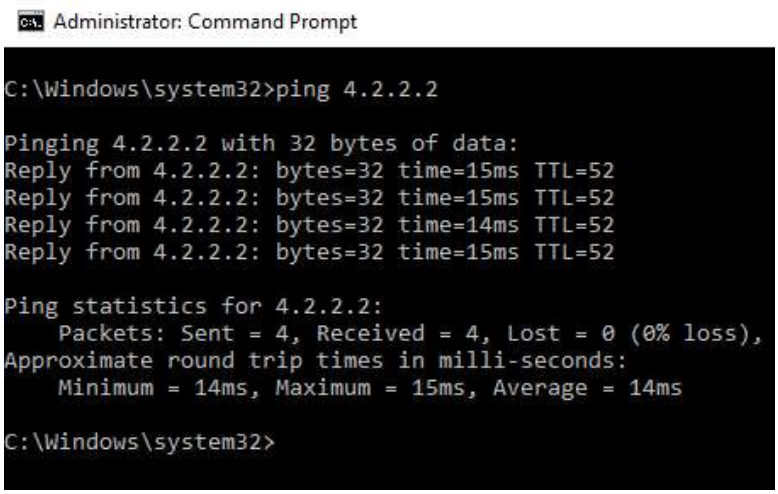
   CorpNet:
   IP = 172.16.100.254
   Subnet = 255.255.255.0
   Gateway = Blank
   DNS = 172.16.100.1

   Internet: 192.168.0.254
   Subnet = 255.255.255.0
   Gateway = 192.168.0.1

10. Open an Administrative Command Prompt, try to ping 4.2.2.2

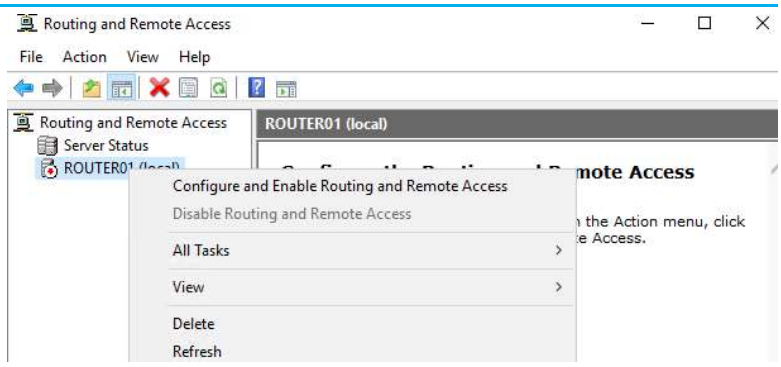
    Ensure that the Router01 VM can ping the internet address by IP prior to continuing.

    This validates that the NAT Switch is working properly.

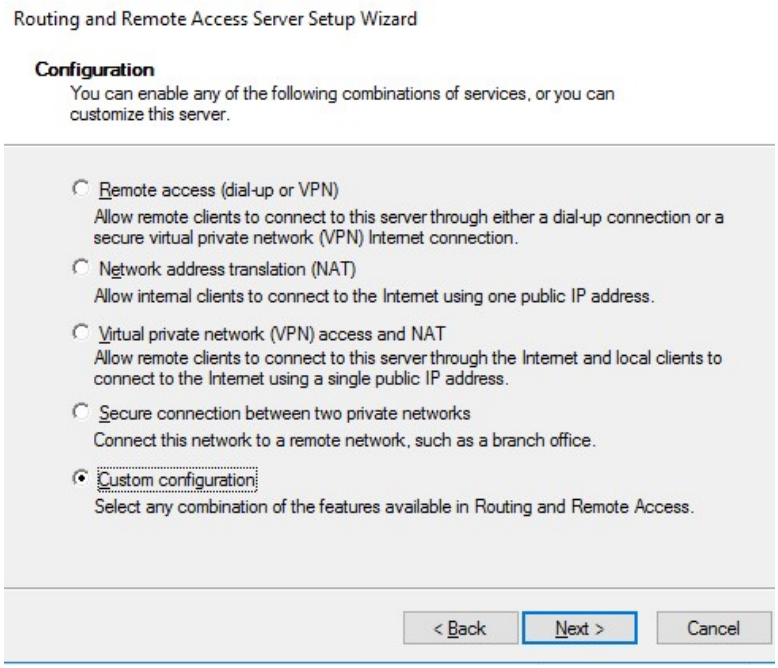


11. Open the **Routing and Remote Access** Management Console

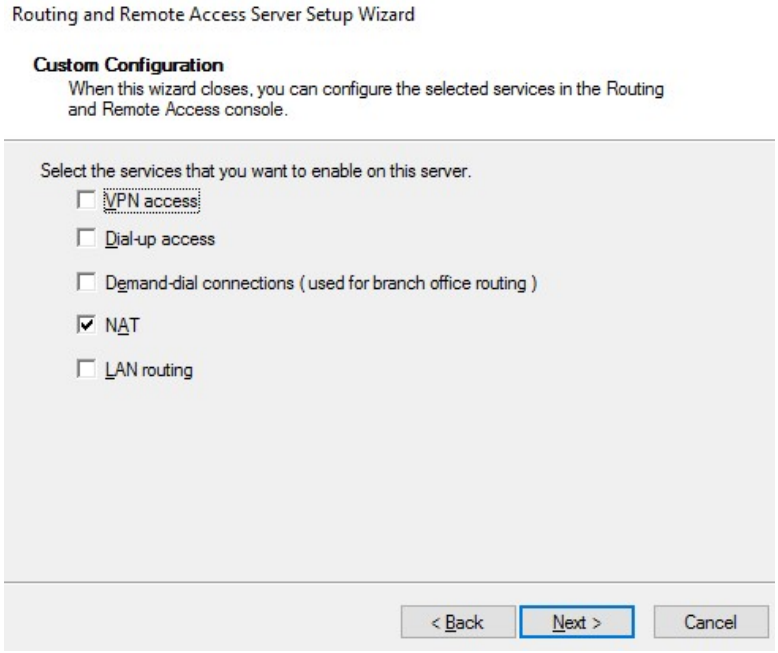
12. Right-Click on **Router01** and click, **Configure and Enable Routing and Remote Access**



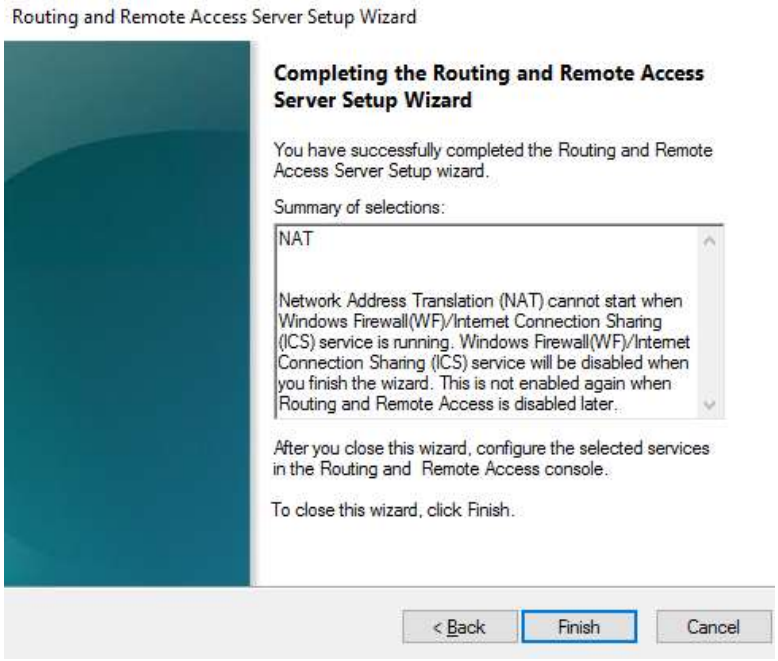
13. On the **Routing and Remote Access Server Setup Wizard** page select **Custom Configuraiton** and click **Next**



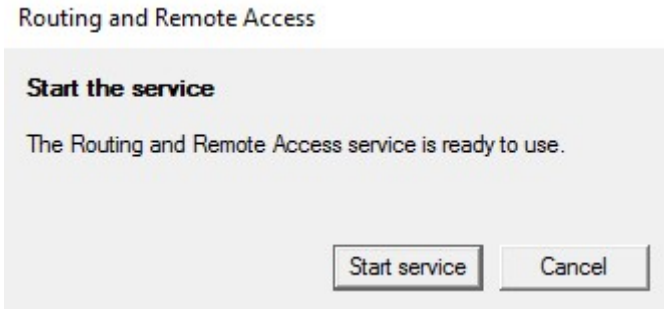
14. On the **Custom Configuraiton** page Select **NAT** and click **Next**



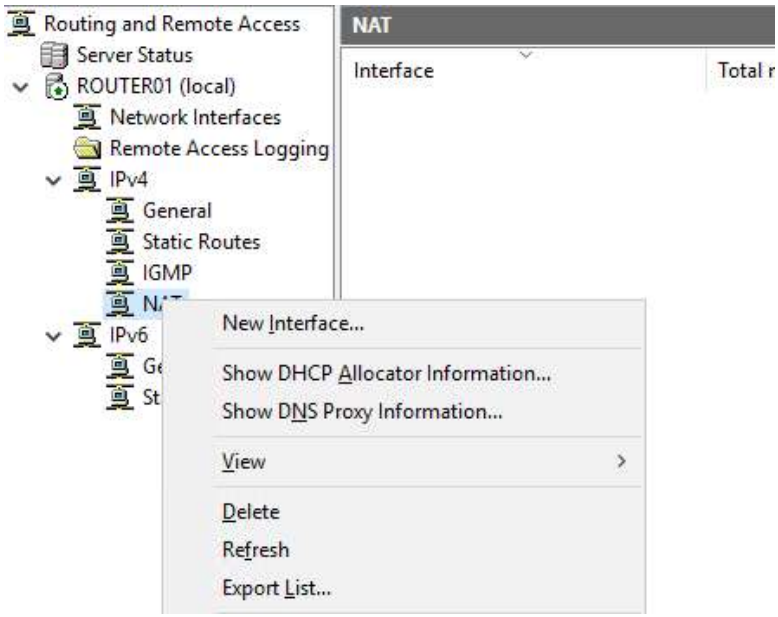
15. On the **Completing the Routing and Remote Access Server Setup Wizard** page click **Finish**



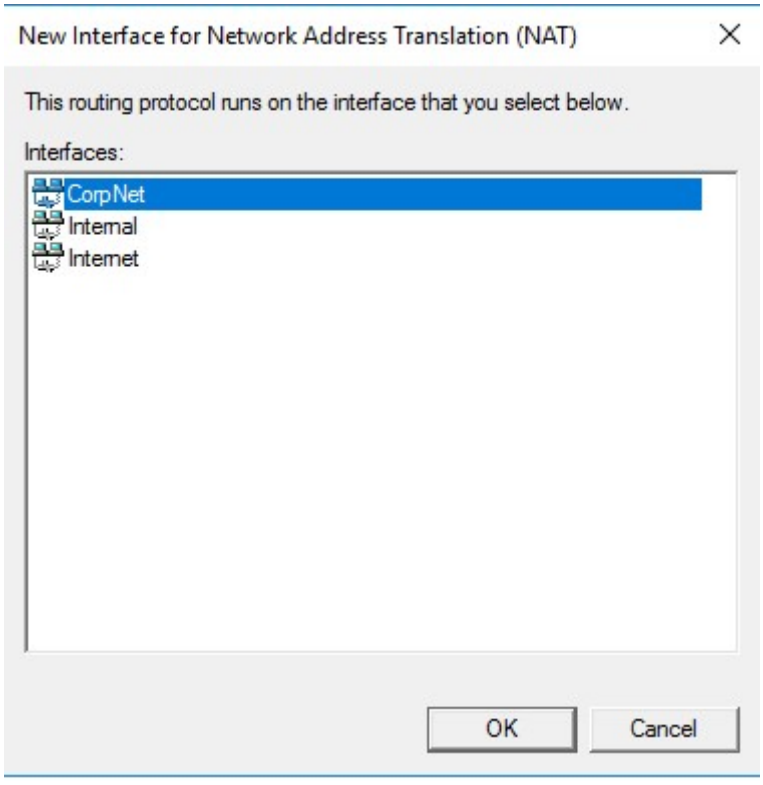
16. When prompted click **Start Service**



