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# How to Enable OpenSSH Server in Windows 10

Sergey Tkachenko

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Windows 10

Windows 10 Enable SSH,  
Windows 10 SSH

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As you may already know, Windows 10 includes built-in SSH software – both a client and a server! In this article, we will see how to enable the SSH Server.

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Note: The OpenSSH Server app will allow you to establish a connection to your computer using the SSH protocol. It won't allow you to access other computers on your network. To connect to other computers, you should [install the OpenSSH Client](#).

With Windows 10, Microsoft has finally listened to its users after years of them requesting an SSH client and server. By including an OpenSSH implementation, the value of the OS increases.

At the moment of this writing, the OpenSSH software included in Windows 10 is at a BETA stage. This means it can have some stability issues.

The provided SSH server is similar to the Linux app. At first glance, it appears to support the same features as its \*NIX counterpart. It is a console app, but it works as a [Windows Service](#).

Let's see how to enable the OpenSSH server in Windows 10.

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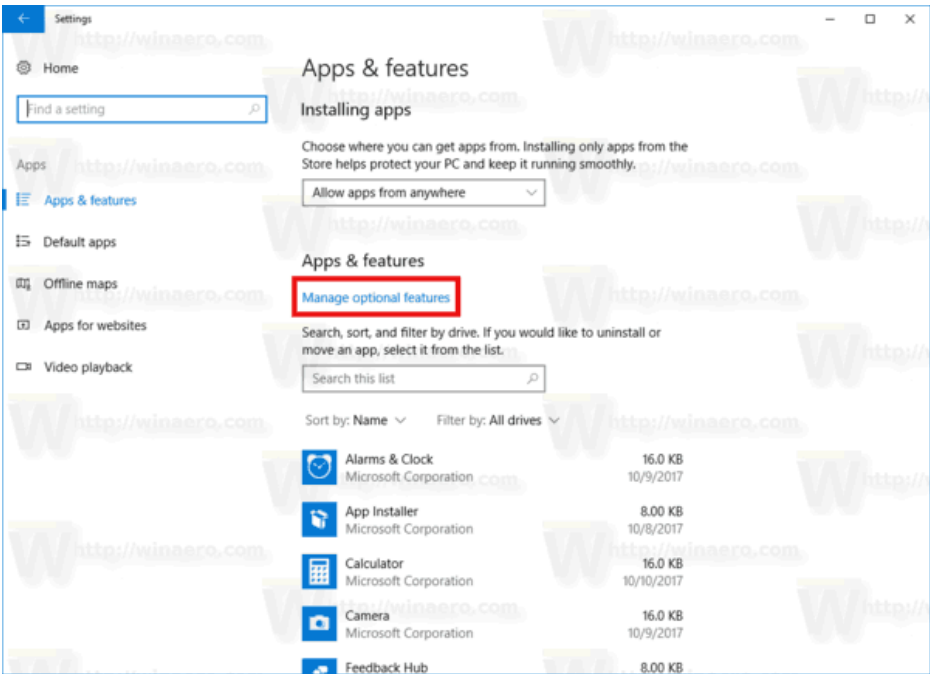
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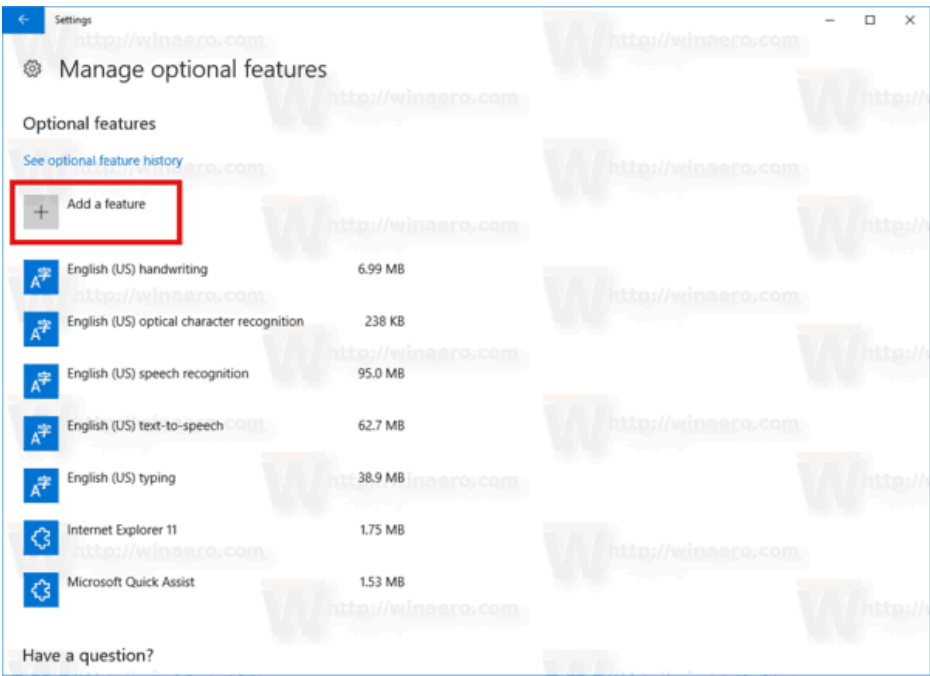
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- [How to Start the OpenSSH Server in Windows 10](#)
- [Connecting to the SSH Server in Windows 10](#)

