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SSH on Windows Server 2019

★★★★★

October 29, 2018 by [BrandonWilson](#) // [8 Comments](#)

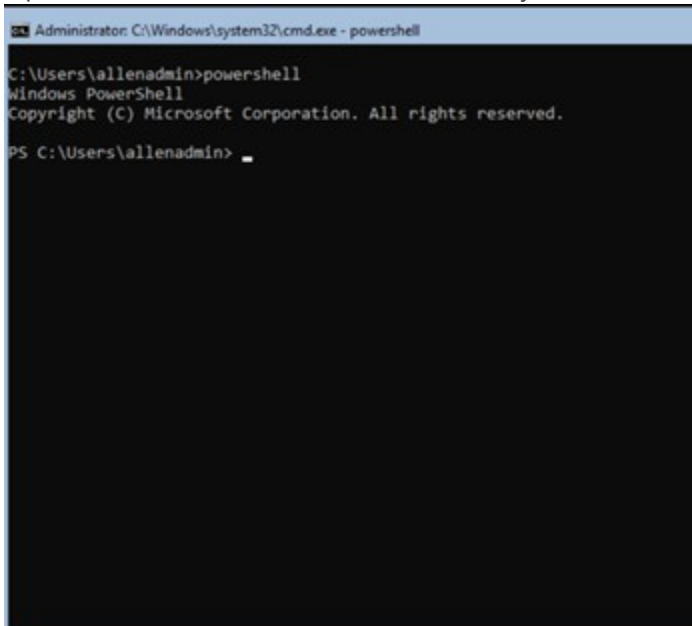
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Hello all from PFE Land! I'm Allen Sudbring, PFE in the Central Region. Today I'm going to talk about the built in SSH server that can be added to Windows Server 2019. With previous versions of server, there was some detailed configuration and installs you needed to do, to get SSH working on a Windows Server. With Windows Server 2019, it has become much easier. Here are the steps to install, configure, and test:

1. Open a PowerShell window on the Server you wish to install at:

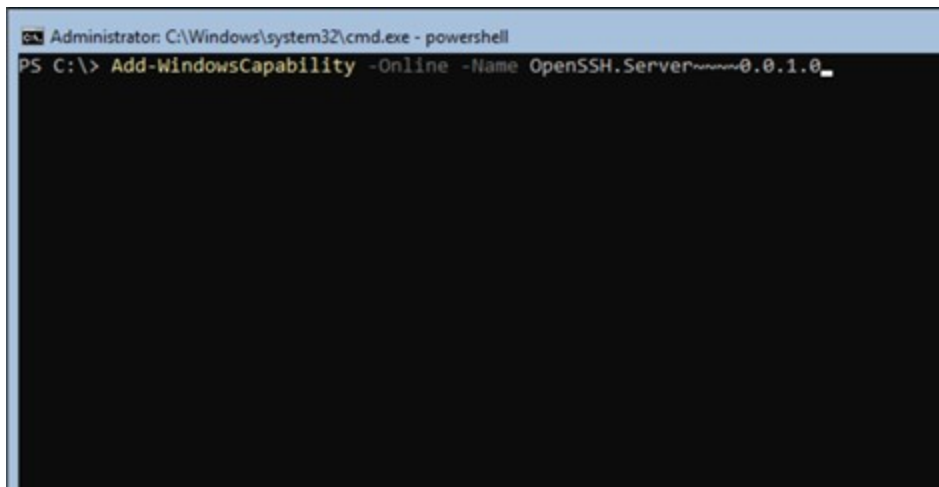


```
Administrator: C:\Windows\system32\cmd.exe - powershell
C:\Users\allenadmin>powershell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\allenadmin>
```

2. Run the following command to install the SSH server components:

Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0



```
Administrator: C:\Windows\system32\cmd.exe - powershell
PS C:\> Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0
```

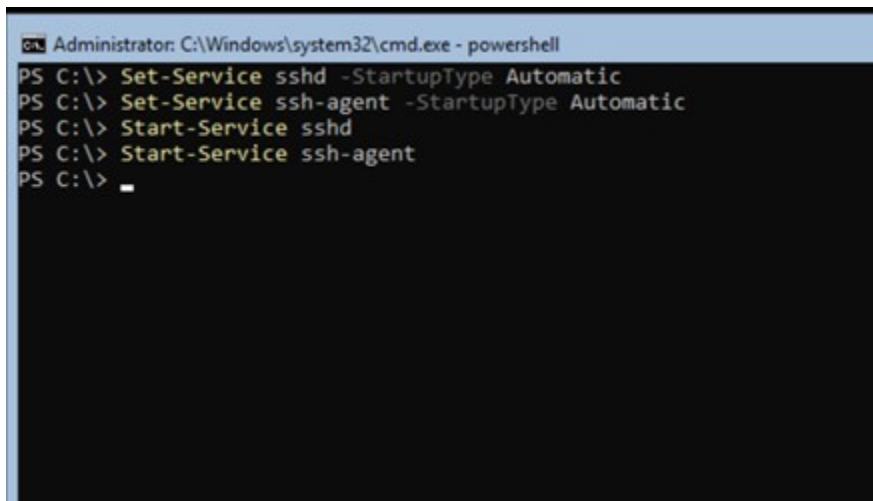
3. The install opens the firewall port and configures the service. Last step is start both SSH services with the following command and set them to automatic:

Set-Service sshd -StartupType Automatic

Set-Service ssh-agent -StartupType Automatic

Start-Service sshd

Start-Service ssh-agent



```
Administrator: C:\Windows\system32\cmd.exe - powershell
PS C:\> Set-Service sshd -StartupType Automatic
PS C:\> Set-Service ssh-agent -StartupType Automatic
PS C:\> Start-Service sshd
PS C:\> Start-Service ssh-agent
PS C:\>
```