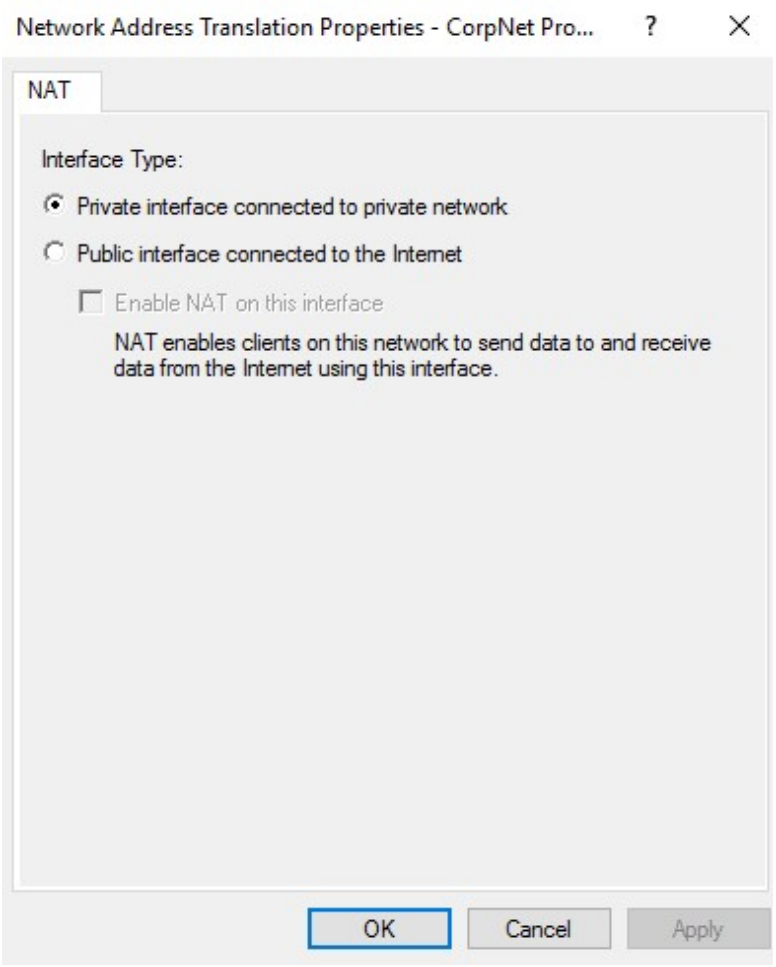
17. In the **Routing and Remote Access** management console, expand **Router01**, **IPv4, NAT**. Then Right-Click **NAT** and click **New Interface…**



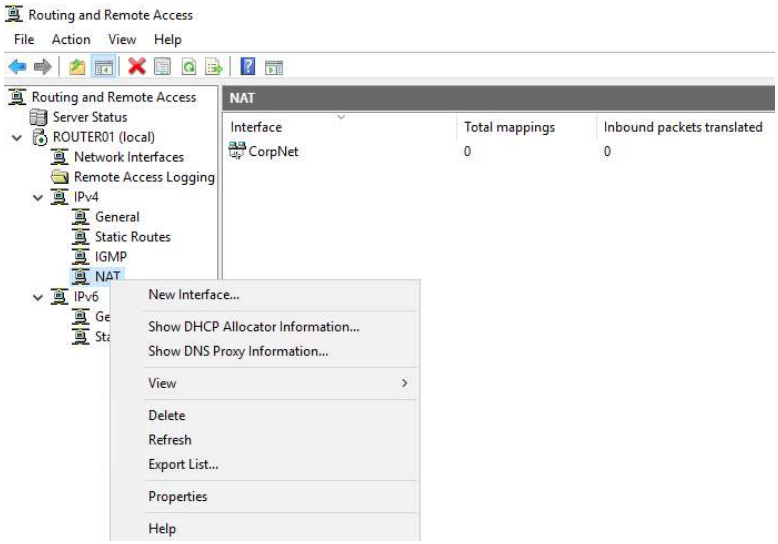
18. Select **CorpNet** and click **OK**



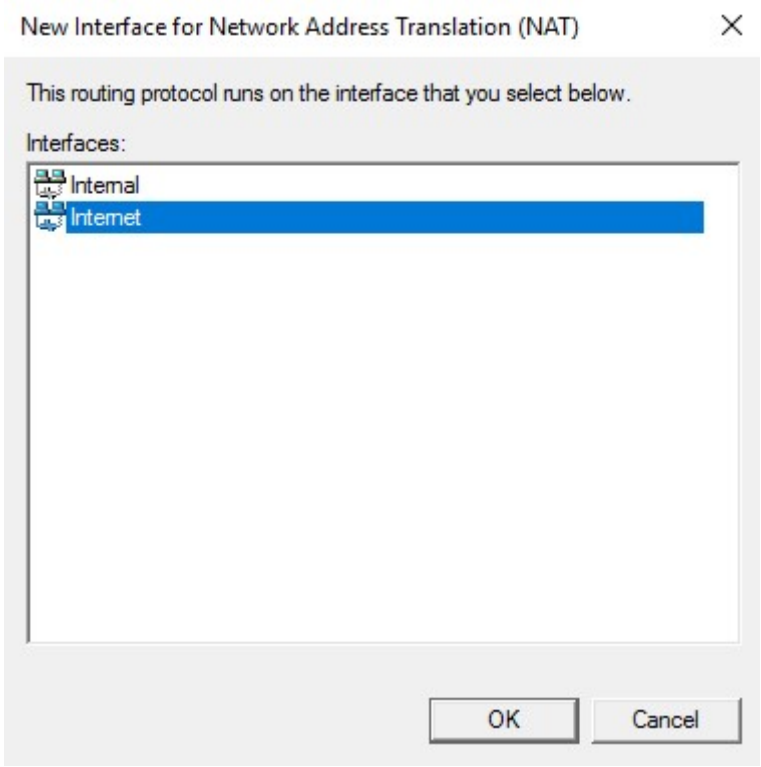
19. On the **Nat** page ensure **Private interface connected to the private network** is selected and click **OK**



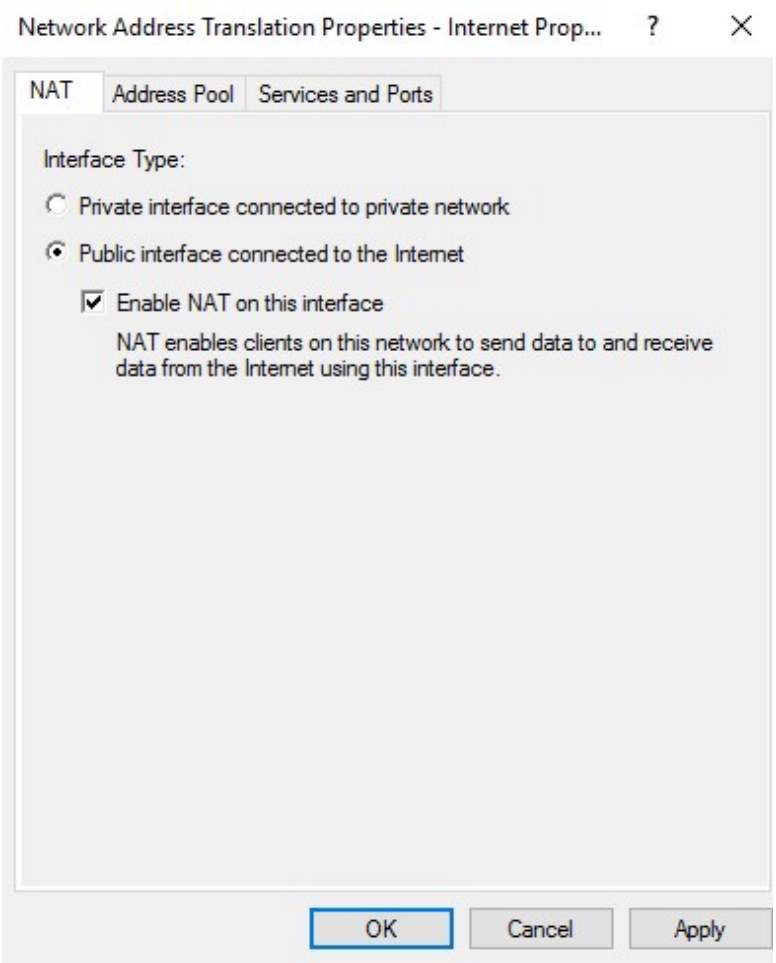
20. In the **Routing and Remote Access** management console, expand **Router01**, **IPv4, NAT**. Then Right-Click **NAT** and click **New Interface…**



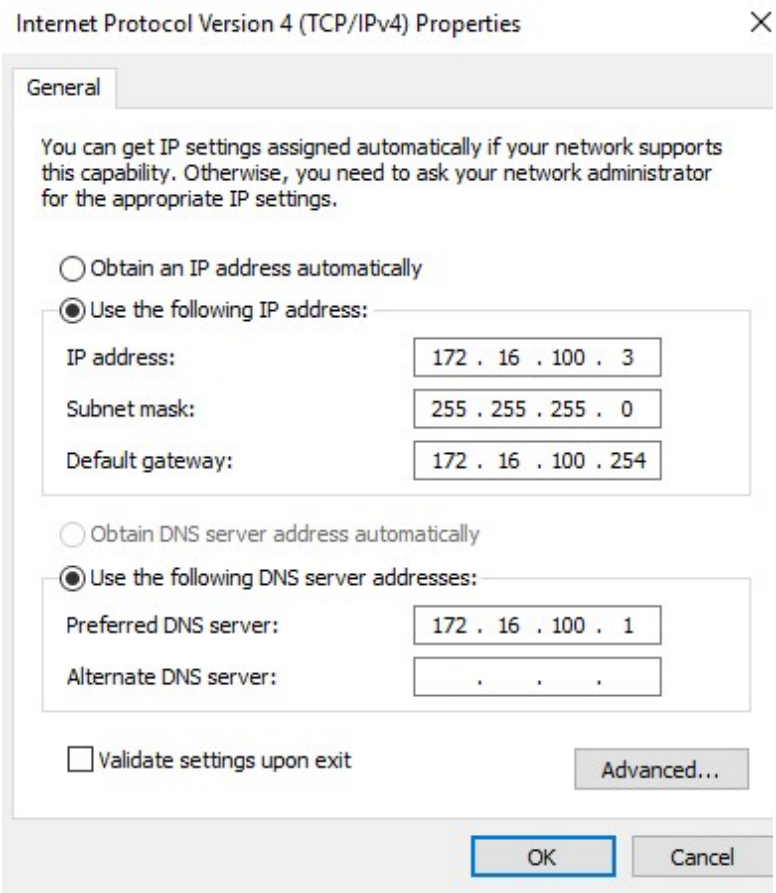
21. Select **Internet** and click **OK**



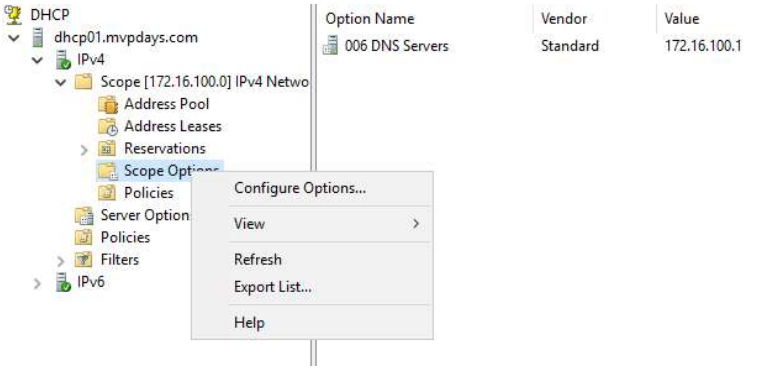
22. On the **Nat** page select **Public Interface connected to the Internet** and select **Enable NAT on this Interface** and click **OK**



