

kashtan404

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# Connect to Windows via SSH like in Linux

System administration, PowerShell, Server Administration, DevOps

Tutorial

The most depressing thing for me is to connect to Windows hosts. I'm not an opponent or a fan of Microsoft and their's products. Every product has its own purpose. But it is really painful for me to connect to Windows servers, because of 2 points: it is hard to configure (Hi WinRM with HTTPS), and it is really unstable (Hello RDP to VMs across the ocean).

Fortunately, I found the project [Win32-OpenSSH](#). I realized that I want to share my experience with it. I believe it will help somebody and save a lot of nerves.



Installation ways:

1. [Manually](#)
2. Via Chocolatey [package](#)
3. Via Ansible, let us say the role [jborean93.win\\_openssh](#)

I will explain the manual way because other ones are obvious.

I must note, this project is on beta stage and it isn't recommended to use it in production.

Well, let's download latest release. Currently it is [7.9.0.0p1-beta](#). It also has 32 and 64 bit versions.

Then unpack it to `C:\Program Files\OpenSSH`.

Important: It is necessary to grant write access to `SYSTEM` and Administrators group only.

Futher, install services via shell script `install-sshd.ps1` which is located in the OpenSSH directory

```
powershell.exe -ExecutionPolicy Bypass -File install-sshd.ps1
```

Let's allow incoming connections on 22 port:

```
New-NetFirewallRule -Name sshd -DisplayName 'OpenSSH Server (sshd)' -Enabled True -Direction Inbound -Protocol TCP -Action Allow -LocalPort 22
```

Note: applet `New-NetFirewallRule` is for Windows Server 2012 and above only. For older or desktop OS, you can use the following command:

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

Start the service:

```
net start sshd
```

This will automatically generate host keys under `%programdata%\ssh` if they don't already exist.

You can set up the service auto-start by command:

```
Set-Service sshd -StartupType Automatic
```

Also, you can change default shell (it is `cmd` by default after install):

```
New-ItemProperty -Path "HKLM:\SOFTWARE\OpenSSH" -Name DefaultShell -Value "C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" -PropertyType String -Force
```

Note: you must define absolut path.

What's next?

We can configure `sshd_config`, which is located in `C:\ProgramData\ssh`.

E.g.:

```
PasswordAuthentication no
PubkeyAuthentication yes
```

Then we create `.ssh` directory inside the user directory (`C:\Users\<user_directory>`) and `authorized_keys` file inside it. We can paste public keys into this file.

Important: the only user in which directory it is, must have write permissions for this file.

By the way, if you can't fix it, you can disable permissions check via config:

```
StrictModes no
```

Also, directory `C:\Program Files\OpenSSH` contains 2 scripts (`FixHostFilePermissions.ps1`, `FixUserFilePermissions.ps1`), which should ~~but not obliged~~ fix permissions, including `authorized_keys` permissions, but they don't.

Don't forget to restart `sshd` service to apply changes.

```
ru-mbp-666:infrastructure$ ssh Administrator@192.168.1.10 -i ~/.ssh/id_rsa
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> Get-Host

Name           : ConsoleHost
Version        : 5.1.14393.2791
InstanceId     : 653210bd-6f58-445e-80a0-66f66666f6f6
UI             : System.Management.Automation.Internal.Host.InternalHostUserInterface
CurrentCulture : en-US
CurrentUICulture : en-US
PrivateData    : Microsoft.PowerShell.ConsoleHost+ConsoleColorProxy
DebuggerEnabled : True
IsRunspacePushed : False
Runspace       : System.Management.Automation.Runspaces.LocalRunspace

PS C:\Users\Administrator>
```

Personal pros/cons.

Pros:

- Standart way to connect to any server (Windows/Linux)  
*When you have a few Windows host, it's inconvenient:  
So, here we go via ssh, but here via RDP,  
and generally speaking, it is the best-practice with bastions, firstly ssh-tunnel, then RDP via the tunnel. Oh kill me baby one more time.*
- Easy to configure  
*I think it is obvious.*
- Connection speed to remote host  
*Without GUI we save up host resources, and size of transmitted data*

Cons:

- It can't replace RDP in some cases.  
*Not the all things you can do via PowerShell. I mean the cases when GUI is required.*

Links:

[Project on Github](#)

[Ansible docs](#)

Tags: powershell, ssh, windows server, openssh, devops

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