

# How to Install Ubuntu 24.04 LTS

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COMP-232: Programming Languages

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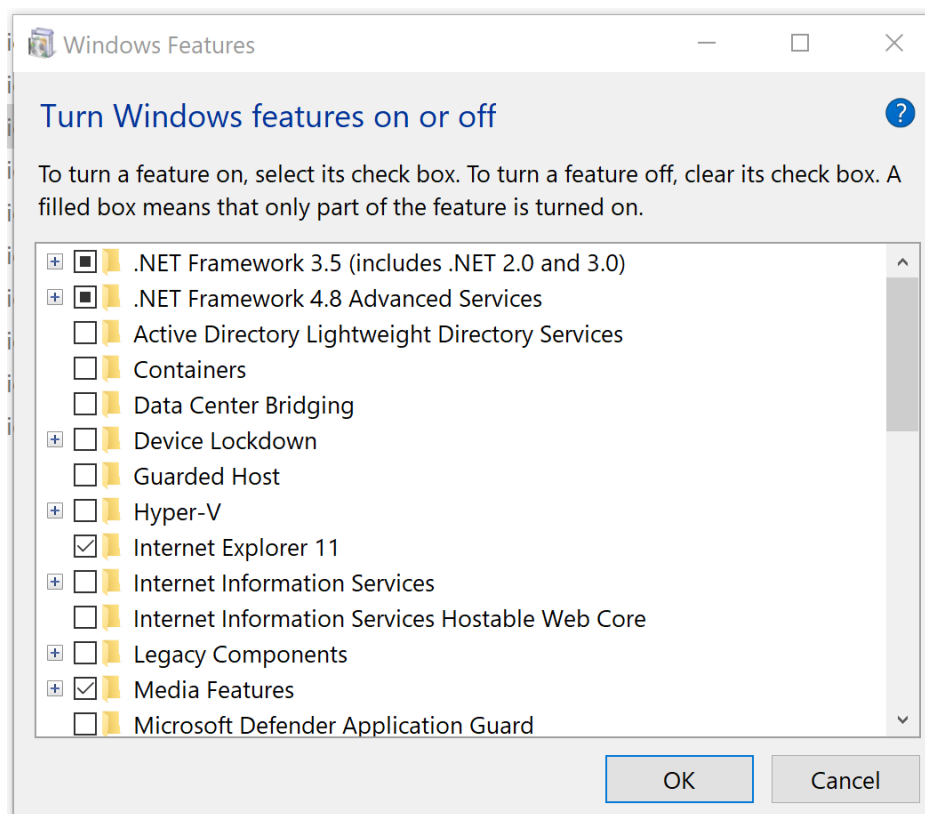
## MAC Users:

Lucky you! You do not need to install Ubuntu onto your system. Mac OS is Unix based. So all you need to do is open a Terminal window and can start the Git Educated assignment.

## Windows 10/11 Users:

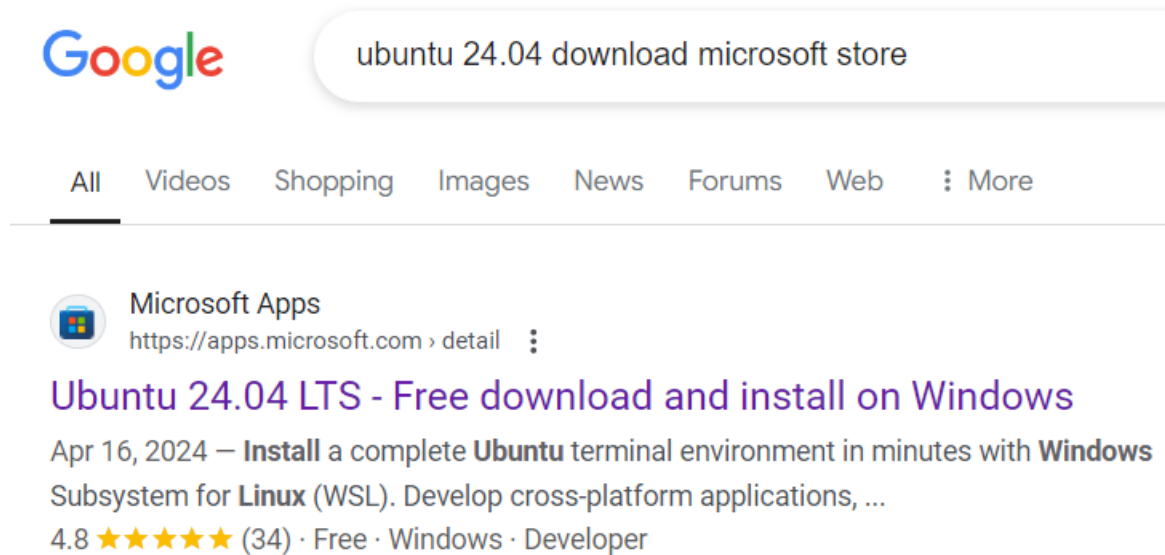
Here's how to install Ubuntu 24.04.1 LTS (Long Term Support) onto your Windows 10/11 laptop.