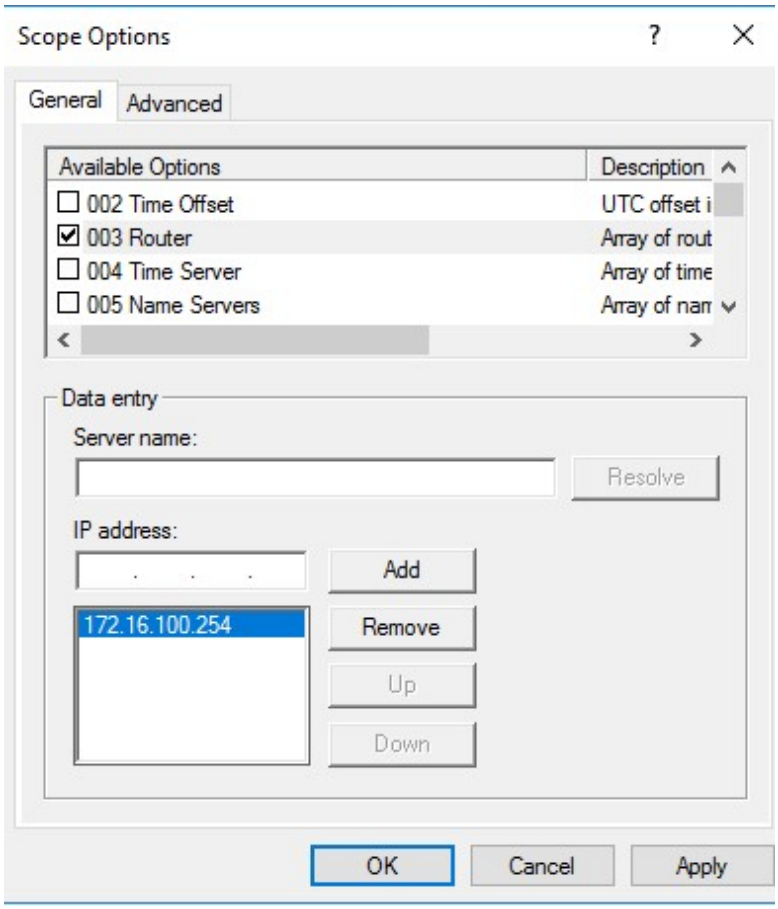
23. Logon to **DHCP01** as **MVPdays\Administrator**
24. Open the Network Control Panel (**NCPA.CPL**) and add a default gateway on the **Ethernet** adapter of 172.16.100.254



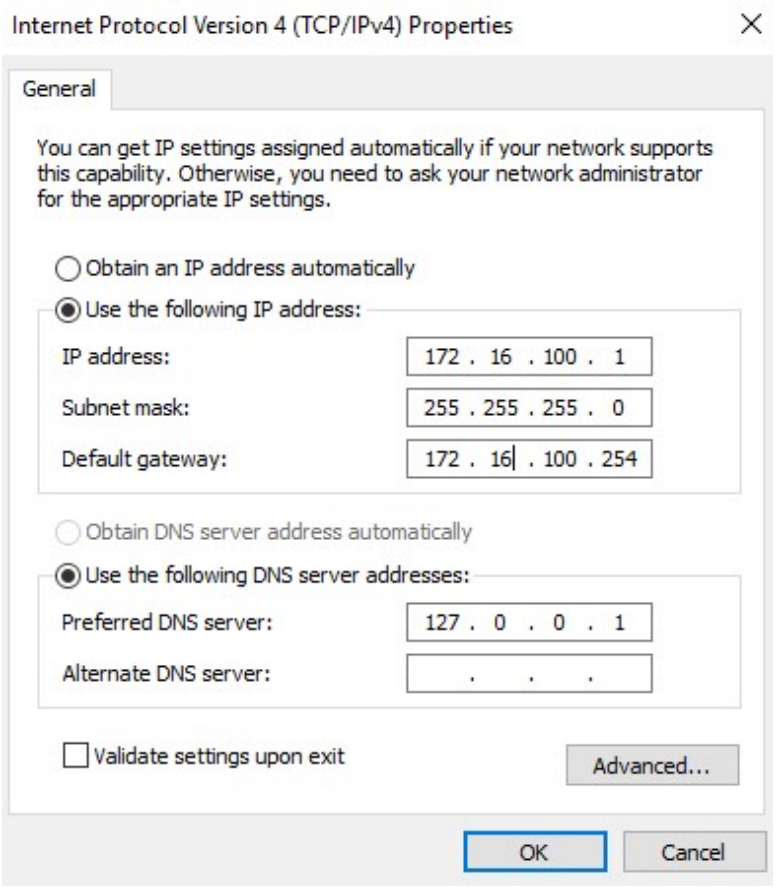
25. Open the **DHCP Management Console (DHCPMGMT.MSC)**
26. Expand **DHCP01, IPv4, Scope (172.16.100.0), Scope Options**
27. Right-Click on **Scope Options** and click **Configure Options**



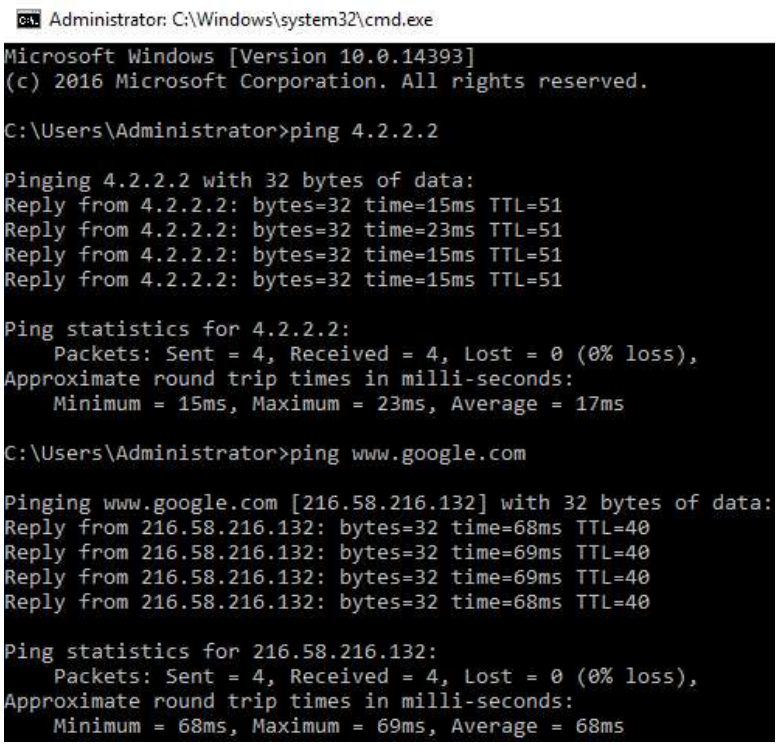
28. Select **003 Router** and in **IP Address** type **172.16.100.254** and click **Add** then click **OK**



29. Logon to **DC01** as **MVPDays\Administrator** and add a **Gateway of** 172.16.100.254 to the **Ethernet Adapter**



30. Open an Administrative command prompt and try pinging: 4.2.2.2 and www.google.com



31. Restart the following VM's:
S2D1-S2D4
Management01
VMM01

This will ensure that they all get updated IP Addresses from the **DHCP01** Server

Software Requirements

The following table provides a summary of the Microsoft software that is used in this guide.

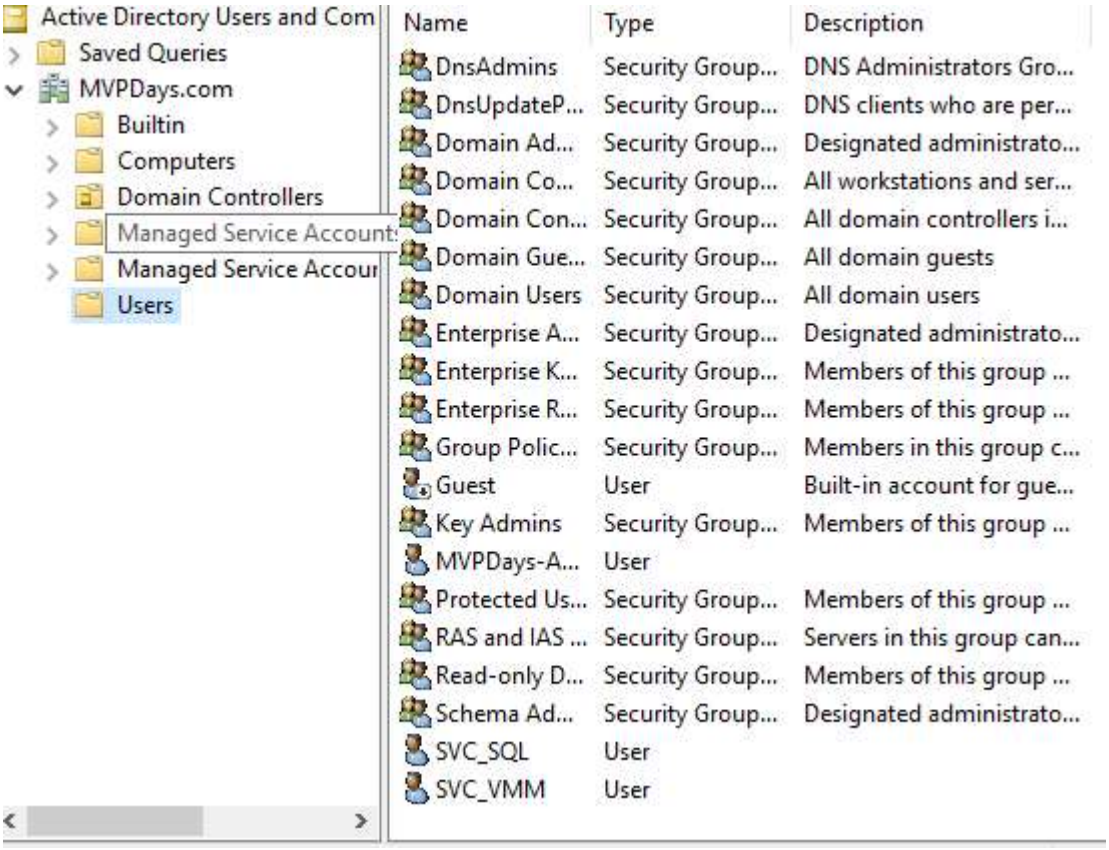
Software	Additional Information
System Center Virtual Machine Manager Technical Preview 1711 https://www.microsoft.com/en-us/evalcenter/evaluate-system-center-technical-preview	
SQL 2016 SP1 Volume License Media	Standard Edition

Virtual Machine Manager Accounts Required for Build

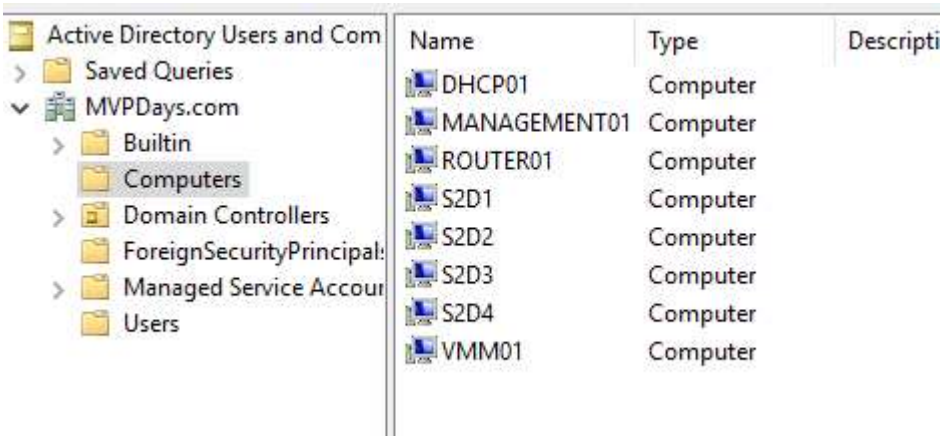
The following accounts have automatically been created in Active Directory with the BigDemo_Insider.PS1 Script. These are the only accounts required for the base installation in our lab for this book.

Service Account / Groups	Scope
svc_SQL	SQL Server Agent / SQL Server Database Engine / SQL Server Reporting Services are running from this account
SVC_SCVMM	SCVMM Service Account used for the SCVMM Services locally installed
MVPDays-Admin	Domain Admin Account that will be used for the RunAS Account in SCVMM. You cannot use the SCVMM Service account for this.

