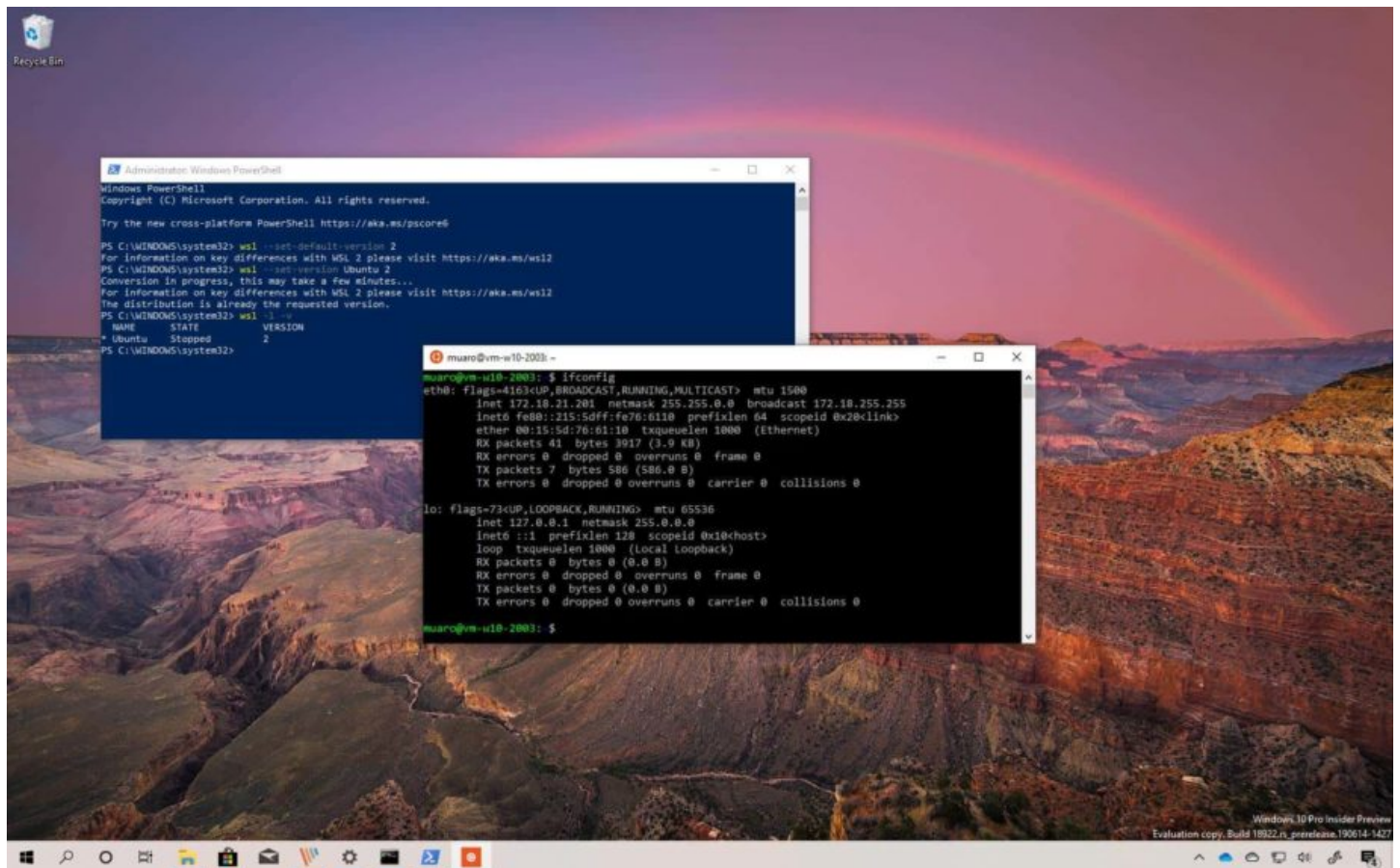


How to install WSL2 (Windows Subsystem for Linux 2) on Windows 10

Windows Subsystem for Linux 2 is now available on Windows 10 with various improvements, and this is how you can install and start using it.



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April 12, 2022



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WSL2 (Windows Subsystem for Linux version 2) is a new version of the architecture that allows you to use Linux on top of Windows 10 natively (using a lightweight virtual machine) and replaces WSL.

The feature runs an actual Linux kernel in this new version, which improves performance and app compatibility over the previous version while maintaining the same experience as the first release.

In this guide, you will learn the steps to install the Windows Subsystem for Linux 2 on Windows 10.

