ITAS141 Lab 6

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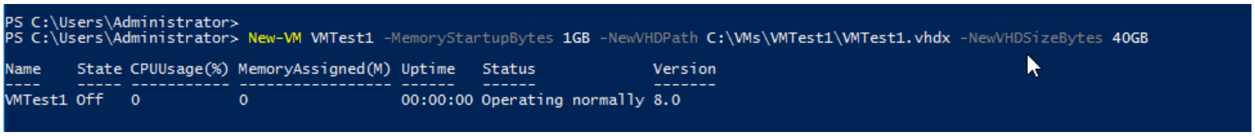
Contents

Objective:

Our introduction for this Lab, we are asked to make a new VM through our PowerShell on our Hyper-V machine that we made earlier. With this, we will ping our machine that we create through PowerShell to our Server-HyperV machine.

Part 6-2: Creating a Virtual Machine

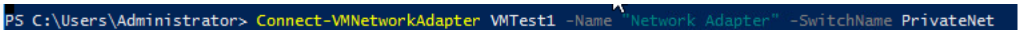
Using the Server-HyperV machine that we created, I opened PowerShell and used the following command: ***New-VM VMTest1 -MemoryStartupBytes 1GB -NewVHDPath C:\VMs\VMTest1\VMTest1.vhdx -NewVHDSizeBytes 40GB*** this command lets us create VMTest1 through our PowerShell



```
PS C:\Users\Administrator>
PS C:\Users\Administrator> New-VM VMTest1 -MemoryStartupBytes 1GB -NewVHDPath C:\VMs\VMTest1\VMTest1.vhdx -NewVHDSizeBytes 40GB

Name    State CPUUsage(%) MemoryAssigned(M) Uptime   Status             Version
----    ----- ----------- ----------------- ------   ------             -------
VMTest1 Off   0           0                 00:00:00 Operating normally 8.0
```

Figure 1: Barebones VM being made

After this, we then need to create our network adapter as we have just created a barebones, generation 1 machine with a disk.

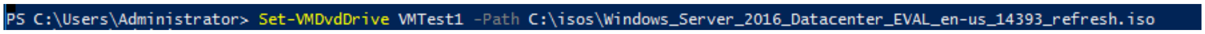


```
PS C:\Users\Administrator> Connect-VMNetworkAdapter VMTest1 -Name "Network Adapter" -SwitchName PrivateNet
```

Figure 2: Adding an adapter

Using the command: ***Connect-VMNetworkAdapter VMTest1 -Name “Network Adapter” -SwitchName PrivateNet*** which will add a new Adapter to our machine, on the Switch name PrivateNet

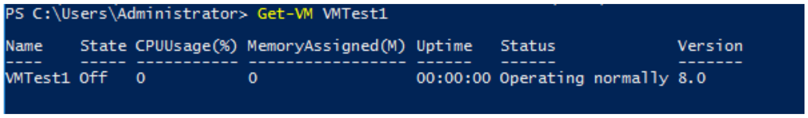
Following this, we now must add our CD/Dvd drive so we can add our ISO to start the install on our machine. Using the command ***Set-VMDvdDrive VMTest1 -Path C:\isos\x*** where x indicates the name of my ISO, your file path may also vary depending on where you keep your ISOs



```
PS C:\Users\Administrator> Set-VMDvdDrive VMTest1 -Path C:\isos\Windows_Server_2016_Datacenter_EVAL_en-us_14393_refresh.iso
```

Figure 3: Adding a cd/iso to the VM

To see the current information about our ***VM using Get-VM VMTest1***



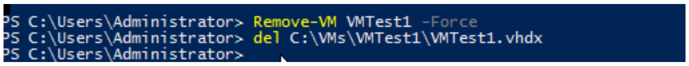
```
PS C:\Users\Administrator> Get-VM VMTest1

Name    State CPUUsage(%) MemoryAssigned(M) Uptime   Status             Version
----    ----- ----------- ----------------- ------   ------             -------
VMTest1 Off   0           0                 00:00:00 Operating normally 8.0
```

Figure 4: Using VMTest to inspect the VM

However, we can get a deeper look into our virtual machine by using the ***Get-VM VMTest1 | fl ****

We can turn our VMs on using the following command ***Get-VM | Where-Object {$_.State -eq “Off”} | Start-VM*** which will turn any of our VMs that are currently off, to an online state, like wise, using ***Get-VM | Where-Object {$_.State -eq “Running”} | Stop-VM -Force*** will turn off any of our VMs that are currently online.

