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.

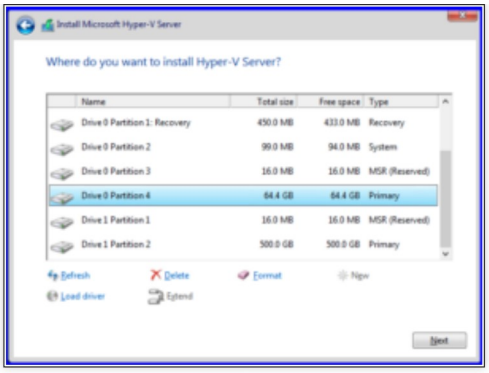
Table of Contents [show]

Hyper-V Server 2016 Host

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:

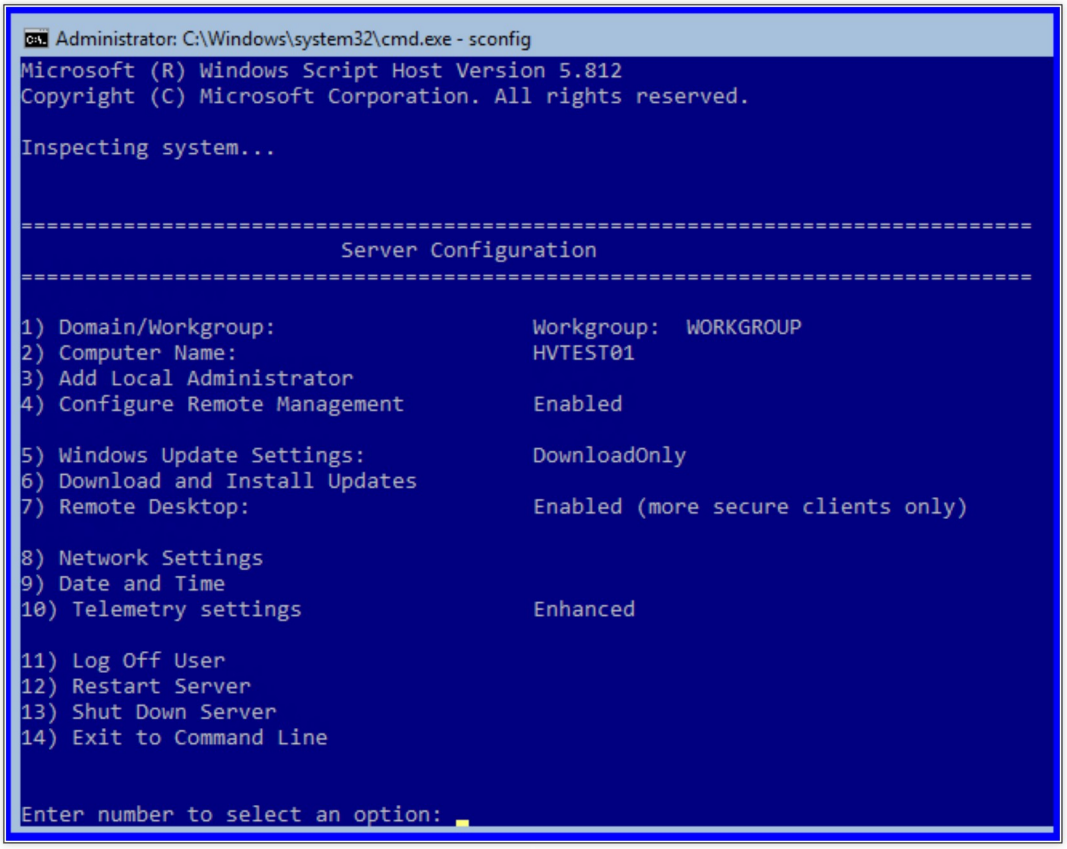


B. **Set a password** at first boot.

C. Change the **computer name** in sconfig (**option 2**).