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- [Install WSL2 on Windows 10](#)
- [Install WSL2 on Windows 10 1909 or older](#)

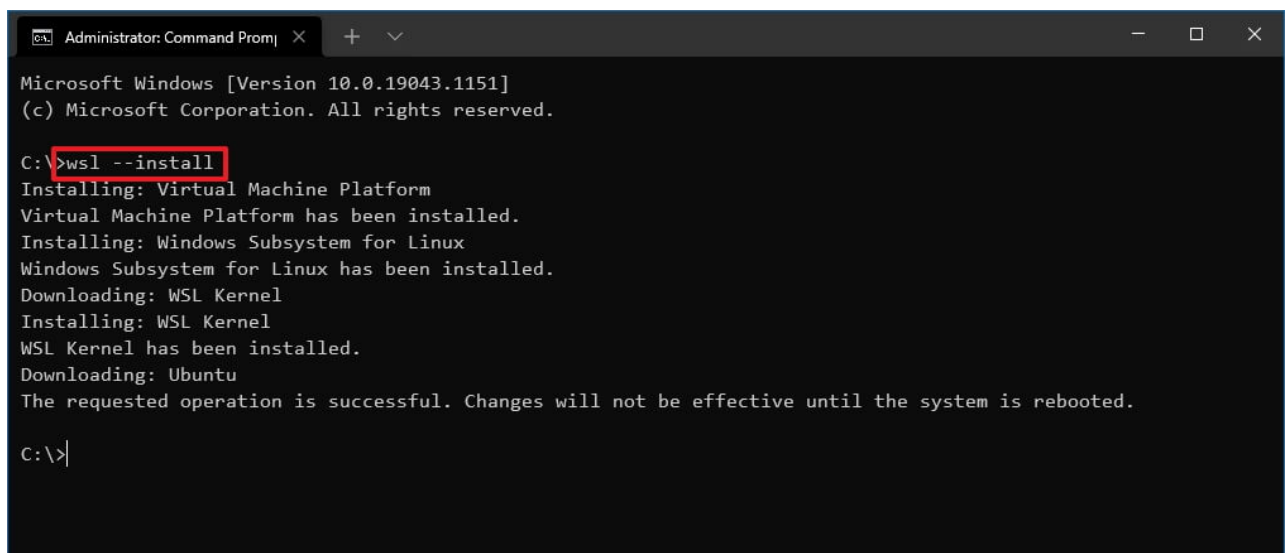
Install WSL2 on Windows 10

Microsoft has simplified the installation process of the WSL on Windows 10 2004 and higher releases (including version [21H2](#) and [21H1](#)) to only one command that downloads and installs all the required components, including the virtual machine platform and Ubuntu Linux by default.

To install Windows Subsystem for Linux on Windows 10, use these steps:

- 1 Open **Start** on Windows 10.
- 2 Search for **Command Prompt**, right-click the top result, and select the **Run as administrator** option.
- 3 Type the following command to *install the WSL on Windows 10* and press **Enter**:

```
wsl --install
```



```
Administrator: Command Promp
Microsoft Windows [Version 10.0.19043.1151]
(c) Microsoft Corporation. All rights reserved.

C:\>wsl --install
Installing: Virtual Machine Platform
Virtual Machine Platform has been installed.
Installing: Windows Subsystem for Linux
Windows Subsystem for Linux has been installed.
Downloading: WSL Kernel
Installing: WSL Kernel
WSL Kernel has been installed.
Downloading: Ubuntu
The requested operation is successful. Changes will not be effective until the system is rebooted.

C:\>
```

- 4 Restart your computer to finish the WSL installation on Windows 10.
- 5 Continue with the Linux distro setup as necessary.

Once you complete the steps, the required Linux components will automatically install the latest version of the Ubuntu Linux distribution.

Install WSL with specific distro

To install WSL with a specific distro on Windows 10, use these steps:

- 1 Open **Start**.