After creating this VM through PowerShell, we can delete it using ***Remove-VM VMTest1 -Force*** and then delete the disk that was created using ***del C:\VMs\VMTest1\VMTest1.vhdx***

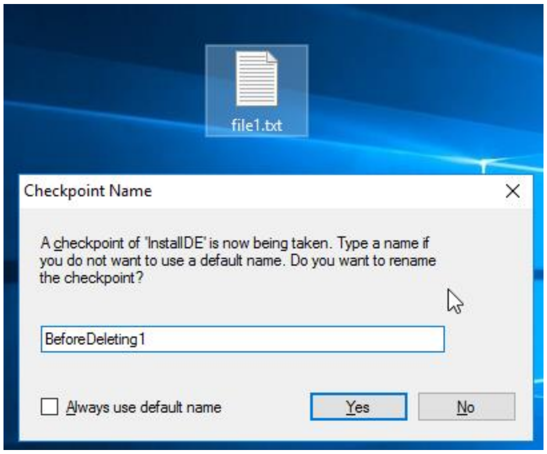


```
PS C:\Users\Administrator> Remove-VM VMTest1 -Force
PS C:\Users\Administrator> del C:\VMs\VMTest1\VMTest1.vhdx
PS C:\Users\Administrator>
```

Figure 5: Removing and Deleting the VM

Part 6-3: Working with Virtual Machines in Hyper-V Manager

In this part of the lab, we are asked to work with Checkpoints in Hyper-V, while I never received the option on what kind of checkpoint to make, this checkpoint should be made as a production checkpoint.



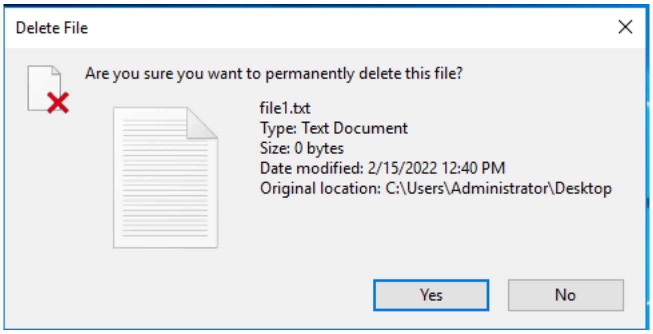
Checkpoint Name

A checkpoint of 'InstallDE' is now being taken. Type a name if you do not want to use a default name. Do you want to rename the checkpoint?

BeforeDeleting1

☐ Always use default name

Figure 6: Creating a test file



Delete File

Are you sure you want to permanently delete this file?

file1.txt
Type: Text Document
Size: 0 bytes
Date modified: 2/15/2022 12:40 PM
Original location: C:\Users\Administrator\Desktop

Figure 7: Deleting the test file

After deleting the file, revert the machine, when signing back in you should see that the machine will have its file that we deleted back.

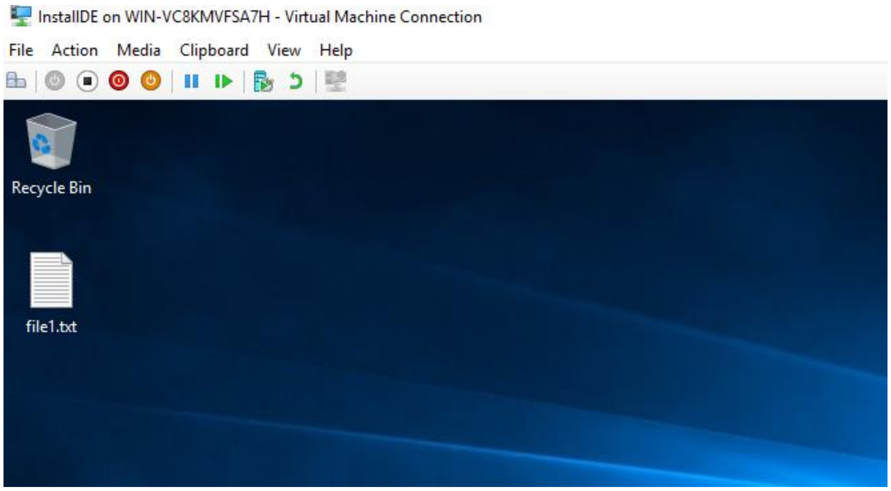
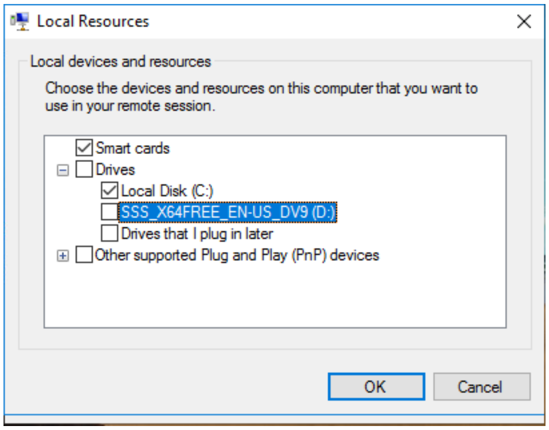


Figure 8: Having the file restored

Part 6-5: Enable Enhanced Session Mode

After enabling Enhanced session mode on Server-HyperV machine, and using the more options section to add my local C: drive from Server HyperV, I can see my drive on my InstallDE machine



