

Deploying System Center Virtual Machine Manager – Step by Step

Volume 2

**Featuring VMM Version 1711 & Windows
Insider Build 17079**

Dave Kawula - MVP

Allan Rafuse - MVP

Cristal Kawula - MVP

Cary Sun – Cisco Champion (CCIE)

PUBLISHED BY

MVPDays Publishing

<http://www.mvpdays.com>

Copyright © 2018 by MVPDays Publishing

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means without the prior written permission of the publisher.

ISBN:TBA

Warning and Disclaimer

Every effort has been made to make this manual as complete and as accurate as possible, but no warranty or fitness is implied. The information provided is on an “as is” basis. The authors and the publisher shall have neither liability nor responsibility to any person or entity with respect to any loss or damages arising from the information contained in this book.

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

Dave Kawula - MVP

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.

BLOG: www.checkyourlogs.net

Twitter: @DaveKawula



Allan Rafuse – MVP

Allan has worked as a senior member of the Windows and VMWare Platform Department at Swedbank. He took part in the architecture and implementation of multiple datacenters in several countries. He is responsible for the roadmap and lifecycle of the Windows Server Environment, including the development of ITIL processes of global server OSD, configuration, and performance.

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.

BLOG: <http://www.checkyourlogs.net>

Twitter: @allanrafuse



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.

BLOG: <http://www.checkyourlogs.net>

Twitter: @supercristal1



Cary Sun – CCIE #4531 (Cisco Champion)

Cary Sun is CISCO CERTIFIED INTERNETWORK EXPERT (CCIE No.4531) and MCSE, MCIPT, Citrix CCA with over twenty years in the planning, design, and implementation of network technologies and Management and system integration. Background includes hands-on experience with multi-platform, all LAN/WAN topologies, network administration, E-mail and Internet systems, security products, PCs and Servers environment. Expertise analyzing user's needs and coordinating system designs from concept through implementation. Exceptional analysis, organization, communication, and interpersonal skills. Demonstrated ability to work independently or as an integral part of team to achieve objectives and goals. Specialties: CCIE /CCNA / MCSE / MCITP / MCTS / MCSA / Solution Expert / CCA

Cary's is a very active blogger at [checkyourlogs.net](http://www.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>

Twitter:@SifuSun



Contents

Acknowledgements.....	iv
From Dave	iv
About the Authors	v
Dave Kawula - MVP	v
Allan Rafuse – MVP	vi
Cristal Kawula – MVP	vii
Cary Sun – CCIE #4531 (Cisco Champion)	viii
Contents.....	x
Introduction	16
North American MVPDays Community Roadshow	16
Sample Files	18
Additional Resources	18
Chapter 1.....	20
Pre-Requisites	20
Lab Server Names	20
Building the Lab with BigDemo_Insider.PS1	22
Enable Routing in the Lab.....	27
Software Requirements	41
Virtual Machine Manager Accounts Required for Build	43

Add a 2 VHDx drives to the VMM Server for the SQL Install	47
Install Windows ADK 1709	56
SQL Command Line Utilities	59
Chapter 2.....	60
Install SQL Server 2016 SP1	60
SQL Server Service Accounts.....	60
Configure SQL Firewall Port Exceptions	61
Install Default Instance of SQL 2016 SP1	65
Download and Install SQL Server Managemetn Studio (SSMS)	74
Configure SQL Server Memory Limits.....	76
Chapter 3.....	80
Install System Center Virtual Machine Manager Version 1711	80
Download VMM 1711 Media	80
Install System Center Virtual Machine Manager (SCVMM) 2016	82
Chapter 4.....	89
Base Configuration of VMM.....	89
Create a Run As Account.....	89
Configure Network Settings	91
Create a New Host Group.....	93
Add Hyper-V Hosts	95
Chapter 5.....	101
Configuring Host Networking for S2D with VMM	101
Sample – Network Configuration from Mellanox	101

Logical Network Configuration.....	103
Servers and Network Configuration.....	103
DHCP Service Configuration	103
Sample Top of Rack Switch Configuration:	104
System Deployment.....	113
Install and Configure DataCenter Bridging – Optional	113
Creating Logical Networks (MGMT, Cluster, LiveMigration, and Storage).....	114
Review the S2D Node Networking configuration	114
Create MGMT Logical Network	116
Create MGMT IP Pool	118
Create Cluster Logical Network.....	122
Create Cluster IP Pool.....	124
Create Live Migration Logical Network	128
Create Live Migration IP Pool.....	130
Create Storage Logical Network.....	134
Create Storage IP Pool	136
Create CorpNet Logical Network.....	140
Create CorpNet IP Pool.....	142
Validate the Logical Networks	145
Create Logical Switch for the Storage Network	146
Create Logical Switch for the CorpNet Network.....	162
VMM_Networking_S2D.PS1 Script	168
Deploy the Storage Logical Switch to S2D1-4	181
Deploy the CorpNet Logical Switch to S2D1-4	184
Chapter 6.....	188

Configure Failover Cluster and S2D with VMM	188
Build the Cluster and Storage Spaces Direct (S2D)	188
Chapter 7.....	194
Configure Storage Integration of S2D with VMM.....	194
Review Storage Providers, Arrays, and Classifications	194
Create Cluster Shared Volumes with VMM	197
Create Cluster Shared Volumes with PowerShell.....	201
Chapter 8.....	202
VM Templates	202
Configure S2D Nodes with 8 GB RAM	202
Building a Gold VHDx with BaselineImageBuilder.PS1.....	204
Creating the VM Template.....	210
Deploying a VM Template	214
Chapter 9.....	220
Host Patch Management with VMM.....	220
Install the WSUS Feature on VMM01	220
WSUS Configuration Wizard	226
Add WSUS Server to VMM	234
Verify that WSUS has been added Successfully	235
Assign Computers to Built-In Update Baseline	236
Scan S2D Hyper-V Hosts for Compliance	240
Remediate Hosts.....	244
Chapter 10.....	246

Host Patching of Storage Spaces Direct (S2D) with VMM	246
Patching Storage Spaces Direct nodes with VMM	246
Check the Health of Your Virtual Disks before going into Maintenance Mode	246
Scan S2D Hyper-V Hosts for Compliance	248
Put the Node into Maintenance Mode	250
Remediate Hosts.....	253
Turn off Maintenance Mode on the Host and verify Storage Spaces Direct Health	255
Chapter 11.....	258
Operational Maintenance of Storage Spaces Direct	258
Restarting Storage Spaces Direct nodes with VMM	258
Check the Health of Your Virtual Disks before going into Maintenance Mode	259
Put the Node into Maintenance Mode and Restart / Shutdown.....	260
Chapter 12.....	264
Bonus Community Content - Storage Spaces Direct (S2D) Scripts.....	264
Using PowerShell to Document Storage Spaces Direct	264
Using the Community PowerShell S2D-Audit.PS1	264
Using PowerShell to setup Email Alerting for Storage Spaces Direct.....	270
Using the Community PowerShell Monitor-S2D.PS1.....	270
Monitor S2D with Storage Spaces Direct Monitor GUI	273
Using the Community PowerShell Monitor-S2D.PS1.....	273
Monitor S2D with Storage Spaces StarWind Manager (Preview)	276
Using StarWind Manager (Preview)	276
Chapter 13.....	287

Integrate VMM 1711 with Azure	287
Connecting to your Azure Subscription.....	287
Chapter 14.....	289
Configuring Deduplication for ReFS and Storage Spaces Direct	289
Enable Deduplication on a Cluster Shared Volume	289
Appendix.....	294
BigDemo_Insider.PS1	294
S2D-Audit.PS1	331
Contact Info	333
Join us at MVPDays and meet great MVP's like this in person.....	333
Live Presentations	333
Video Training.....	333
Live Instructor-led Classes.....	334
Consulting Services	334
Twitter.....	335

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 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

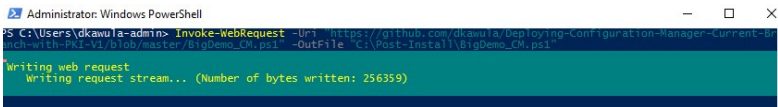
The follow table describes the required Virtual Machines to build this lab. This lab is designed to be built on a Hyper-V Host Server with a minimum of 16 GB of RAM. An automation script called BigDemo_Insider.PS1 has been used to provision this lab environment. *A copy of this script can be found in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

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:	<pre>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"</pre>  A screenshot of a Windows PowerShell window titled "Administrator: Windows PowerShell". The command prompt shows the execution of the command: <code>PS C:\Users\dkawula-admin> Invoke-WebRequest -Uri "https://raw.githubusercontent.com/dkawula/Deploying-Configuration-Manager-Current-Build-with-PK1-V1/BigDemo/master/BigDemo_CM.ps1" -OutFile "C:\Post-Install\BigDemo_CM.ps1"</code> . The output shows: <code>Writing web request Writing request stream... (Number of bytes written: 256359)</code>
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/

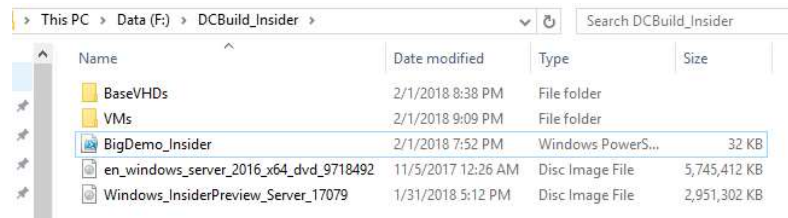
Save the ISO to
F:\DCBuild_Insider

- 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:\

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

Save the ISO to
F:\DCBuild_Insider

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



Name	Date modified	Type	Size
BaseVHDs	2/1/2018 8:38 PM	File folder	
VMs	2/1/2018 9:09 PM	File folder	
BigDemo_Insider	2/1/2018 7:52 PM	Windows PowerS...	32 KB
en_windows_server_2016_x64_dvd_9718492	11/5/2017 12:26 AM	Disc Image File	5,745,412 KB
Windows_InsiderPreview_Server_17079	1/31/2018 5:12 PM	Disc Image File	2,951,302 KB

- 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

```

425 $WindowsKey = '****' #Dave's Technet KEY Remove for Publishing of Book
426
427 $unattendSource = [xml]@"
428 <?xml version="1.0" encoding="utf-8"?>
429 <unattend xmlns="urn:schemas-microsoft-com:unattend">
430   <servicing></servicing>
431   <settings pass="specialize">
432     <component name="Microsoft-Windows-Shell-Setup" processorArchitecture="amd64">
433       <ComputerName></ComputerName>
434       <ProductKey>*****</ProductKey>
435       <RegisteredOrganization></RegisteredOrganization>
436       <RegisteredOwner></RegisteredOwner>
437       <TimeZone>TZ</TimeZone>
438     </component>
439   </settings>

```

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

```

418 #ServerISO = "D:\DCBuild\10986.0.151029-1700-1H2-RELEASE-36KVKL-06MKL1-X64-RELE-N-US-ISO"
419 #ServerISO = "D:\DCBuild\14393.0.160808-1702-RS1-Release-ServerMedia-Server-ODPRET-X64FRE-EN-US-ISO"
420 #ServerISO = "D:\DCBuild\en_windows_server_2016_technical_preview_5_x64_dvd_8512312.iso"
421 #ServerISO = "c:\ClusterStorage\Volume1\DCBuild\en_windows_server_2016_x64_dvd_9327751.iso" #Updated for RTM Build 2016
422 $ServerISO = "F:\dcbuild\en_windows_server_2016_x64_dvd_9718492.iso" #THIS NEEDS to be Modified for your Lab
423