## Enable the OpenSSH Server in Windows 10

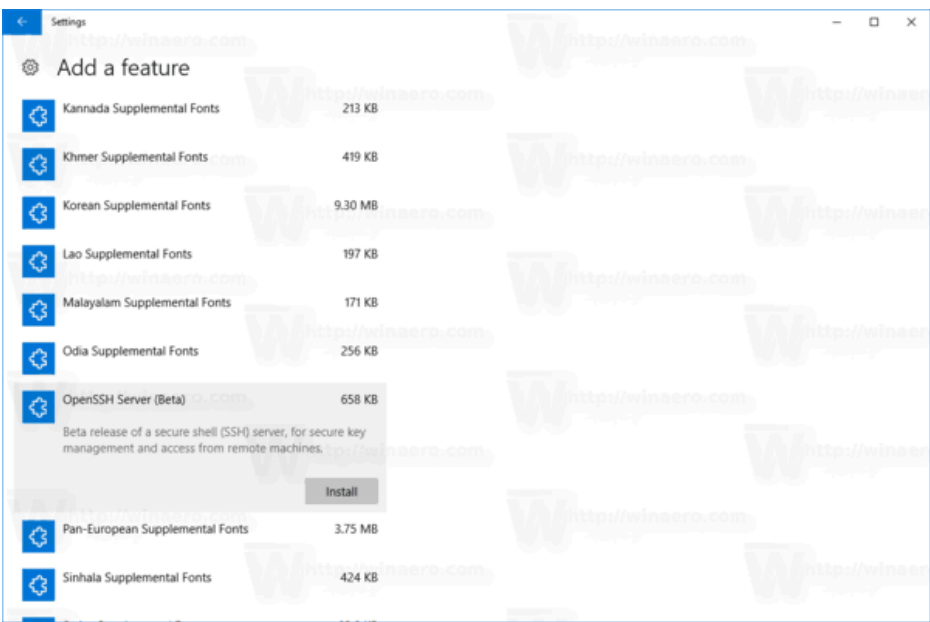
1. Open the [Settings app](#) and go to Apps -> Apps & features.
2. On the right, click Manage optional features.



3. On the next page, click the button *Add a feature*.



4. In the list of features, select *OpenSSH Server* and click on the *Install* button.



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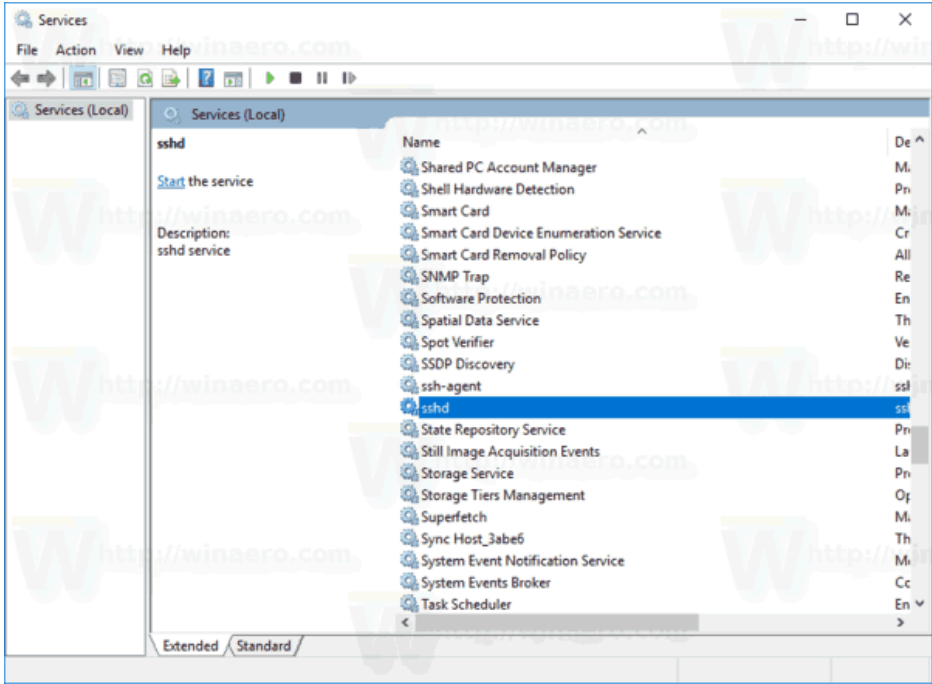
5. [Restart Windows 10](#).