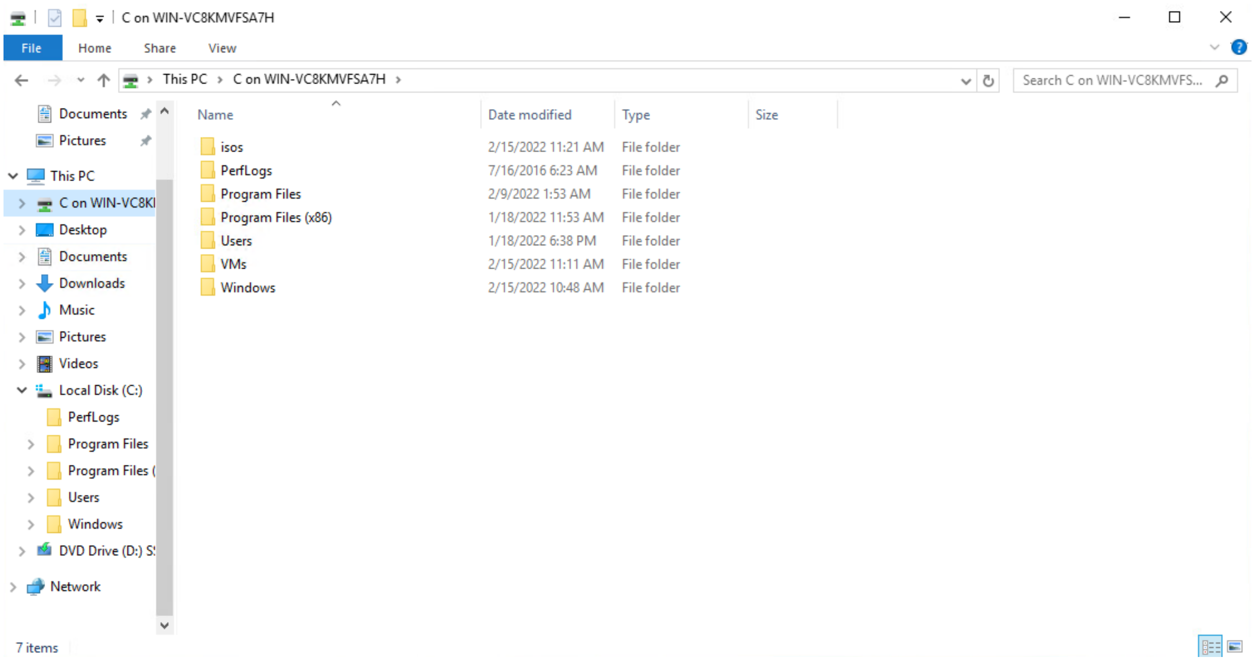
Local Resources

Local devices and resources

Choose the devices and resources on this computer that you want to use in your remote session.

- ☑ Smart cards
- ⊟ □ Drives
  - ☑ Local Disk (C:)
  - □ SSS_X64FREE_EN-US_DV9 (D:)
  - □ Drives that I plug in later
- ⊞ □ Other supported Plug and Play (PnP) devices

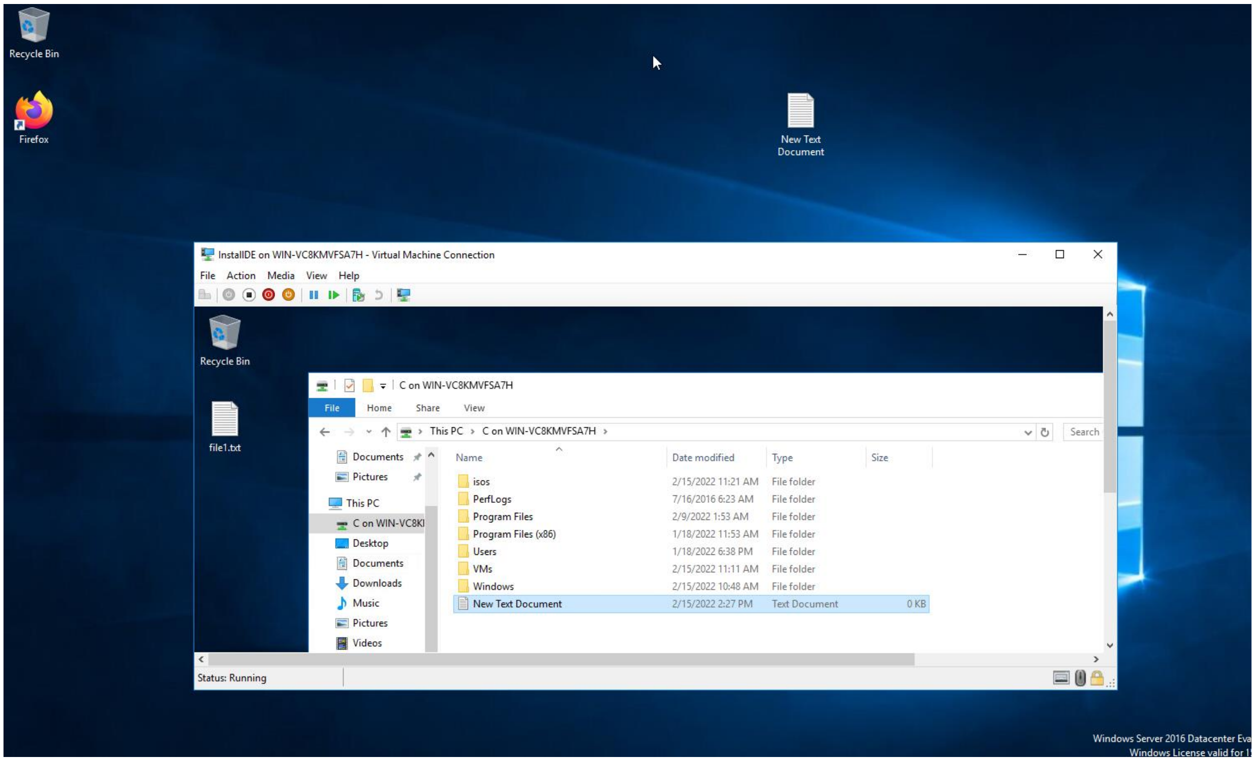
Figure 9: Adding my HyperV C: drive to the machine