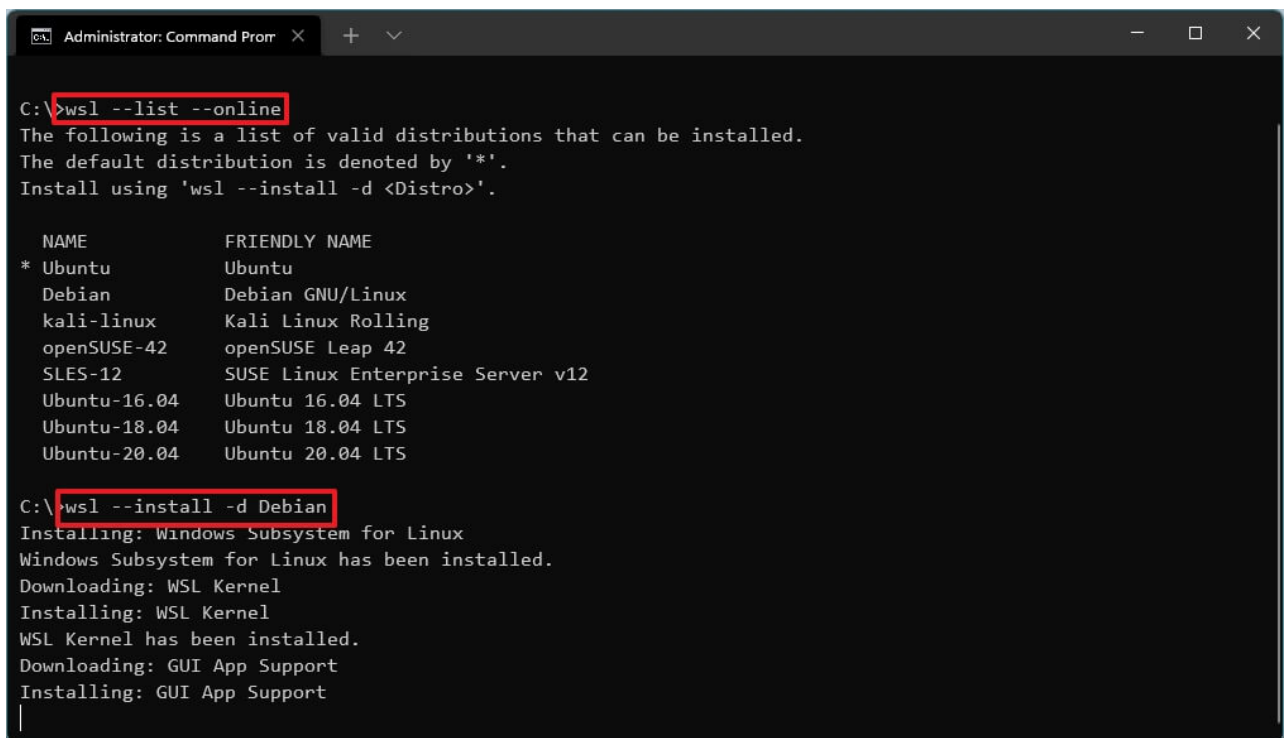
- 2 Search for **Command Prompt**, right-click the top result, and select the **Run as administrator** option.
- 3 Type the following command to view a list of available WSL distros you can install on Windows 10 and press **Enter**:

```
wsl --list --online
```

❗ **Quick note:** At the time of this writing, you can install Ubuntu, Debian, Kali Linux, openSUSE, and SUSE Linux Enterprise Server.

- 4 Type the following command to install the *WSL with a specific distro on Windows 10* and press **Enter**:

```
wsl --install -d DISTRO-NAME
```



The screenshot shows a Windows Command Prompt window titled "Administrator: Command Prom". The first command entered is `wsl --list --online`, which is highlighted with a red box. The output lists valid distributions that can be installed, with the default distribution denoted by an asterisk (*). The list includes Ubuntu, Debian, Kali Linux Rolling, openSUSE Leap 42, SUSE Linux Enterprise Server v12, and several Ubuntu LTS versions. The second command entered is `wsl --install -d Debian`, also highlighted with a red box. The output shows the installation progress for the Windows Subsystem for Linux, including downloading the WSL Kernel and GUI App Support.

NAME	FRIENDLY NAME
* Ubuntu	Ubuntu
Debian	Debian GNU/Linux
kali-linux	Kali Linux Rolling
openSUSE-42	openSUSE Leap 42
SLES-12	SUSE Linux Enterprise Server v12
Ubuntu-16.04	Ubuntu 16.04 LTS
Ubuntu-18.04	Ubuntu 18.04 LTS
Ubuntu-20.04	Ubuntu 20.04 LTS

In the command, remember to replace “**DISTRO-NAME**” for the name of the distro you want to install, such as **Debian**.

- 5 Restart your computer.
- 6 Continue with the Linux distro setup as necessary.