This will install the OpenSSH Server software in Windows 10.

Its binary files are located under the folder `c:\windows\system32\Openssh`. Besides the SSH client apps, the folder contains the following server tools:

- sftp-server.exe
- ssh-agent.exe
- ssh-keygen.exe
- sshd.exe
- and the config file "sshd\_config".

The SSH server is configured to run as a service.

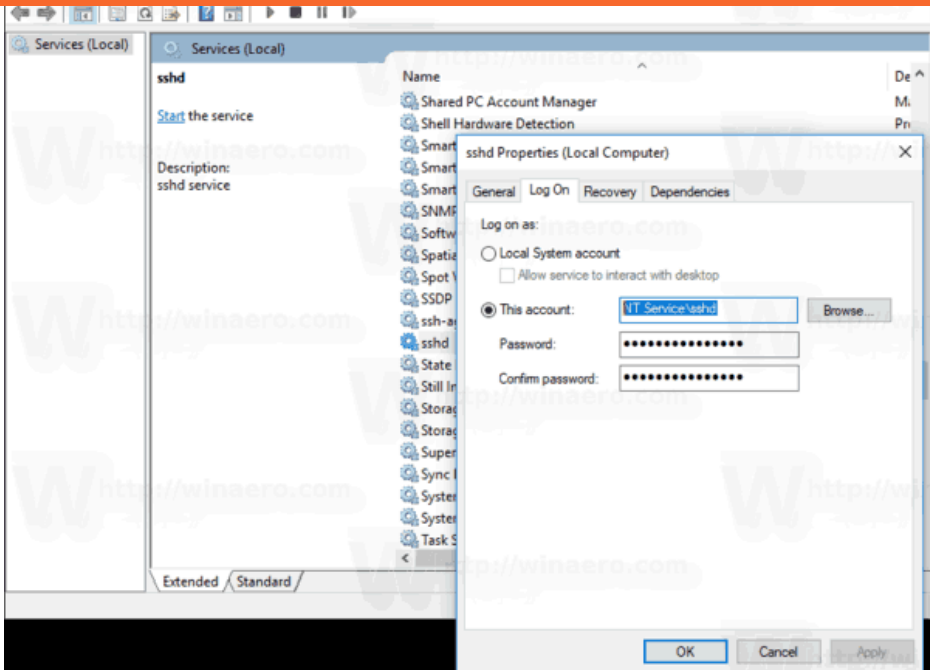


At the moment of this writing, it doesn't start automatically. You need to configure it manually.

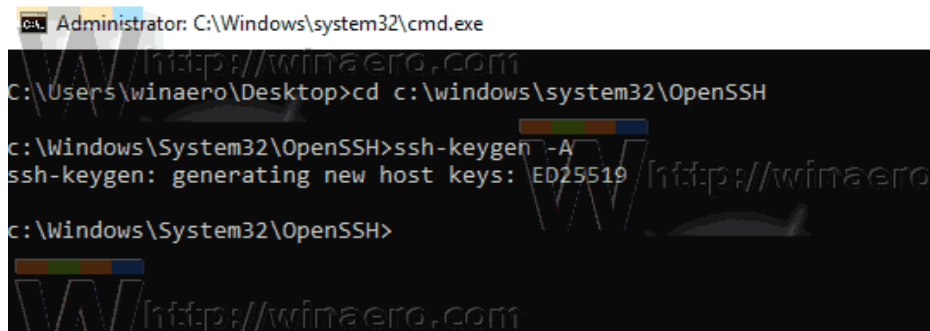
## How to Start the OpenSSH Server in Windows 10

1. Double-click the *sshd* entry in Services to open its properties.
2. On the "Log On" tab, see the user account which is used by the sshd server. In my case, it is *NT Service\sshd*.

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- Now, open [an elevated command prompt](#).
- Go to the `c:\windows\system32\Openssh` directory using the command `cd c:\windows\system32\Openssh`.
- Here, run the command `ssh-keygen -A` to generate security keys for the sshd server.