```

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
Rockstars**

Owner: Dave Kawula

**TimeZone: Mountain
Standard Time**

**AdminPassword:
P@ssw0rd**

**DomainName:
MVPDays.com**

**DomainAdminPassword:
P@ssw0rd**

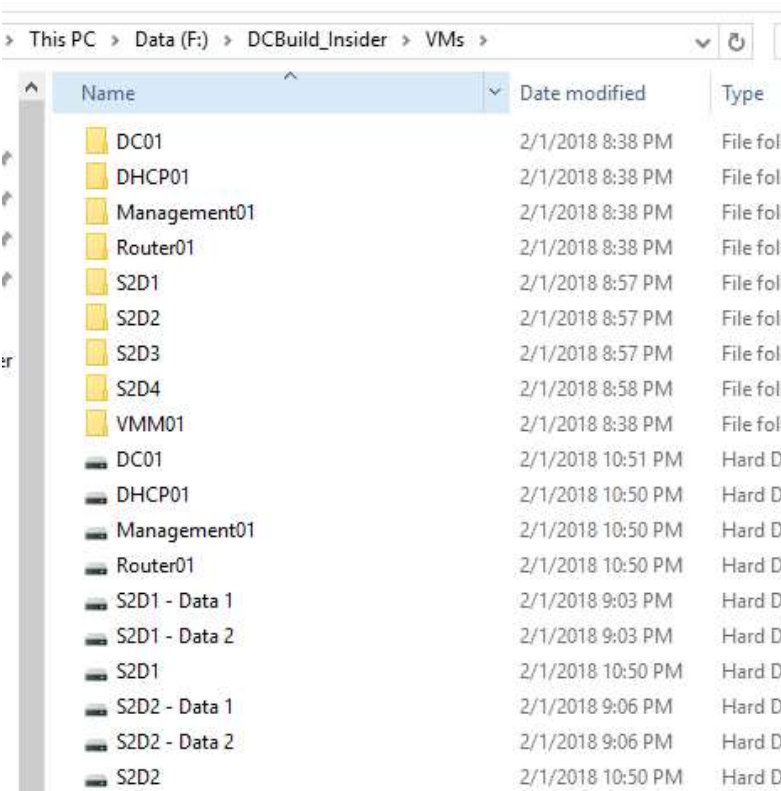
```
PS F:\dcbuild_insider> .\BigDemo_Insider.ps1
cmdlet BigDemo_Insider.ps1 at command pipeline position 1
Supply values for the following parameters:
WorkingDir: f:\dcbuild_insider
Organization: MVPDays Rockstars
Owner: Dave Kawula
TimeZone: Mountain Standard Time
adminPassword: P@ssw0rd
DomainName: MVPDays.com
DomainAdminPassword: P@ssw0rd
VirtualSwitchName: MVPDays_Insider_VSwitch
Subnet: 172.16.100.
ExtraLabFilesSource: c:\
7:51 PM - [Host]::Getting started...
7:51 PM - [Host]::Building Base Images
VERBOSE: GET
http://download.windowsupdate.com/d/msdownload/update/software/secur/2016/12/windows10.0-kb32139
28c92e318d6596d9072aec4.msu with 0-byte payload
VERBOSE: received 996775808-byte response of content type application/octet-stream
Done. The log is at: F:\dcbuild_insider\BaseVHDs\Logs\2018-02-01_20-09-19-23
8:38 PM - [DC01]::Removing old VM
8:38 PM - [DC01]::Creating new differencing disk
8:38 PM - [DC01]::Creating virtual machine
8:38 PM - [DC01]::Starting virtual machine
8:38 PM - [DHCP01]::Removing old VM
8:38 PM - [DHCP01]::Creating new differencing disk
8:38 PM - [DHCP01]::Creating virtual machine
8:38 PM - [DHCP01]::Starting virtual machine
8:38 PM - [Management01]::Removing old VM
8:38 PM - [Management01]::Creating new differencing disk
8:38 PM - [Management01]::Creating virtual machine
8:38 PM - [Management01]::Starting virtual machine
8:38 PM - [Router01]::Removing old VM
8:38 PM - [Router01]::Creating new differencing disk
8:38 PM - [Router01]::Creating virtual machine
8:38 PM - [Router01]::Starting virtual machine
8:38 PM - [VMM01]::Removing old VM
8:38 PM - [VMM01]::Creating new differencing disk
8:38 PM - [VMM01]::Creating virtual machine
8:38 PM - [VMM01]::Starting virtual machine
8:38 PM - [DC01]::Waiting for PowerShell Direct (using Administrator)
[DC01]:: Setting IP Address to 172.16.100.1
[DC01]:: Setting DNS Address
[DC01]:: Renaming OS to "DC01"
WARNING: The changes will take effect after you restart the computer THOMAS-SPE345GC.
[DC01]:: Configuring WSMAN Trusted hosts
```

VirtualSwitchName:
MVPDays_VMM_VSwitch

Subnet: 172.16.100.
ExtraLabFiles: C:

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

	DC01	Running	0 %	4096 MB
	DHCP01	Running	0 %	4096 MB
	Management01	Running	0 %	4096 MB
	Router01	Running	0 %	4096 MB
	S2D1	Running	6 %	4096 MB
	S2D2	Running	3 %	4096 MB
	S2D3	Running	6 %	4096 MB
	S2D4	Running	6 %	4096 MB
	VMM01	Running	0 %	4096 MB



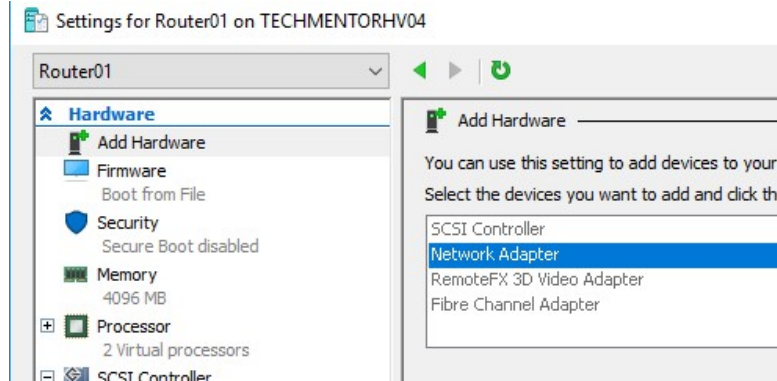
Name	Date modified	Type
DC01	2/1/2018 8:38 PM	File fol
DHCP01	2/1/2018 8:38 PM	File fol
Management01	2/1/2018 8:38 PM	File fol
Router01	2/1/2018 8:38 PM	File fol
S2D1	2/1/2018 8:57 PM	File fol
S2D2	2/1/2018 8:57 PM	File fol
S2D3	2/1/2018 8:57 PM	File fol
S2D4	2/1/2018 8:58 PM	File fol
VMM01	2/1/2018 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

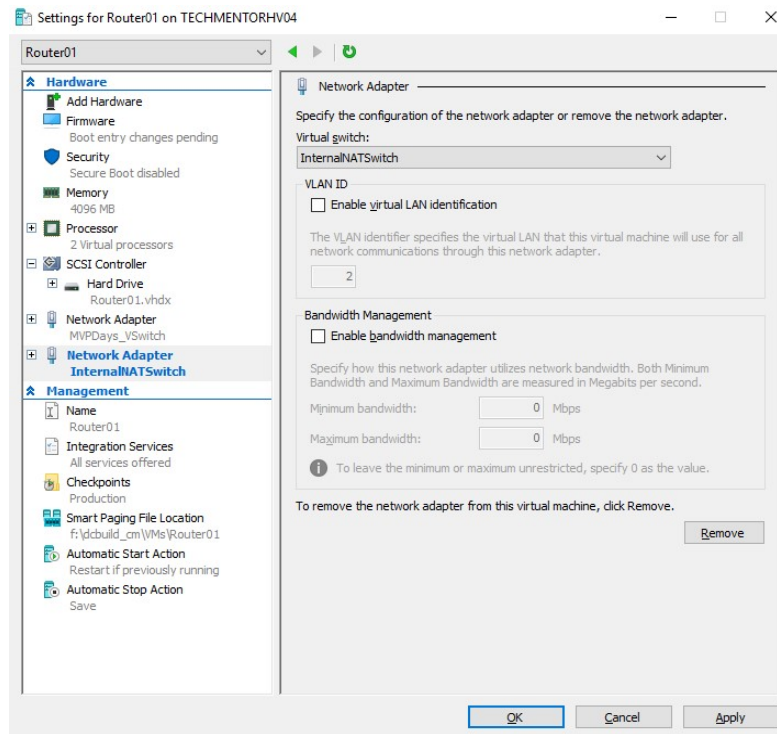
This step-by-step lab guide requires access to the Internet for configurations. To enable access to the internet from the Nested Hyper-V Host running in Azure run the following. This will create a Gateway IP Address of 192.168.0.1 which will be used by the Router VM to get out to the Internet. After 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	<pre>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</pre>
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 Switch**, and click **OK**



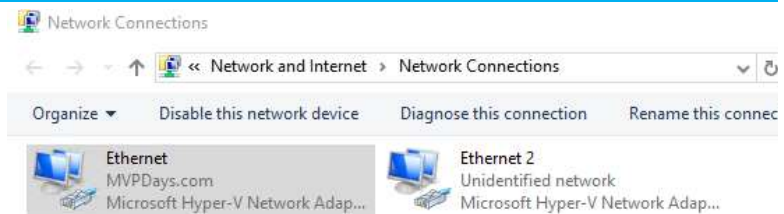
6. Logon to **Router01** with using **Administrator** and a password of **P@ssw0rd**
-

7. Open an administrative PowerShell prompt and run the command

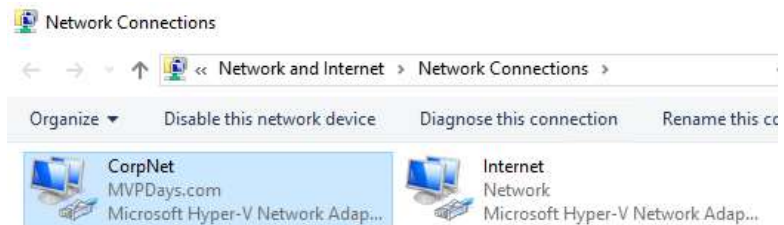
```
Add-WindowsFeature -Name RemoteAccess, Routing, RSAT-RemoteAccess-Mgmt -verbose
```

This will install the Routing and Remote Access Feature

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.

Administrator: Command Prompt

```
C:\Windows\system32>ping 4.2.2.2

Pinging 4.2.2.2 with 32 bytes of data:
Reply from 4.2.2.2: bytes=32 time=15ms TTL=52
Reply from 4.2.2.2: bytes=32 time=15ms TTL=52
Reply from 4.2.2.2: bytes=32 time=14ms TTL=52
Reply from 4.2.2.2: bytes=32 time=15ms TTL=52

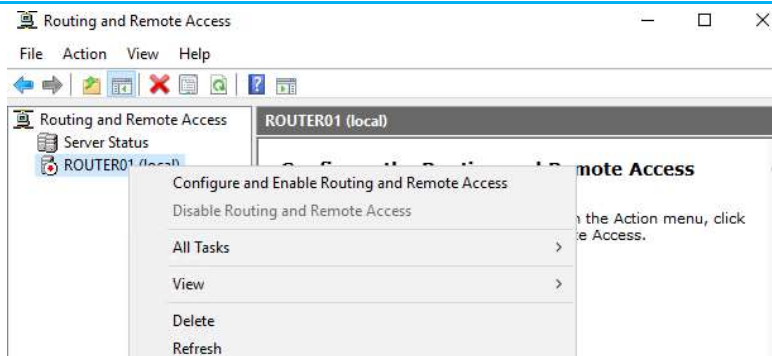
Ping statistics for 4.2.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 15ms, Average = 14ms

C:\Windows\system32>
```

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**

Routing and Remote Access Server Setup Wizard

Configuration
You can enable any of the following combinations of services, or you can customize this server.

- ☐ Remote access (dial-up or VPN)
Allow remote clients to connect to this server through either a dial-up connection or a secure virtual private network (VPN) Internet connection.
- ☐ Network address translation (NAT)
Allow internal clients to connect to the Internet using one public IP address.
- ☐ Virtual private network (VPN) access and NAT
Allow remote clients to connect to this server through the Internet and local clients to connect to the Internet using a single public IP address.
- ☐ Secure connection between two private networks
Connect this network to a remote network, such as a branch office.
- ☒ Custom configuration
Select any combination of the features available in Routing and Remote Access.

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

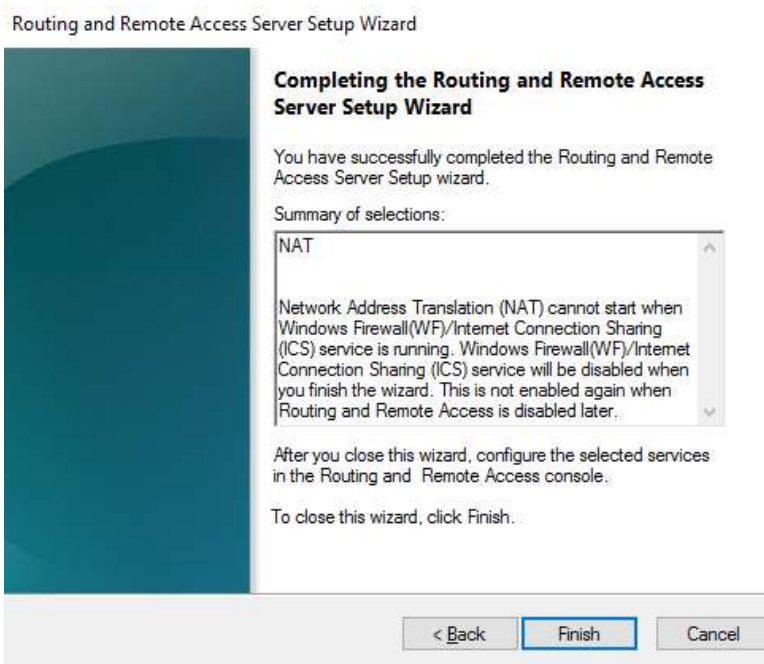
Routing and Remote Access Server Setup Wizard

Custom Configuration
When this wizard closes, you can configure the selected services in the Routing and Remote Access console.

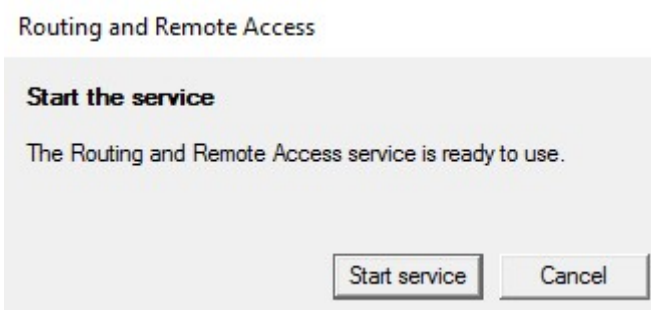
Select the services that you want to enable on this server.