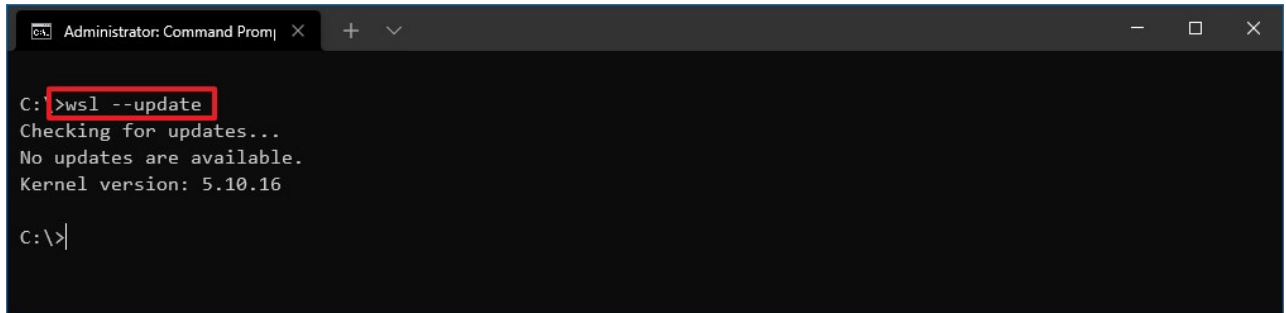
After you complete the steps, the Windows Subsystem for Linux 2 components will install with the distro of Linux you specified.

Update WSL kernel

To update the WSL kernel to the latest version, use these steps:

- 1 Open **Start**.
- 2 Search for **Command Prompt**, right-click the top result, and select the **Run as administrator** option.
- 3 Type the following command to *update the WSL kernel* and press **Enter**:

```
wsl --update
```



```
C:\>wsl --update
Checking for updates...
No updates are available.
Kernel version: 5.10.16
C:\>
```

Once you complete the steps, if an update is available, then it will download and install on the device.

If the update command doesn't work, open **Settings > Update & Security > Windows Update > Advanced options**, and turn on the "Receive updates for other Microsoft products when you update Windows" toggle switch.

Install WSL2 on Windows 10 1909 or older

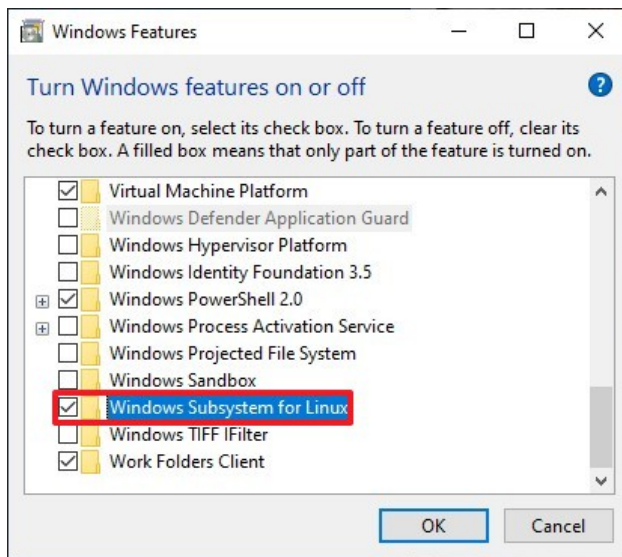
Alternatively, you can still install WSL on Windows 10 version 1909 and older versions using the legacy processes. The process requires enabling WSL1, the Virtual Machine Platform, converting existing distros (if applicable), and configuring the Windows Subsystem for Linux 2 as the new default for future distro installations.

If you have an ARM64 system, the Linux integration is supported on version 2004 and higher.

Enable Windows Subsystem for Linux

If you are not already using Linux on Windows 10, you must enable the Windows Subsystem for Linux (version 1) with these steps:

- 1 Open **Start** on Windows 10.
- 2 Search for **Turn Windows features on or off** and click the top result to open the experience.
- 3 Check the "Windows Subsystem for Linux" option.



4 Click the **OK** button.

5 Click the **Restart** button.

Once you complete the steps, you need to enable the Virtual Machine Platform feature.