Virtual Machine Manager Service Accounts for MVPDays Domain

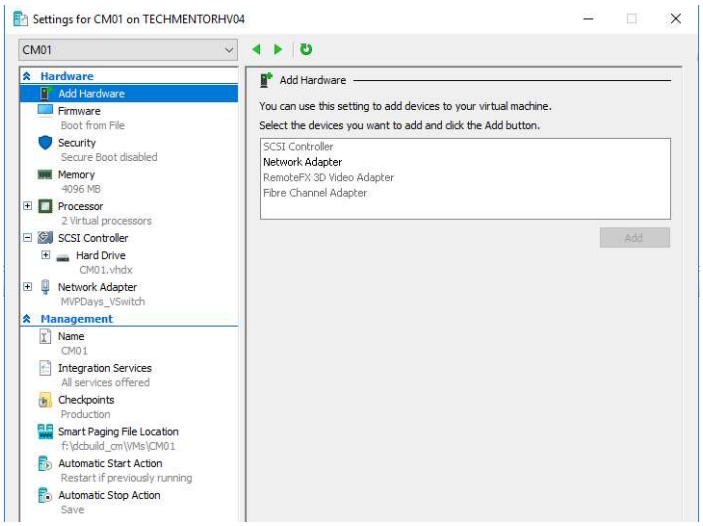


The Computer Accounts as they have been joined to the MVPDays Domain

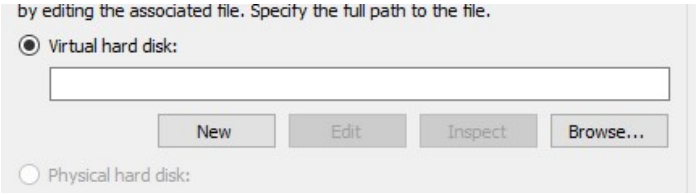

Active Directory Users and Com
Saved Queries
MVPDays.com
Builtin
Computers
Domain Controllers
ForeignSecurityPrincipal:
Managed Service Accour
Users
Name
Type
Descripti
DHCP01
Computer
MANAGEMENT01
Computer
ROUTER01
Computer
S2D1
Computer
S2D2
Computer
S2D3
Computer
S2D4
Computer
VMM01
Computer

Add a 2 VHDx drives to the VMM Server for the SQL Install

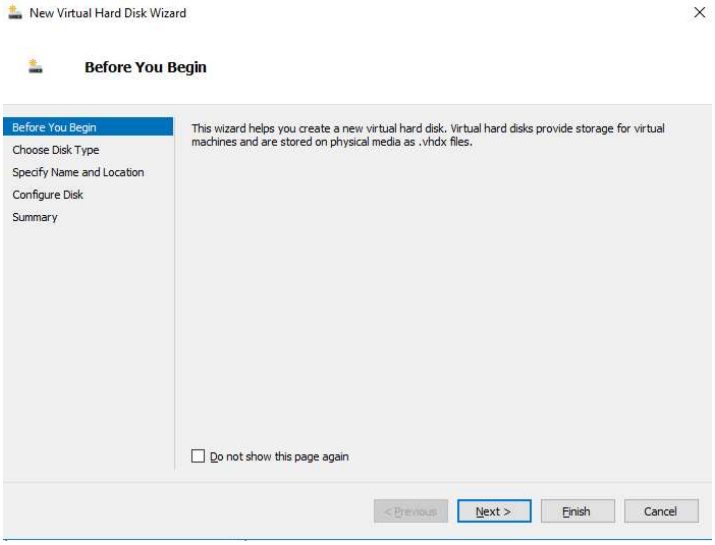
The following steps will add an additional Virtual Hard Disk to the VMM Server that will be used to host the installation and site server components (SQL and VMM binaries).

Instructions	Screenshot (if applicable)
1. Logon to the **Hyper-V Host Server** and open **Hyper-V Manager** Right-Click on **VMM01** and click **Settings**	
2. Click on **SCSI Controller**, click **Hard Drive** and click **Add**	

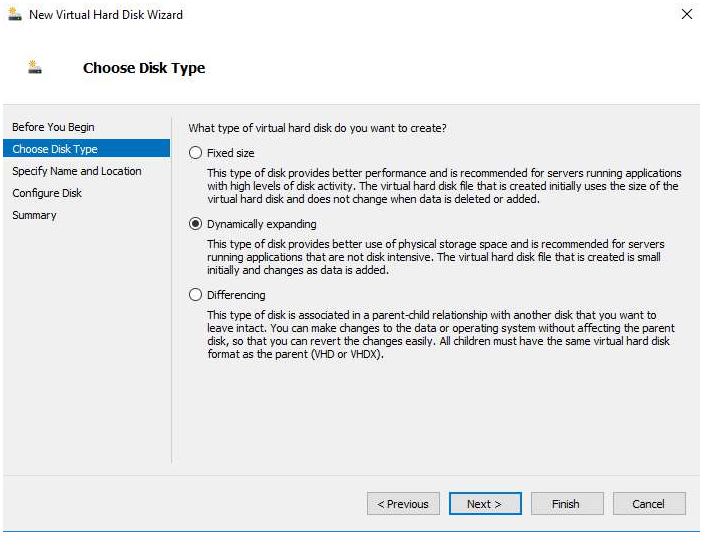
3. Click **New**



4. In the **New Virtual Hard Disk Wizard before you begin** page click **Next**



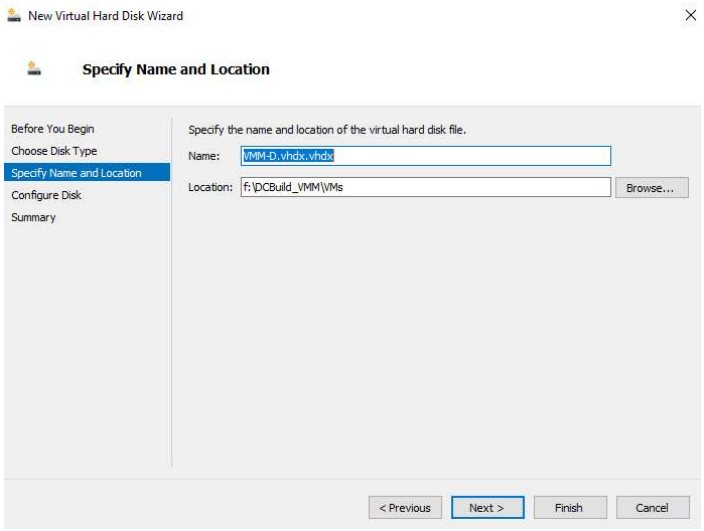
5. On the **Choose Disk Type** page select **Dynamically Expanding** and click **Next**



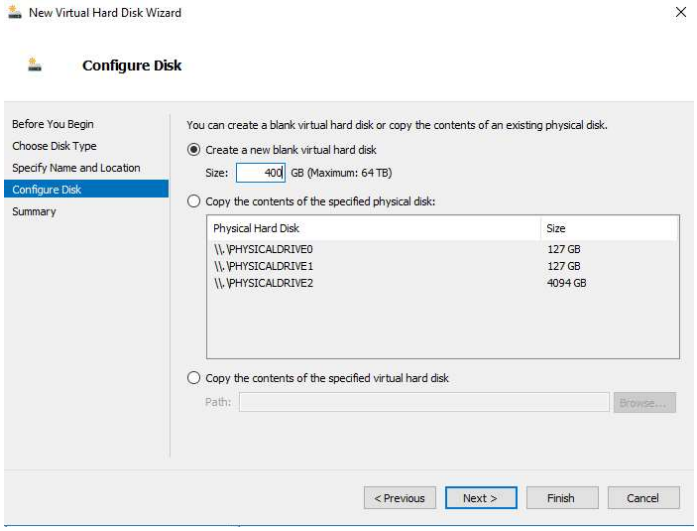
6. On the **Specify Name and Location** page type:

   Name: **VMM01-D.VHDX**
   Location: **F:\DCBuild_Insider\VMs**

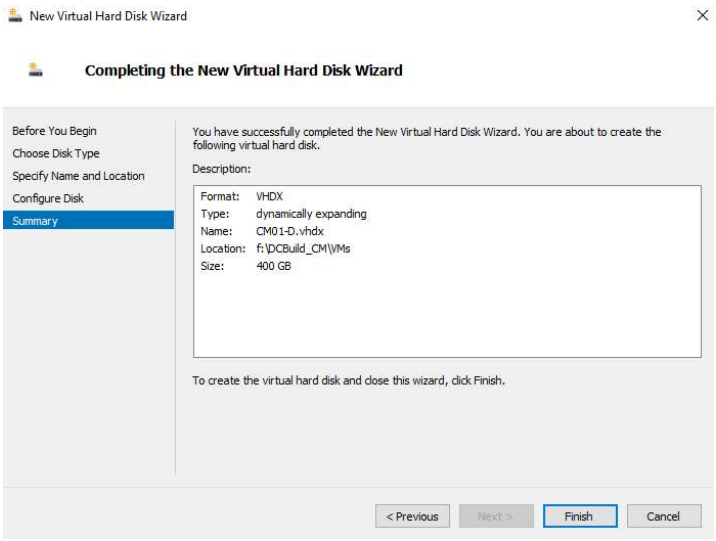
   and then click **Next**



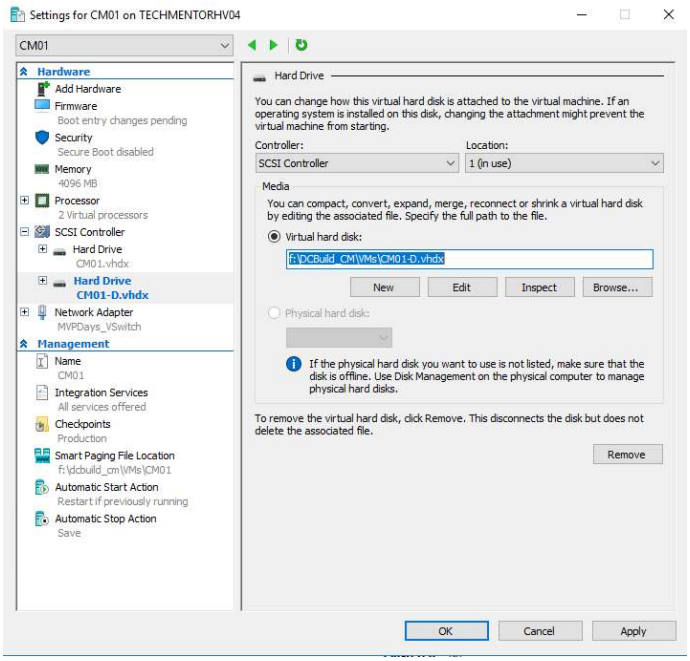
7. On the **Configure Disk** page change the size to **400 GB**



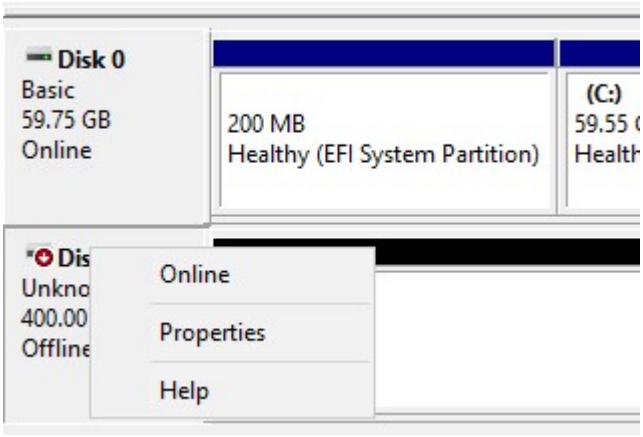
8. On the **Summary** page click **Finish**
9. Click **Apply**



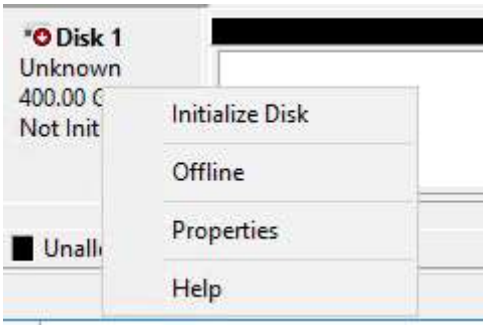
10. On the **Hyper-V Settings** Page for **VMM01** click **OK**



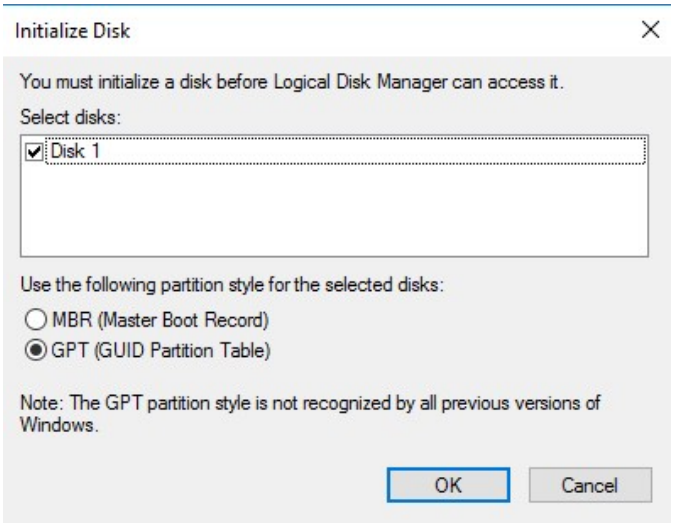
11. Return the **VMM01** and open **Diskmgmt.msc,** rick click on **Disk 1** and click **Online**



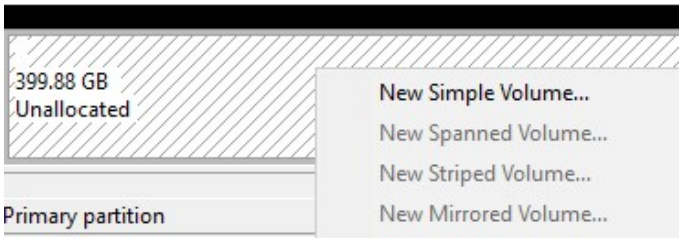
12. Right-Click on **Disk 1** and click **Initalize Disk**