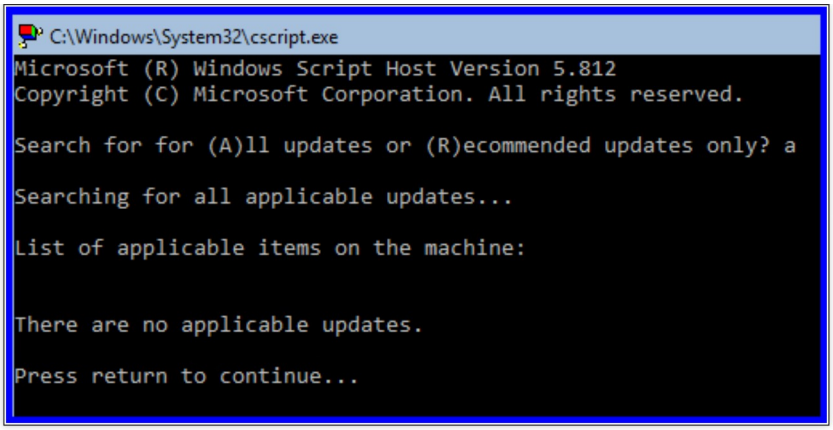
D. Verify **Remote Management** is Enabled (**option 4**).

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.



3. **Enable PSRemoting:**

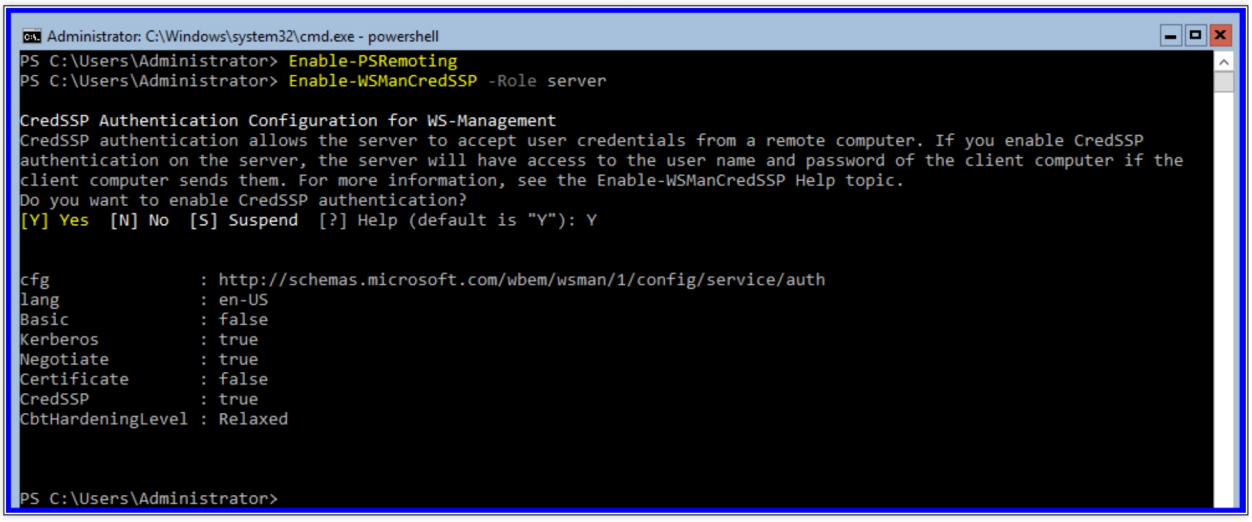
   A. Enter the following command in an elevated PowerShell window:

   ```
   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
   ```

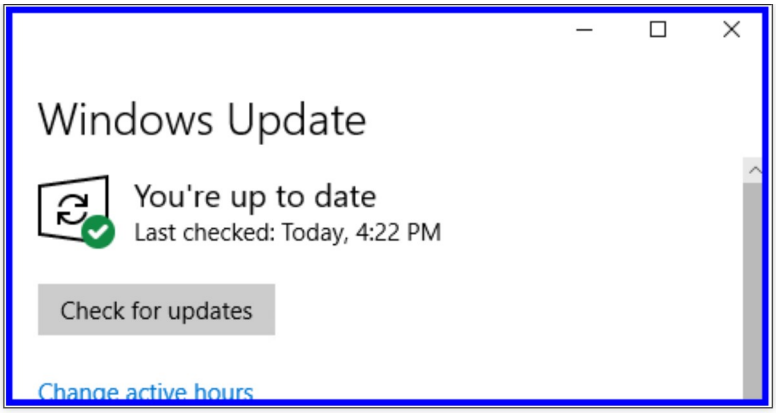


Windows 10 PC

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:

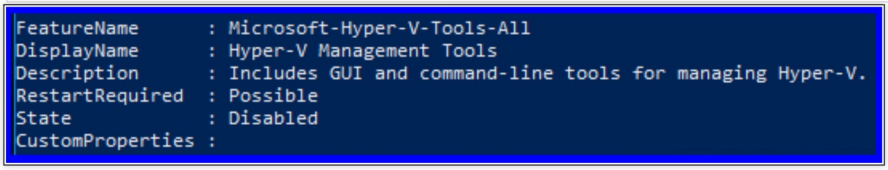


2. **Install the Hyper-V Management Tools:**

   A. Open up an **elevated PowerShell** window (Run as Administrator)

   B. 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
```



3. **Set the network connection category to private:**

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

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

      i. You may need to change “Ethernet” (InterfaceAlias) to match the name of your network connection(s).

      ii. 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:**

   A. Enter the following command, which appends the host name of the Hyper-V host and it’s IP address to the local hosts file:

```
Add-Content -Path C:\Windows\System32\drivers\etc\hosts -Value "`n172.30.32.151`tHVTEST01"
```

      i. The `n is new line

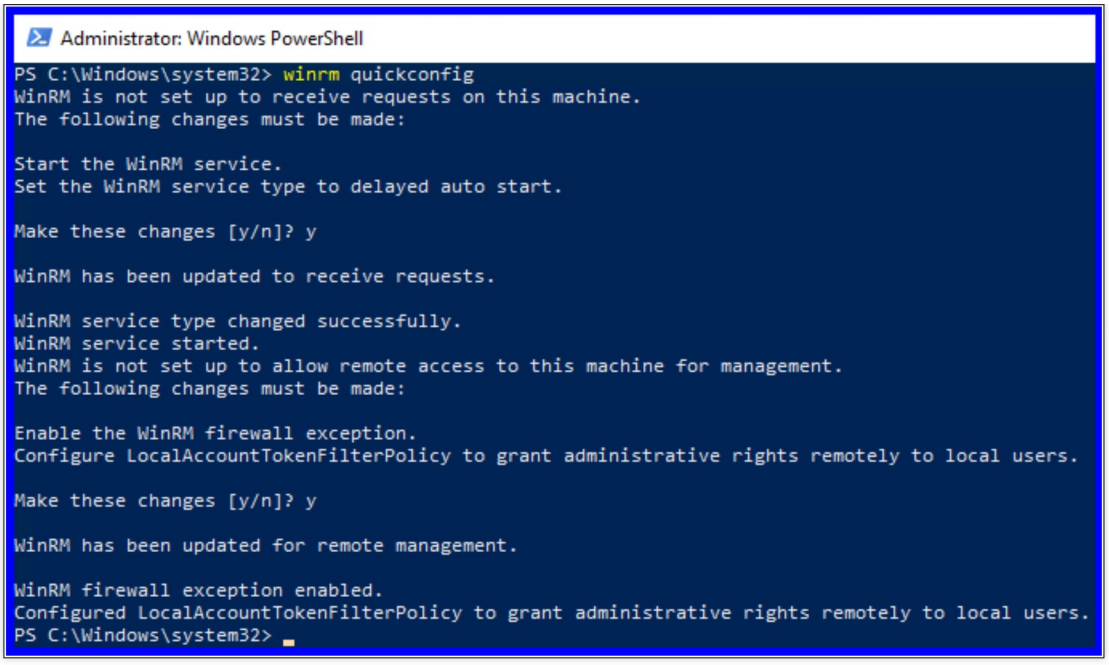
      ii. The `t is horizontal tab character

      iii. 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:**

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

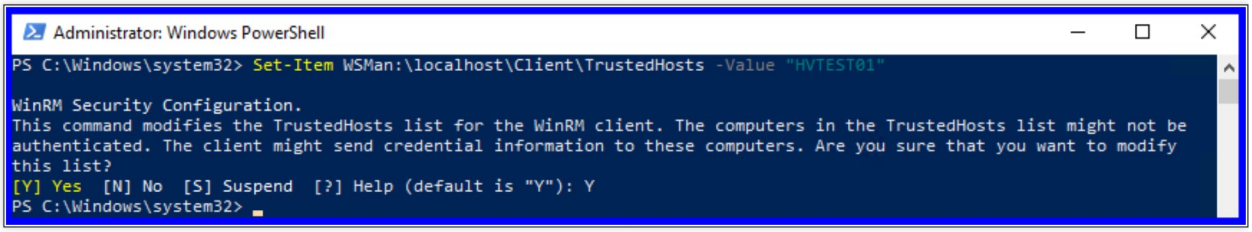
```
winrm quickconfig
```



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:

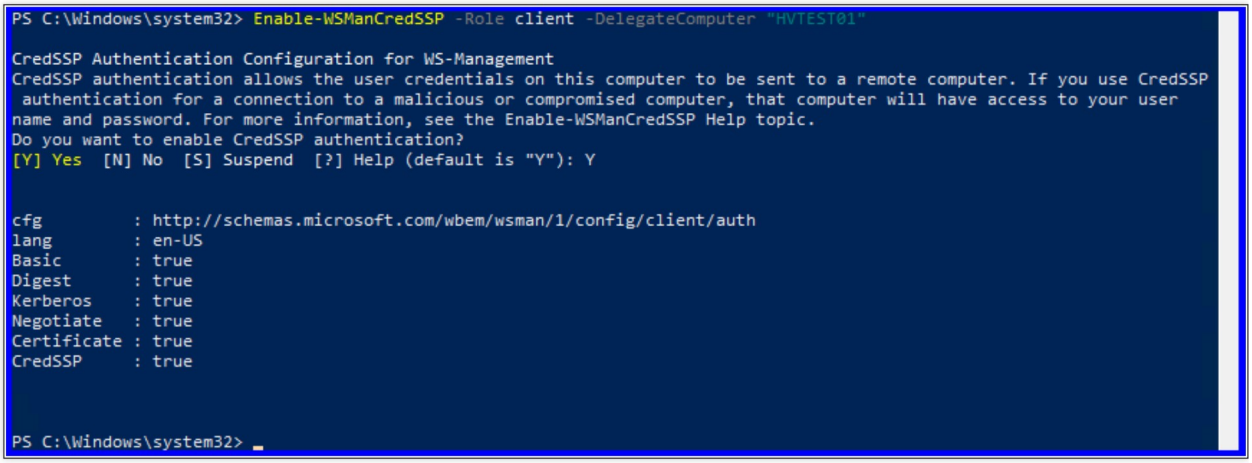
```
Set-Item WSMan:\localhost\Client\TrustedHosts -Value "HVTEST01"
```



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"
```