Enable Virtual Machine Platform

To enable the Virtual Machine Platform on Windows 10, use these steps:

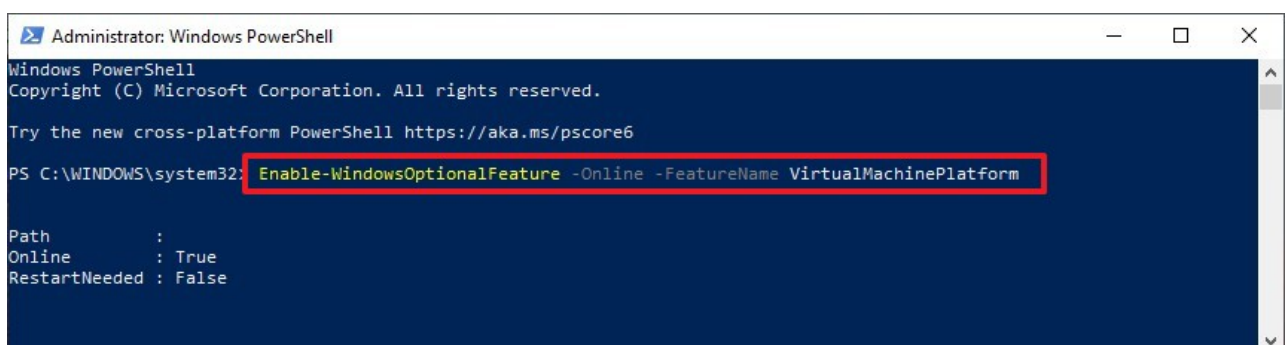
Important: The motherboard and processor must support virtualization, and the option has to be enabled on the Basic Input/Output System (BIOS) or Unified Extensible Firmware Interface (UEFI).

1 Open **Start**.

2 Search for **PowerShell**, right-click the top result, and select the **Run as administrator** option.

3 Type the following command to enable the Virtual Machine Platform feature and press **Enter**:

```
Enable-WindowsOptionalFeature -Online -FeatureName VirtualMachinePlatform
```



- 4 Restart your computer.

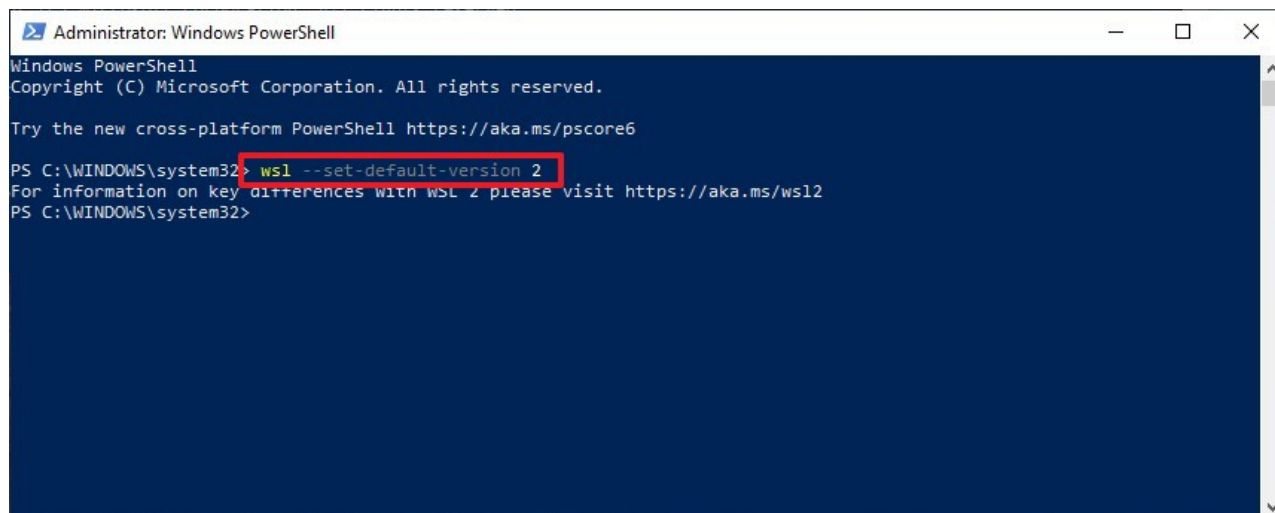
After you complete the steps, you can set the Windows Subsystem for Linux version 2 as the new default architecture and convert existing distros.

Enable Windows Subsystem for Linux 2

To start using WSL2 or convert WSL distros to WSL2, use these steps:

- 1 Download this [WSL 2 kernel update](#) (required).
- 2 Double-click the `wsl_update_x64.msi` file and apply the update.
- 3 Open **Start**.
- 4 Search for **PowerShell**, right-click the top result, and select the **Run as administrator** option.
- 5 Type the following command to set **Windows Subsystem for Linux 2** your default architecture for new distros that you install, and press **Enter**:

```
wsl --set-default-version 2
```

A screenshot of a Windows PowerShell window running as Administrator. The window title is "Administrator: Windows PowerShell". The text inside shows the standard PowerShell startup messages: "Windows PowerShell", "Copyright (C) Microsoft Corporation. All rights reserved.", and "Try the new cross-platform PowerShell https://aka.ms/pscore6". The prompt "PS C:\WINDOWS\system32>" is followed by the command "wsl --set-default-version 2", which is highlighted with a red rectangular box. Below the command, there is a message: "For information on key differences with WSL 2 please visit https://aka.ms/wsl2". The prompt "PS C:\WINDOWS\system32>" appears again on the next line.