13. On the **Initalize Disk** page click **Ok**

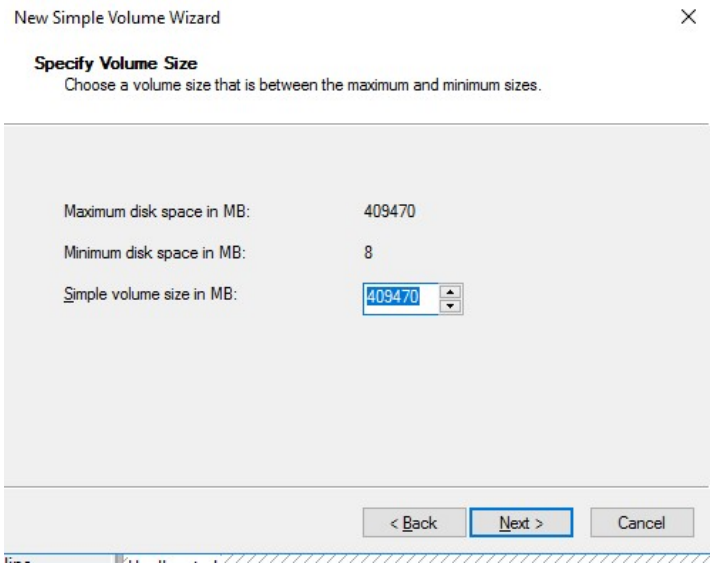


14. Right-Click on **Disk 1's** unallocated space and click **New Simple Volume**

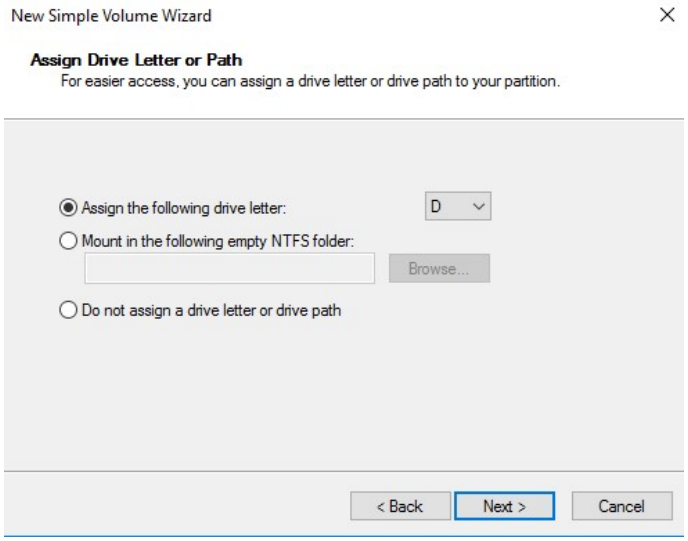


15. In the **Welcome to the New Simple Volume Wizard Page** click **Next**

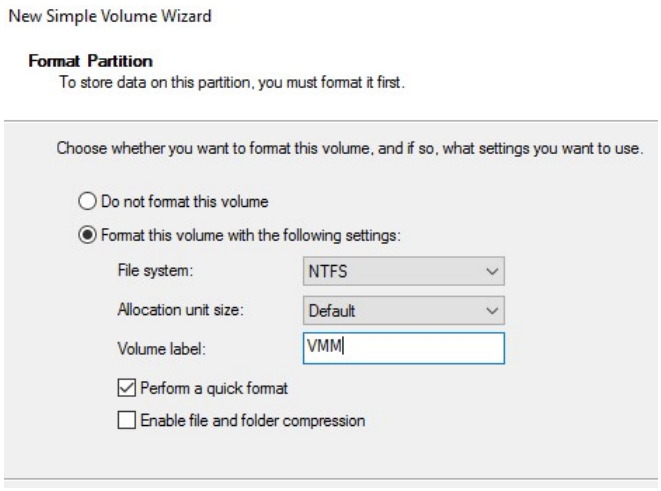
16. On the **Specify Volume Size** page click **Next**



17. On the **Assign Drive Letter or Path** page click **Next**

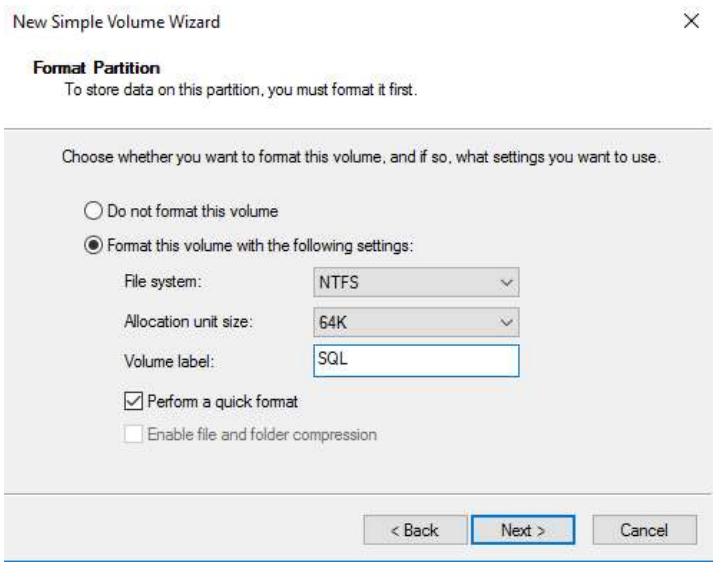


18. On the **Format Partition** page change the **Volume Label** to **ConfigMGR** and click **Next**

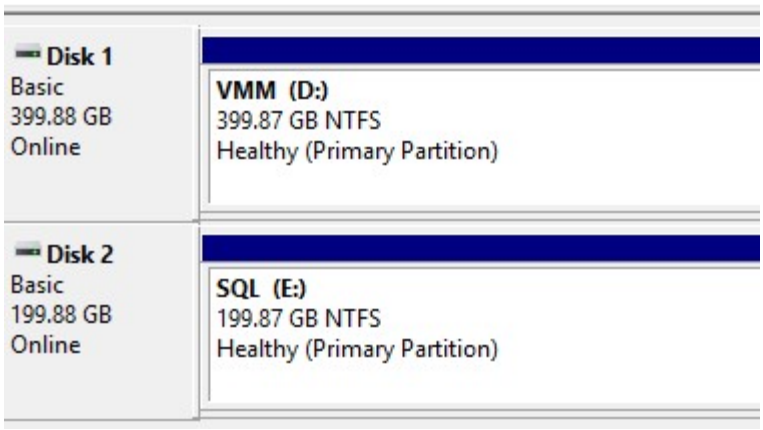


19. On the **Completing the New Simple Volume Wizard** page click **Finish**

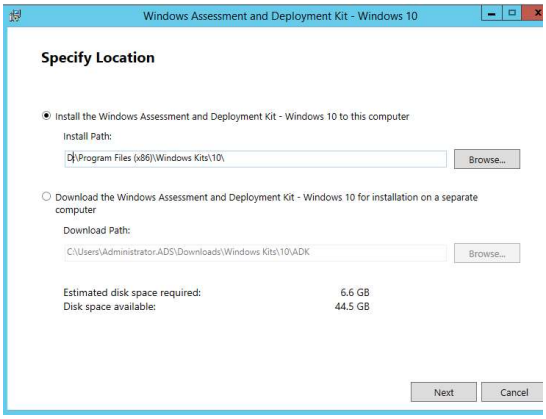
20. Repeat the steps above to add another Disk for the SQL Installation. As the SQL Installation will be on the Same Server as the ConfigMGR Server and will require a difference block size we will add another disk. Create the F: with 200 GB size format as NTFS with a Block Size of 64KB



21. The end result should look like the screen shot here.



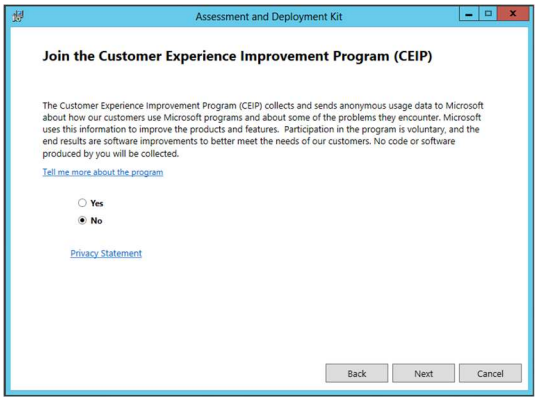
Install Windows ADK 1709

Instructions	Screenshot (if applicable)
1. Download the ADK 1709 from https://go.microsoft.com/fwlink/p/?linkid=859206	
2. Open Windows Explorer and navigate to the location of the downloaded **adksetup.exe** 3. *Right-click* **adksetup.exe** and select **Run as Administrator** 4. When prompted by UAC, select **Yes** to proceed 5. The *Assessment and Deployment Kit* installation program starts. 6. The *Specify Location* screen appears	
7. Leave the default path D**:\Program Files (x86)\Windows Kits\10** selected 8. Click **Next**	

9. The Join the *Customer Experience Improvement Program (CEIP)* screen appears

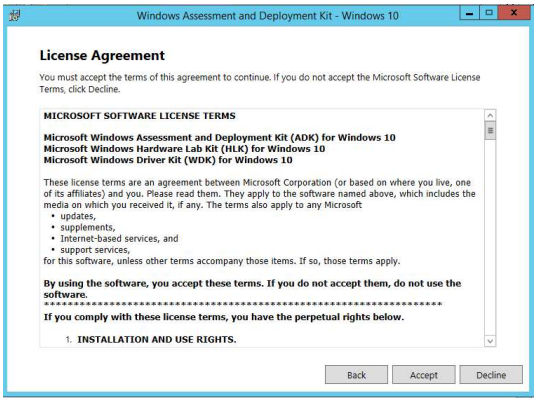
10. Leave the radio button set to "**No**"

11. Click **Next**



12. The *License Agreement* screen appears

13. Click **Accept**

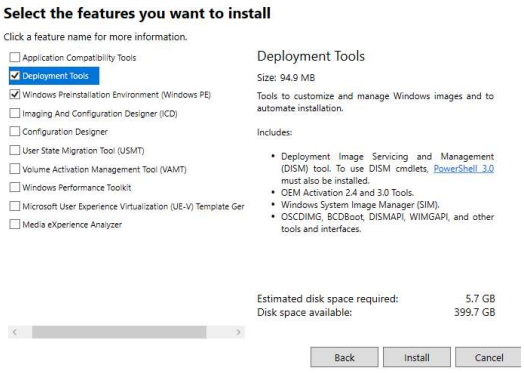


14. The *Select the features you want to install* screen appears

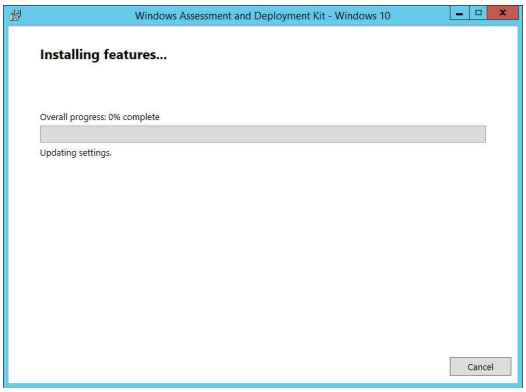
15. Install the following components:

    Deployment Tools
    Windows Pre-installation Environment (Windows PE)

16. Click **Install**



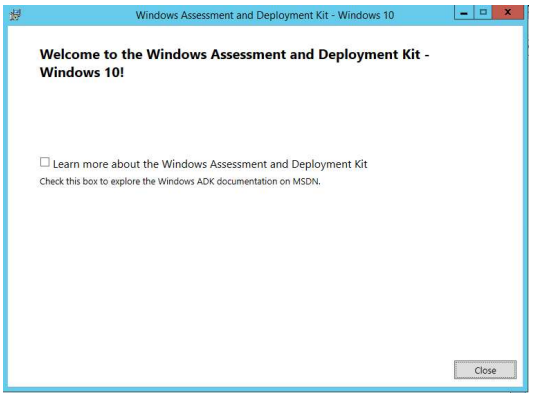
17. The *Installing features* screen will appear with a progress bar showing the installation progress



18. Depending on network connection and disk speed, the download and installation can take several minutes.

19. When the installation is complete, the *Welcome to the Assessment and Deployment Kit* screen will appear

20. Click **Close**



SQL Command Line Utilities

Instructions	Screenshot (if applicable)
1. Download the SQL Command Line Utilities from from https://www.microsoft.com/en-ca/download/details.aspx?id=36433 https://www.microsoft.com/en-ca/download/details.aspx?id=36434	
2. Install **msodbcsql.msi** 3. Accept all defaults	
4. Install **MSSqlCmdLnUtils.msi** 5. Accept all defaults	

Chapter 2

Install SQL Server 2016 SP1

SQL Server Service Accounts

You will create three new accounts with these properties by following the steps below:

Full Name	User Logon Name	Forest	Password
SQL Server Agent	MVPDays\SVC_SQL	MVPDays.com	*P@ssw0rd*
SQL Server Database Engine	MVPDays\SVC_SQL	MVPDays.com	*P@ssw0rd*
SQL Server Reporting Services	MVPDays\SVC_SQL	MVPDays.com	*P@ssw0rd*

For the purpost of this book we have pre-created the SQL Service account as part of the DCBuild_Insider1 Script.

