

WSL Subsystem for Linux Assignment

Download linux

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Administrator> wsl --install
Ubuntu is already installed.
Launching Ubuntu...
```

To install the default Ubuntu 20.04 distro and To install a specific distro by name, such as Debian, enter:

```
karthik@f542ba3b5a78573: ~
karthik@f542ba3b5a78573: ~$ exit
Logout
The operation completed successfully.
PS C:\Users\Administrator> wsl --install -d Debian
Installing: Debian GNU/Linux
Debian GNU/Linux has been installed.
Launching Debian GNU/Linux...
Installing, this may take a few minutes...
Please create a default UNIX user account. The username does not need to match your Windows username.
For more information visit: https://aka.ms/wslusers
Enter new UNIX username: karthik
New password:
Retype new password:
No password has been supplied.
New password:
Retype new password:
passwd: password updated successfully
Installation successful
karthik@f542ba3b5a78573: ~$
```

Update Linux

```
karthik@f542ba3b5a78573: ~  
karthik@f542ba3b5a78573: $ sudo apt update  
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]  
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease  
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]  
Get:4 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [8972 B]  
Get:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]  
Get:6 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.0 kB]  
Get:7 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [838 kB]  
Get:8 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [208 B]  
Get:9 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]  
Get:10 http://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [191 kB]  
Get:11 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [151 kB]  
Get:12 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1003 kB]  
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [250 kB]  
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [315 kB]  
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]  
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [16.3 kB]  
Get:17 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]  
Get:18 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]  
Get:19 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.7 kB]  
Get:20 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [212 B]  
Get:21 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]  
Fetched 3224 kB in 6s (548 kB/s)  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
61 packages can be upgraded. Run 'apt list --upgradable' to see them.  
karthik@f542ba3b5a78573: $ sudo apt upgrade  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
Calculating upgrade... Done  
The following package was automatically installed and is no longer required:  
  libllvm17t64  
Use 'sudo apt autoremove' to remove it.  
The following NEW packages will be installed:  
  libllvm19 mesa-libgallium  
The following upgrades have been deferred due to phasing:  
  libunwind8  
The following packages will be upgraded:  
  bsdextrautils bsdutils eject fdisk kmod libattr1 libblkid1 libbsd0 libcap2 libcap2-bin libdrm-amdgpu libdrm-common libdrm-intel libdrm-nouveau libdrm-radeon libdrm2  
  libdw1t64 libegl-mesa0 libelf1t64 libfdisk1 libgdm1 libgl1-mesa-dri libglapi-mesa libglx-mesa0 libgmp10 libgpg-error-l10n libgpg-error0 libidn2-0 libkmod2 libmd0 libmount1  
  libnftnl1 libnftnl2 libnss-systemd libpam-cap libpam-systemd libpcrc2-0 libperl5.38t64 libselinux1 libsmartcols1 libsqlite3-0 libsystemd-shared libsystemd0 libudev1  
  libunistring1 libusb1t1 mesa-vulkan-drivers mount perl perl-base perl-modules-5.38 systemd systemd-dev systemd-resolved systemd-sysv systemd-timesyncd udev util-linux  
0 upgraded, 4 newly installed, 0 to remove and 59 not upgraded.  
Need to get 240 kB of archives.  
After this operation, 806 kB of additional disk space will be used.  
Do you want to continue? [Y/n] y  
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libxslt1.1 amd64 2.9.14+dfsg-1.3ubuntu3.1 [39.4 kB]  
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libxslt1.1 amd64 1.1.39-0exp1build1 [167 kB]  
Get:3 http://archive.ubuntu.com/ubuntu noble/universe amd64 wsl all 0.2.1-3 [18.7 kB]  
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 xsltproc amd64 1.1.39-0exp1build1 [15.0 kB]  
Fetched 240 kB in 2s (126 kB/s)  
Selecting previously unselected package libxslt1.1.  
(Reading database ... 41789 files and directories currently installed.)  
Preparing to unpack .../libxslt1.1_2.9.14+dfsg-1.3ubuntu3.1_amd64.deb ...  
Unpacking libxslt1.1 (2.9.14+dfsg-1.3ubuntu3.1) ...  
Selecting previously unselected package libxslt1.1:amd64.  
Preparing to unpack .../libxslt1.1_1.1.39-0exp1build1_amd64.deb ...  
Unpacking libxslt1.1:amd64 (1.1.39-0exp1build1) ...  
Selecting previously unselected package wsl.  
Preparing to unpack .../archives/wsl_0.2.1-3_all.deb ...  
Unpacking wsl (0.2.1-3) ...  
Selecting previously unselected package xsltproc.  
Preparing to unpack .../xsltproc_1.1.39-0exp1build1_amd64.deb ...  
Unpacking xsltproc (1.1.39-0exp1build1) ...  
Setting up libxslt1.1:amd64 (1.1.39-0exp1build1) ...  
Setting up libxslt1.1:amd64 (1.1.39-0exp1build1) ...  
Setting up wsl (0.2.1-3) ...  
Setting up xsltproc (1.1.39-0exp1build1) ...  
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...  
Processing triggers for man-db (2.12.0-4build2) ...
```

SUDO APT UPGRADE

There are likely to be several Linux updates. To update Ubuntu applications, enter the following commands in the Linux terminal:

