



TIMOTHY GRUBER'S BLOG

IT SYSTEMS ENGINEERING

[HOME](#) [BACKUP](#) [HYPER-V](#) [LINUX](#) [SCRIPTS](#) [OFFICE 365](#) [PKI](#) [PROJECTS](#) [WEB](#)[WINDOWS](#) [WINDOWS SERVER 2016](#)

REMOTELY MANAGING HYPER-V SERVER IN A WORKGROUP OR NON-DOMAIN

🕒 31 JULY, 2018

In this post, my goal is to provide the steps one must take in a typical non-domain environment to set up Hyper-V Server 2016 and remotely manage it via Hyper-V Manager from a Windows 10 PC. I will split this post into three sections; what to do on the Hyper-V Server host, the Windows 10 PC, and some troubleshooting steps.

When you aren't using Hyper-V Server in a domain in which you have group policies in place to take care of the automatic configuration of systems for seamless remote manageability, there are quite a few steps one must take on both the Hyper-V Server host and the Windows 10 PC from which you are trying to manage the host.

Most of the information out there regarding managing Hyper-V remotely in a workgroup or non-domain environment results in one of these two outcomes: not enough information, therefore leaving you still unable to connect properly to your Hyper-V host, or too much information, leaving your systems vulnerable and insecure, possibly still unable to connect to the Hyper-V host.

Table of Contents [\[show\]](#)

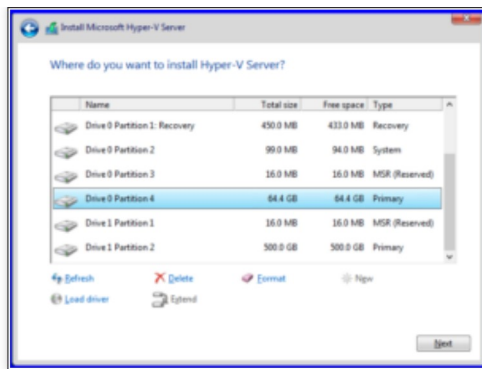
Hyper-V Server 2016 Host

- | | | |
|-----------------------------|----------------------------|----------------------------------|
| 1 SMALL BUSINESS SOFTWARE ▶ | 3 DOWNLOADS FOR WINDOWS ▶ | 5 FREE REGISTRATION FORMS ▶ |
| 2 BIG DATA ANALYTIC TOOLS ▶ | 4 FREE BUSINESS SOFTWARE ▶ | 6 SURVEY QUESTIONNAIRE EXAMPLE ▶ |

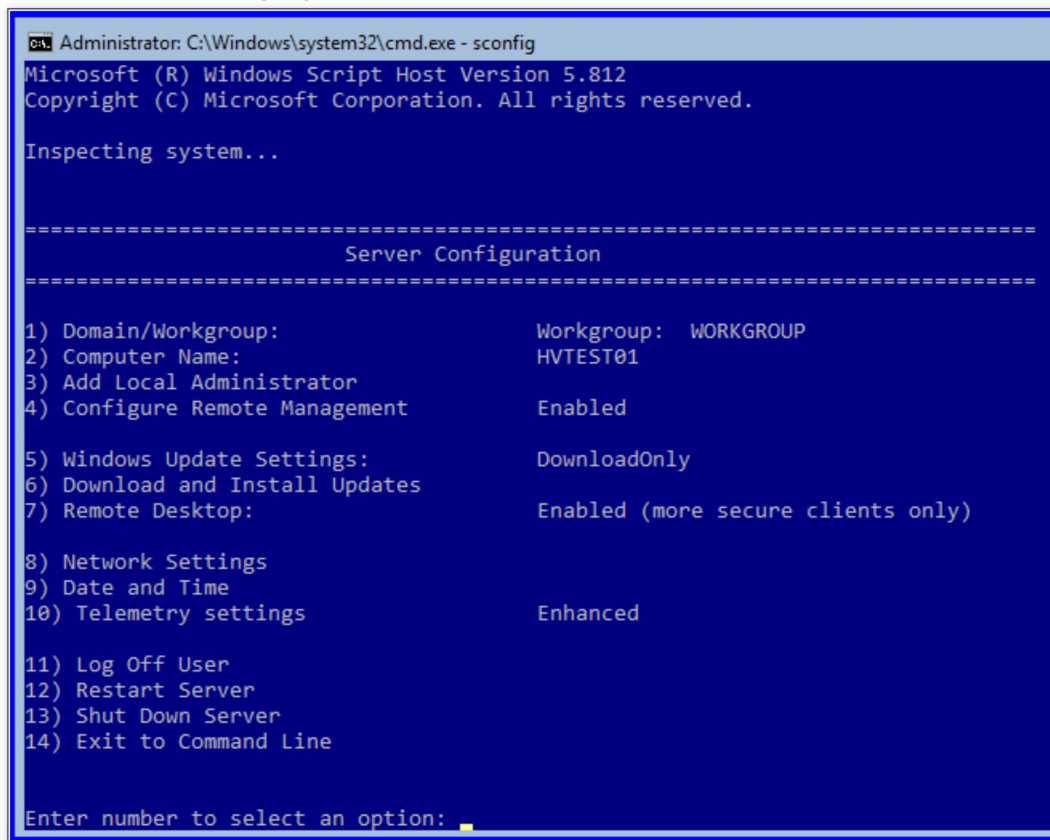
All steps in this section are to be done on your Hyper-V Server 2016 host server. I am starting from a fresh install of Hyper-V Server 2016 that is fully patched and up-to-date as of the end of July 2018.