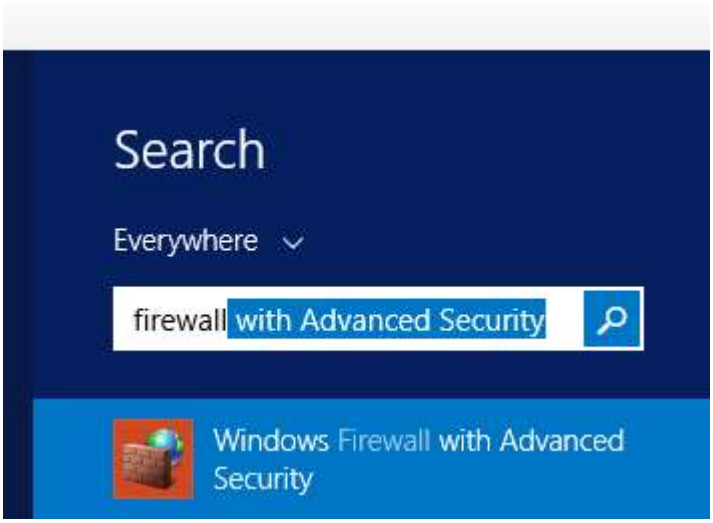
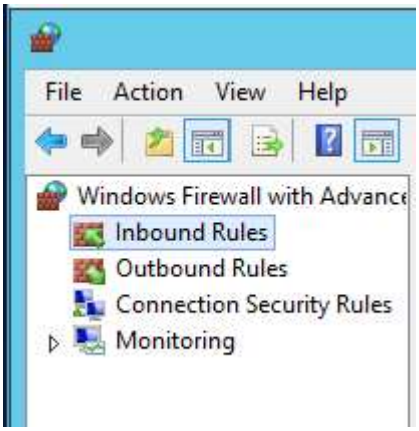
Note: These accounts must have Log on as a Service rights on the SQL server. This can be achieved via Group Policy or via local policy. You cannot set via local policy if a domain group policy is already setting a list of user accounts that can log in as a service.

The policy is configured at Computer Configuration -> Policies -> Windows Settings -> Security Settings -> Local Policies -> User Rights Assignment and the setting is Log on as a Service.

For the purpose of this book / lab we have added the SVC_SQL Service account as a local administrator on the VMM01 Server.

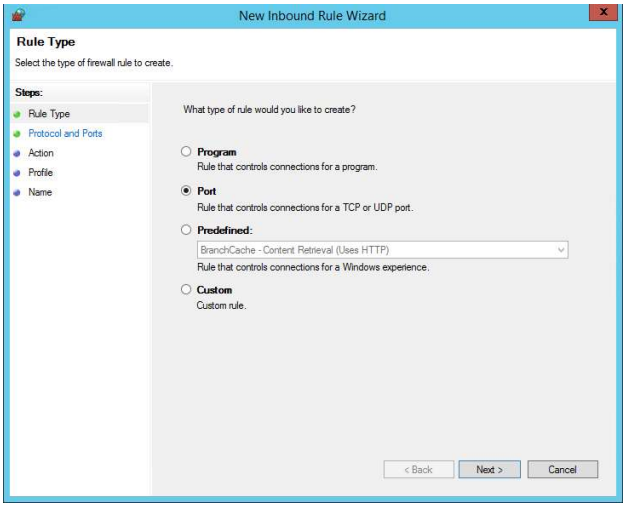
Configure SQL Firewall Port Exceptions

These steps are executed even if SQL is co-located with Configuration Manager.

Instructions	Screenshot (if applicable)
1. Logon to **VMM01** as **MVPDays\Administrator**	
2. Open the local firewall configuration. Note, if you are managing firewall settings via Group Policy you will need to manage exceptions through GPO.	
3. Add port exceptions for 1433, 1434, 4022, 80 and 443 by following these steps. 4. Navigate to *Inbound rules*	

5. In the *Actions Pane*, select **New Rule**

6. Select a new **Port** rule and click **Next**

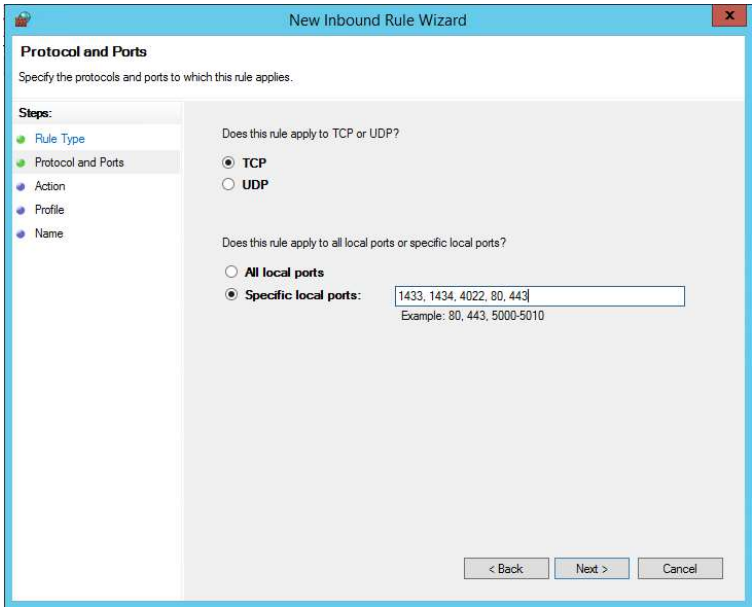


7. Maintain the radio button on **TCP**.

8. Add in ports **1433, 1434, 4022, 80, 443**

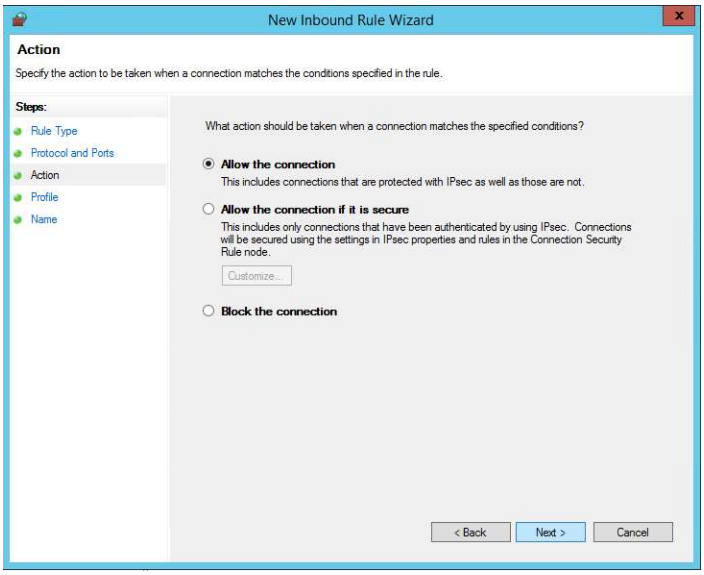
   Note: If SQL were configured on a remote server, add 135 as well

9. Click **Next**



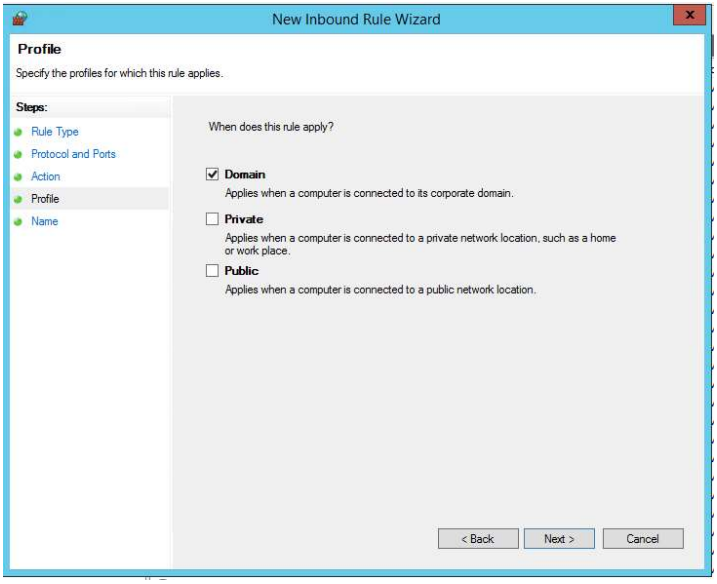
10. Keep the setting "**Allow the connection**"

11. Click **Next**



12. Select this to apply in the **Domain** profile only.

13. Click **Next**



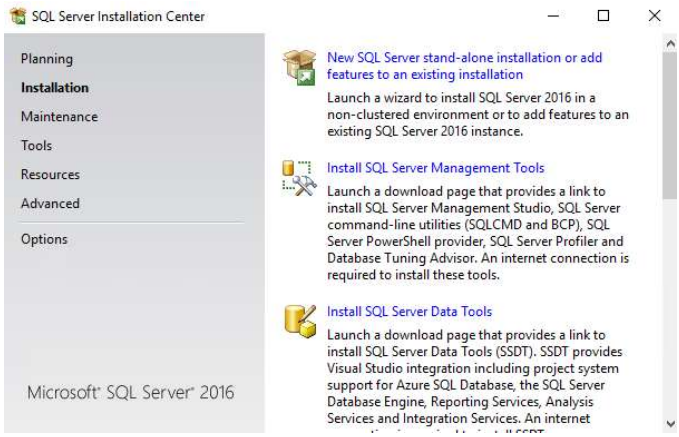
14. Name the rule **SQL 2016 Exceptions**

15. Click **Finish**

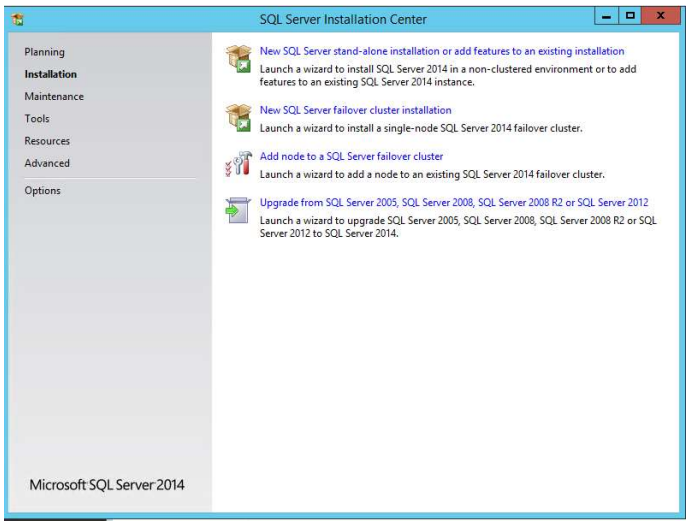
16. Close the Firewall manager

17. If applying via GPO be sure to gpupdate /force on the server before proceeding.

Install Default Instance of SQL 2016 SP1

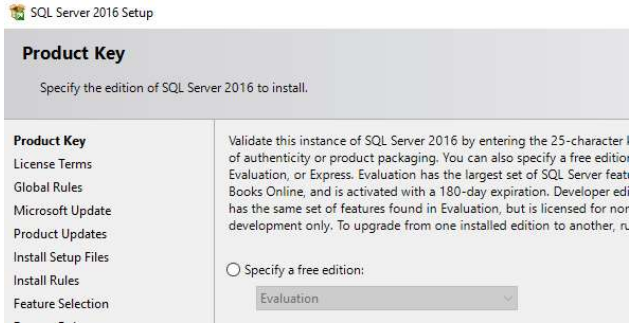
Instructions	Screenshot (if applicable)
1. Logon to **VMM01** as **MVPDays\Administrator**	
2. Mount SQL media to the media drive of the site server	Media available from the volume license download site
3. Open File Explorer, navigate to **Computer** and then double-click the **Media Drive**	
4. When prompted by User Account Control (UAC), click **Yes** to continue with the installation.	
5. The *SQL Server Installation Center* screen launches	
6. In the left-hand pane, select **Installation**	

7. The right-hand pane options change when the Installation choice is selected.



1. Select the top-most installation option, "**New SQL Server stand-alone installation or add features to an existing installation.**"

2. The *Product Key* screen appears

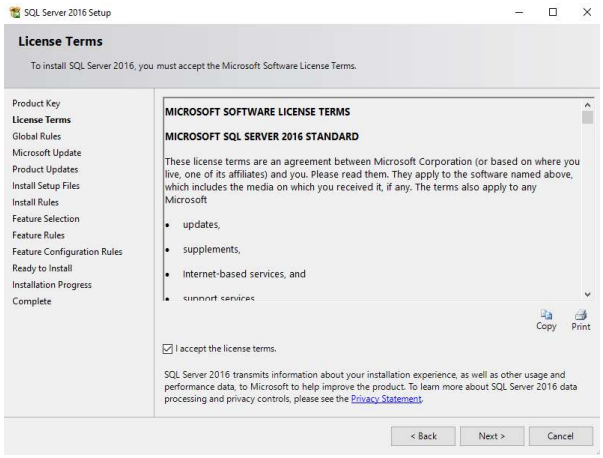


3. The license key should be embedded with volume license media. If not, retrieve the license key from the volume license media site.