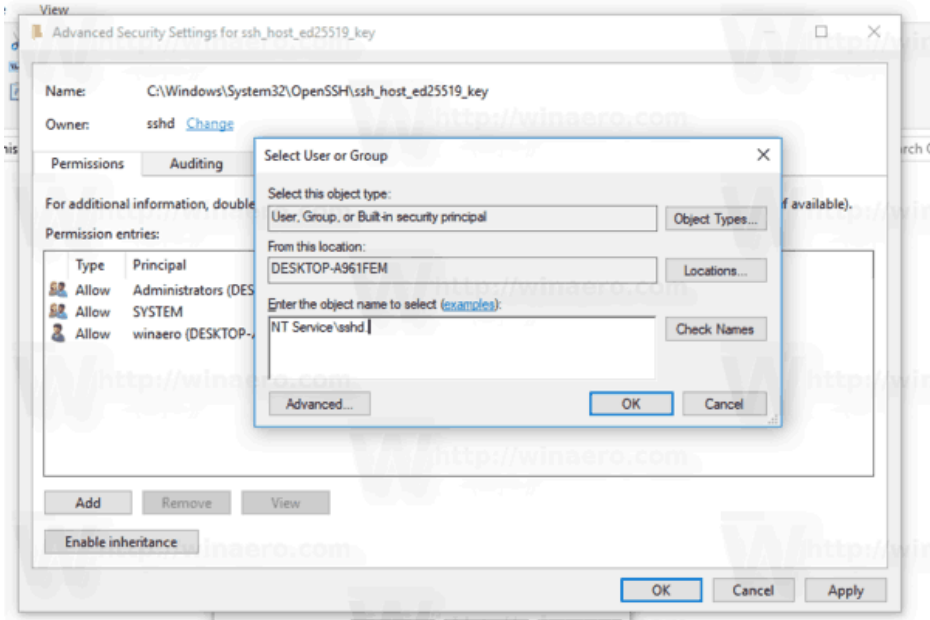
- Now, in the elevated command prompt, type `explorer.exe` to launch File Explorer in the OpenSSH folder.
- Update:** Microsoft has published a [tutorial](#) which makes the right assignment process very simple.

Open PowerShell as Administrator and execute these commands:

```
Install-Module -Force OpenSSHUtils  
  
Repair-SshdHostKeyPermission -FilePath C:\Windows\System32\Openssh
```

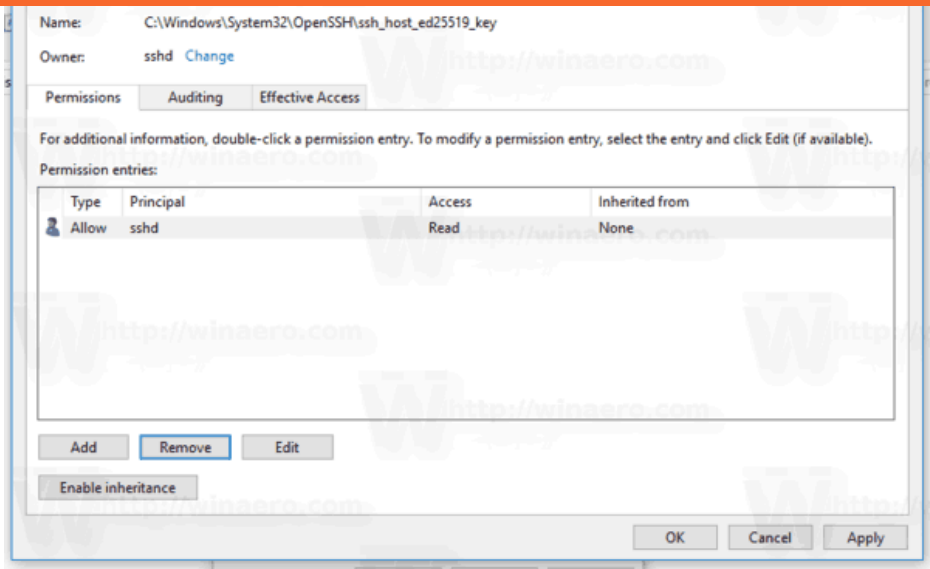
That's it! All the required permissions are set.

- Alternatively, you can perform these steps.  
Right-click the `ssh_host_ed25519_key` file and [change its ownership](#) to the sshd service user, e.g. `NT Service\sshd`.