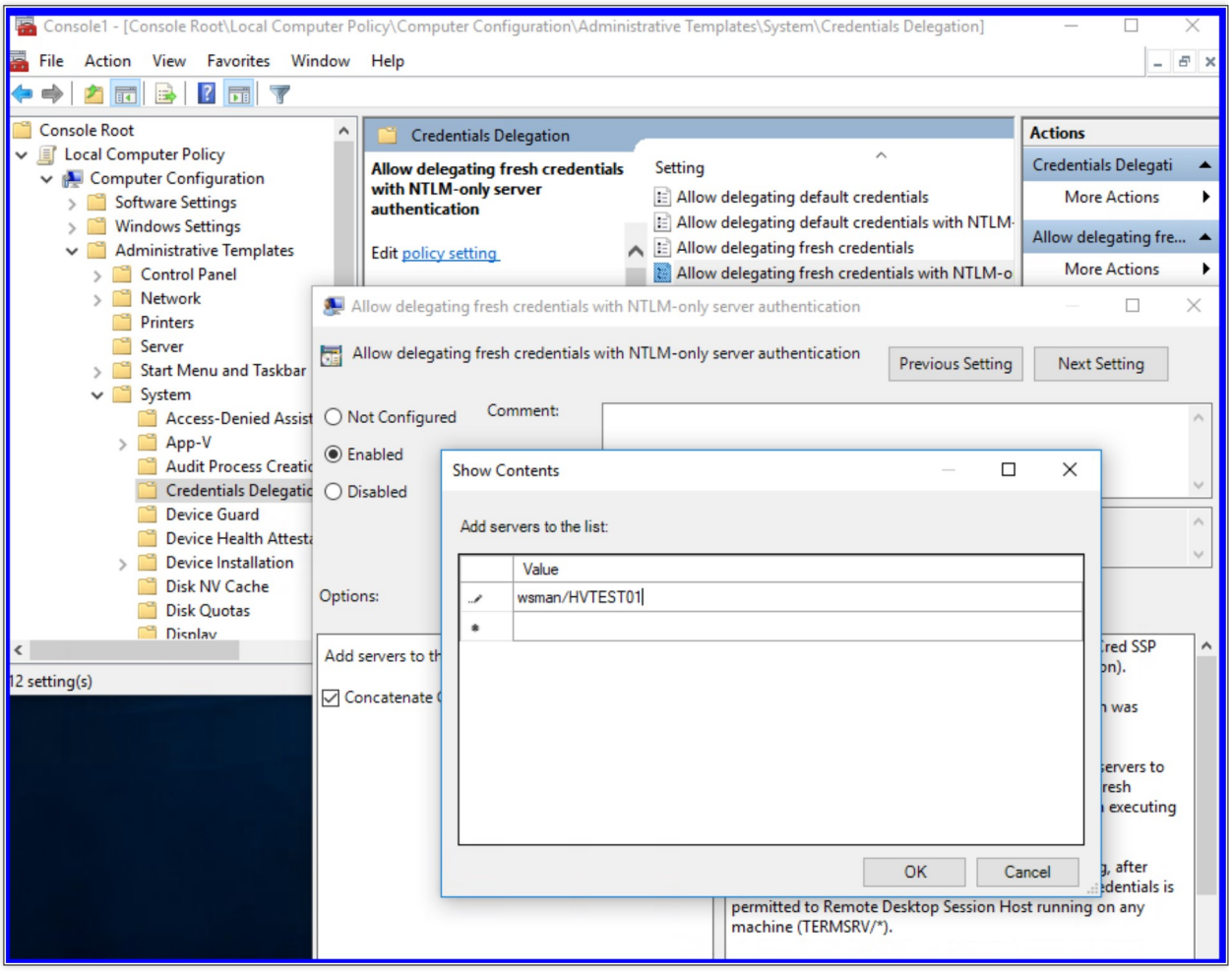


8. **Allow delegating fresh credentials with NTLM-only server authentication**:

   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):