1. Install Hyper-V Server 2016

A. Go through the typical install dance:

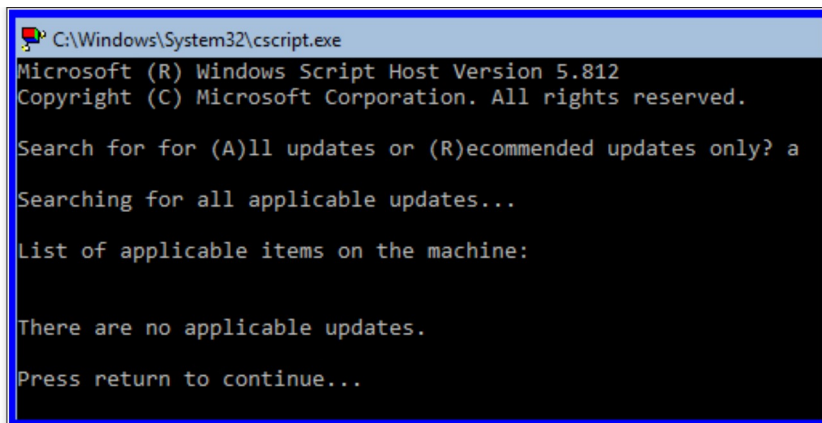


- B. **Set a password** at first boot.
- C. Change the **computer name** in sconfig (**option 2**).
- D. Verify **Remote Management** is Enabled (**option 4**).
- E. Enable **Remote Desktop** (**option 7**).



2. **Run Windows Update** and make sure your server is **100% up-to-date**. (**option 6**, then **(A)**ll updates)

- A. This is the most **important** step, because depending on which patch level Hyper-V Server 2016 is on, versus the patch level of your Windows 10 PC, you **WILL** get errors and will not be able to remotely connect via Hyper-V Manager.



```
C:\Windows\System32\cscript.exe
Microsoft (R) Windows Script Host Version 5.812
Copyright (C) Microsoft Corporation. All rights reserved.

Search for for (A)ll updates or (R)ecommended updates only? a
Searching for all applicable updates...

List of applicable items on the machine:

There are no applicable updates.

Press return to continue...
```