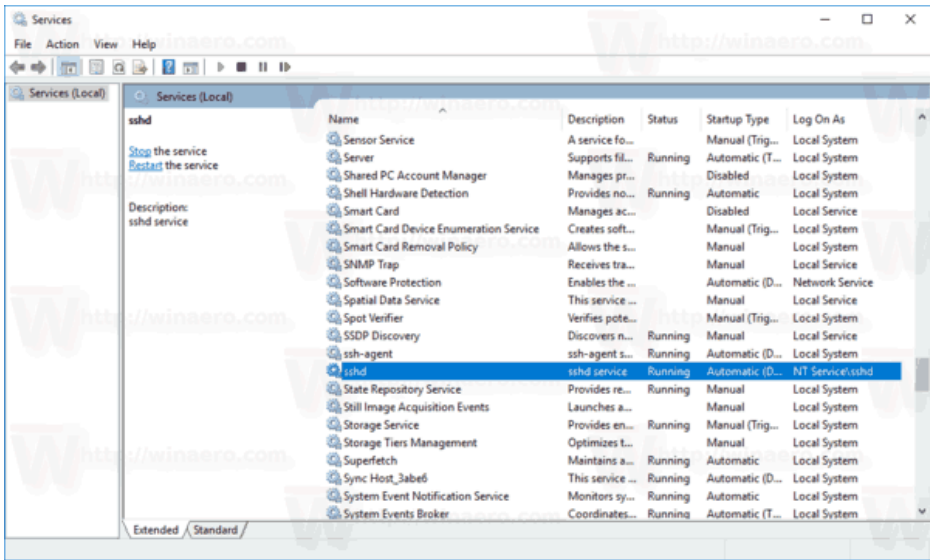
- Click "Add" and add the permission "Read" for the user "NT

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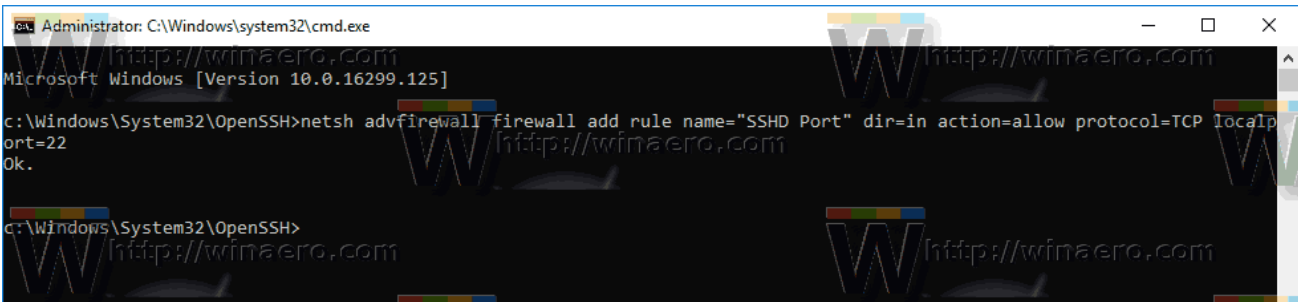
Click "Apply" and confirm the operation.

10. Finally, open Services (Press the Win + R keys and type `services.msc` in the Run box) and start the sshd service. It should start:



11. Allow the SSH port in Windows Firewall. By default, the server is using port 22. Run this command in an elevated command prompt:

```
netsh advfirewall firewall add rule name="SSHD Port" dir=in action=allow protocol=TCP localport=22
```



Microsoft has supplied the following alternative command for PowerShell:

```
New-NetFirewallRule -Name sshd -DisplayName 'OpenSSH Server (sshd)' -Service sshd -Enabled True -Direction Inbound -Protocol TCP -Action Allow -Profile Domain
```

12. Finally, [set a password for your user account](#) if you don't have it.

Now, you can try it in action.

## Connecting to the SSH Server in Windows 10

Open your ssh client. You can start it on the same computer, e.g. using the built-in [OpenSSH client](#) or start it from another computer on your network.