Name	Date modified	Type	Size
isos	2/15/2022 11:21 AM	File folder	
PerfLogs	7/16/2016 6:23 AM	File folder	
Program Files	2/9/2022 1:53 AM	File folder	
Program Files (x86)	1/18/2022 11:53 AM	File folder	
Users	1/18/2022 6:38 PM	File folder	
VMs	2/15/2022 11:11 AM	File folder	
Windows	2/15/2022 10:48 AM	File folder	

Figure 10: Looking at my C: on a different Machine

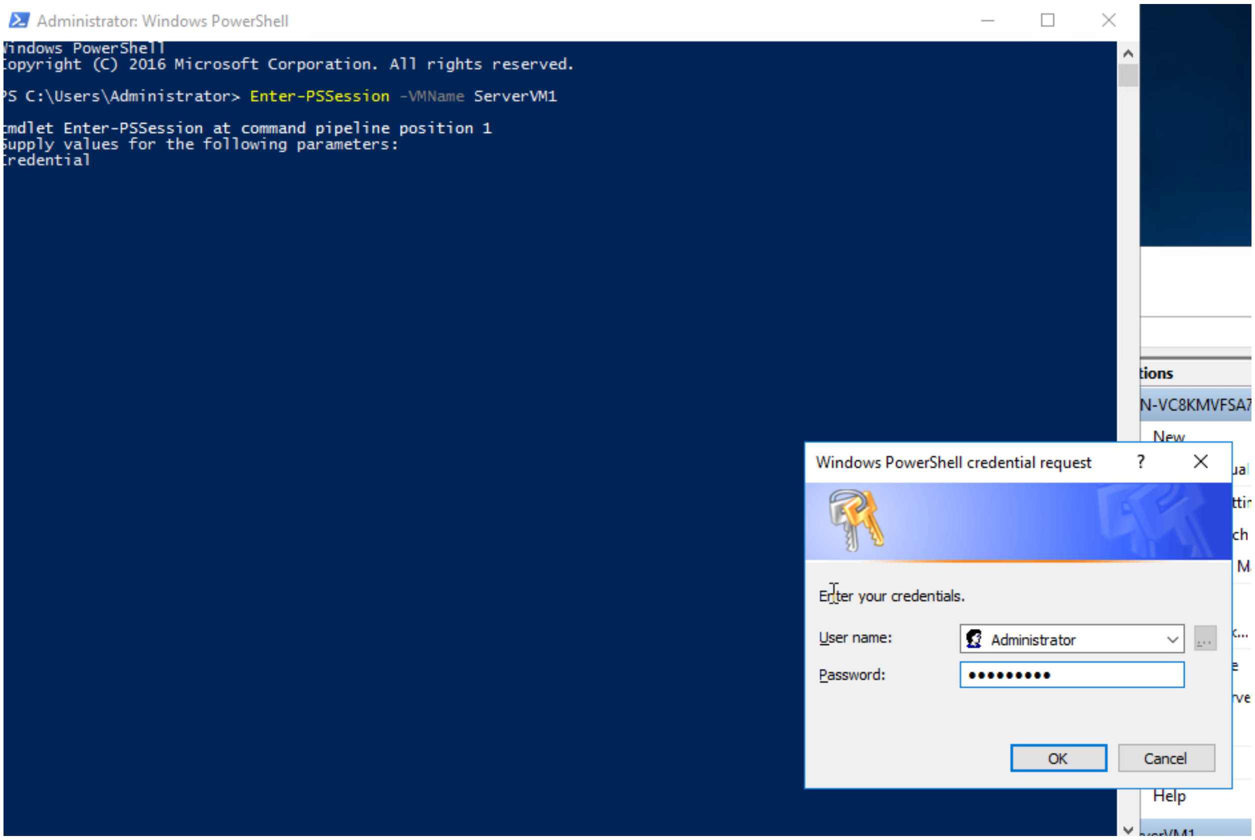
After making a new file on the Server HyperV machine, I can copy and paste it into my InstallDE machine