```
karthik@f542ba3b5a78573: ~  
karthik@f542ba3b5a78573: $ sudo apt install wsl  
[sudo] password for karthik:  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  libxslt1.1 xsltproc  
The following NEW packages will be installed:  
  libxslt1.1 xsltproc wsl  
0 upgraded, 4 newly installed, 0 to remove and 59 not upgraded.  
Need to get 240 kB of archives.  
After this operation, 806 kB of additional disk space will be used.  
Do you want to continue? [Y/n] y  
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libxslt1.1 amd64 2.9.14+dfsg-1.3ubuntu3.1 [39.4 kB]  
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libxslt1.1 amd64 1.1.39-0exp1build1 [167 kB]  
Get:3 http://archive.ubuntu.com/ubuntu noble/universe amd64 wsl all 0.2.1-3 [18.7 kB]  
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 xsltproc amd64 1.1.39-0exp1build1 [15.0 kB]  
Fetched 240 kB in 2s (126 kB/s)  
Selecting previously unselected package libxslt1.1.  
(Reading database ... 41789 files and directories currently installed.)  
Preparing to unpack .../libxslt1.1_2.9.14+dfsg-1.3ubuntu3.1_amd64.deb ...  
Unpacking libxslt1.1 (2.9.14+dfsg-1.3ubuntu3.1) ...  
Selecting previously unselected package libxslt1.1:amd64.  
Preparing to unpack .../libxslt1.1_1.1.39-0exp1build1_amd64.deb ...  
Unpacking libxslt1.1:amd64 (1.1.39-0exp1build1) ...  
Selecting previously unselected package wsl.  
Preparing to unpack .../archives/wsl_0.2.1-3_all.deb ...  
Unpacking wsl (0.2.1-3) ...  
Selecting previously unselected package xsltproc.  
Preparing to unpack .../xsltproc_1.1.39-0exp1build1_amd64.deb ...  
Unpacking xsltproc (1.1.39-0exp1build1) ...  
Setting up libxslt1.1:amd64 (1.1.39-0exp1build1) ...  
Setting up libxslt1.1:amd64 (1.1.39-0exp1build1) ...  
Setting up wsl (0.2.1-3) ...  
Setting up xsltproc (1.1.39-0exp1build1) ...  
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...  
Processing triggers for man-db (2.12.0-4build2) ...
```

Activate Windows
Go to Settings to activate Windows.

Set a Default Linux Distribution

One Linux distribution must be set as the default when you have more than one installed. This will be used when wsl is entered in a Windows Powershell terminal.

```
PS C:\Users\Administrator> wsl --setdefault Ubuntu
The operation completed successfully.
PS C:\Users\Administrator> wsl --user karthik

Administrator: Windows PowerShell
Setting up udev (252.33-1-deb12u1) ...
Processing triggers for libc-bin (2.36-9+deb12u9) ...
karthik@9542ba3b5a78573: ~$ wsl --update
-bash: wsl: command not found
karthik@9542ba3b5a78573: ~$ exit
logout
The installation process for distribution 'Debian' failed with exit code: 127.
Error code: Wsl/InstallDistro/WSL_E_INSTALL_PROCESS_FAILED
PS C:\Users\Administrator> wsl --update
Checking for updates.
The most recent version of Windows Subsystem for Linux is already installed.
PS C:\Users\Administrator> wsl --list --verbose
  NAME      STATE      VERSION
* docker-desktop  Stopped    2
  Debian     Stopped    2
  Ubuntu     Stopped    2
PS C:\Users\Administrator> wsl --set-version Ubuntu 2
For information on key differences with WSL 2 please visit https://aka.ms/wsl2
Conversion in progress, this may take a few minutes.
The distribution is already the requested version.
Error code: Wsl/Service/WSL_E_VH_NODE_INVALID_STATE
PS C:\Users\Administrator> wsl --set-version Ubuntu 1
Conversion in progress, this may take a few minutes.
The operation completed successfully.
PS C:\Users\Administrator>
```

```
The installation process for distribution 'Debian' failed with exit code: 127.
Error code: Wsl/InstallDistro/WSL_E_INSTALL_PROCESS_FAILED
PS C:\Users\Administrator> wsl --update
Checking for updates.
The most recent version of Windows Subsystem for Linux is already installed.
PS C:\Users\Administrator>
```

Run Linux as a Specific User

```
PS C:\Users\Administrator> wsl --setdefault Ubuntu
The operation completed successfully.
PS C:\Users\Administrator> wsl --user karthik
```

```
error code: wsl/service/registeredistro/known_file_exists
PS C:\Users\Administrator> ubuntu config --default-user karthik
PS C:\Users\Administrator> touch /etc/wsl.conf
```

For other distros that aren't the WSL Windows default, define a user by logging on to the distro and creating/editing `/etc/wsl.conf`:

```
karthik@f542ba3b5a78573:/mnt/c/Users/Administrator$ exit
logout
PS C:\Users\Administrator> wsl --terminate Debian
The operation completed successfully.
```

```
root@f542ba3b5a78573:~# touch /etc/wsl.conf
root@f542ba3b5a78573:~# nano /etc/wsl.conf
```

Access Linux Files from Windows

```
PS C:\Users\Administrator> wsl
karthik@f542ba3b5a78573:/mnt/c/Users/Administrator$ exit
logout
PS C:\Users\Administrator> cd \\wsl$\Ubuntu\home\karthik
PS Microsoft.PowerShell.Core\FileSystem::\\wsl$\Ubuntu\home\karthik> cd /mnt/c/Users/<your_windows_username>
```

Install Applications

Git on Ubuntu is installed using:

```
arthik@f542ba3b5a78573: $ sudo apt-get install -y nodejs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libc-ares2 libnode108 libuv1 node-acorn node-busboy node-cjs-module-lexer node-undici node-xtend nodejs-doc
Suggested packages:
  npm
The following NEW packages will be installed:
  libc-ares2 libnode108 libuv1 node-acorn node-busboy node-cjs-module-lexer node-undici node-xtend nodejs nodejs-doc
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 15.1 MB of archives.
After this operation, 70.0 MB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bookworm/main amd64 libc-ares2 amd64 1.18.1-3 [102 kB]
Get:2 http://deb.debian.org/debian bookworm/main amd64 libuv1 amd64 1.44.2-1+deb12u1 [136 kB]
Get:3 http://deb.debian.org/debian bookworm/main amd64 node-xtend all 4.0.2-3 [3,932 B]
Get:4 http://deb.debian.org/debian bookworm/main amd64 nodejs amd64 18.19.0+dfsg-6~deb12u2 [319 kB]
Get:5 http://deb.debian.org/debian bookworm/main amd64 node-acorn all 8.8.1+ds+~cs25.17.7-2 [128 kB]
Get:6 http://deb.debian.org/debian bookworm/main amd64 node-cjs-module-lexer all 1.2.2+dfsg-5 [30.1 kB]
Get:7 http://deb.debian.org/debian bookworm/main amd64 node-busboy all 1.6.0+~cs2.6.0-2 [16.9 kB]
Get:8 http://deb.debian.org/debian bookworm/main amd64 node-undici all 5.15.0+dfsg1+~cs20.10.9.3-1+deb12u4 [285 kB]
Get:9 http://deb.debian.org/debian bookworm/main amd64 libnode108 amd64 18.19.0+dfsg-6~deb12u2 [10.5 MB]
Get:10 http://deb.debian.org/debian bookworm/main amd64 nodejs-doc all 18.19.0+dfsg-6~deb12u2 [3,569 kB]
Fetched 15.1 MB in 1s (20.0 MB/s)
```

```
arthik@f542ba3b5a78573: $ curl -sL https://deb.nodesource.com/setup_18.x | sudo -E bash
2025-02-04 15:58:19 - Installing pre-requisites
Hit:1 http://deb.debian.org/debian bookworm InRelease
Hit:2 http://deb.debian.org/debian bookworm-updates InRelease
Hit:3 http://security.debian.org/debian-security bookworm-security InRelease
Hit:4 http://ftp.debian.org/debian bookworm-backports InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20230311).
ca-certificates set to manually installed.
curl is already the newest version (7.88.1-10+deb12u8).graded.
gnupg is already the newest version (2.2.40-1.1).
gnupg set to manually installed.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 25.2 kB of archives.
After this operation, 35.8 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bookworm/main amd64 apt-transport-https all 2.6.1 [25.2 kB]
Fetched 25.2 kB in 0s (772 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 28686 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.6.1_all.deb ...
Unpacking apt-transport-https (2.6.1) ...
Setting up apt-transport-https (2.6.1) ...
Hit:1 http://deb.debian.org/debian bookworm InRelease
Hit:2 http://deb.debian.org/debian bookworm-updates InRelease
Hit:3 http://security.debian.org/debian-security bookworm-security InRelease
Hit:4 http://ftp.debian.org/debian bookworm-backports InRelease
Get:5 https://deb.nodesource.com/node_18.x nodistro InRelease [12.1 kB]
Get:6 https://deb.nodesource.com/node_18.x nodistro/main amd64 Packages [11.2 kB]
Fetched 23.4 kB in 1s (15.8 kB/s)
Reading package lists... Done
2025-02-04 15:58:27 - Repository configured successfully.
2025-02-04 15:58:27 - To install Node.js, run: apt-get install nodejs -y
2025-02-04 15:58:27 - You can use N|solid Runtime as a node.js alternative
2025-02-04 15:58:27 - To install N|solid Runtime, run: apt-get install nsolid -y
```

Activate Windows
Go to Settings to activate Windows

Installing Graphical Linux Applications

[illegible]