

# WSL2 SSH In Windows 11

To access the server of the Space Environment Information Processing System via the Internet, you need to go through a login server (a Jump\_Server). The login server is accessed by SSH public key authentication. In this article, we install Windows Subsystem for Linux 2 (WSL2) on Windows 11 and connect to the login server via SSH. [How to install Linux on Windows with WSL \(Microsoft\)](#)

Connection settings for this article

	Host Name	Login Name
Server	Jump_Server	Jump_Server_Username
Client	Localhost	Local_Username

## Command install

### Check OS version

Start PowerShell or Command Prompt by selecting "Run as administrator". PowerShell or Command Prompt can also be opened in Windows Terminal<sup>1)</sup>. The command to check the OS version is as follows:

```
PS C:\Windows\System32> winver
```

### Select and install a Linux distribution

Linux distributions that install WSL2 online can be found with "wsl -l -o".

```
PS C:\Windows\System32> wsl -l -o
The following is a list of valid distributions that can be installed.
Install using 'wsl.exe --install <Distro>'.
```

NAME	FRIENDLY NAME
Ubuntu	Ubuntu
Debian	Debian GNU/Linux
kali-linux	Kali Linux Rolling
Ubuntu-18.04	Ubuntu 18.04 LTS
Ubuntu-20.04	Ubuntu 20.04 LTS
Ubuntu-22.04	Ubuntu 22.04 LTS
OracleLinux_7_9	Oracle Linux 7.9
OracleLinux_8_7	Oracle Linux 8.7
OracleLinux_9_1	Oracle Linux 9.1
openSUSE-Leap-15.5	openSUSE Leap 15.5
SUSE-Linux-Enterprise-Server-15-SP4	SUSE Linux Enterprise Server 15 SP4
SUSE-Linux-Enterprise-15-SP5	SUSE Linux Enterprise 15 SP5
openSUSE-Tumbleweed	openSUSE Tumbleweed

It can also be installed from the Microsoft Store rather than by command.

[Here we install Ubuntu-22.04](#)(

wsl\_install.jpg

).

```
wsl --install -d Ubuntu-22.04
```

Reboot the system as instructed.

## Ubuntu Linux startup and initial configuration

Ubuntu will start automatically after rebooting, but if it does not, start it from the menu. Enter your client username and password.

```
Enter new UNIX username: Local_Username  
New password:  
Retype new password:  
passwd: password updated successfully  
Installation successful!  
...
```

Updating Ubuntu.

```
username@localhost:/etc/apt$ sudo apt update  
username@localhost:/etc/apt$ sudo apt -y full-upgrade
```

Check the timezone and locale, and change them if necessary.

```
username@localhost:/etc/apt$ timedatectl  
Local time: Fri 2024-01-12 11:51:24 JST  
Universal time: Fri 2024-01-12 02:51:24 UTC  
RTC time: Fri 2024-01-12 02:51:24  
Time zone: Asia/Tokyo (JST, +0900)  
System clock synchronized: yes  
NTP service: inactive  
RTC in local TZ: no  
username@localhost:/etc/apt$ localectl status  
System Locale: LANG=C.UTF-8  
VC Keymap: n/a  
X11 Layout: us  
X11 Model: pc105
```

## Generate an SSH Key Pair

Generate an ssh key in PowerShell. (After # are comments)

```

username@localhost:~$ ssh-keygen -t ecdsa -b 384
Generating public/private ecdsa key pair.
Enter file in which to save the key (/home/username/.ssh/id_ecdsa):
Created directory '/home/username/.ssh'.
Enter passphrase (empty for no passphrase): #Enter passphrase
Enter same passphrase again: #Enter passphrase
Your identification has been saved in /home/username/.ssh/id_ecdsa
Your public key has been saved in /home/username/.ssh/id_ecdsa.pub
The key fingerprint is:
SHA256:qI0IpGWS430BdmS8b+6ARH5JUoLj+eDZ4LD4ux8gEXA username@Win11
The key's randomart image is:
+---[ECDSA 384]---+
|+ E..+ |
| = =. |
|o o= o. |
|.B+ =... |
|XoXo +o S |
|B@o=o..o |
|+o.o+oo |
| . .o.. |
| o+. .. |
+-----[SHA256]-----+

```

## Apply for a key

Please apply for registration of the created public key id\_ecdsa.pub.  
[\[see Jump\\_Server account request\]](#) [\[CIDAS System account request\]](#)

## Add your SSH key to the ssh-agent

Register the created private key with ssh-agent. (After # are comments)

```

username@localhost:~$ eval $(ssh-agent) # Start ssh-
agent
Agent pid 658
username@localhost:~$ ssh-add ~/.ssh/id_ecdsa # Register
private key
Enter passphrase for /home/username/.ssh/id_ecdsa: # pass phrase
Identity added: /home/username/.ssh/id_ecdsa (username@Win11)

```

You can check if it is registered with the following command.

```

username@localhost:~$ ssh-add -l
384 SHA256:qI0IpGWS430BdmS8b+6ARH5JUoLj+eDZ4LD4ux8gEXA username@Win11
(ECDSA)

```

# SSH Connection

Enter the following:

```
username@localhost:~$ ssh Jump_Server_Username@Jump_Server -AX
The authenticity of host 'Jump_Server' can't be established.
ED25519 key fingerprint is
SHA256:TTWvEs781VjJwKrz0LJVDtTbLUn/1Ut00asloihi5QI.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'Jump_Server' (ED25519) to the list of known
hosts.
```

option -A: Enables forwarding of connections from an authentication agent such as ssh-agent. option -X: Enables X11 forwarding. After connecting to the Jump\_Server, you can use the same private key that you used at the first connection to connect to another server.

## About x11 forwarding

WSL 2 enables Linux GUI applications to feel native and natural to use on Windows. There is no need to install a new X server.

[Run Linux GUI apps on the Windows Subsystem for Linux](#)

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- [OpenSSH on macOS 10.15](#)

1)

Terminal available by default in Windows 11. Tabs can be used and it is easy to customize. ([What is Windows Terminal?](#))

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Last update: **2024/03/18 11:12**