3. Enable PSRemoting:

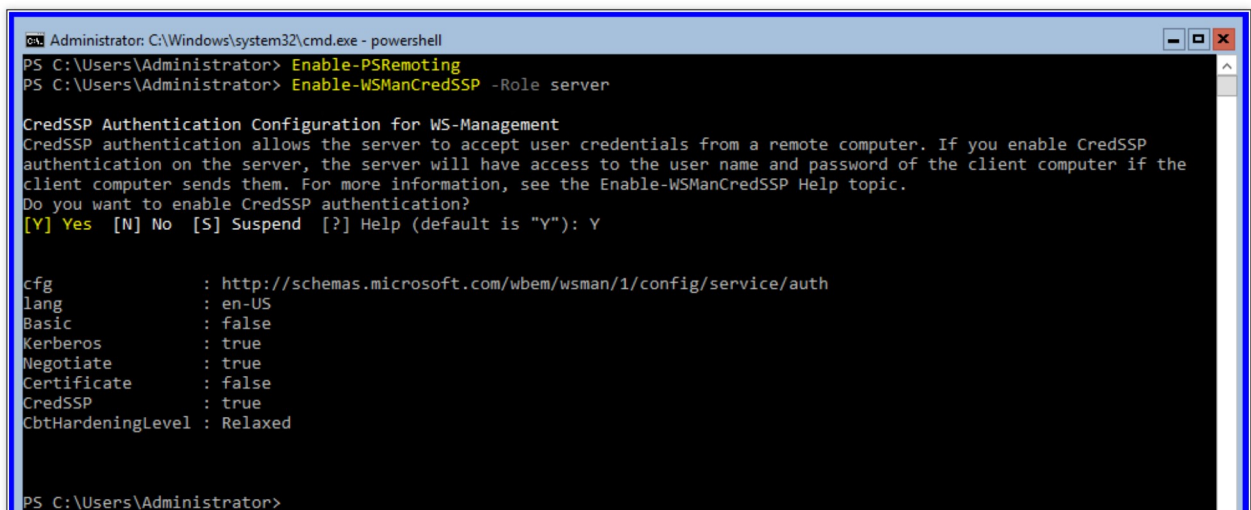
A. Enter the following command in an elevated PowerShell window:

```
Enable-PSRemoting
```

4. Allow remote access on public zones and enable firewall rules for CredSSP and WinRM:

A. Enter the following command in an elevated PowerShell window, then enter **Y** when prompted:

```
Enable-WSManCredSSP -Role server
```



```
Administrator: C:\Windows\system32\cmd.exe - powershell
PS C:\Users\Administrator> Enable-PSRemoting
PS C:\Users\Administrator> Enable-WSManCredSSP -Role server

CredSSP Authentication Configuration for WS-Management
CredSSP authentication allows the server to accept user credentials from a remote computer. If you enable CredSSP
authentication on the server, the server will have access to the user name and password of the client computer if the
client computer sends them. For more information, see the Enable-WSManCredSSP Help topic.
Do you want to enable CredSSP authentication?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

cfg           : http://schemas.microsoft.com/wbem/wsmman/1/config/service/auth
lang          : en-US
Basic         : false
Kerberos      : true
Negotiate     : true
Certificate   : false
CredSSP       : true
CbtHardeningLevel : Relaxed

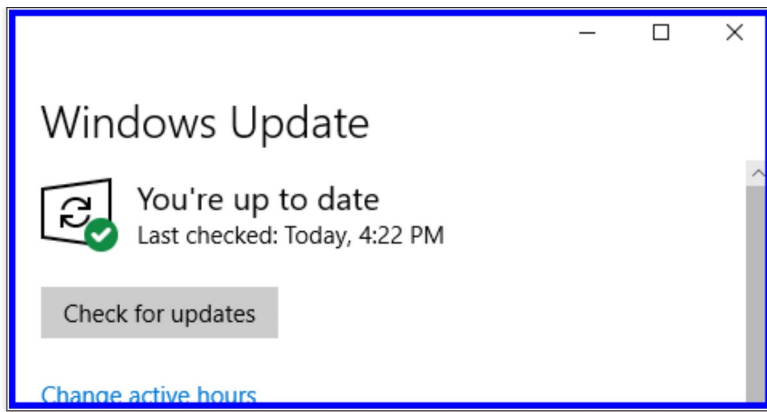
PS C:\Users\Administrator>
```

Windows 10 PC

All steps in this section are to be done on your Windows 10 PC. I used a fresh installed of Windows 10 Pro 1803 fully patched and up to date as of the end of July 2018. I know, scary! (but working)

1. Run Windows Update:

A. This is very important, and depending on which patch level your Windows 10 PC and Hyper-V Server 2016 host is on, you WILL get errors and will not be able to remotely manage your Hyper-V host:



2. Install the Hyper-V Management Tools:

- Open up an **elevated PowerShell** window (Run as Administrator)
- Enter the following command, which installs the Hyper-V Management tools, then enter **Y** to reboot:

```
Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V-Tools-All -All
```

```
FeatureName      : Microsoft-Hyper-V-Tools-All
DisplayName       : Hyper-V Management Tools
Description       : Includes GUI and command-line tools for managing Hyper-V.
RestartRequired  : Possible
State            : Disabled
CustomProperties  :
```

3. Set the network connection category to private:

- Enter the following command in an elevated PowerShell window:

```
Set-NetConnectionProfile -InterfaceAlias Ethernet -NetworkCategory Private
```

- You may need to change "Ethernet" (InterfaceAlias) to match the name of your network connection(s).
- You can use `Get-NetConnectionProfile` to list your connections and their categories.