Name	Date modified	Type	Size
isos	2/15/2022 11:21 AM	File folder	
PerfLogs	7/16/2016 6:23 AM	File folder	
Program Files	2/9/2022 1:53 AM	File folder	
Program Files (x86)	1/18/2022 11:53 AM	File folder	
Users	1/18/2022 6:38 PM	File folder	
VMs	2/15/2022 11:11 AM	File folder	
Windows	2/15/2022 10:48 AM	File folder	
New Text Document	2/15/2022 2:27 PM	Text Document	0 KB

Figure 11: Copy/Pasting a file between machines

Part 6-6: Managing a VM with PowerShell Direct



Administrator: Windows PowerShell

```
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> Enter-PSSession -VMName ServerVM1

cmdlet Enter-PSSession at command pipeline position 1
Supply values for the following parameters:
Credential
```

Windows PowerShell credential request

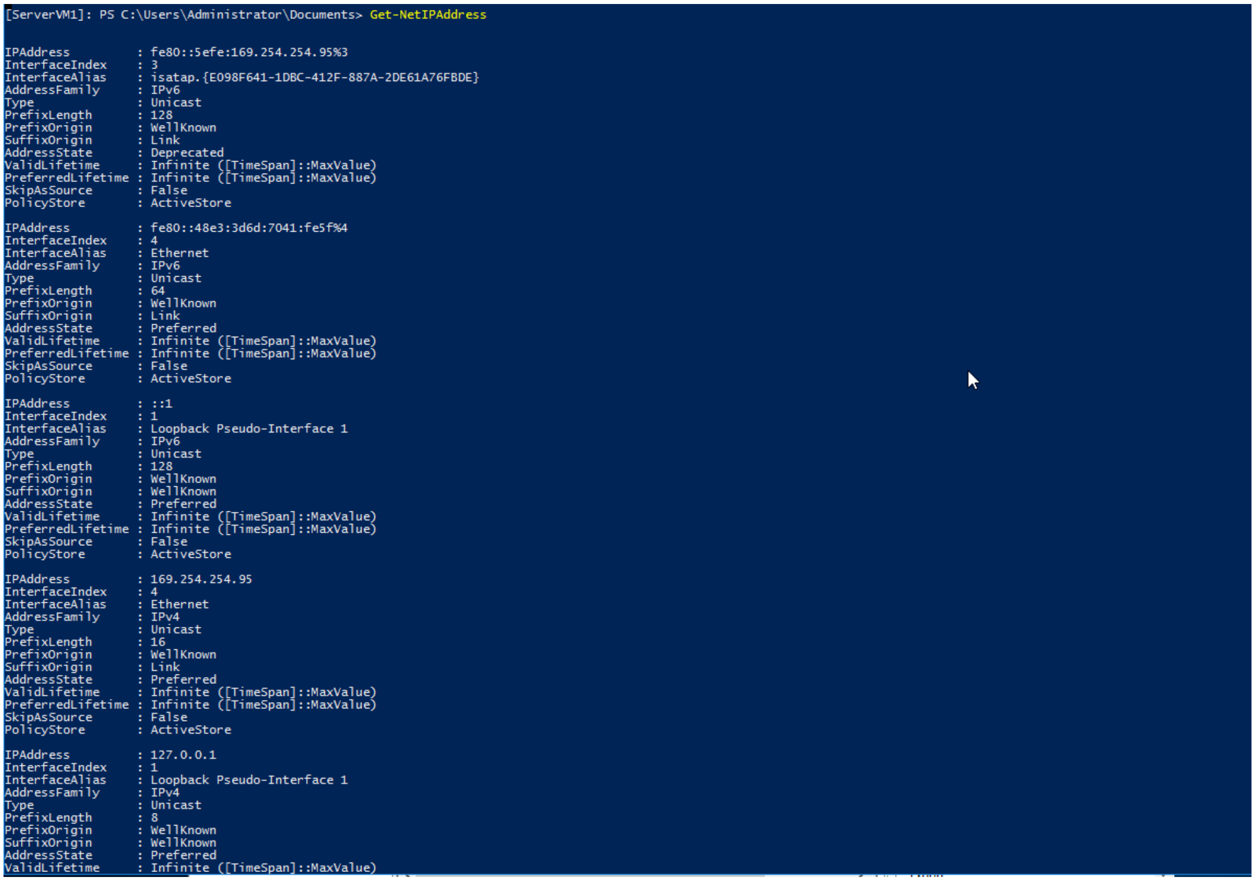
Enter your credentials.