To the manual page of the software for the OpenSSH server distribution

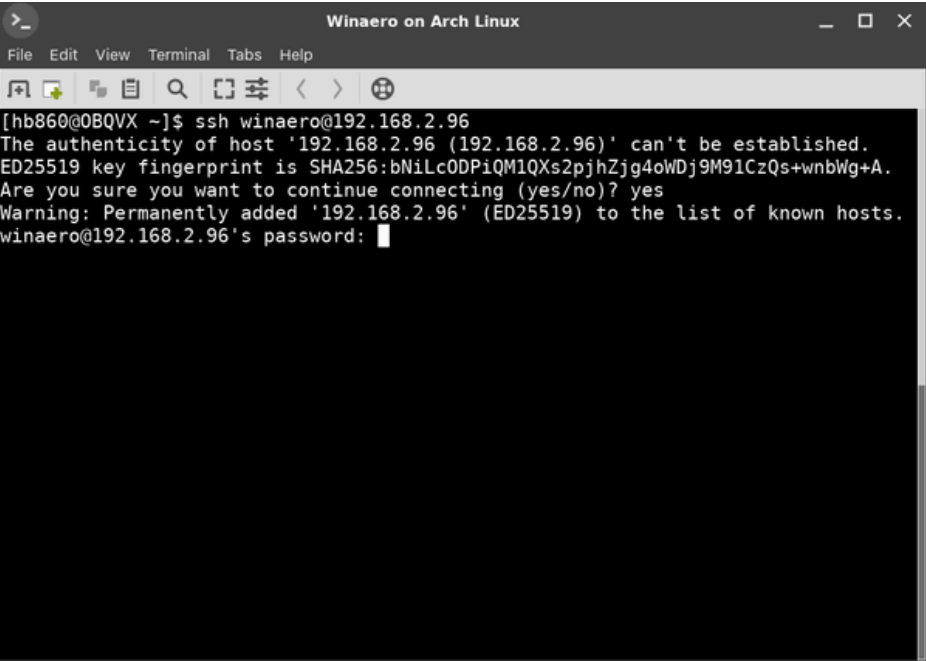


```
ssh -l username host -p port
```

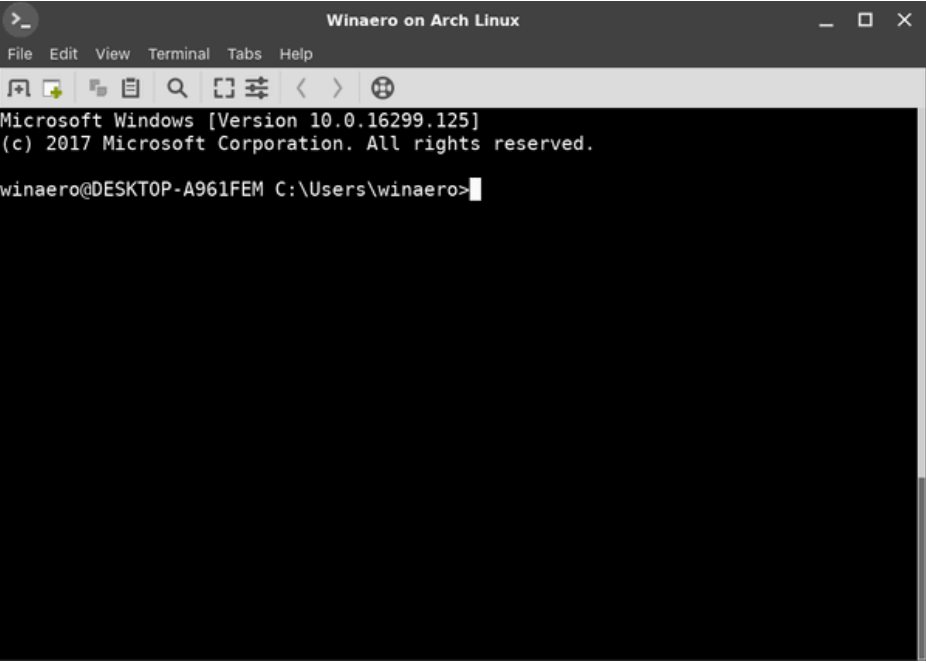
In my case, the command looks as follows:

```
ssh winaero@192.168.2.96
```

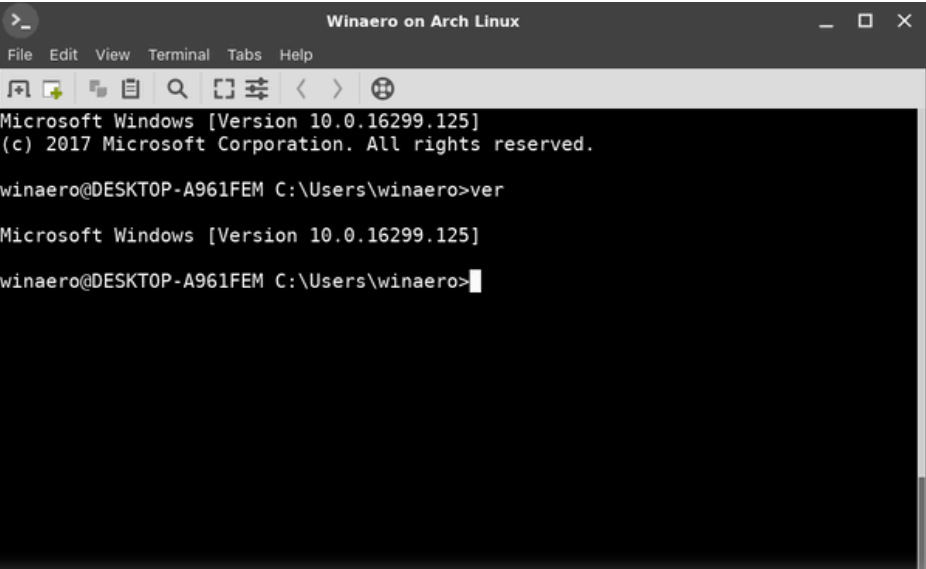
Where *winaero* is my Windows user name and *192.168.2.96* is the [IP address of my Windows 10 PC](#). I will connect to it from another PC, running Arch Linux.