4. Add the Hyper-V Server 2016 host to the local "hosts" file:

- Enter the following command, which appends the host name of the Hyper-V host and its IP address to the local hosts file:

```
Add-Content -Path C:\Windows\System32\drivers\etc\hosts -Value "`n172.30.32.151`thVTEST01"
```

- The ``n` is new line
- The ``t` is horizontal tab character
- Replace **HVTEST01** and **172.30.32.151** with the host name and IP address of your Hyper-V Server host.

5. Configure Remote Management Service:

- Enter the following in an elevated PowerShell window, and enter **Y** when prompted:

```
winrm quickconfig
```

```

Administrator: Windows PowerShell
PS C:\Windows\system32> winrm quickconfig
WinRM is not set up to receive requests on this machine.
The following changes must be made:

Start the WinRM service.
Set the WinRM service type to delayed auto start.

Make these changes [y/n]? y

WinRM has been updated to receive requests.

WinRM service type changed successfully.
WinRM service started.
WinRM is not set up to allow remote access to this machine for management.
The following changes must be made:

Enable the WinRM firewall exception.
Configure LocalAccountTokenFilterPolicy to grant administrative rights remotely to local users.

Make these changes [y/n]? y

WinRM has been updated for remote management.

WinRM firewall exception enabled.
Configured LocalAccountTokenFilterPolicy to grant administrative rights remotely to local users.
PS C:\Windows\system32>

```

6. Add the Hyper-V Server 2016 host to the trusted hosts of the Win10 PC:

- A. Enter the following command in an elevated PowerShell window, and enter **Y** when prompted:

```
Set-Item WSMan:\localhost\Client\TrustedHosts -Value "HVTEST01"
```

```

Administrator: Windows PowerShell
PS C:\Windows\system32> Set-Item WSMan:\localhost\Client\TrustedHosts -Value "HVTEST01"

WinRM Security Configuration.
This command modifies the TrustedHosts list for the WinRM client. The computers in the TrustedHosts list might not be
authenticated. The client might send credential information to these computers. Are you sure that you want to modify
this list?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y
PS C:\Windows\system32>

```

7. Allow the Win10 PC credentials to be delegated to the Hyper-V Server 2016 host:

- A. Enter the following command in an elevated PowerShell window, enter **Y** when prompted:

```
Enable-WSManCredSSP -Role client -DelegateComputer "HVTEST01"
```

```

PS C:\Windows\system32> Enable-WSManCredSSP -Role client -DelegateComputer "HVTEST01"

CredSSP Authentication Configuration for WS-Management
CredSSP authentication allows the user credentials on this computer to be sent to a remote computer. If you use CredSSP
authentication for a connection to a malicious or compromised computer, that computer will have access to your user
name and password. For more information, see the Enable-WSManCredSSP Help topic.
Do you want to enable CredSSP authentication?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

cfg      : http://schemas.microsoft.com/wbem/wsmman/1/config/client/auth
lang     : en-US
Basic    : true
Digest   : true
Kerberos : true
Negotiate : true
Certificate : true
CredSSP   : true

PS C:\Windows\system32>