User name: Administrator

Password: ●●●●●●●●●

Figure 12: Logging into the machine locally to view its drives

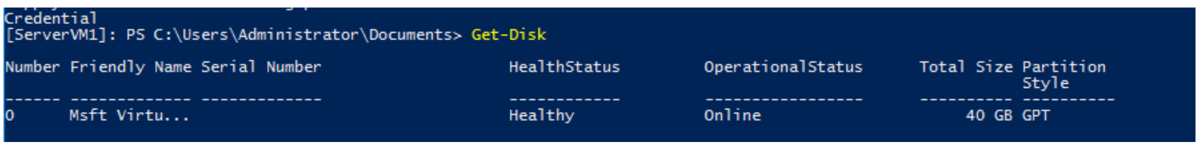
After signing into my machine remotely using the Administrator account and password, I can use some commands in PowerShell to control the device remotely.



```
[ServerVM1]: PS C:\Users\Administrator\Documents> Get-NetIPAddress


IPAddress         : fe80::5efe:169.254.254.95%3
InterfaceIndex    : 3
InterfaceAlias    : isatap.{E098F641-1DBC-412F-887A-2DE61A76FBDE}
AddressFamily     : IPv6
Type              : Unicast
PrefixLength      : 128
PrefixOrigin      : WellKnown
SuffixOrigin      : Link
AddressState      : Deprecated
ValidLifetime     : Infinite ([TimeSpan]::MaxValue)
PreferredLifetime : Infinite ([TimeSpan]::MaxValue)
SkipAsSource      : False
PolicyStore       : ActiveStore

IPAddress         : fe80::48e3:3d6d:7041:fe5f%4
InterfaceIndex    : 4
InterfaceAlias    : Ethernet
AddressFamily     : IPv6
Type              : Unicast
PrefixLength      : 64
PrefixOrigin      : WellKnown
SuffixOrigin      : Link
AddressState      : Preferred
ValidLifetime     : Infinite ([TimeSpan]::MaxValue)
PreferredLifetime : Infinite ([TimeSpan]::MaxValue)
SkipAsSource      : False
PolicyStore       : ActiveStore

IPAddress         : ::1
InterfaceIndex    : 1
InterfaceAlias    : Loopback Pseudo-Interface 1
AddressFamily     : IPv6
Type              : Unicast
PrefixLength      : 128
PrefixOrigin      : WellKnown
SuffixOrigin      : WellKnown
AddressState      : Preferred
ValidLifetime     : Infinite ([TimeSpan]::MaxValue)
PreferredLifetime : Infinite ([TimeSpan]::MaxValue)
SkipAsSource      : False
PolicyStore       : ActiveStore

IPAddress         : 169.254.254.95
InterfaceIndex    : 4
InterfaceAlias    : Ethernet
AddressFamily     : IPv4
Type              : Unicast
PrefixLength      : 16
PrefixOrigin      : WellKnown
SuffixOrigin      : Link
AddressState      : Preferred
ValidLifetime     : Infinite ([TimeSpan]::MaxValue)
PreferredLifetime : Infinite ([TimeSpan]::MaxValue)
SkipAsSource      : False
PolicyStore       : ActiveStore

IPAddress         : 127.0.0.1
InterfaceIndex    : 1
InterfaceAlias    : Loopback Pseudo-Interface 1
AddressFamily     : IPv4
Type              : Unicast
PrefixLength      : 8
PrefixOrigin      : WellKnown
SuffixOrigin      : WellKnown
AddressState      : Preferred
ValidLifetime     : Infinite ([TimeSpan]::MaxValue)
```

Figure 13: IP Address stats on the machine

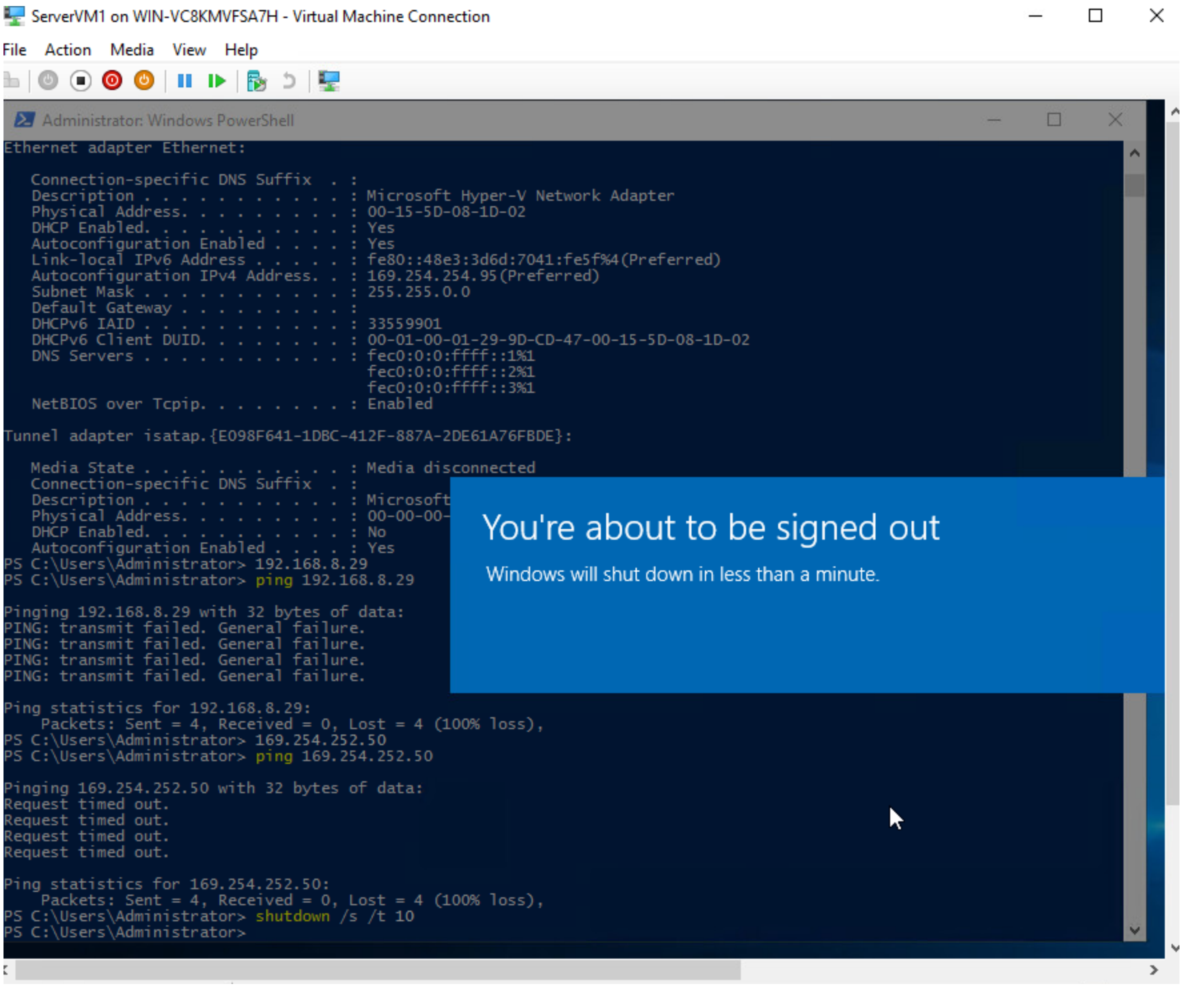
The Get-NetIPAddress command allows me to view information about the machines IP Address that are on the machine, in the same way you could by using ipconfig /all



```
Credential
[ServerVM1]: PS C:\Users\Administrator\Documents> Get-Disk

Number Friendly Name Serial Number                    HealthStatus         OperationalStatus      Total Size Partition
                                                                                                             Style
------ ------------- -------------                    ------------         -----------------      ---------- ----------
0      Msft Virtu...                                  Healthy              Online                      40 GB GPT
```