- ☐ VPN access
- ☐ Dial-up access
- ☐ Demand-dial connections (used for branch office routing)
- ☒ NAT
- ☐ LAN routing

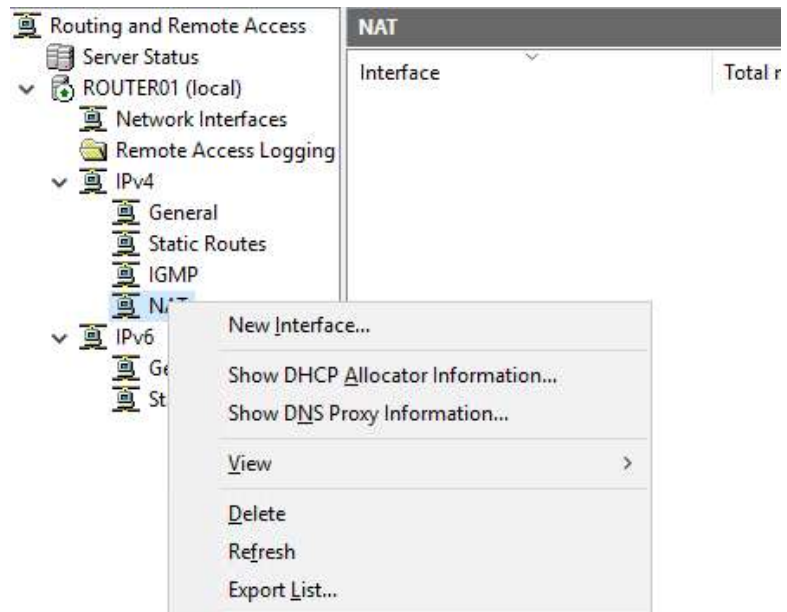
15. On the **Completing the Routing and Remote Access Server Setup Wizard** page click **Finish**



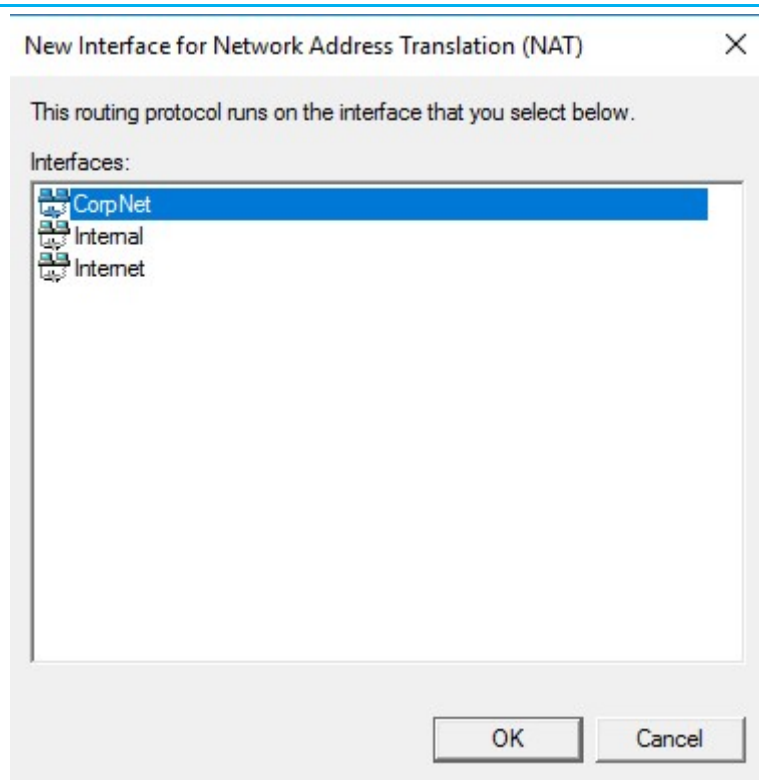
16. When prompted click **Start Service**



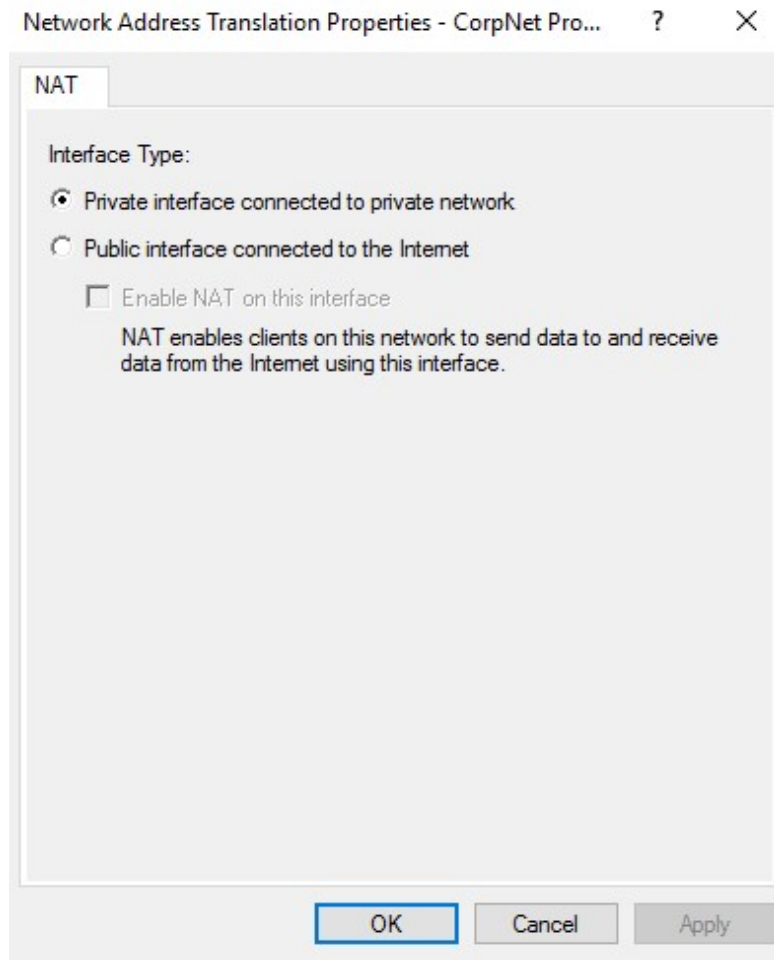
17. In the **Routing and Remote Access** management console, expand **Router01**, **IPv4**, **NAT**. Then Right-Click **NAT** and click **New Interface...**



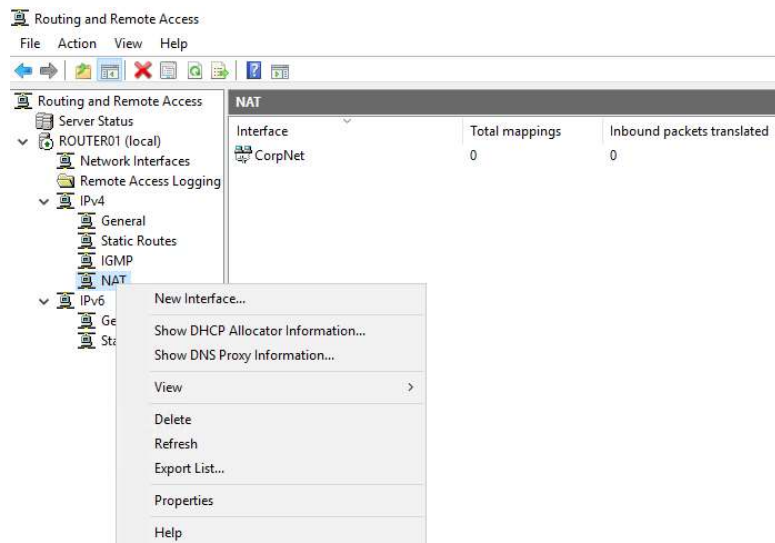
18. Select **CorpNet** and click **OK**



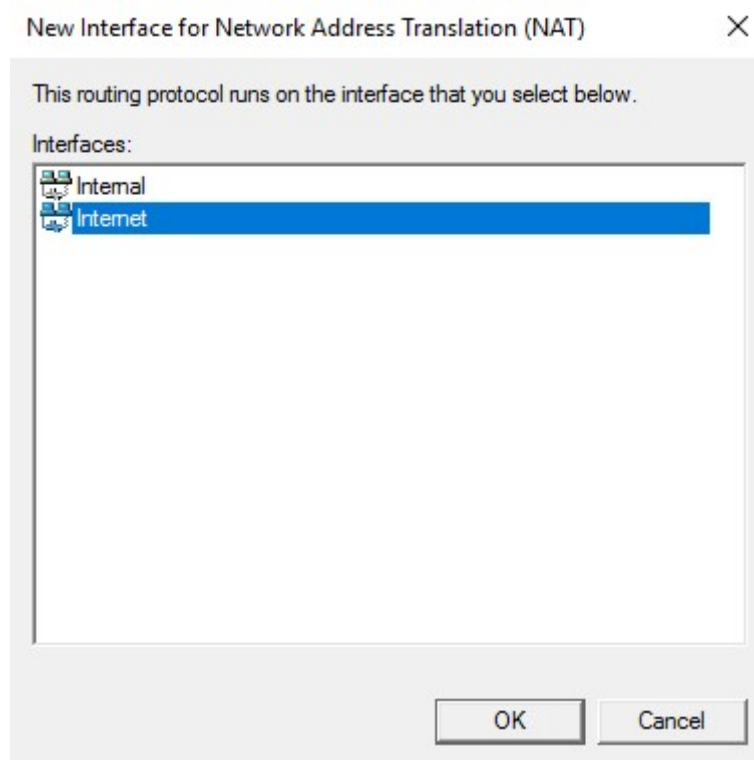
19. On the **Nat** page ensure **Private interface connected to the private network** is selected and click **OK**



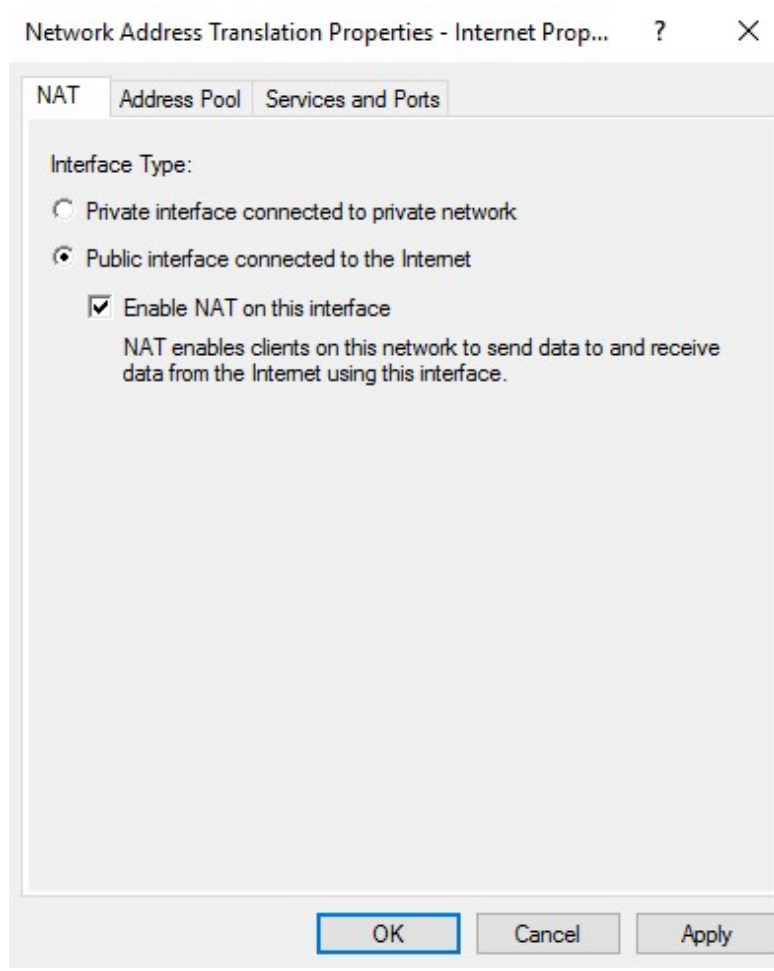
20. In the **Routing and Remote Access** management console, expand **Router01**, **IPv4**, **NAT**. Then Right-Click **NAT** and click **New Interface...**



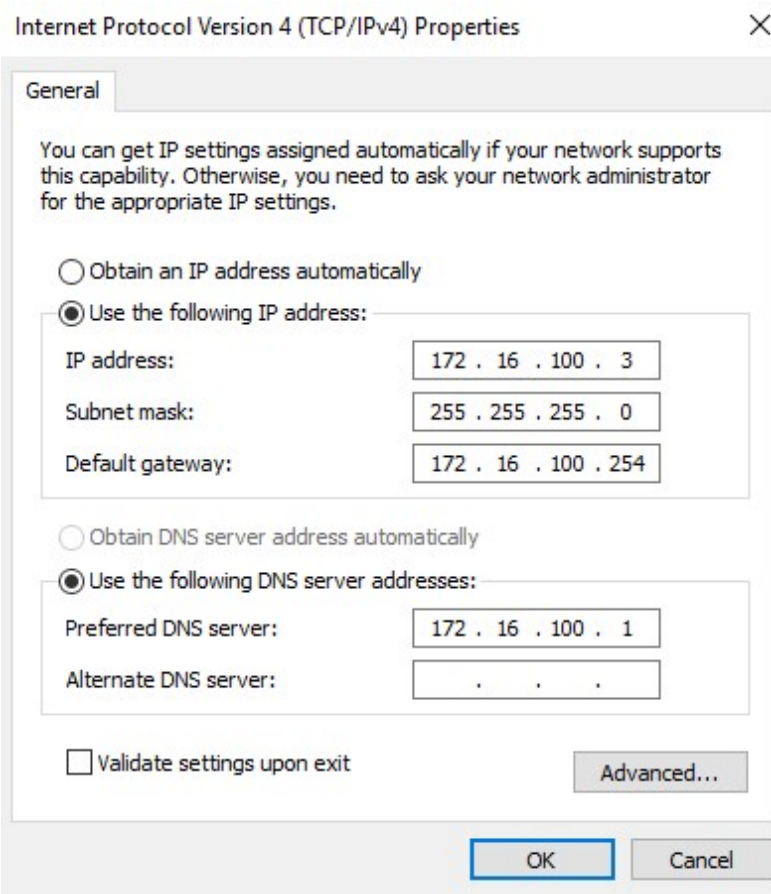
21. Select **Internet** and click **OK**