```

8. Allow delegating fresh credentials with NTLM-only server authentication:

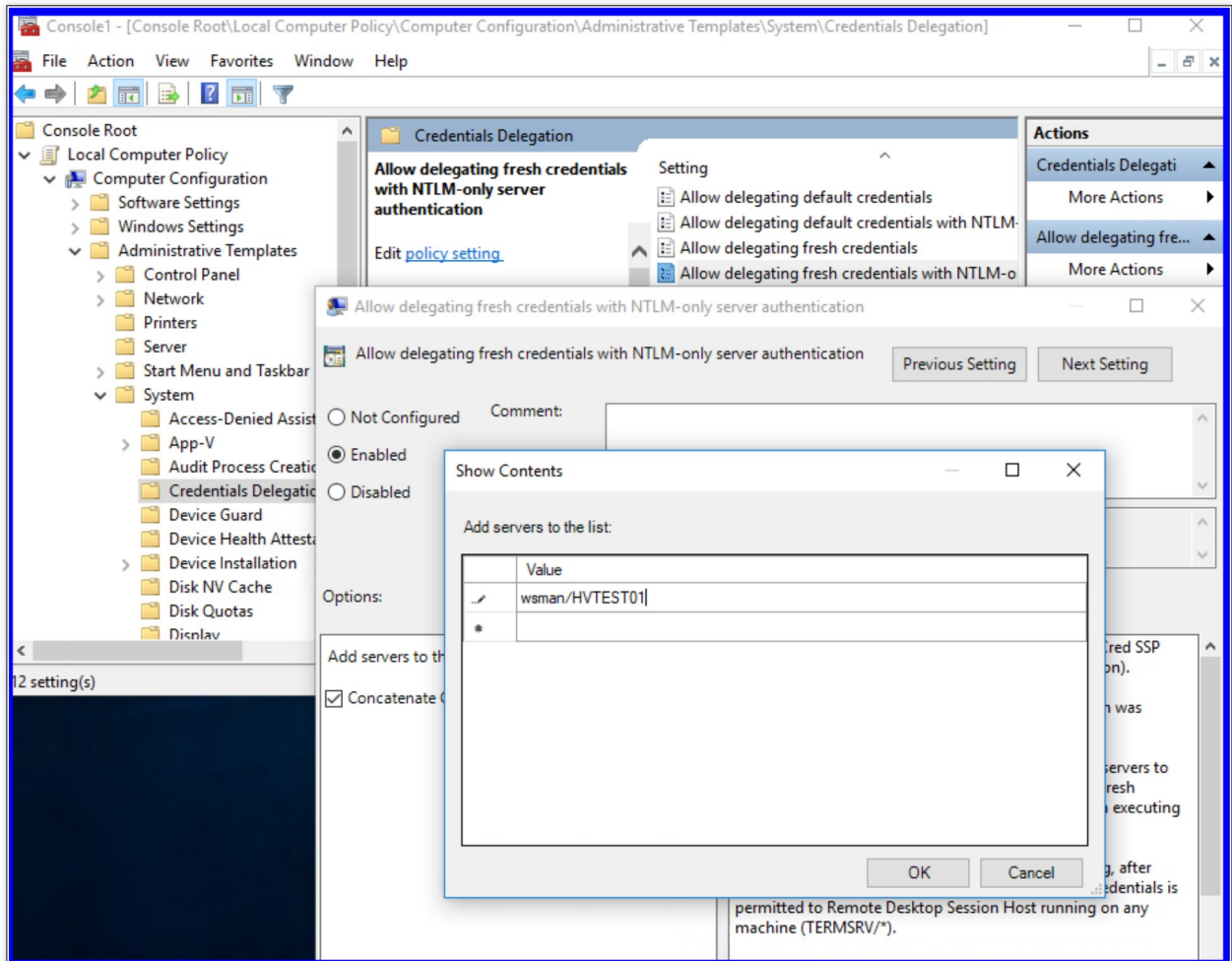
- A. Enter the following commands in an elevated PowerShell window:

```

1 New-Item -Path "HKLM:\SOFTWARE\Policies\Microsoft\Windows\" -Name 'Credenti
2 New-ItemProperty -Path "HKLM:\SOFTWARE\Policies\Microsoft\Windows\Credentia
3 New-ItemProperty -Path "HKLM:\SOFTWARE\Policies\Microsoft\Windows\Credentia
4