4. Test with SSH client. I used Ubuntu installed on Windows 10 WSL. The format for server on domain to connect is upn of the login account @servername, as in:

ssh allenadmin@sudbringlab.com@servername

```
allenadmin@SUDLAB-ALLENPC: ~  
allenadmin@SUDLAB-ALLENPC:~$ ssh allenadmin@sudbringlab.com@sudlab-ads04  
The authenticity of host 'sudlab-ads04 (10.40.1.4)' can't be established.  
ECDSA key fingerprint is SHA256:42dq9vM11o2tArOdALCg2+df9HA4KoEGMmCuEku9dMU.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'sudlab-ads04,10.40.1.4' (ECDSA) to the list of known hosts.  
allenadmin@sudbringlab.com@sudlab-ads04's password:
```

- For servers in a workgroup, use a local admin account@servername as in:

ssh AzureVMAdmin@servername

```
allenadmin@SUDLAB-ALLENPC: ~  
allenadmin@SUDLAB-ALLENPC:~$ ssh AzureVMAdmin@sudlab-pxy01  
AzureVMAdmin@sudlab-pxy01's password:
```

5. After you login, you receive a command prompt where you can proceed with CMD or open PowerShell:

```
Administrator: c:\windows\system32\cmd.exe  
Microsoft Windows [Version 10.0.17763.1]  
(c) 2018 Microsoft Corporation. All rights reserved.  
sudbringlab\allenadmin@SUDLAB-ADS04 C:\Users\allenadmin>
```

```
sudbringlab\allenadmin@SUDLAB-ADS04 C:\Users\allenadmin>powershell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\allenadmin> get-process

Handles  NPM(K)  PM(K)  WS(K)  CPU(s)  Id  SI ProcessName
-----  -
      80       5   3372   4064    0.02   1280  0 cmd
      73       5   2364   3840    0.02   2100  2 cmd
      77       5   3376   4052    0.02   2772  0 cmd
```

OpenSSH gives you the ability to connect to your windows servers without remote PowerShell and get a full CMD and PowerShell Experience. The ability to connect to Windows machines from Linux with a remote CMD shell is also useful in mixed environments.

In case you're asking, you also can do the opposite way, and install PowerShell on Linux and remote to a PowerShell Instance on a Linux Machine with PowerShell Core on a Window Machine, but that is for a later post...

Thanks for reading!

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 Docta

2 months ago

Works on Windows 10 Build 1809.

Doesn't work on Windows Server 2019 Datacenter Build 1809 (built from Azure Marketplace using the Server 2019 1809 w/ Containers image).

```
PS C:\Users\me> Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0
Add-WindowsCapability : Add-WindowsCapability failed. Error code = 0x800f0950
At line:1 char:1
+ Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0
+
~~~~~
~~~~~
+ CategoryInfo          : NotSpecified: (:) [Add-WindowsCapability], COMException
+ FullyQualifiedErrorId : Microsoft.Dism.Commands.AddWindowsCapabilityCommand
```

Trying with DISM gives

```
PS C:\Users\me> dism /Add-Capability /CapabilityName:OpenSSH.Server~~~~0.0.1.0
/LimitAccess /Online
```

Deployment Image Servicing and Management tool
Version: 10.0.17763.1

Image Version: 10.0.17763.107

```
[=====100.0%=====]
]
```

Error: 0x800f081f

The source files could not be found.

Use the "Source" option to specify the location of the files that are required to restore the feature. For more information on specifying a source location, see <http://go.microsoft.com/fwlink/?Link-Id=243077>.

The DISM log file can be found at C:\Windows\Logs\DISM\dism.log

Running dism /Add-Capability /CapabilityName:OpenSSH.Server~~~~0.0.1.0 /Online (without /LimitAccess) progresses a little but still fails with the same error.



Allen Sudbring

1 month ago

I just deployed a Server 1809 Datacenter image with containers from gallery and had no issues. Please try the gallery image again or upload a custom image of 1809 to try.

Thanks!

allen



LukeFiveOh

2 months ago

Is there a possibility of adding certificate authentication to the SSH Server, utilizing a domain internal CA for domain joined machines, or a local cert store for non-domain joined machines?



Allen Sudbring

1 month ago

I haven't configured it with Cert based authentication. From my research it looks like right now it only supports using a self-generated cert:

<https://github.com/PowerShell/Win32-OpenSSH/wiki/Certificate-Authentication>

Will update post if I find any other information on using Enterprise PKI



sheska

1 month ago

It looks like if you install KB4471332 then OpenSSH server will install on Windows Server 2019. Confirmed that it does not work on an unpatched version. It looks like you must have at least 17763.194 (december 2018).



Anonymous

1 month ago

(The content was deleted per user request)



Sylvain Cortes - MVP

1 month ago

Hello team,

I tried to use kerberos auth with the SSH client. (i used putty to do so) and it doesn't work.

I check the putty config, and it is ok, i checked the HOST spn in the computer account, everything is there.

Is kerberos auth is allowed by default on the SSH server or do e have to had additonal settings, somewhere?

thanks – Sylvain



Allen Sudbring

1 month ago

Hello!

It appears the windows port of SSH doesn't have the required key exchange support to support Kerberos at this time, only NTLM. There is a request in on the OpenSSH-WIN32 project page on GitHub to add the support:

<https://github.com/PowerShell/Win32-OpenSSH/issues/96>

<https://github.com/PowerShell/Win32-OpenSSH/issues/15>

Thanks!

Allen

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