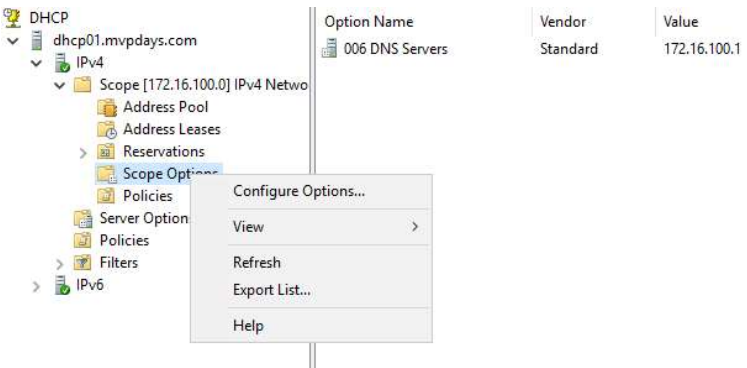
22. On the **Nat** page select **Public Interface connected to the Internet** and select **Enable NAT on this Interface** and click **OK**



- 23. Logon to **DHCP01** as **MVPdays\Administrator** or
- 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**

The screenshot shows the 'Scope Options' dialog box with the 'General' tab selected. The 'Available Options' list contains four items: '002 Time Offset', '003 Router' (which is checked), '004 Time Server', and '005 Name Servers'. The 'Data entry' section has a 'Server name' field and a 'Resolve' button. Below that, the 'IP address' section has a text input field, an 'Add' button, and a list box containing '172.16.100.254'. To the right of the list box are 'Remove', 'Up', and 'Down' buttons. At the bottom of the dialog are 'OK', 'Cancel', and 'Apply' buttons.

Available Options	Description
<input type="checkbox"/> 002 Time Offset	UTC offset i
<input checked="" type="checkbox"/> 003 Router	Array of rout
<input type="checkbox"/> 004 Time Server	Array of time
<input type="checkbox"/> 005 Name Servers	Array of nan

Data entry:

Server name:

IP address:

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

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 172 . 16 . 100 . 1

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 172 . 16 . 100 . 254

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server: 127 . 0 . 0 . 1

Alternate DNS server: . . .

☐ Validate settings upon exit

Advanced...

OK Cancel

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

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping 4.2.2.2

Pinging 4.2.2.2 with 32 bytes of data:
Reply from 4.2.2.2: bytes=32 time=15ms TTL=51
Reply from 4.2.2.2: bytes=32 time=23ms TTL=51
Reply from 4.2.2.2: bytes=32 time=15ms TTL=51
Reply from 4.2.2.2: bytes=32 time=15ms TTL=51

Ping statistics for 4.2.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 23ms, Average = 17ms

C:\Users\Administrator>ping www.google.com

Pinging www.google.com [216.58.216.132] with 32 bytes of data:
Reply from 216.58.216.132: bytes=32 time=68ms TTL=40
Reply from 216.58.216.132: bytes=32 time=69ms TTL=40
Reply from 216.58.216.132: bytes=32 time=69ms TTL=40
Reply from 216.58.216.132: bytes=32 time=68ms TTL=40