```

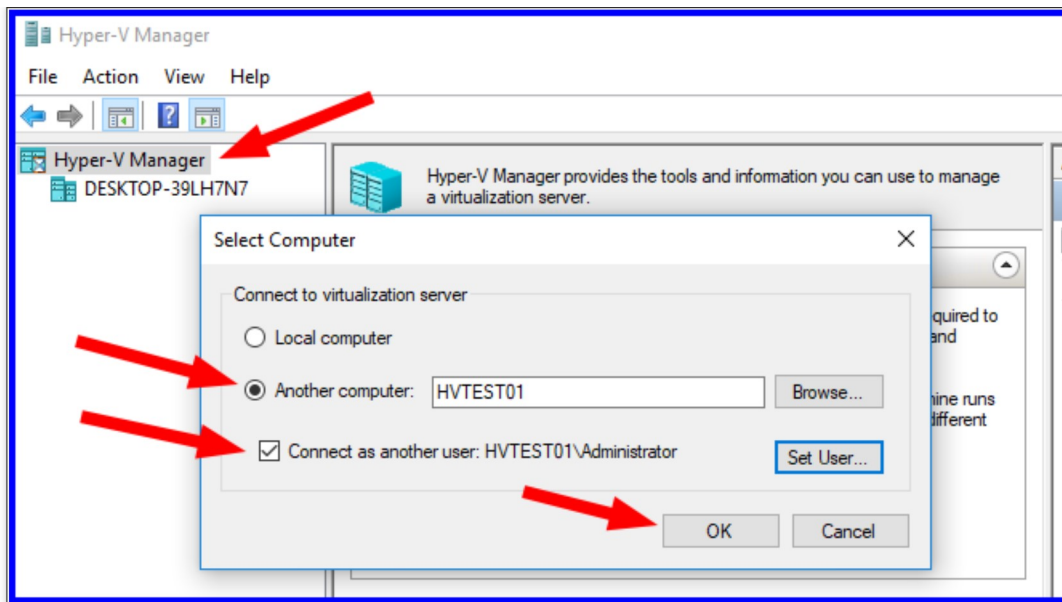
B. Or, configure the following local group policy (does the same as above):



i. Change **“HVTEST01”** to match the name of your Hyper-V host in either of the above steps.

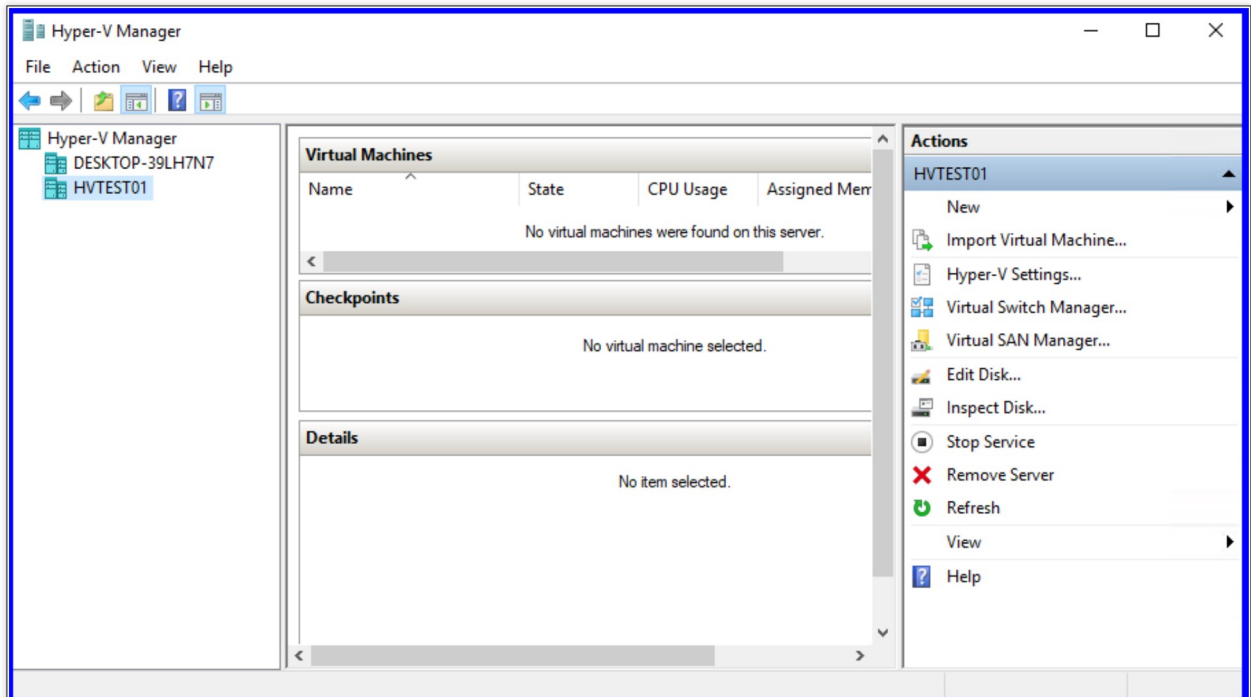
9. Open up Hyper-V Manager:

- Right-Click on “Hyper-V Manager”, and select “Connect to server...”.
- Select “Another computer” and type the name of your Hyper-V Server 2016 host.
- Check “Connect as another user”, then use the local admin account of the Hyper-V Host. Check “Remember me”.
Use **HOSTNAME\Administrator**



10. Success!

A. It should now connect successfully, allowing you to manage your Hyper-V Server 2016 host, set-up, and configure VMs:



Troubleshooting

The operation is not supported

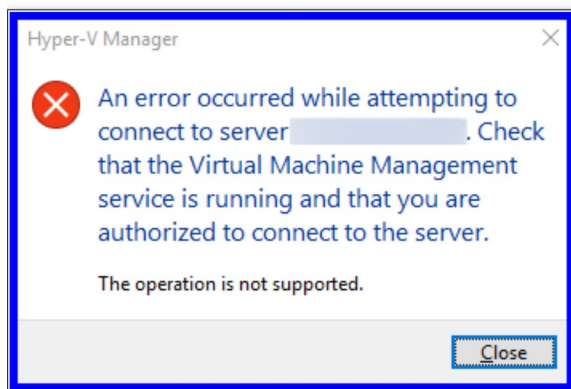
You get an error when trying to connect to the Hyper-V host (pictured below):

“

"An error occurred while attempting to connect to server <serverName>. Check that the Virtual Machine Management service is running and that you are authorized to connect to the server."

”

The operation is not supported."



The Fix

The most likely resolution to this issue is to make sure all systems involved are up to date. This error may be related to this error:

https://timothygruber.com/hyper-v-2/remotely-managing-hyper-v-server-in-a-workgroup-or-non-domain/#An_authentication_error_has_occurred_CredSSP_encryption8230

An error occurred while attempting to connect; WinRM, TrustedHosts, operation failed...

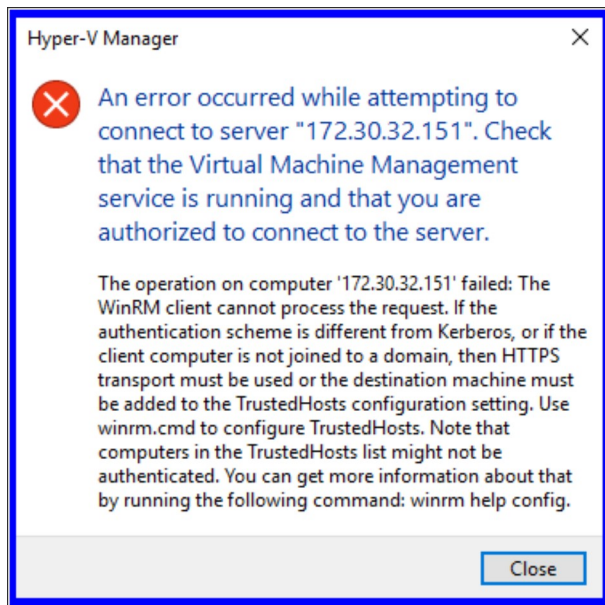
If you see the following error (pictured below):

“

“An error occurred while attempting to connect to server "<serverName>". Check that the Virtual Machine Management service is running and that you are authorized to connect to the server.

The operation on computer '<serverName>' failed: The WinRM client cannot process the request. If the authentication scheme is different from Kerberos, or if the client computer is not joined to a domain, then HTTPS transport must be used or the destination machine must be added to the TrustedHosts configuration setting. Use winrm.cmd to configure TrustedHosts. Note that computers in the TrustedHosts list might not be authenticated. You can get more information about that by running the following command: winrm help config.”

”



It means you are unable to connect to the Hyper-V Server 2016 host, and the most likely causes are that the remote server is not in the TrustedHosts and WinRM isn't configured properly (obviously, there's more to it than that). Hyper-V Server 2016 has the "Virtual Machine Management" service running by default, so we know it's not that, but you can verify this by running the following command on your Hyper-V host:

```
Get-Service vmms
```

The Fix

The best way to resolve this error is to verify all the above steps have been completed.

An authentication error has occurred. CredSSP encryption...

If you see the following error (pictured below):

“

“An authentication error has occurred.