1. Type "Turn Windows features on or off" in Start Menu's "Type here to search" box.
2. Select Virtual Machine Platform and Windows Subsystem for Linux.

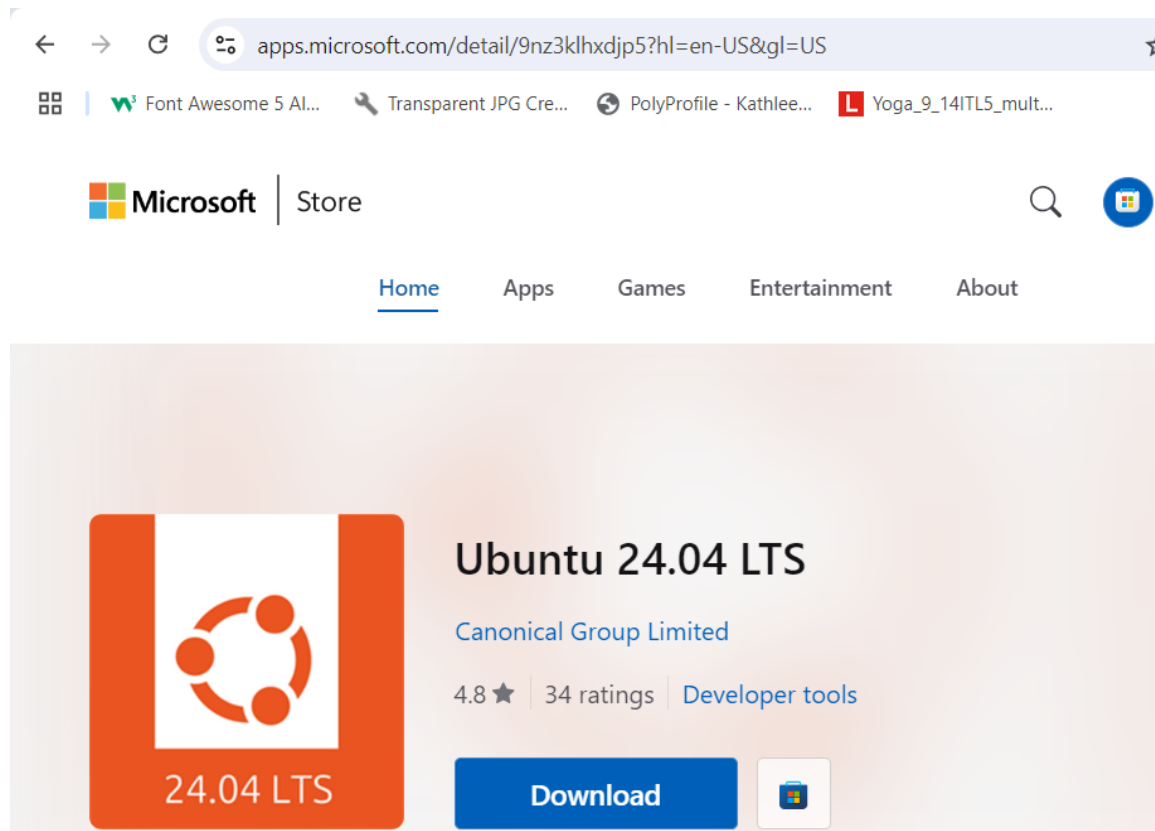


3. Reboot system (if either of these options were not selected previously).

4. Google “ubuntu 24.04.1 download microsoft store”
5. Click on “Ubuntu 24.04 LTS – Free download and install on Windows” link, as seen below:



6. The link goes to <https://apps.microsoft.com/detail/9nz3klhxdjp5?hl=en-US&gl=US> seen below:



7. Click on “Download” button.

8. Go to Downloads folder.

9. Click on “Ubuntu 24.04 LTS Installer.exe”.

10. Asks you for your user name and password ... My user name is “john” and my password is “nicetry”. 😊

It’s important that you remember your PASSWORD!

```

john@oho: ~
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: john
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
passwd: password updated successfully
Installation successful!
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 4.4.0-19041-Microsoft x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Sat Aug 14 16:22:59 PDT 2021

System load:            0.52
Usage of /home:         unknown
Memory usage:           38%
Swap usage:             0%
Processes:              7
Users logged in:        0
IPv4 address for wifi0: 192.168.1.185
IPv6 address for wifi0: 2603:8000:1a01:c8c2:1c51:67ad:7a41:b1cb
IPv6 address for wifi0: 2603:8000:1a01:c8c2::1d88
IPv6 address for wifi0: 2603:8000:1a01:c8c2:7d89:8d9c:ff19:d3ba

1 update can be installed immediately.
0 of these updates are security updates.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

This message is shown once a day. To disable it please create the
/home/john/.hushlogin file.
john@oho:~$

```

**11. We want to install gdb, the GNU debugger. Need to type: sudo apt install gdb**

```

john@oho:~$ pwd
/home/john
john@oho:~$ gdb

Command 'gdb' not found, but can be installed with:

sudo apt install gdb

john@oho:~$

```

## 12. Unfortunately, we hit errors.

```
john@oho:~$ sudo apt install gdb
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  gdbserver libbabeltrace1 libc6-dbg libcc1-0 libdw1
Suggested packages:
  gdb-doc
The following NEW packages will be installed:
  gdb gdbserver libbabeltrace1 libc6-dbg libcc1-0 libdw1
0 upgraded, 6 newly installed, 0 to remove and 0 not upgraded.
Need to get 14.4 MB of archives.
After this operation, 88.7 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 libdw1 amd64 0.176-1.1build1 [226 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal/main amd64 libbabeltrace1 amd64 1.5.8-1build1 [156 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 gdb amd64 9.2-0ubuntu1~20.04 [3221 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 gdbserver amd64 9.2-0ubuntu1~20.04 [222 kB]
Ign:5 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libcc1-0 amd64 10.2.0-5ubuntu1~20.04
Get:6 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libc6-dbg amd64 2.31-0ubuntu9.2 [10.5 MB]
Err:5 http://security.ubuntu.com/ubuntu focal-updates/main amd64 libcc1-0 amd64 10.2.0-5ubuntu1~20.04
      404 Not Found [IP: 2001:67c:1360:8001::23 80]
Fetched 14.3 MB in 35s (405 kB/s)
E: Failed to fetch http://security.ubuntu.com/ubuntu/pool/main/g/gcc-10/libcc1-0_10.2.0-5ubuntu1~20.04_amd64.deb 404 Not Found
E: Unable to fetch some archives, maybe run apt-get update or try with --fix-missing?
john@oho:~$
```

### 13. Let's update and upgrade our system using:

% sudo apt update

% sudo apt upgrade

```
john@oho:~$ which gdb
john@oho:~$ which vim
/usr/bin/vim
john@oho:~$ which gdb
john@oho:~$ sudo apt-get update
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:2 http://archive.ubuntu.com/ubuntu focal InRelease
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [101 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [8628 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [793 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [157 kB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [8424 B]
Get:9 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [330 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [47.6 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 c-n-f Metadata [460 B]
Get:12 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [636 kB]
Get:13 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en [98.9 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [12.1 kB]
Get:15 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [22.3 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/multiverse Translation-en [5072 B]
Get:17 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 c-n-f Metadata [568 B]
Get:18 http://archive.ubuntu.com/ubuntu focal/universe Translation-en [5124 kB]
Get:19 http://archive.ubuntu.com/ubuntu focal/universe amd64 c-n-f Metadata [265 kB]
Get:20 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [144 kB]
Get:21 http://archive.ubuntu.com/ubuntu focal/multiverse Translation-en [104 kB]
Get:22 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 c-n-f Metadata [9136 B]
Get:23 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1138 kB]
Get:24 http://archive.ubuntu.com/ubuntu focal-updates/main Translation-en [248 kB]
Get:25 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [13.9 kB]
Get:26 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [372 kB]
Get:27 http://archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [53.7 kB]
Get:28 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 c-n-f Metadata [456 B]
Get:29 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [844 kB]
Get:30 http://archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [177 kB]
Get:31 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [18.4 kB]
Get:32 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [28.7 kB]
Get:33 http://archive.ubuntu.com/ubuntu focal-updates/multiverse Translation-en [7092 B]
Get:34 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [680 B]
Get:35 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [2568 B]
Get:36 http://archive.ubuntu.com/ubuntu focal-backports/main Translation-en [1120 B]
Get:37 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [400 B]
Get:38 http://archive.ubuntu.com/ubuntu focal-backports/restricted amd64 c-n-f Metadata [116 B]
Get:39 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [5800 B]
Get:40 http://archive.ubuntu.com/ubuntu focal-backports/universe Translation-en [2068 B]
Get:41 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 c-n-f Metadata [288 B]
Get:42 http://archive.ubuntu.com/ubuntu focal-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 19.6 MB in 41s (475 kB/s)
Reading package lists... Done
john@oho:~$
```