Ping statistics for 216.58.216.132:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 68ms, Maximum = 69ms, Average = 68ms
```

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.

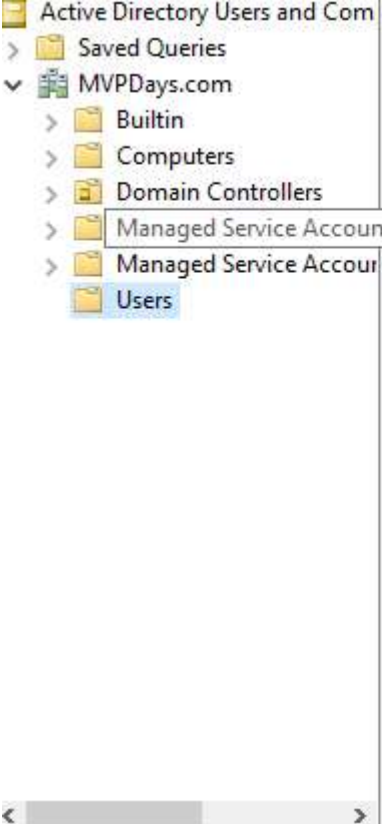
Software	Additional Information
System Center Virtual Machine Manager Technical Preview 1711 https://www.microsoft.com/en-us/evalcenter/evaluate-system-center-technical-preview	
SQL 2016 SP1 Volume License Media	Standard Edition

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



Name	Type	Description
DnsAdmins	Security Group...	DNS Administrators Gro...
DnsUpdateP...	Security Group...	DNS clients who are per...
Domain Ad...	Security Group...	Designated administrato...
Domain Co...	Security Group...	All workstations and ser...
Domain Con...	Security Group...	All domain controllers i...
Domain Gue...	Security Group...	All domain guests
Domain Users	Security Group...	All domain users
Enterprise A...	Security Group...	Designated administrato...
Enterprise K...	Security Group...	Members of this group ...
Enterprise R...	Security Group...	Members of this group ...
Group Polic...	Security Group...	Members in this group c...
Guest	User	Built-in account for gue...
Key Admins	Security Group...	Members of this group ...
MVPDays-A...	User	
Protected Us...	Security Group...	Members of this group ...
RAS and IAS ...	Security Group...	Servers in this group can...
Read-only D...	Security Group...	Members of this group ...
Schema Ad...	Security Group...	Designated administrato...
SVC_SQL	User	
SVC_VMM	User	

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:

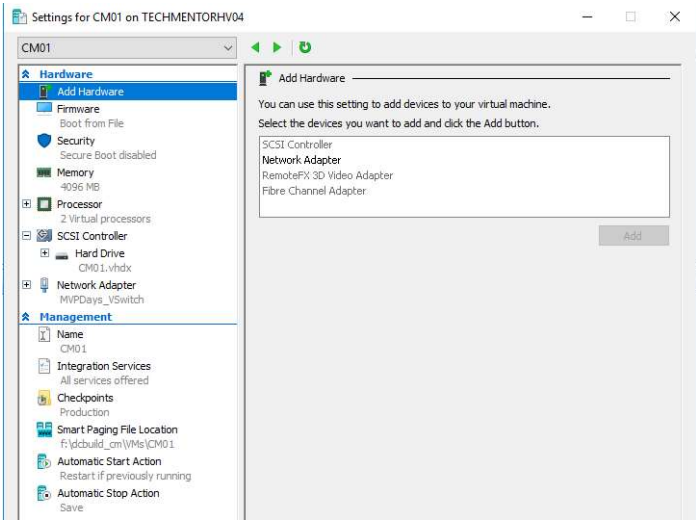

> Managed Service Accour

Users

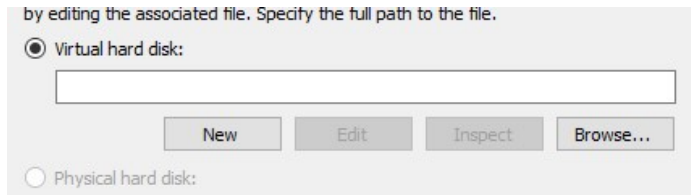
Name	Type	Descripti
 DHCP01	Computer	
 MANAGEMENT01	Computer	
 ROUTER01	Computer	
 S2D1	Computer	
 S2D2	Computer	
 S2D3	Computer	
 S2D4	Computer	
 VMM01	Computer	

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

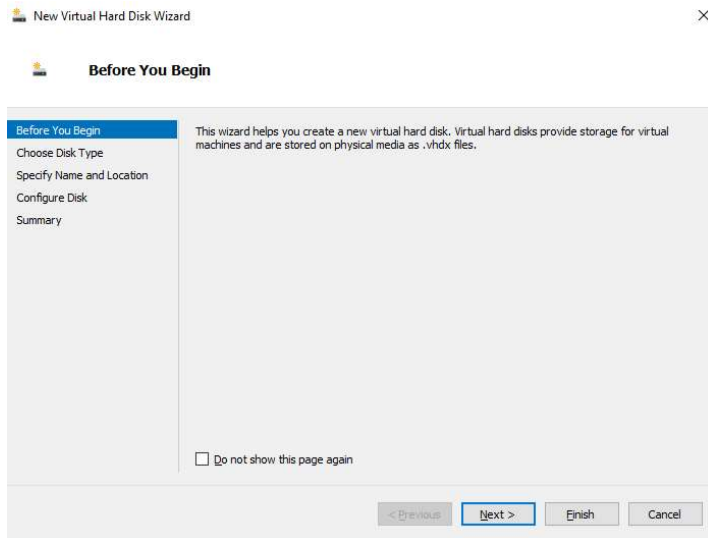
The following steps will add an additional Virtual Hard Disk to the VMM Server that will be used to host the installation and site server components (SQL and VMM binaries).

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

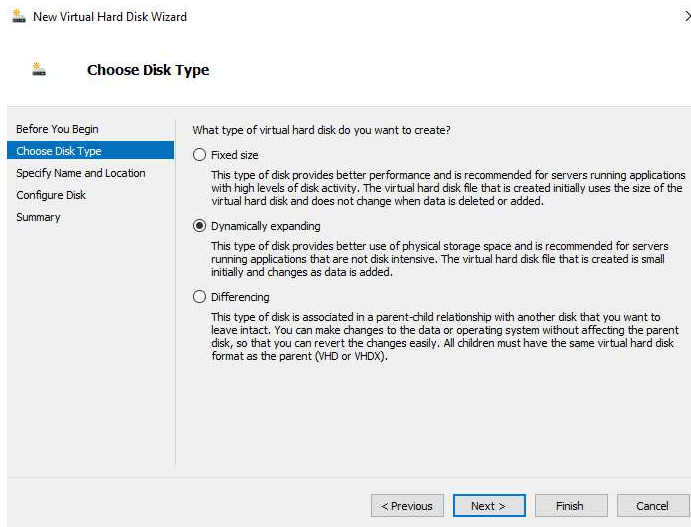
3. Click **New**



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

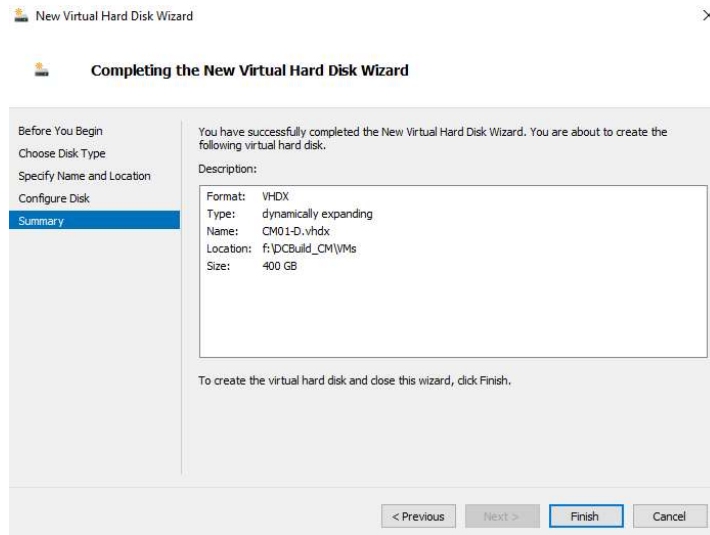
and then click **Next**

The screenshot shows the 'Specify Name and Location' step of the 'New Virtual Hard Disk Wizard'. The left sidebar has four steps: 'Before You Begin', 'Choose Disk Type', 'Specify Name and Location' (which is selected and highlighted in blue), 'Configure Disk', and 'Summary'. The main area is titled 'Specify the name and location of the virtual hard disk file.' It contains two text input fields: 'Name:' with the value 'VMM01-D.vhdx.vhdx' and 'Location:' with the value 'F:\DCBuild_Insider\VMs'. A 'Browse...' button is next to the location field. At the bottom, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

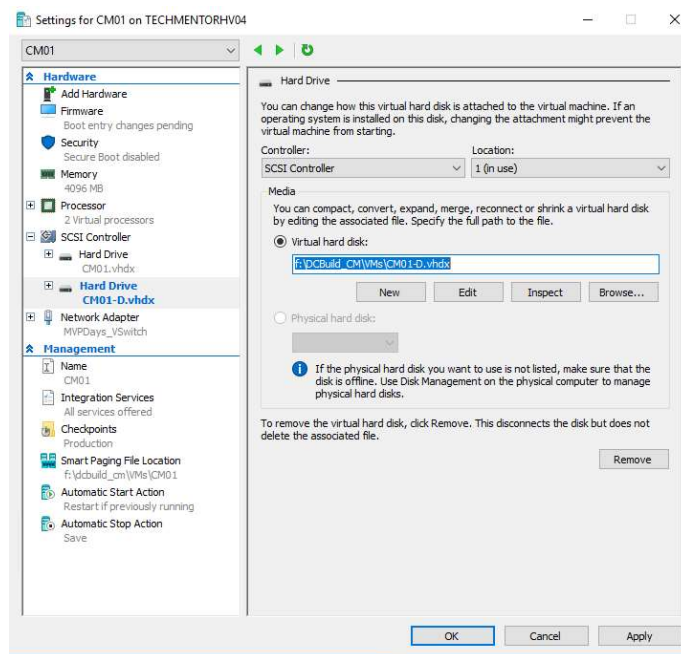
7. On the **Configure Disk** page change the size to **400 GB**