Figure 14: Checking the Disk of the connected ServerVM1

Get-Disk allows me to view what disks are on the machine and their operational status on the machine.



ServerVM1 on WIN-VC8KMVFSA7H - Virtual Machine Connection
File
Action
Media
View
Help
Administrator: Windows PowerShell

```
Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Hyper-V Network Adapter
   Physical Address. . . . . . . . . : 00-15-5D-08-1D-02
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::48e3:3d6d:7041:fe5f%4(Preferred)
   Autoconfiguration IPv4 Address. . : 169.254.254.95(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.0.0
   Default Gateway . . . . . . . . . :
   DHCPv6 IAID . . . . . . . . . . . : 33559901
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-29-9D-CD-47-00-15-5D-08-1D-02
   DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                       fec0:0:0:ffff::2%1
                                       fec0:0:0:ffff::3%1
   NetBIOS over Tcpip. . . . . . . . : Enabled

Tunnel adapter isatap.{E098F641-1DBC-412F-887A-2DE61A76FBDE}:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft
   Physical Address. . . . . . . . . : 00-00-00-
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
PS C:\Users\Administrator> 192.168.8.29
PS C:\Users\Administrator> ping 192.168.8.29

Pinging 192.168.8.29 with 32 bytes of data:
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.

Ping statistics for 192.168.8.29:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PS C:\Users\Administrator> 169.254.252.50
PS C:\Users\Administrator> ping 169.254.252.50

Pinging 169.254.252.50 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 169.254.252.50:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PS C:\Users\Administrator> shutdown /s /t 10
PS C:\Users\Administrator>
```