4. Click **Next**

5. The *License Terms* screen appears

6. Select the checkbox that states "**I accept the license terms**."

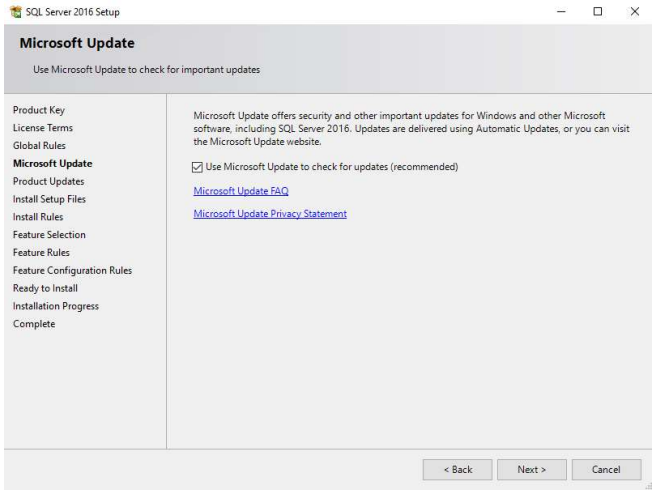


7. Click **Next**

8. The **Microsoft Update** screen appears.

9. Select the checkbox to Use Microsoft Update.

10. Click **Next**

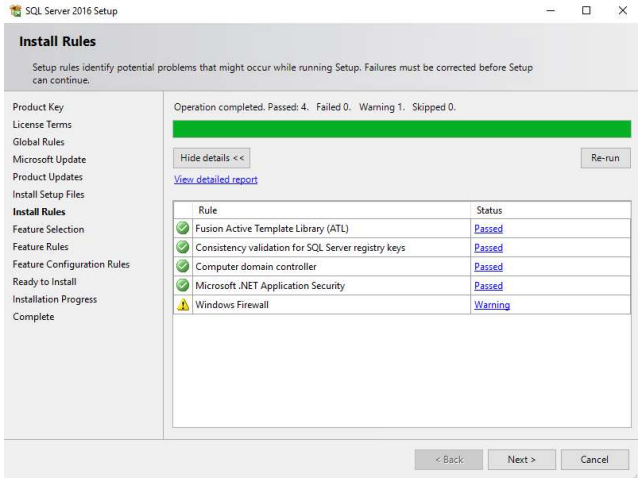


11. A rules validation process runs.

12. The *Install Rules* screen appears.

13. Check/remediate any warnings that appear.

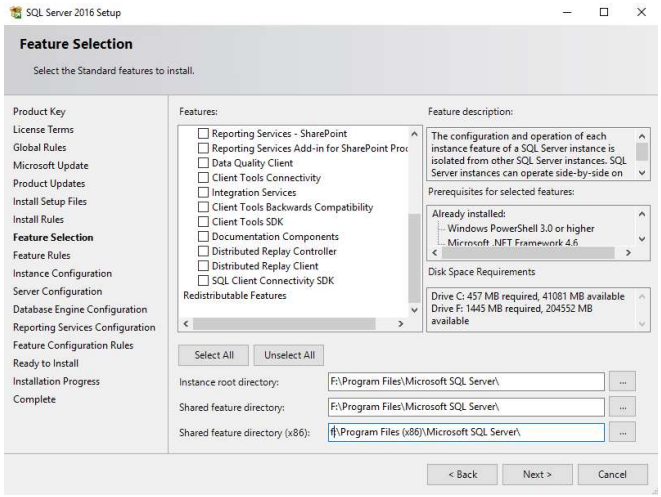
14. Click **Next.**



15. The *Feature Selection* screen appears

16. Under *Instance Features*, select **Database Engine Services** and **Reporting Services – Native**

17. If the server contains a separate volume for SQL databases, change the install directories from C:\ to the alternate drive letter F:\.



18. Click **Next**

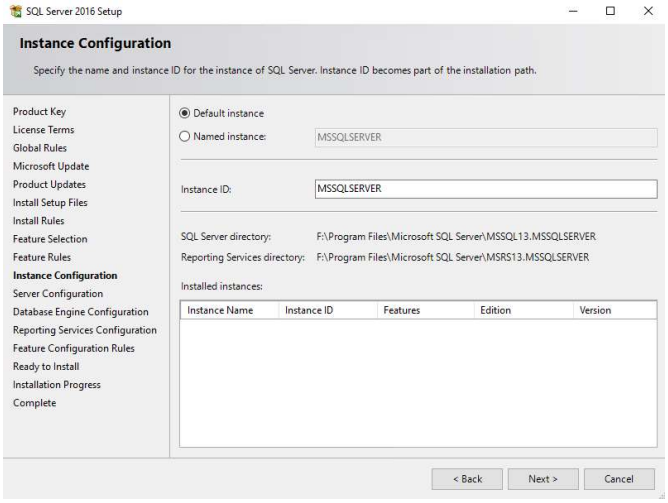
19. The *Instance Configuration* screen will appear

20. The first instance we will install is the default SQL instance (MSSQLSERVER). The default instance is used for Reporting Services.

21. Leave the radio button for "**Default instance**" selected

22. Leave the instance ID as **MSSQLSERVER**

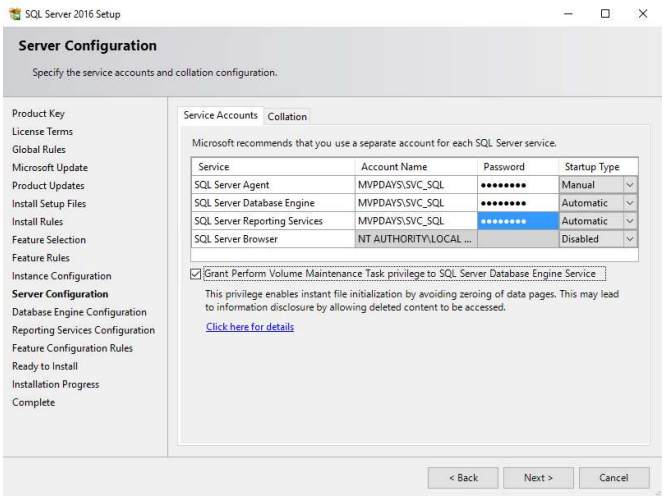
23. Click **Next**



24. The *Server Configuration* screen will appear. We will now configure services to run under the alternate user accounts created earlier in this document.

25. Next to **SQL Server Agent** under **Account Name**, enter **MVPDays\SVC_SQL**, under **Password**, enter the **P@ssw0rd**.

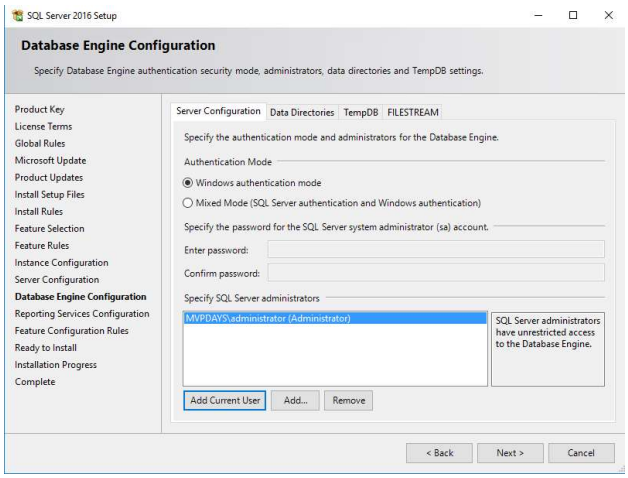
26. Next to **SQL Server Database Engine** under **Account Name**, enter **MVPDays\SVC_SQL**, under **Password**, enter



the **P@ssw0rd**.

27. Next to **SQL Server Reporting Services** under **Account Name**, enter **MVPDays\SVC_SQL**, under **Password**, enter the **P@ssw0rd**.
28. Select **Grant Perform Volume Maintenance Task privilege to SQL Server Database Engine Service**

29. The *Database Engine Configuration* screen appears. Ensure **Windows authentication mode** is selected and click on **Add Current User.** Then click **Next**

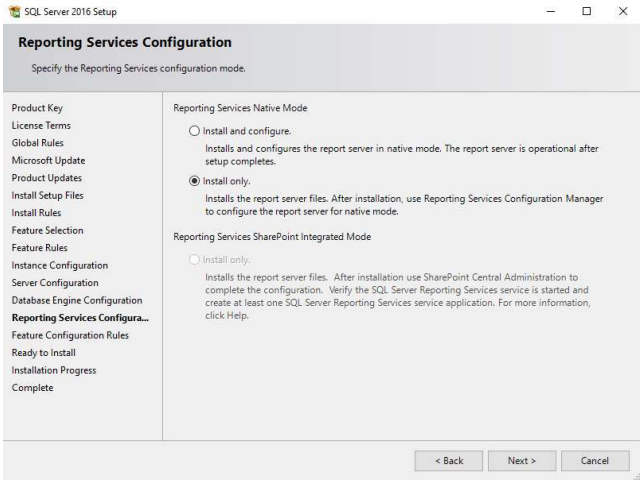


30. Click **Next**

31. The *Reporting Services Configuration* screen appears

32. Change the radio button to "**Install only**" for the Reporting Services Native Mode

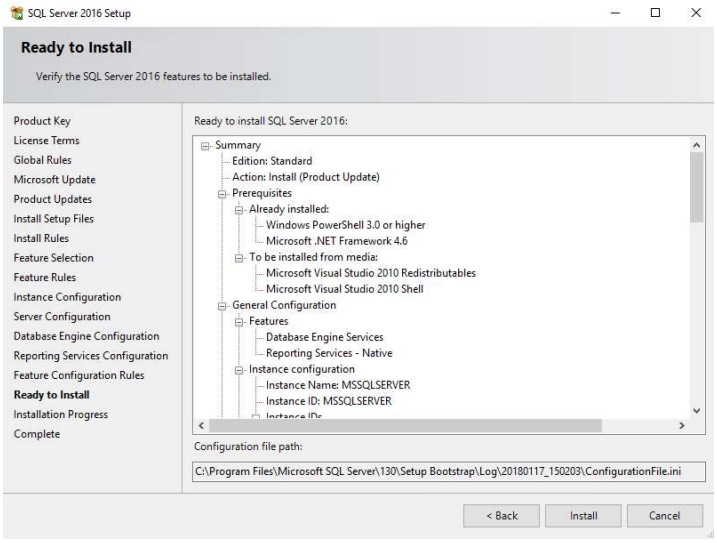
33. Click **Next**



34. The *Ready to Install* screen appears

35. This screen summarizes the choices made in installing this instance of the SQL Server.

36. Note that a ConfigurationFile.Ini is saved to the C:\ drive. This ini file can be used to perform unattended SQL installations that match this configuration. When planning for a large deployment of SQL servers, you can set up a server once using the menu system and then use the ConfigurationFile.ini for unattended installations



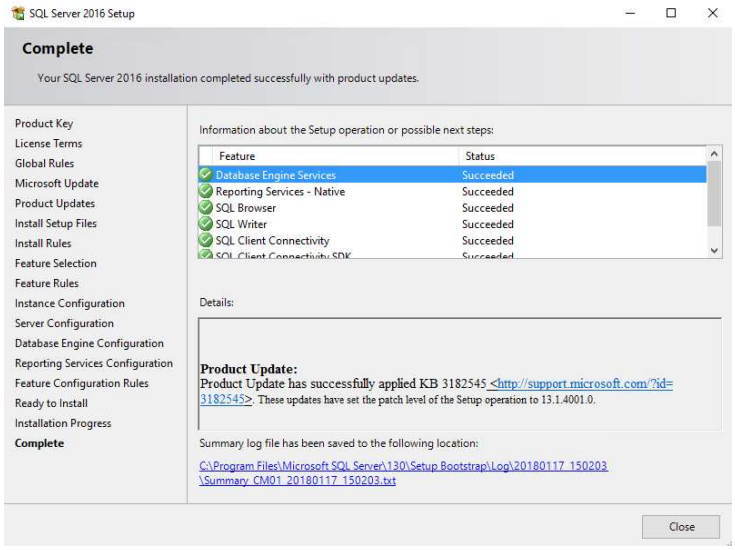
for the remaining servers.