The screenshot shows the 'Configure Disk' step of the 'New Virtual Hard Disk Wizard'. The left sidebar has five steps: 'Before You Begin', 'Choose Disk Type', 'Specify Name and Location', 'Configure Disk' (which is selected and highlighted in blue), and 'Summary'. The main area is titled 'You can create a blank virtual hard disk or copy the contents of an existing physical disk.' It has two radio button options. The first option, 'Create a new blank virtual hard disk', is selected. Below it, the 'Size:' is set to '400 GB (Maximum: 64 TB)'. The second option, 'Copy the contents of the specified physical disk:', is unselected. Below it is a table with two columns: 'Physical Hard Disk' and 'Size'. The table lists three physical drives: '\\.\PHYSICALDRIVE0' (127 GB), '\\.\PHYSICALDRIVE1' (127 GB), and '\\.\PHYSICALDRIVE2' (4094 GB). Below the table is a third radio button option, 'Copy the contents of the specified virtual hard disk', which is unselected. Below it is a 'Path:' text input field and a 'Browse...' button. At the bottom, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

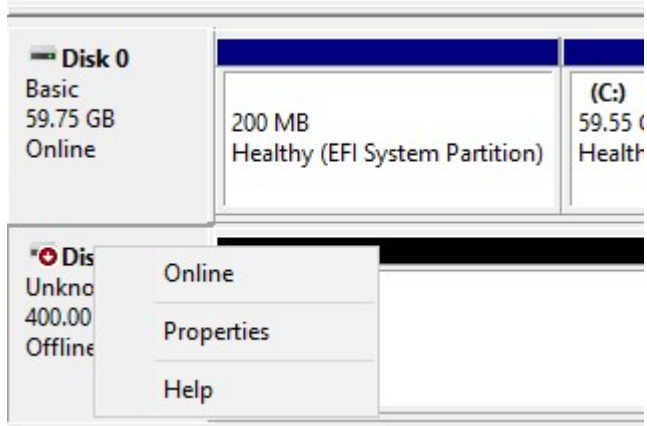
8. On the **Summary** page click **Finish**
9. Click **Apply**



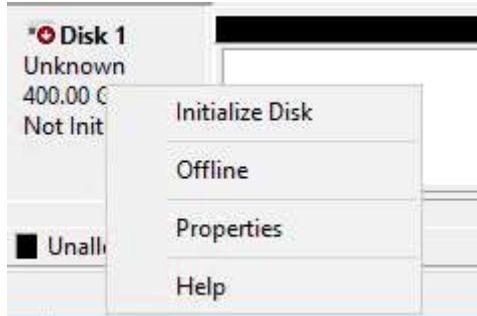
10. On the **Hyper-V Settings** Page for **VMM01** click **OK**



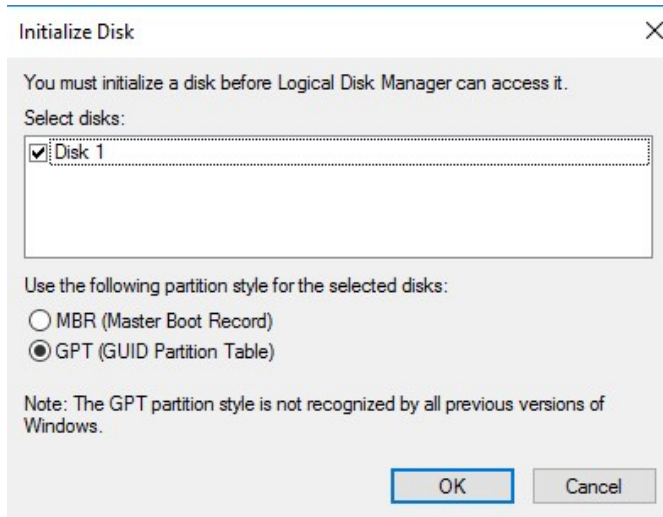
11. Return the **VMM01** and open **Diskmgmt.msc**, right click on **Disk 1** and click **Online**



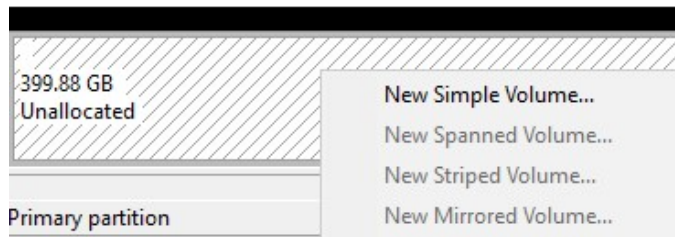
12. Right-Click on **Disk 1** and click **Initialize Disk**



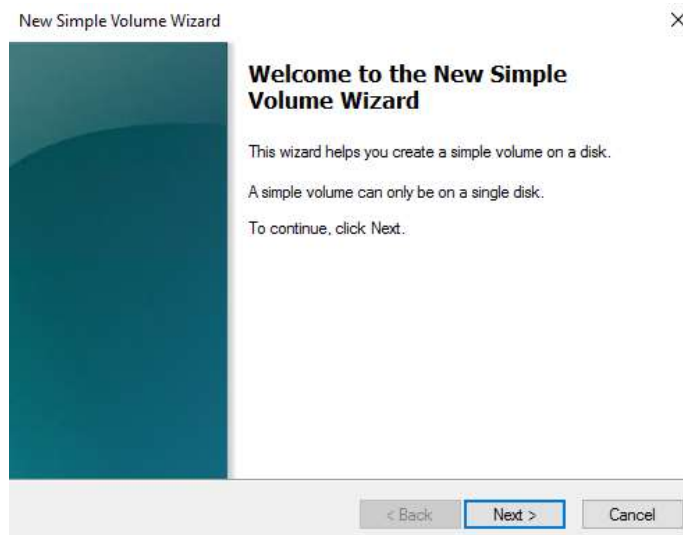
13. On the **Initialize Disk** page click **Ok**



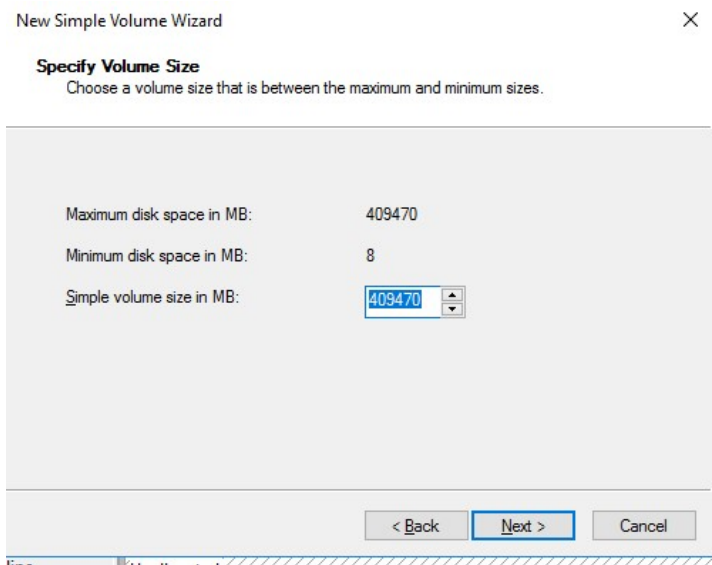
14. Right-Click on **Disk 1's** unallocated space and click **New Simple Volume**



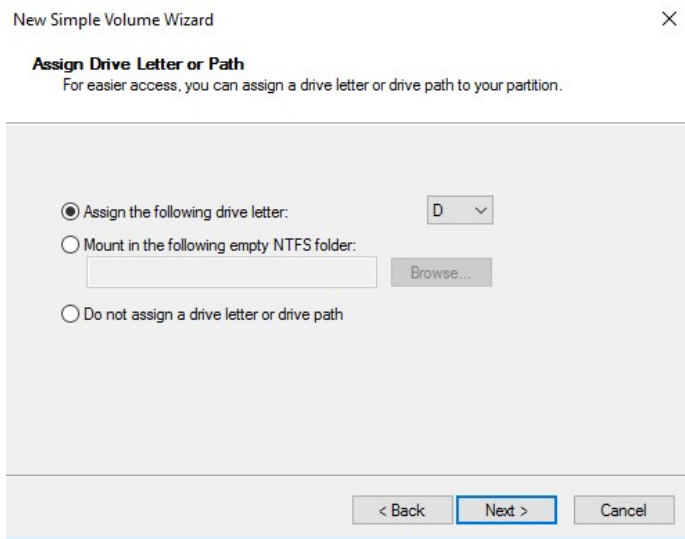
15. In the **Welcome to the New Simple Volume Wizard Page** click **Next**



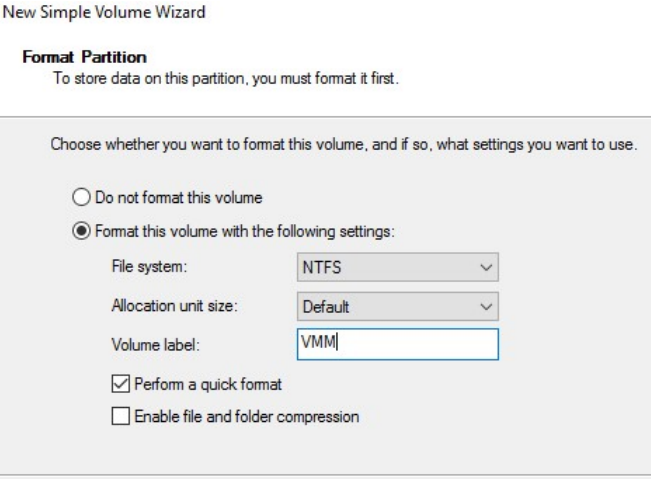
16. On the **Specify Volume Size** page click **Next**



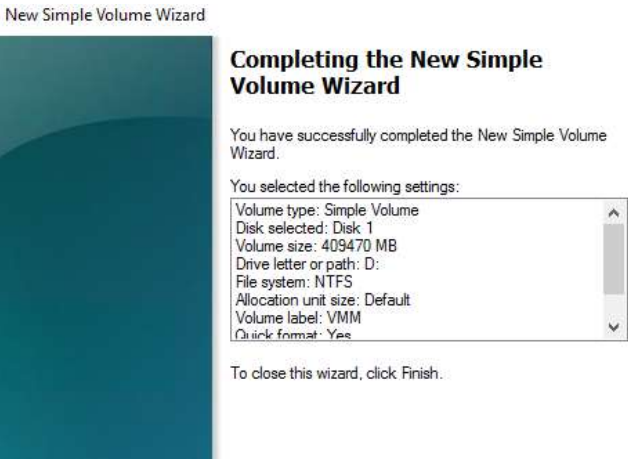
17. On the **Assign Drive Letter or Path** page click **Next**



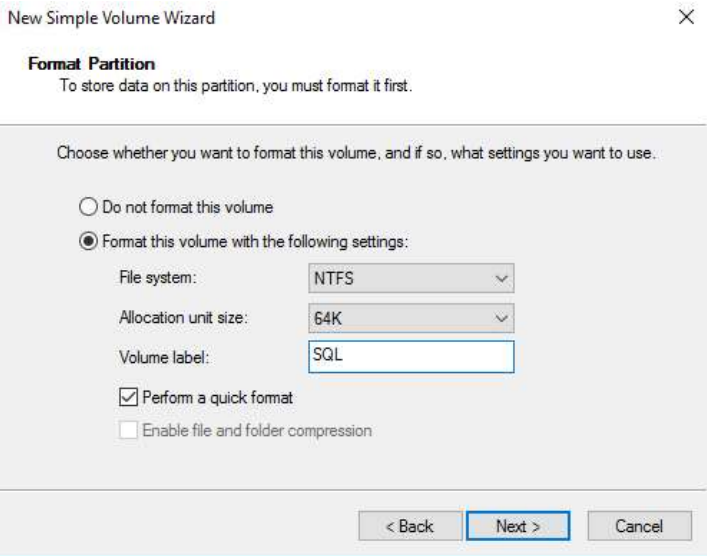
18. On the **Format Partition** page change the **Volume Label** to **ConfigMGR** and click **Next**



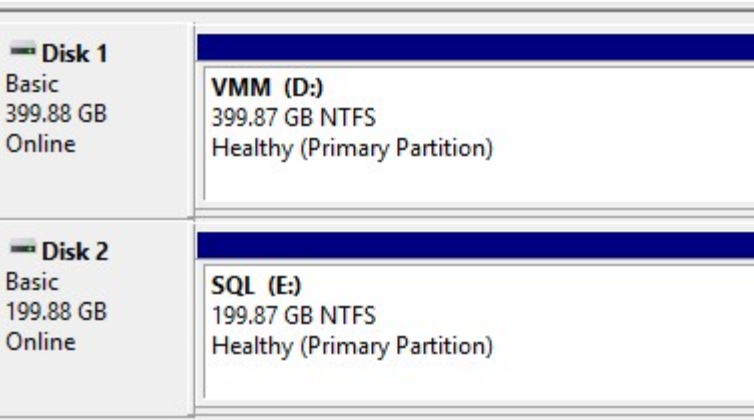
19. On the **Completing the New Simple Volume Wizard** page click **Finish**




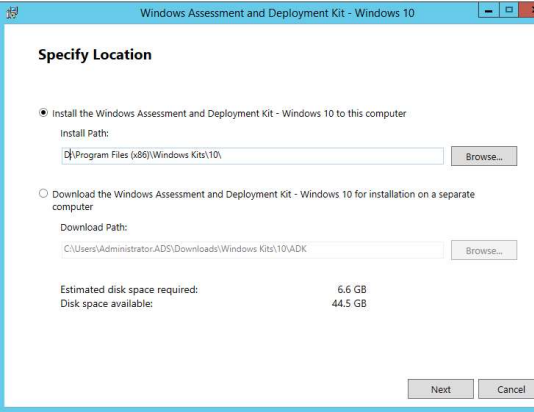
20. Repeat the steps above to add another Disk for the SQL Installation. As the SQL Installation will be on the Same Server as the ConfigMGR Server and will require a difference block size we will add another disk. Create the F: with 200 GB size format as NTFS with a Block Size of 64KB



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



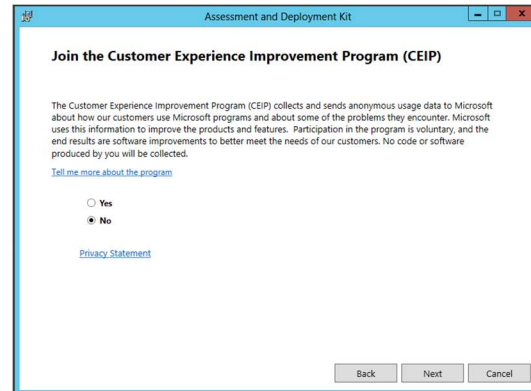
Install Windows ADK 1709

Instructions	Screenshot (if applicable)
<ol style="list-style-type: none">1. Download the ADK 1709 from https://go.microsoft.com/fwlink/p/?linkid=859206	
<ol style="list-style-type: none">2. Open Windows Explorer and navigate to the location of the downloaded adksetup.exe3. <i>Right-click</i> adksetup.exe and select Run as Administrator4. When prompted by UAC, select Yes to proceed5. The <i>Assessment and Deployment Kit</i> installation program starts.6. The <i>Specify Location</i> screen appears	
<ol style="list-style-type: none">7. Leave the default path D:\Program Files (x86)\Windows Kits\10\ selected8. 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