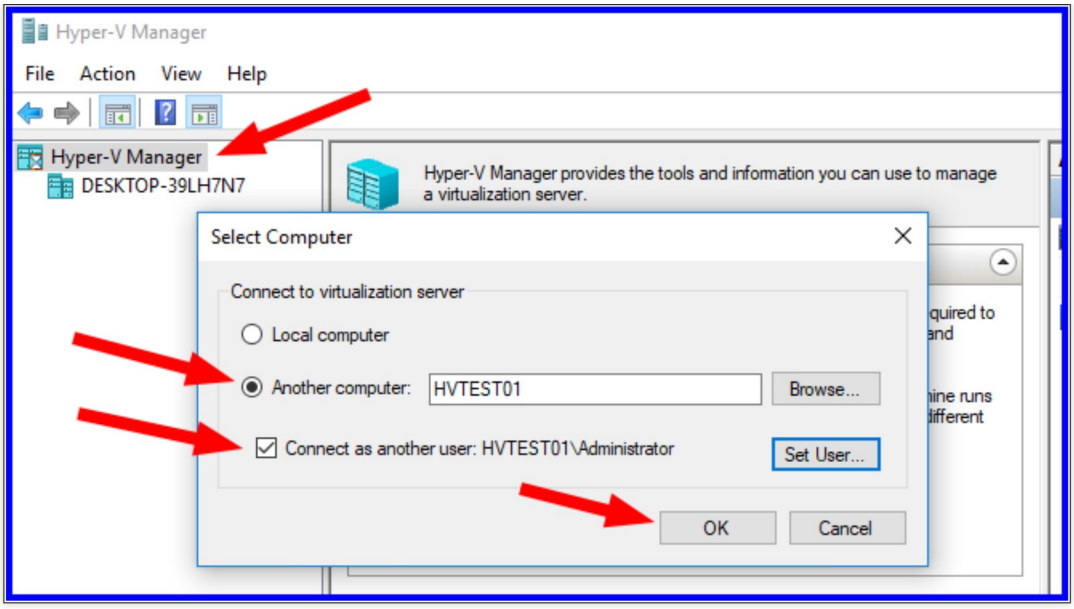
i. **Change "HVTEST01"** to match the name of your Hyper-V host in either of the above steps.

9. **Open up Hyper-V Manager:**

A. Right-Click on "Hyper-V Manager", and select "Connect to server…".

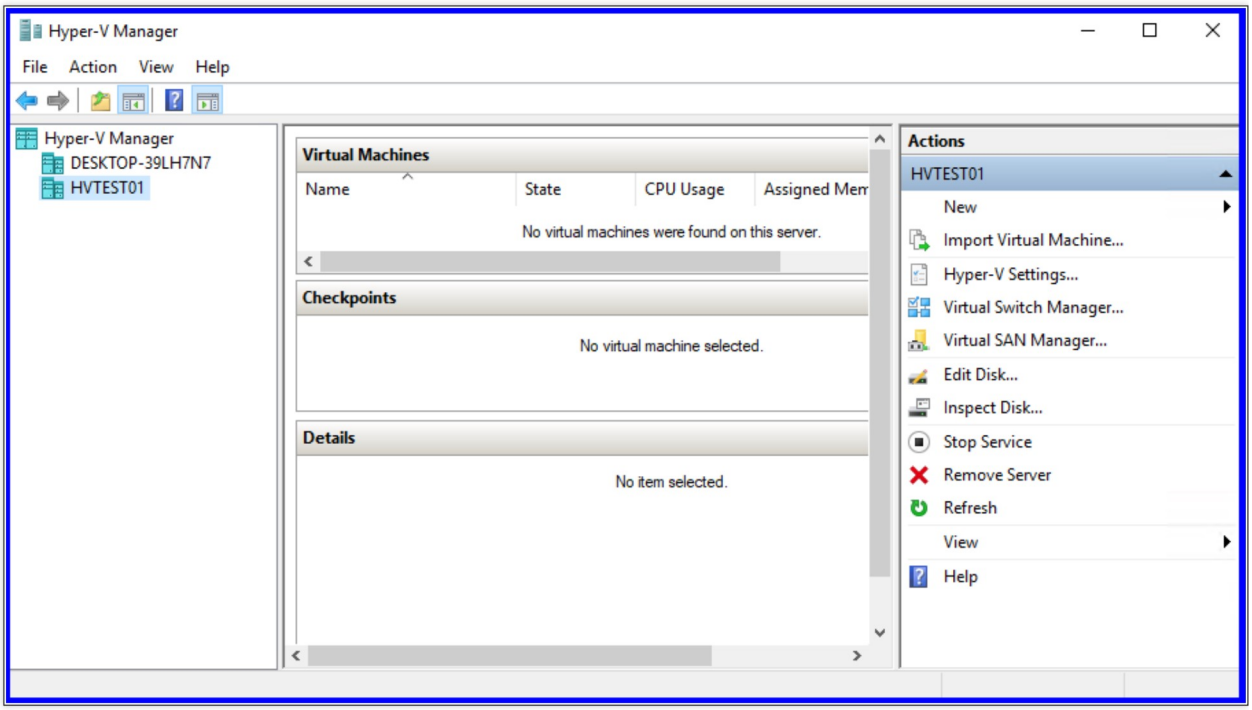
B. Select "Another computer" and type the name of your Hyper-V Server 2016 host.