Finally, you are in!



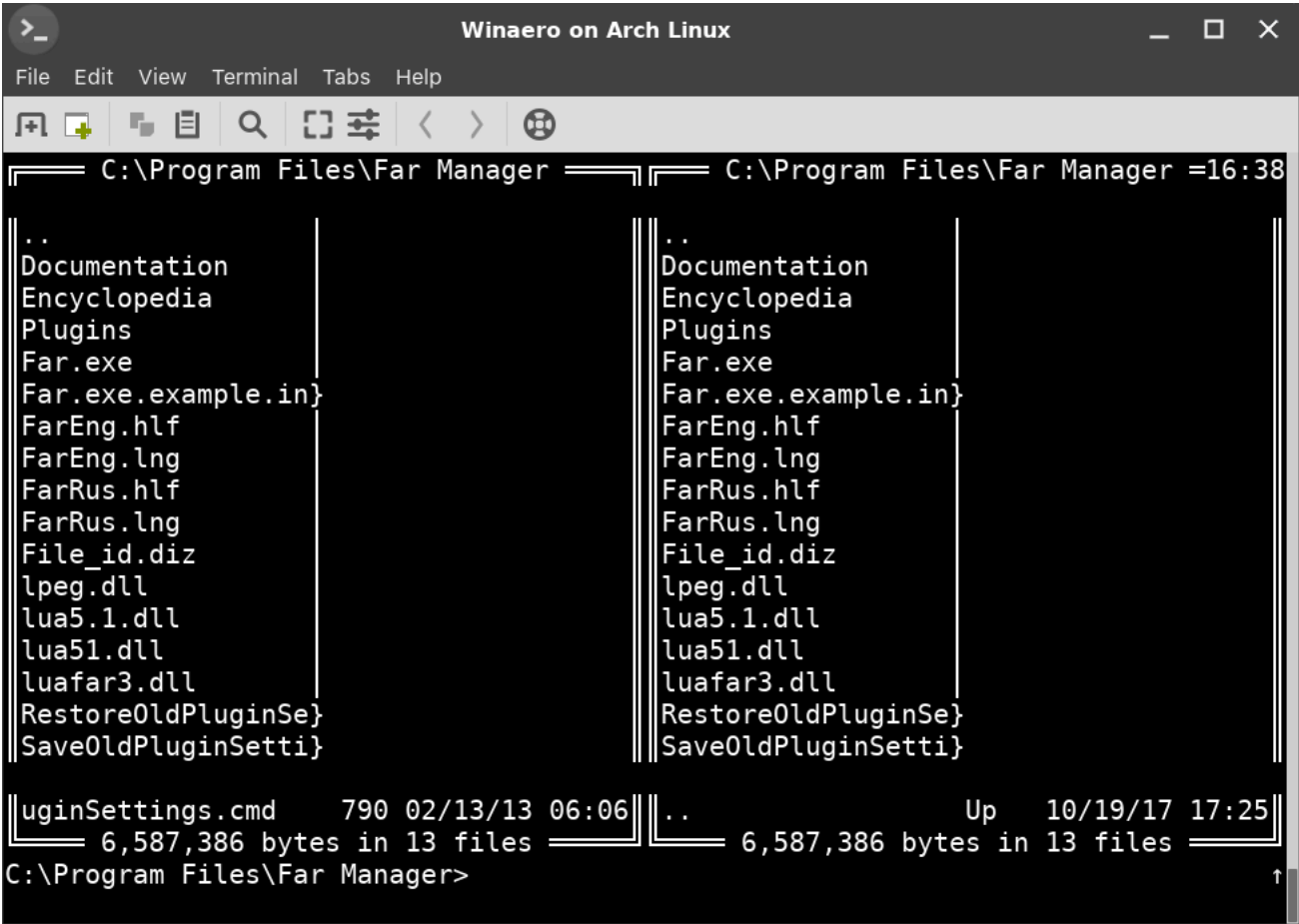
The server runs classic Windows console commands, e.g. more, type, ver, copy.