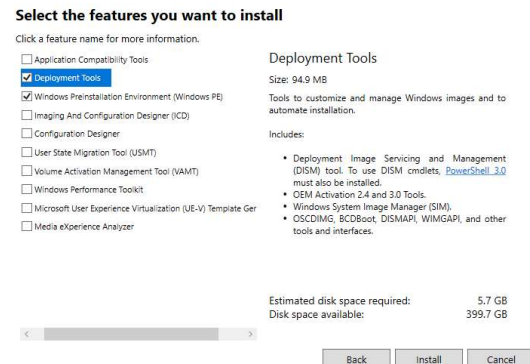
13. Click **Accept**



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

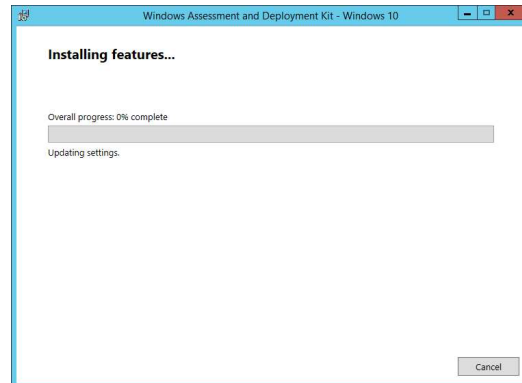
15. Install the following components:

Deployment Tools
Windows Pre-installation Environment
(Windows PE)



16. Click **Install**

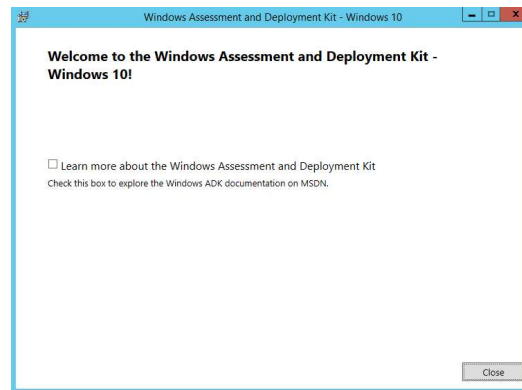
17. The *Installing features* screen will appear with a progress bar showing the installation progress



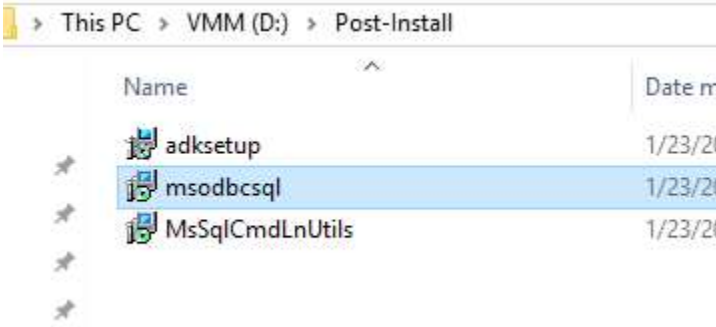
18. Depending on network connection and disk speed, the download and installation can take several minutes.

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)
<div>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</div>	
<div>2. Install msodbcsql.msi</div>	
<div>3. Accept all defaults</div>	
<div>4. Install MSSqlCmdLnUtils.msi</div>	
<div>5. Accept all defaults</div>	

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	<i>P@ssw0rd</i>
SQL Server Database Engine	MVPDays\SVC_SQL	MVPDays.com	<i>P@ssw0rd</i>
SQL Server Reporting Services	MVPDays\SVC_SQL	MVPDays.com	<i>P@ssw0rd</i>

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

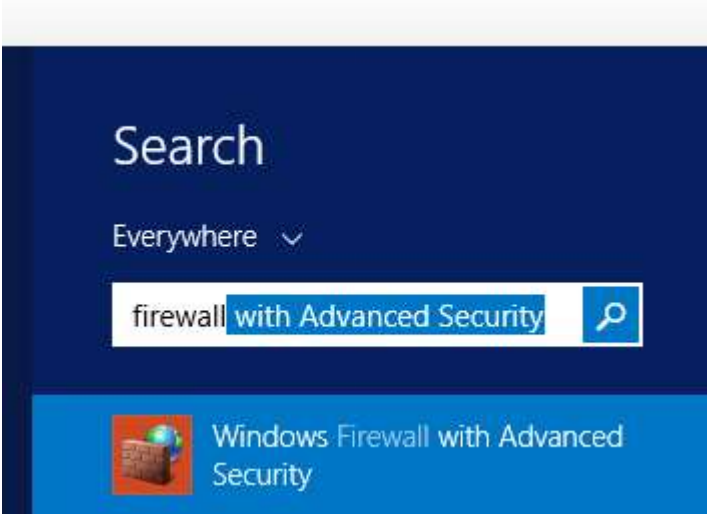
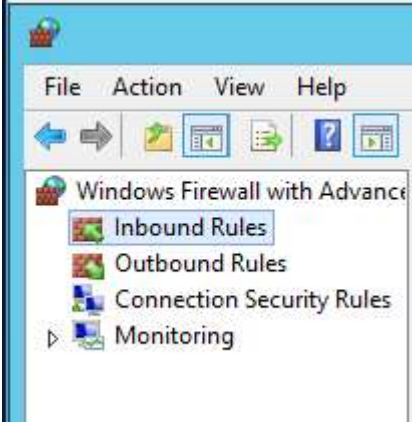
Note: These accounts must have Log on as a Service rights on the SQL server. This can be achieved via Group Policy or via local policy. You cannot set via local policy if a domain group policy is already setting a list of user accounts that can log in as a service.

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

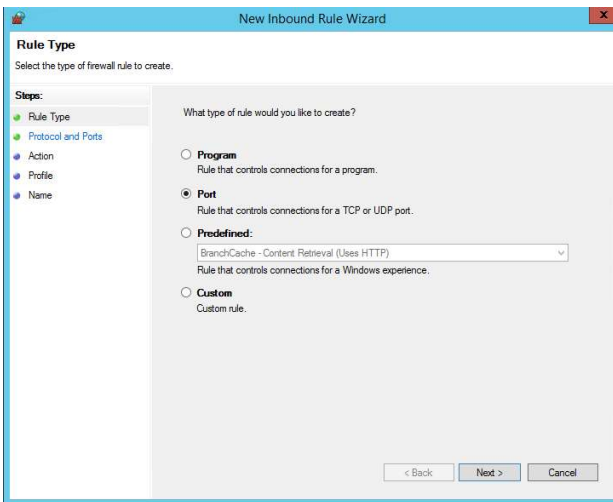
These steps are executed even if SQL is co-located with Configuration Manager.

Instructions	Screenshot (if applicable)
<ol style="list-style-type: none"> 1. Logon to VMM01 as MVPDays\Administrator 	
<ol style="list-style-type: none"> 2. Open the local firewall configuration. Note, if you are managing firewall settings via Group Policy you will need to manage exceptions through GPO. 	 <p>A screenshot of the Windows Search interface. The search bar contains the text 'firewall with Advanced Security'. Below the search bar, the results show 'Windows Firewall with Advanced Security' with a corresponding icon.</p>
<ol style="list-style-type: none"> 3. Add port exceptions for 1433, 1434, 4022, 80 and 443 by following these steps. 4. Navigate to <i>Inbound rules</i> 	 <p>A screenshot of the Windows Firewall with Advanced Security console. The left pane shows the tree structure with 'Inbound Rules' selected. The right pane shows the 'Inbound Rules' list.</p>

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



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

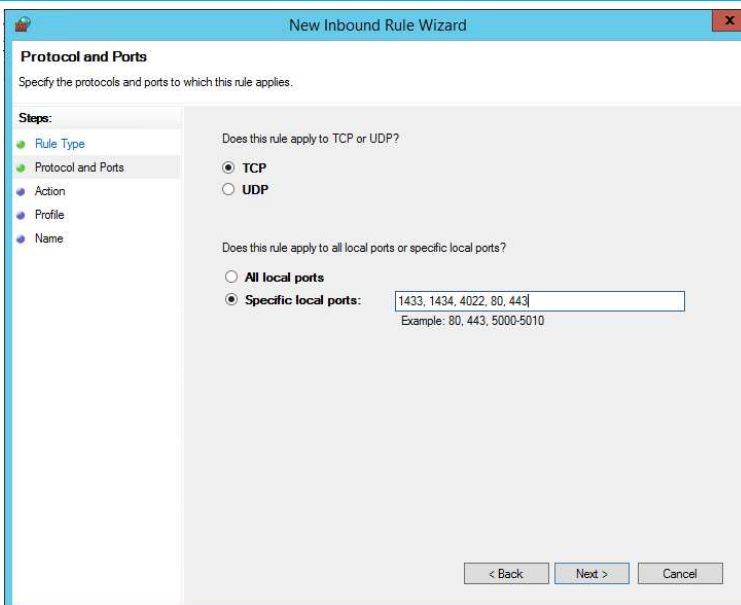


7. Maintain the radio button on **TCP**.

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

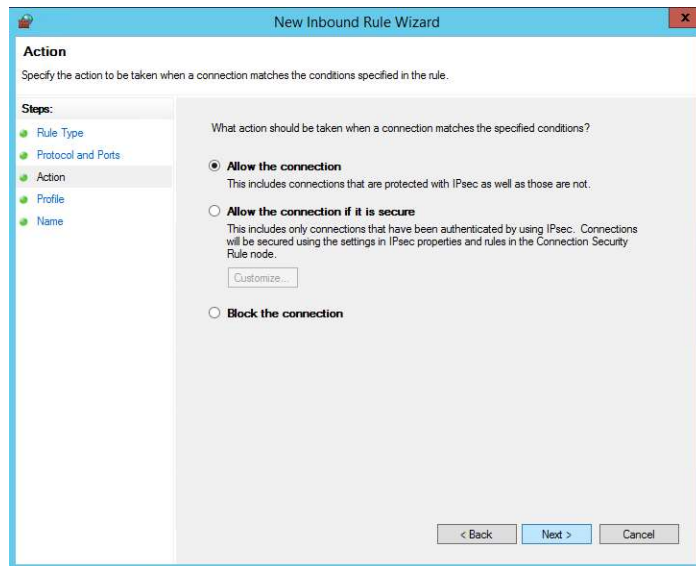
Note: If SQL were configured on a remote server, add 135 as well

9. Click **Next**



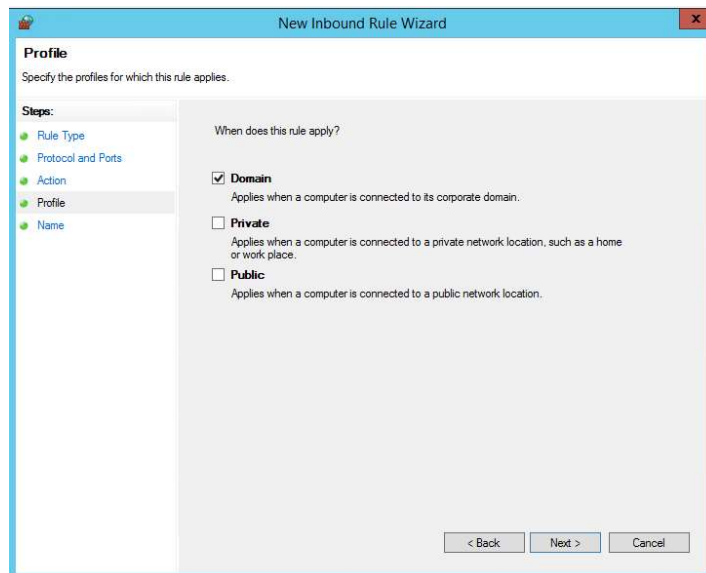
10. Keep the setting
“**Allow the connection**”

11. Click **Next**



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

13. Click **Next**



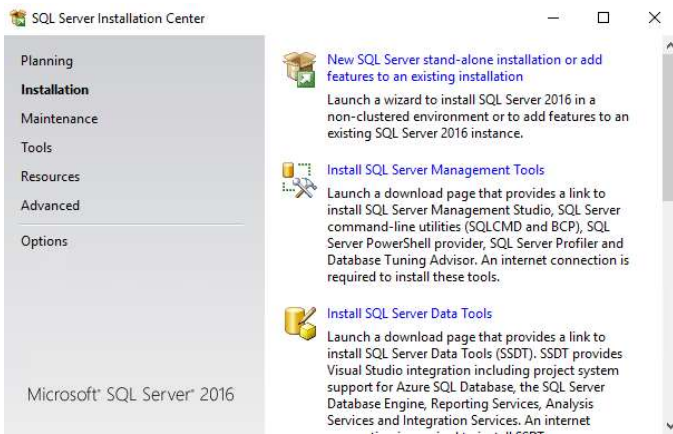
14. Name the rule **SQL
2016 Exceptions**

15. Click **Finish**

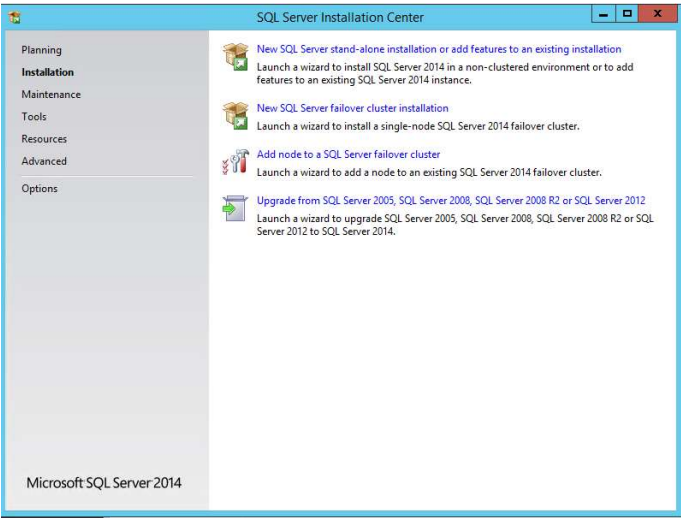
16. Close the Firewall