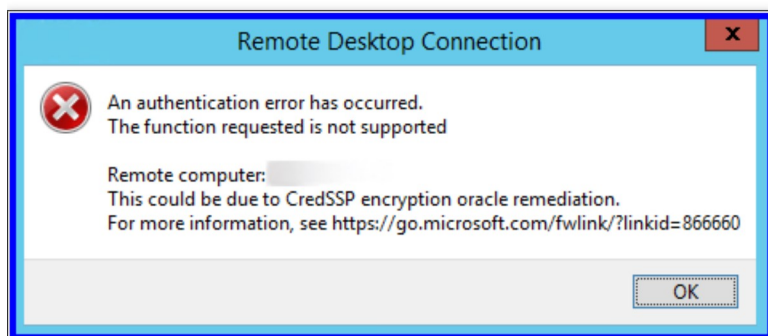
The function requested is not supported

Remote computer: <computerName>

This could be due to CredSSP encryption oracle remediation.

For more information, see <https://go.microsoft.com/fwlink/?linkid=866660>“

”



This error is most likely being produced due to a recent update in March 2018 to either your Hyper-V Server host or the PC in which you are trying to connect from.

The fix

To fix this error, you must make sure all systems involved are updated. This means your Hyper-V host, the VM you're trying to access, and the PC you are trying to connect from.

Click the link below for more information from Microsoft:

<https://portal.msrc.microsoft.com/en-us/security-guidance/advisory/CVE-2018-0886>

References

Remotely Manage Hyper-V Hosts *via Microsoft Docs:*

<https://docs.microsoft.com/en-us/windows-server/virtualization/hyper-v/manage/remotely-manage-hyper-v-hosts#manage-hyper-v-hosts-remotely>

🔖 HYPER-V, REMOTE MANAGEMENT, WINDOWS 10, WORKGROUP. 📖 BOOKMARK.

◀ Getting Started Programming

Win10 crAPP Remover PowerShell Script GUI ▶

5 COMMENTS

DASHRENDER

11 December, 2018 at 09:57

I haven't tried this yet – but does this also open all required things to manage the disk and other parts of the Hyper-V server?

↩ REPLY

TIMOTHY GRUBER

11 December, 2018 at 10:30

No, this is specific to managing Hyper-V only. Other things such as disk management require firewall and service changes.

↩ REPLY

RAUL

8 November, 2018 at 03:09

many thanks!!!! Worked perfectly 😊

↩ REPLY

GUSTAVO VERDUZCO

7 November, 2018 at 12:47

I am not able to follow step 3 because I am in a domain network that does not allow for the network type to be changed from Domain to Private. Is there any workaround for this? Step 6 fails for me with “Set-Item : The client cannot connect to the destination specified in the request. Verify that the service on the destination is running and is accepting requests. Consult the logs and documentation for the WS-Management service running on the destination, most commonly IIS or WinRM. If the destination is the WinRM service, run the following command on the destination to analyze and configure the WinRM service: “winrm quickconfig”” and I don’t know if it is related to this. WinRM is running on the remote server.

↩ REPLY

EDDIE JENNINGS

19 October, 2018 at 20:30

Worked beautifully! Thanks for the guide.

↩ REPLY

LEAVE A REPLY

Your email address will not be published. Required fields are marked *

Comment

Name

Email

Website

☐ Save my name, email, and site URL in my browser for next time I post a comment.

Post Comment

RECENT POSTS

Win10 crAPP Remover PowerShell Script GUI

Remotely Managing Hyper-V Server in a Workgroup or non-domain

Getting Started Programming

Samba File Server with Microsoft AD

Windows Admin Center



ARCHIVES

December 2018 (1)

July 2018 (1)

April 2018 (3)

February 2018 (2)

December 2017 (1)

November 2017 (2)

October 2017 (1)

August 2017 (3)

April 2017 (3)

February 2017 (1)

January 2017 (6)

December 2016 (2)

TAGS

Active Directory **ADCS** Backup Bootable USB **Certificates** Failover Cluster **Fedora** **Fedora 26** Fedora 27 Ginger GitLab
Hyper-V Install Integration Services KEY Kimchi-project KVM LAMP Licensing **Linux** Nested Nested VM News NGINX Office 365 PEM PFX **PKI**
Projects QEMU salt SaltStack Security **Server** Server Hardening Software Assurance SSL systems management **Virtualization** Virtualization Extensions Windows
Windows 10 Windows Server 2016 Windows XP **WOK**

© Copyright 2015-2018 TimothyGruber.com

Powered by Nirvana & WordPress.