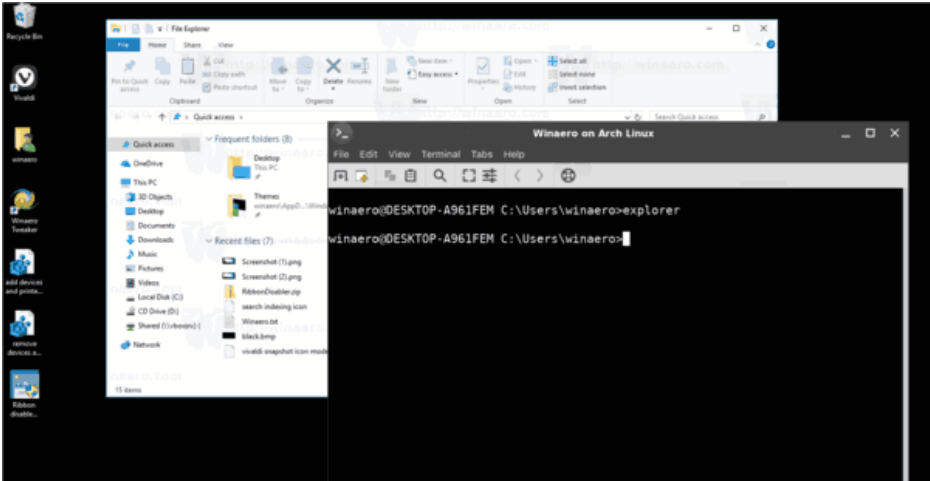
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broken:



Another interesting observation: You can start GUI apps like explorer. If you are signed in to the same user account that you use for SSH, they will start on the desktop. See:



Well, the built-in SSH server is definitely an interesting thing to play with. It allows you to manage a Windows machine without installing tools like rdesktop on your Linux computer, or even changing Windows settings from a Linux computer which has no X server installed.

As of this writing, the built-in SSH server in Windows 10 is at a BETA stage, so it should get more interesting and become a useful feature in the near future.

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Author: **Sergey Tkachenko**

Sergey Tkachenko is a software developer who started Winaero back in 2011. On this blog, Sergey is writing about everything connected to Microsoft, Windows and popular software. Follow him on [Telegram](#), [Twitter](#), and [YouTube](#).  
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## 14 thoughts on “How to Enable OpenSSH Server in Windows 10”

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**Herohtar**

December 14, 2017 at 6:23 am

The instructions here are very clear and organized; however, the service still wouldn’t start for me with just this. It kept complaining about the sshd user not having the correct permissions. I had to follow the “User Rights Assignment” step found [here](#) before the service would start. After that it worked great!

Reply

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**Sergey Tkachenko** 

December 14, 2017 at 1:17 pm

Thanks for pointing.  
Maybe I should add this to the article.

Reply

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**Gabe**

December 15, 2017 at 10:53 pm

Thank you for explanation! How to modify the User Rights Assignment option in Windows 10 without GPO like Home Home edition? Thank you!

Reply



we are

<https://www.itechtics.com/enable-gpedit-windows-10-home/>

Reply

Gabe

December 15, 2017 at 11:29 pm

Another question if possible: how to modify the sshd config file for allow auth with key file only? I would like to connect just with the public / private key and disable the username/password login. Thank you!

Reply

Sergey Tkachenko 

December 17, 2017 at 12:30 am

Microsoft has published the official guide.  
Please consider reading it:  
<https://blogs.msdn.microsoft.com/powershell/2017/12/15/using-the-openssh-beta-in-windows-10-fall-creators-update-and-windows-server-1709/>

Reply

Junbo

December 30, 2017 at 2:11 pm

I have a question about GUI app. I opened sshd service, and connect it from a Linux machine ssh client. I run “notepad” command, the process would been started, and could find it in task manager. But I could not saw the notepad window. Do you know how to configure it? Thank you very much.

Reply

Sergey Tkachenko 

December 30, 2017 at 2:17 pm

Currently, I have no idea how to specify the session for the sshd server.  
Also, as you could notice from my post, the behavior you’ve described is the default behavior for my instance.  
I don’t know why. There are no documentation which could explain this thing at this moment.

Reply

Assaf Toledo

February 3, 2018 at 1:31 am

Hi,  
Thanks for the tutorial!  
Any idea if this is supported on Windows 10 Home?  
Thanks!

**Sergey Tkachenko** 

February 3, 2018 at 5:30 pm

I have no the Home edition here to check. I don’t think that it is available.

Reply

**Rajat**

January 6, 2019 at 4:03 pm

After installing OpenSSH server and restarting the PC, there isn’t any sshd in services. Please help out. The OpenSSH server is not a beta version.

Reply

**Vishal**

December 30, 2019 at 8:30 pm

Hi Rajat,

Try searching for OpenSSH Authentication Agent.  
That is what comes up in my system.

Vishal

Reply

**Hillel Swimmer**

November 20, 2019 at 9:13 pm

In latest win version the service called OpenSSH SSH Server

Reply

**Binu Balakrishnan**

December 30, 2019 at 8:27 pm

Hey i dont see “OpenSSH Server” as a Feature to install, in the “Add a feature”.  
I have Windows 10 Enterprise. What is missing in my case?

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