manager

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 <i>SQL Server Installation Center</i> screen launches	
6. In the left-hand pane, select Installation	

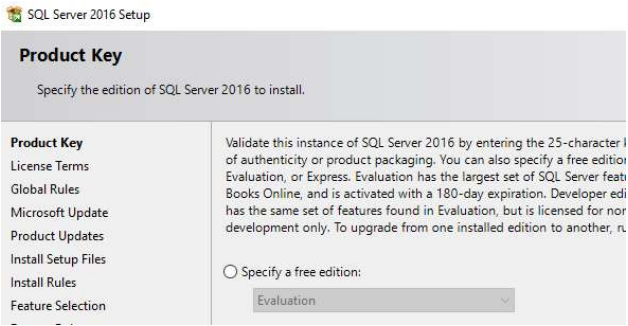
7. The right-hand pane options change when the Installation choice is selected.



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

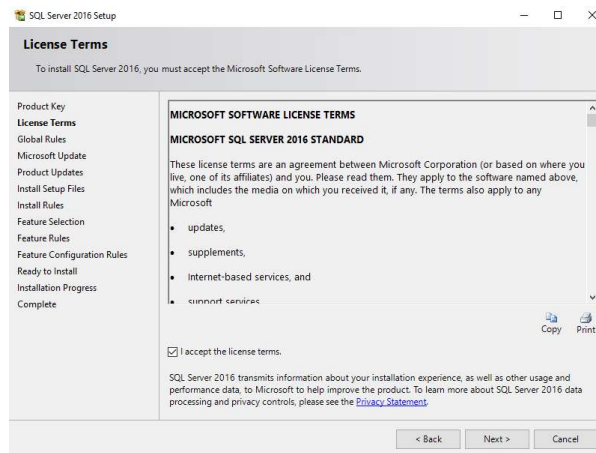


3. The license key should be embedded with volume license media. If not, retrieve the license key from the volume license media site.

4. Click **Next**

5. The *License Terms* screen appears

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

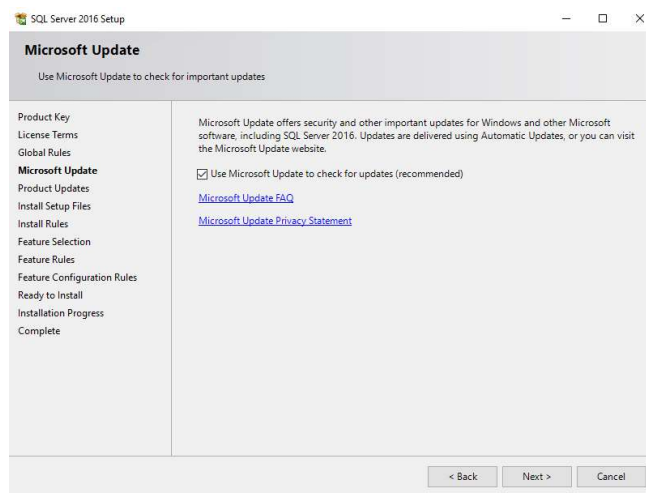


7. Click **Next**

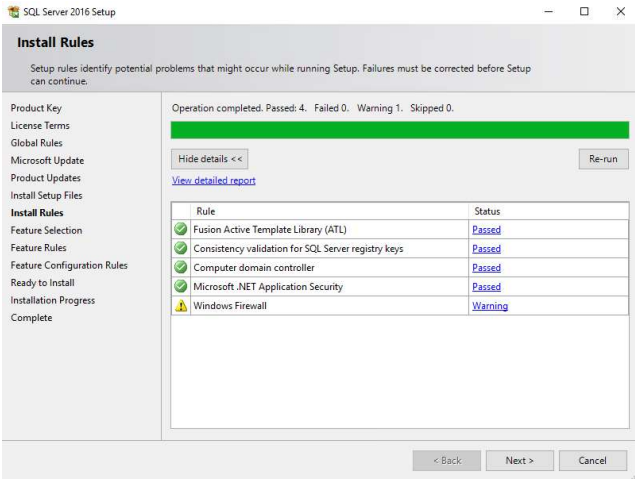
8. The **Microsoft Update** screen appears.

9. Select the checkbox to Use Microsoft Update.

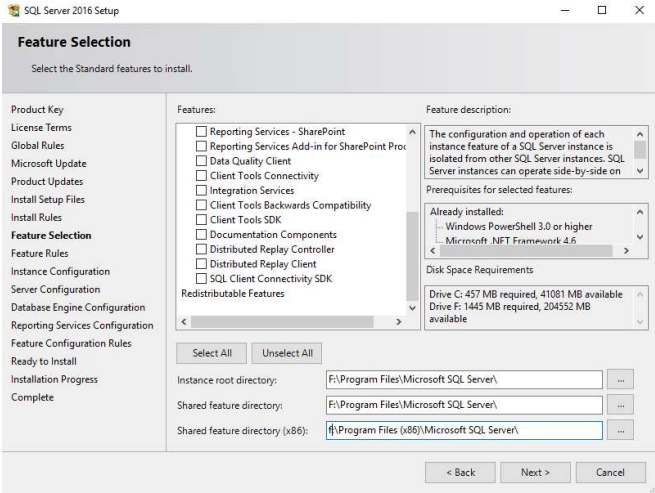
10. Click **Next**



- 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**

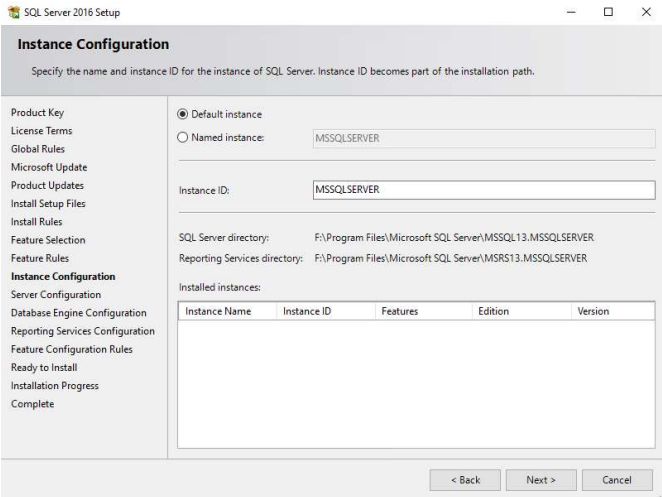
19. The *Instance Configuration* screen will appear

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

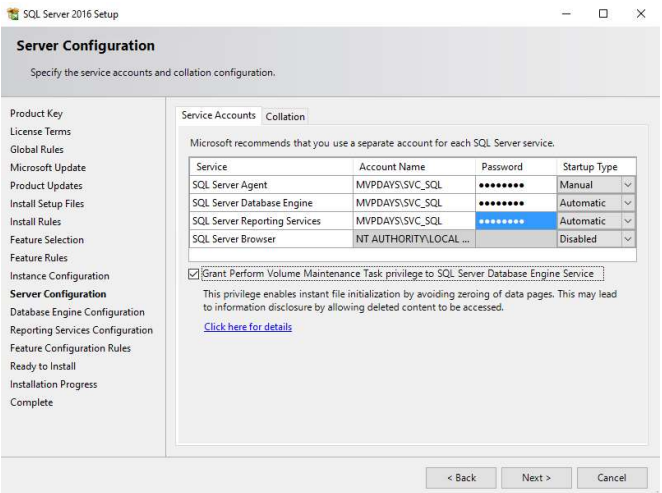
22. Leave the instance ID as **MSSQLSERVER**

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**.

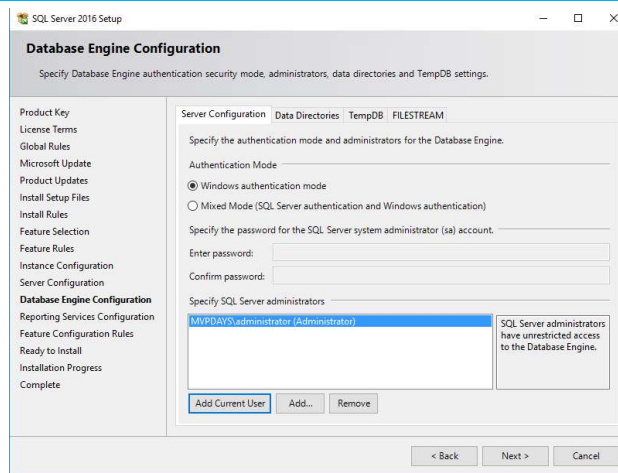


26. Next to **SQL Server Database Engine** under **Account Name**, enter **MVPDays\SVC_SQL**, under **Password**, enter

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**

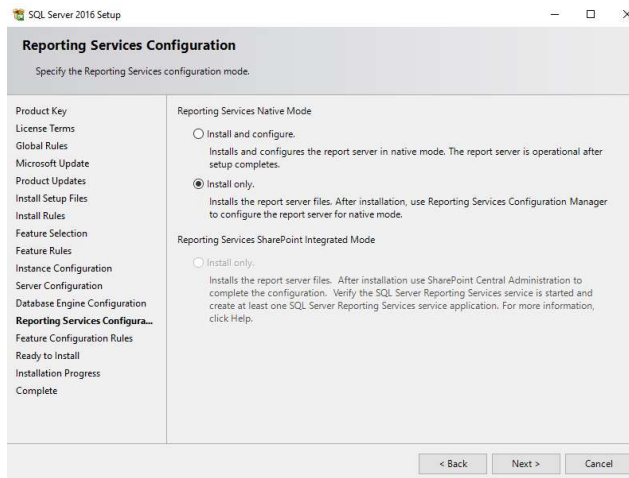


30. Click **Next**
-

31. The *Reporting Services Configuration* screen appears

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

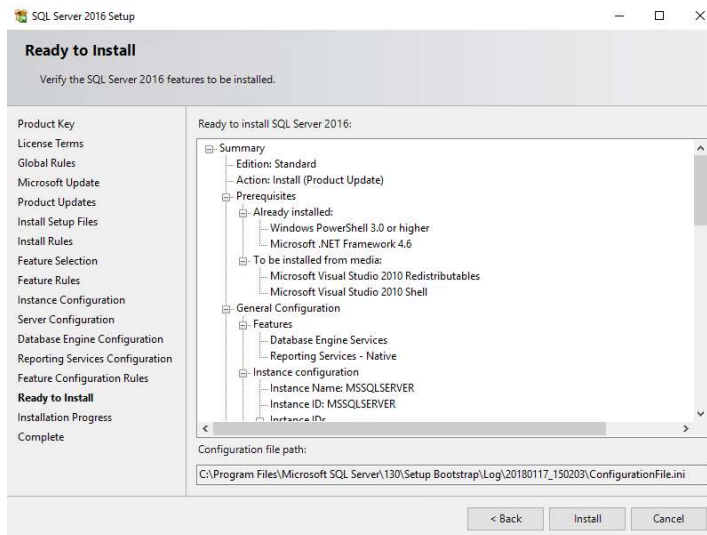
33. Click **Next**



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.

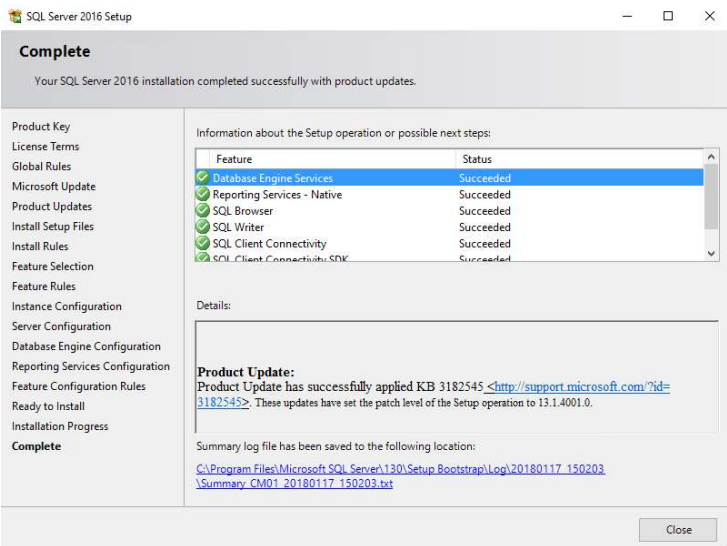
37. Click **Install**

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



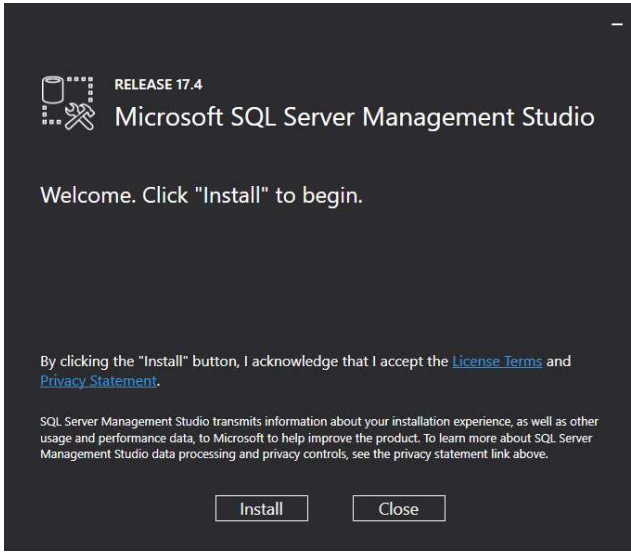
41. The SQL Server Installation Center screen will re-appear, with the Installation option selected in the left-hand pane.

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

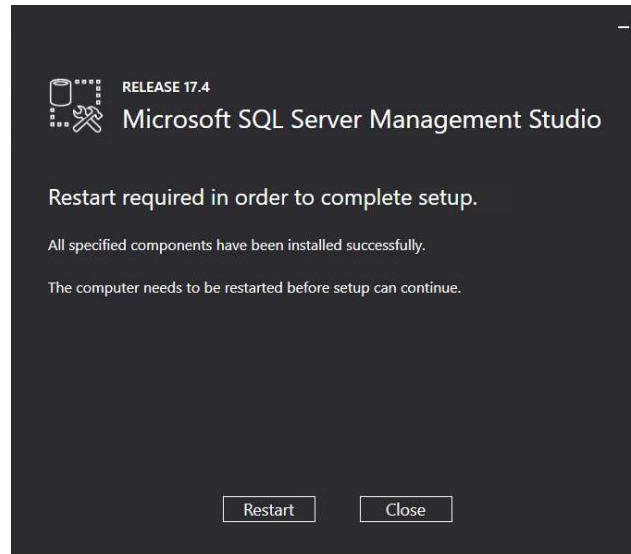
43. Eject the SQL media

Download and Install SQL Server Management 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	<p>Browse to: https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms</p> <p>Download SSMS-Setup-ENU.exe to C:\Post-Install</p>
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**



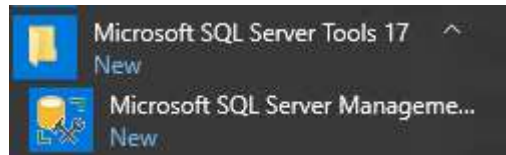
Configure SQL Server Memory Limits

Instructions

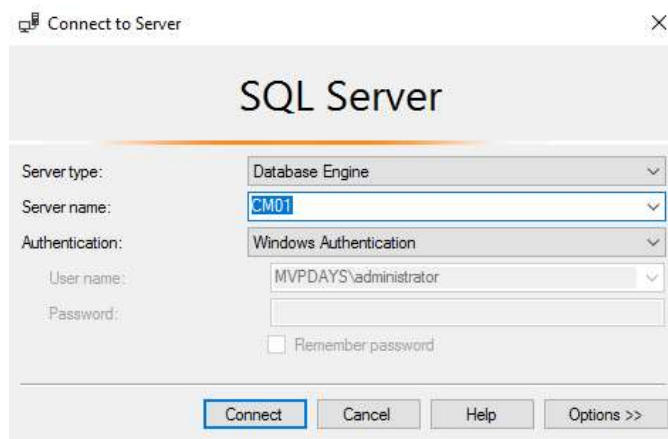
Screenshot (if applicable)

1. Logon to **VMM01**
as
MVPDays\Administrat
or

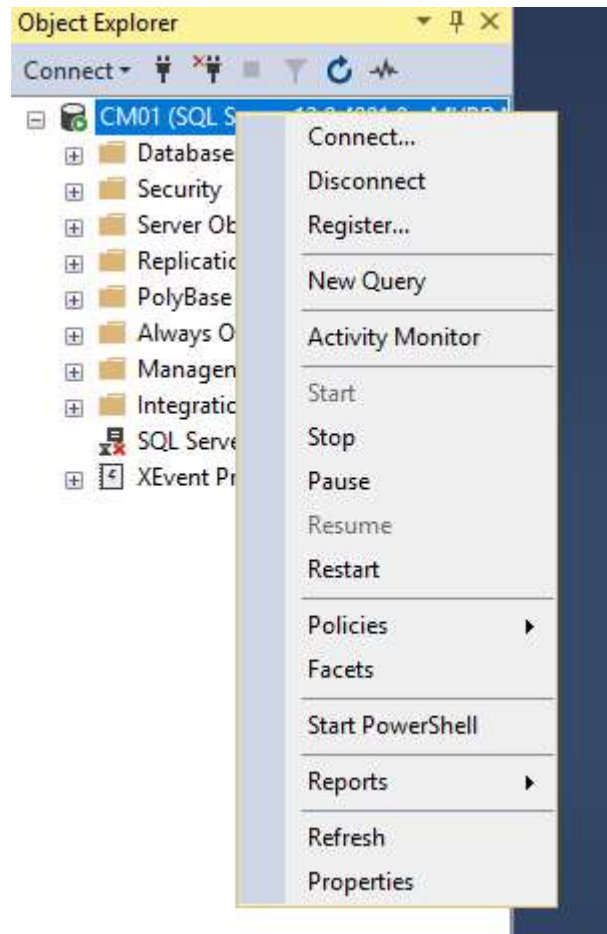
2. Launch **SQL Server Management Studio**



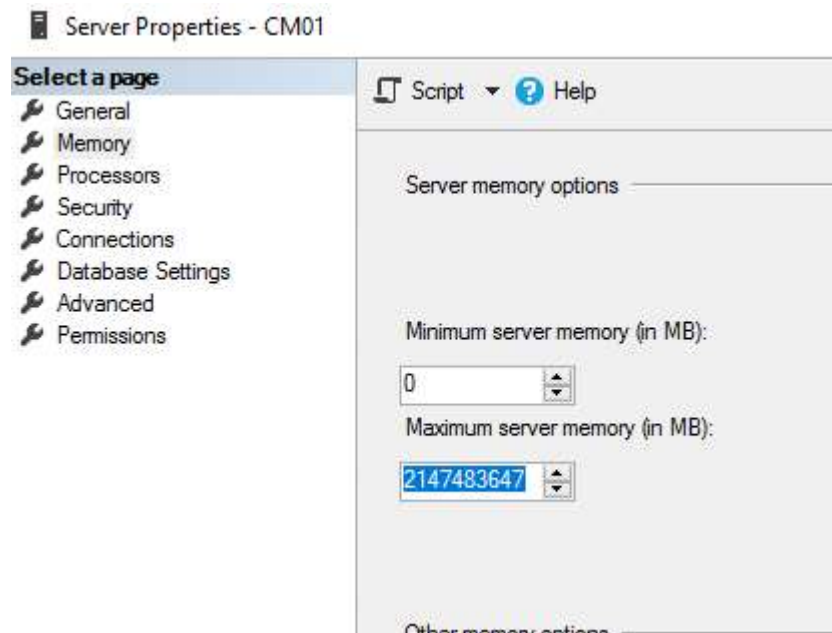
3. Click **Connect** to connect to the local database



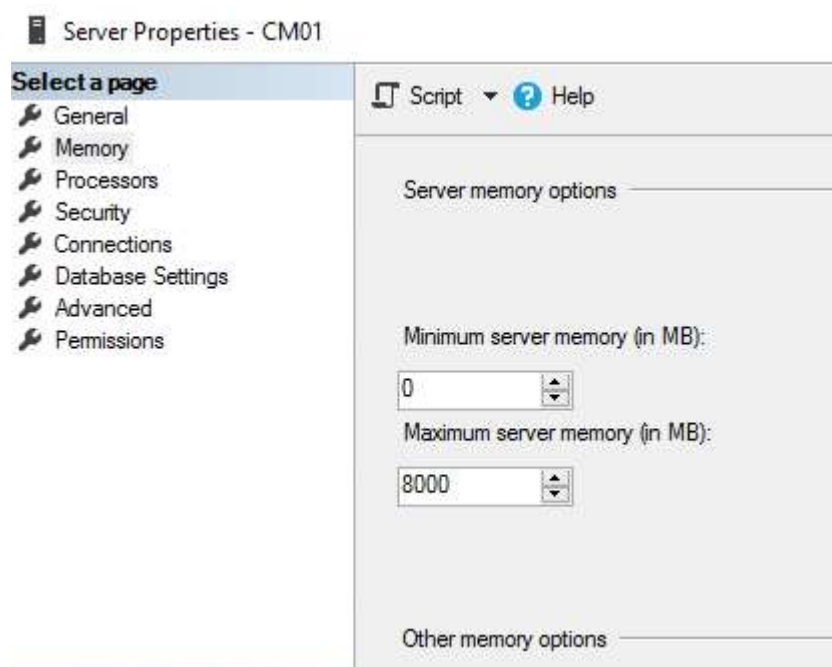
4. Within the Management Studio, **right-click** the Server and select **Properties**



5. Select the **Memory** node



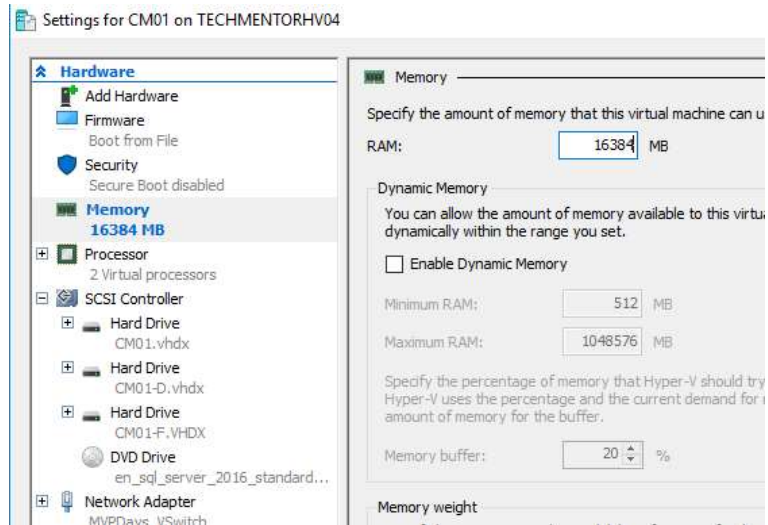
6. Reset the maximum memory to one half the memory of the site server. In other words, if the site server is configured with 16 GB of RAM, configure SQL to only consume 8 GB maximum.



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
	