C. 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 mange your Hyper-V Server 2016 host, set-up, and configure VMs:



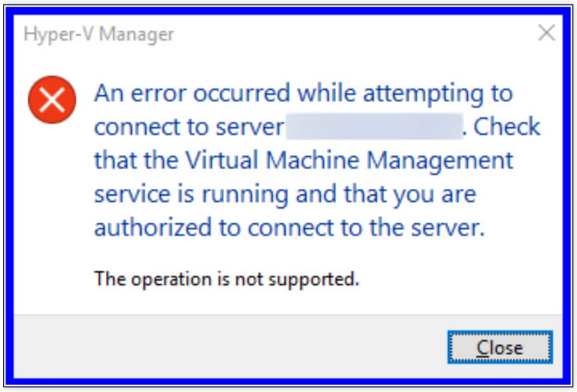
Troubleshooting

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

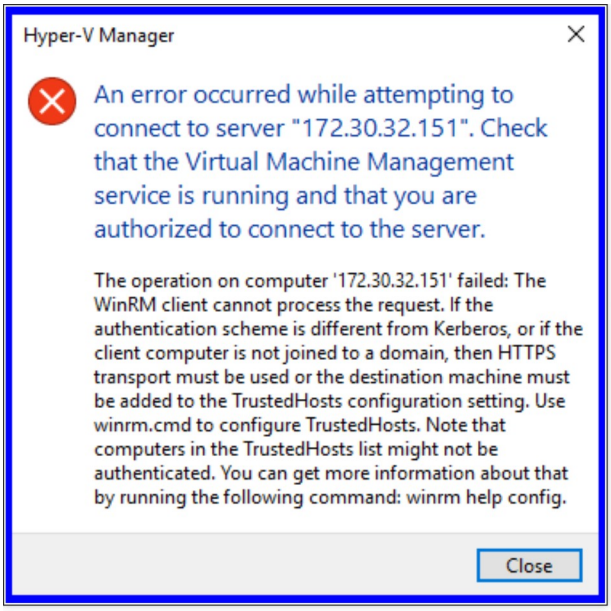
The most likely resolution to this issue is to make sure all systems involved are up to date. This error may be related to this error:

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 veryify this by running the following command on your Hyper-V host:

```
Get-Service vmms
```

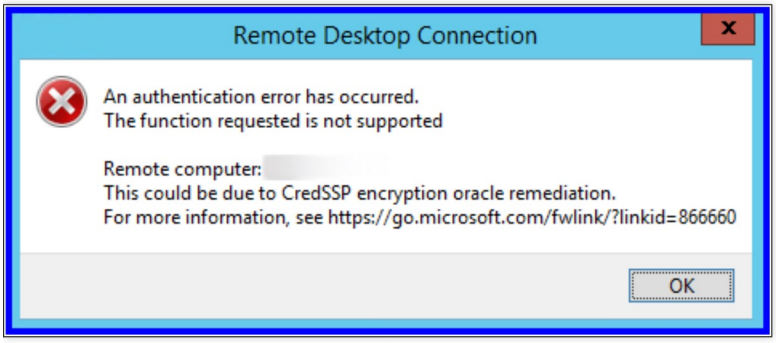
The Fix

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 inforation 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