37. Click **Install**

38. The installation begins. The progress is displayed on the *Installation Progress* screen

39. Once complete, the *Complete* screen will appear.

40. Click **Close** to exit the installation



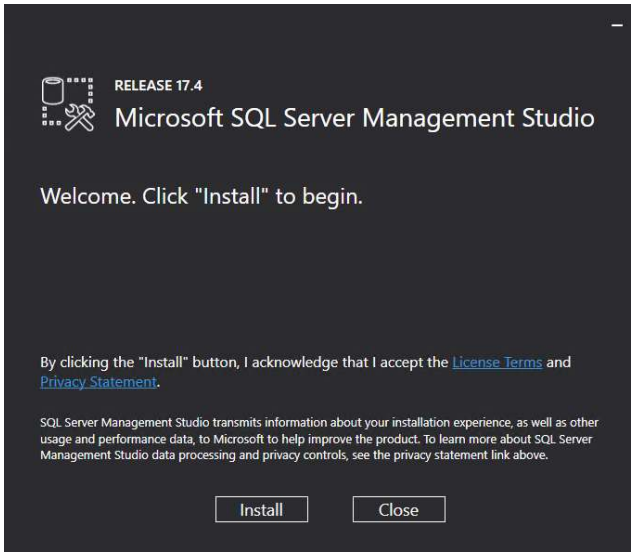
41. The SQL Server Installation Center screen will re-appear, with the Installation option selected in the left-hand pane.

42. Close the SQL server Installation Center by clicking the Red X in the upper right corner

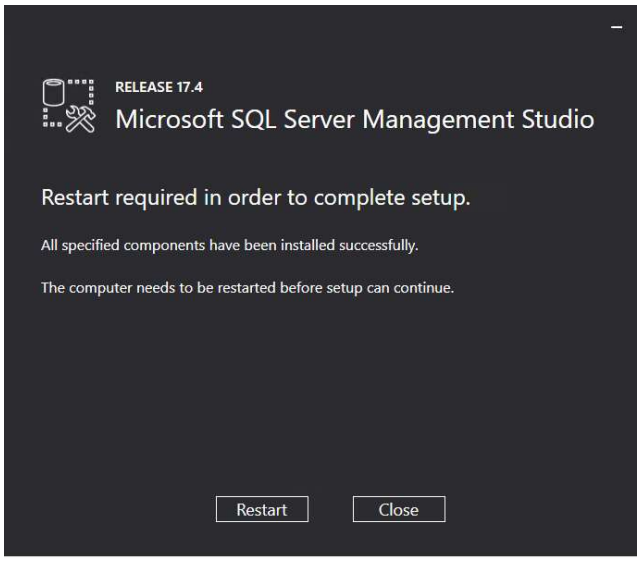
43. Eject the SQL media

Download and Install SQL Server Managemetn Studio (SSMS)

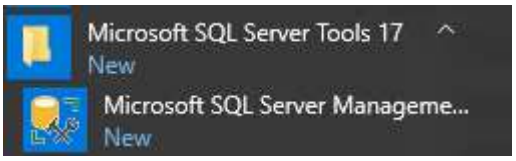
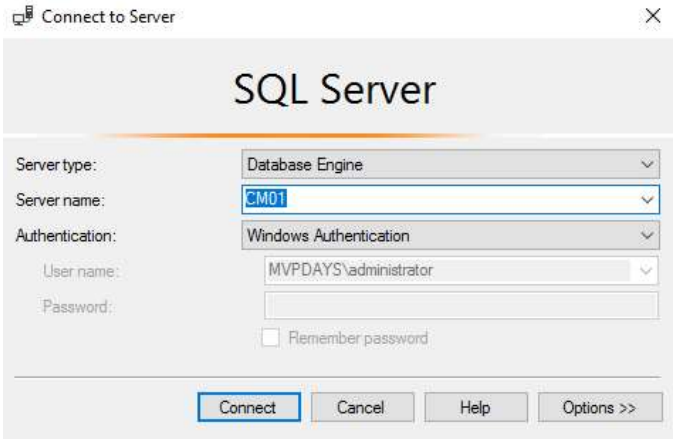
The steps below will install the SQL Server Management Studio (SMSS) in the lab.

Instructions	Screenshot (if applicable)
1. Logon to **VMM01** as	
2. Download **SSMS** from Microsoft	Browse to: https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms Download **SSMS-Setup-ENU.exe** to **C:\Post-Install**
3. Launch the **SSMS-Setup-ENU.exe** installer 4. On the **Welcome** page click **Install**	

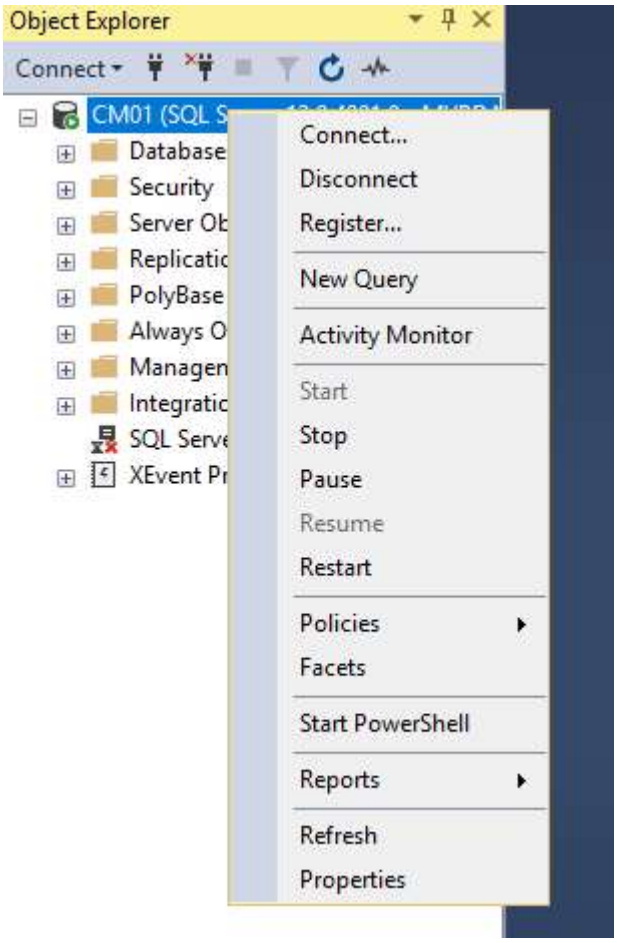
5. On the **Restart required in order to complete setup** page click **Restart**



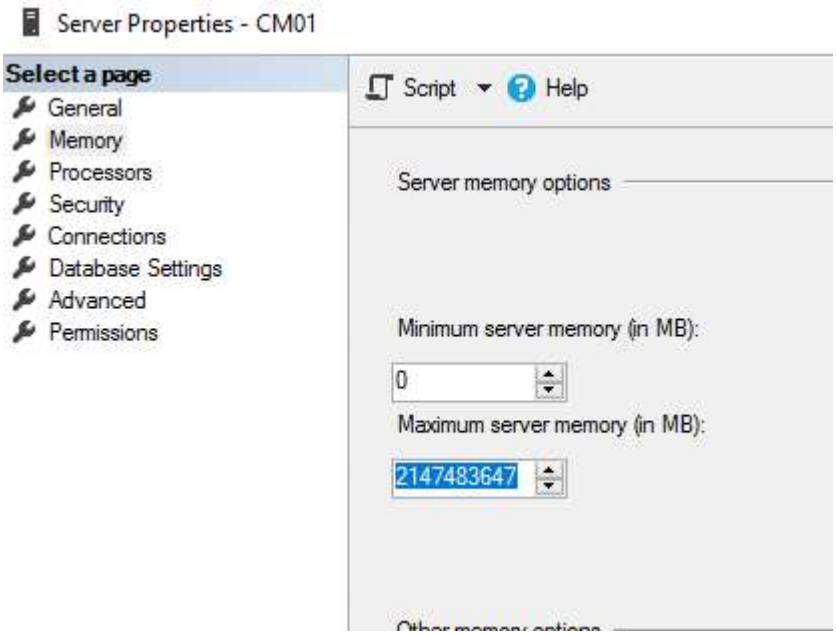
Configure SQL Server Memory Limits

Instructions	Screenshot (if applicable)
1. Logon to **VMM01** as **MVPDays\Adminsitrator**	
2. Launch **SQL Server Management Studio**	
3. Click **Connect** to connect to the local database	

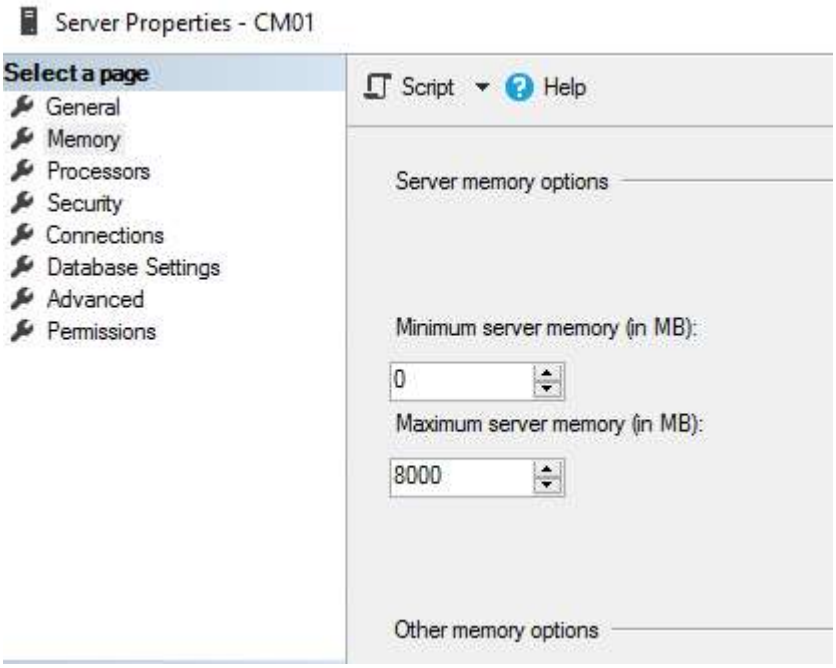
4. Within the Management Studio, **right-click** the Server and select **Properties**



5. Select the **Memory** node



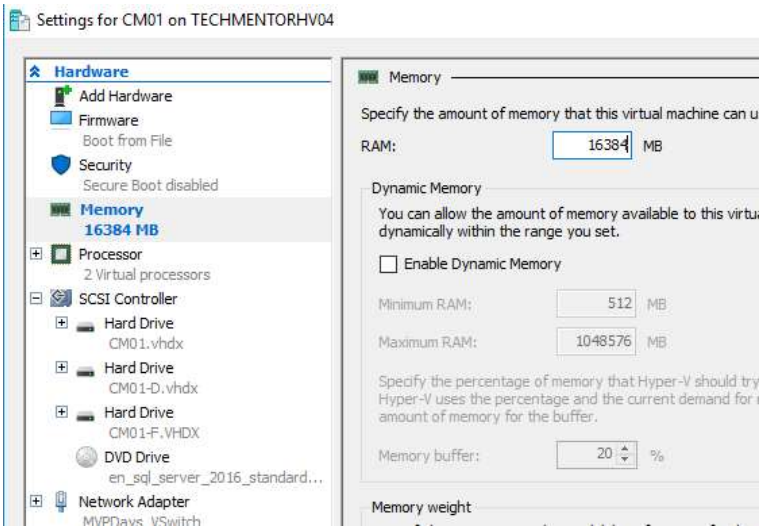
6. Reset the maximum memory to one half the memory of the site server. In other words, if the site server is configured with 16 GB of RAM, configure SQL to only consume 8 GB maximum.



7. Save settings.

8. If available configure **VMM01** with **16 GB** of **RAM**

   Configuration Manager will perform better in the lab with **16 GB of** RAM



Chapter 3

Install System Center Virtual Machine Manager Version 1711

Download VMM 1711 Media

Instructions	Screenshot (if applicable)
1. Logon to **VMM** as **MVPDays\Administrator**	
2. Download System Center 1711 Trial Virtual Machine Manager from	https://www.microsoft.com/en-us/evalcenter/evaluate-system-center-technical-preview