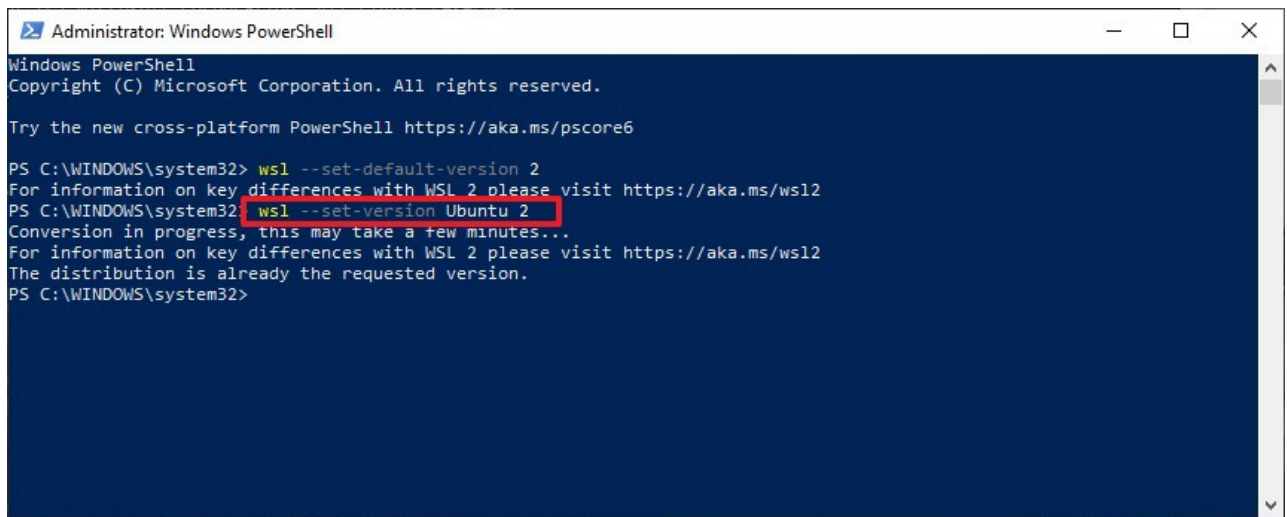
```
Administrator: Windows PowerShell
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\WINDOWS\system32> wsl --set-default-version 2
For information on key differences with WSL 2 please visit https://aka.ms/wsl2
PS C:\WINDOWS\system32>
```

- 6 (Optional) Type the following command to convert the distro from WSL to WSL 2 and press **Enter**:

```
wsl --set-version Ubuntu 2
```

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

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

PS C:\WINDOWS\system32> wsl --set-default-version 2
For information on key differences with WSL 2 please visit https://aka.ms/wsl2
PS C:\WINDOWS\system32> wsl --set-version Ubuntu 2
Conversion in progress, this may take a few minutes...
For information on key differences with WSL 2 please visit https://aka.ms/wsl2
The distribution is already the requested version.
PS C:\WINDOWS\system32>
```

In the command, change “Ubuntu” for the distro’s name you want to convert. If you do not know the distro’s name, use the `wsl -l -v` command.

Once you complete the steps, your device will start using the new version of Windows Subsystem for Linux as the default architecture. (See [video tutorial](#) on the Pureinfotech YouTube channel.)

Confirm distro platform

To confirm distros are using the Windows Subsystem for Linux 2, use these steps:

- 1 Open **Start**.
- 2 Search for **PowerShell**, right-click the top result, and select the **Run as administrator** option.
- 3 Type the following command to verify the version of the distro and press **Enter**:

```
wsl --list --verbose
```

- 4 Confirm the distro version is 2.



```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32>
PS C:\WINDOWS\system32> wsl -l -v
  NAME      STATE          VERSION
* Ubuntu    Stopped        2
PS C:\WINDOWS\system32>
```

After you complete the steps, you will know if the process was successful or if you need to troubleshoot any of the steps.

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