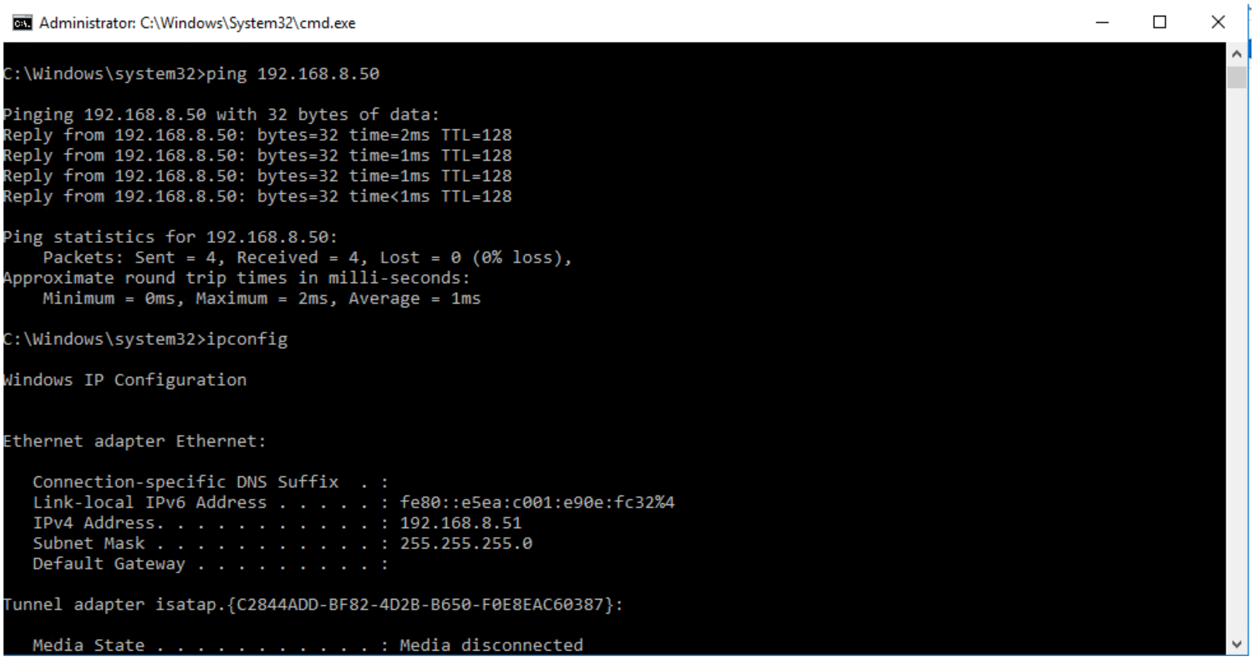
You're about to be signed out

Windows will shut down in less than a minute.

Figure 15: Shutting down the machine remotely

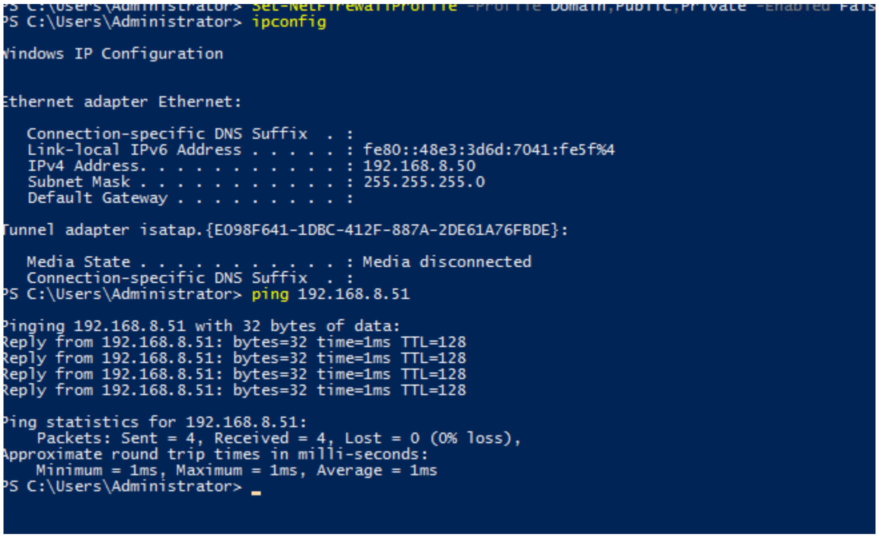
And shutdown, allows me to shutdown the machine via PowerShell remotely

Extra: Ping between 2 Hyper-V Machines



```
C:\Windows\system32>ping 192.168.8.50

Pinging 192.168.8.50 with 32 bytes of data:
Reply from 192.168.8.50: bytes=32 time=2ms TTL=128
Reply from 192.168.8.50: bytes=32 time=1ms TTL=128
Reply from 192.168.8.50: bytes=32 time=1ms TTL=128
Reply from 192.168.8.50: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.8.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\Windows\system32>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::e5ea:c001:e90e:fc32%4
   IPv4 Address. . . . . . . . . . . : 192.168.8.51
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Tunnel adapter isatap.{C2844ADD-BF82-4D2B-B650-F0E8EAC60387}:

   Media State . . . . . . . . . . . : Media disconnected
```

Figure 16: InstallDE to ServerVM1



```
PS C:\Users\Administrator> Set-NetFirewallProfile -Profile Domain,Public,Private -Enabled Fals
PS C:\Users\Administrator> ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::48e3:3d6d:7041:fe5f%4
   IPv4 Address. . . . . . . . . . . : 192.168.8.50
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Tunnel adapter isatap.{E098F641-1DBC-412F-887A-2DE61A76FBDE}:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
PS C:\Users\Administrator> ping 192.168.8.51

Pinging 192.168.8.51 with 32 bytes of data:
Reply from 192.168.8.51: bytes=32 time=1ms TTL=128
Reply from 192.168.8.51: bytes=32 time=1ms TTL=128
Reply from 192.168.8.51: bytes=32 time=1ms TTL=128
Reply from 192.168.8.51: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.8.51:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
PS C:\Users\Administrator> _
```

Figure 17: Ping from SeverVM1 to InstallDE

Summary

Using the PowerShell was quite easy to navigate around in; however, I notice with windows things just seem to be really annoying to get to work sometimes. I ran into plenty of issues regarding getting things such as the machine to ping, among other various issues.