14. Ok, now try to install gdb again by running:

`% sudo apt install gdb`

```
john@oho: ~  
john@oho:~$ sudo apt install gdb  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  gcc-10-base gdbserver libbabeltrace1 libc6-dbg libcc1-0 libdw1 libgcc-s1 libstdc++6  
Suggested packages:  
  gdb-doc  
The following NEW packages will be installed:  
  gdb gdbserver libbabeltrace1 libc6-dbg libcc1-0 libdw1  
The following packages will be upgraded:  
  gcc-10-base libgcc-s1 libstdc++6  
3 upgraded, 6 newly installed, 0 to remove and 120 not upgraded.  
Need to get 612 kB/14.9 MB of archives.  
After this operation, 88.7 MB of additional disk space will be used.  
Do you want to continue? [Y/n] Y  
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 gcc-10-base amd64 10.3.0-1ubuntu1~20.04 [20.2 kB]  
Get:2 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libstdc++6 amd64 10.3.0-1ubuntu1~20.04 [501 kB]  
Get:3 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libgcc-s1 amd64 10.3.0-1ubuntu1~20.04 [41.8 kB]  
Get:4 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libcc1-0 amd64 10.3.0-1ubuntu1~20.04 [48.8 kB]  
Fetched 612 kB in 2s (404 kB/s)  
(Reading database ... 32157 files and directories currently installed.)  
Preparing to unpack .../gcc-10-base_10.3.0-1ubuntu1~20.04_amd64.deb ...  
Unpacking gcc-10-base:amd64 (10.3.0-1ubuntu1~20.04) over (10.2.0-5ubuntu1~20.04) ...  
Setting up gcc-10-base:amd64 (10.3.0-1ubuntu1~20.04) ...  
(Reading database ... 32157 files and directories currently installed.)  
Preparing to unpack .../libstdc++6_10.3.0-1ubuntu1~20.04_amd64.deb ...  
Unpacking libstdc++6:amd64 (10.3.0-1ubuntu1~20.04) over (10.2.0-5ubuntu1~20.04) ...  
Setting up libstdc++6:amd64 (10.3.0-1ubuntu1~20.04) ...  
(Reading database ... 32157 files and directories currently installed.)  
Preparing to unpack .../libgcc-s1_10.3.0-1ubuntu1~20.04_amd64.deb ...  
Unpacking libgcc-s1:amd64 (10.3.0-1ubuntu1~20.04) over (10.2.0-5ubuntu1~20.04) ...  
Setting up libgcc-s1:amd64 (10.3.0-1ubuntu1~20.04) ...  
Selecting previously unselected package libdw1:amd64.  
(Reading database ... 32157 files and directories currently installed.)  
Preparing to unpack .../0-libdw1_0.176-1.1build1_amd64.deb ...  
Unpacking libdw1:amd64 (0.176-1.1build1) ...  
Selecting previously unselected package libbabeltrace1:amd64.  
Preparing to unpack .../1-libbabeltrace1_1.5.8-1build1_amd64.deb ...  
Unpacking libbabeltrace1:amd64 (1.5.8-1build1) ...  
Selecting previously unselected package gdb.  
Preparing to unpack .../2-gdb_9.2-0ubuntu1~20.04_amd64.deb ...  
Unpacking gdb (9.2-0ubuntu1~20.04) ...  
Selecting previously unselected package gdbserver.  
Preparing to unpack .../3-gdbserver_9.2-0ubuntu1~20.04_amd64.deb ...  
Unpacking gdbserver (9.2-0ubuntu1~20.04) ...  
Selecting previously unselected package libcc1-0:amd64.  
Preparing to unpack .../4-libcc1-0_10.3.0-1ubuntu1~20.04_amd64.deb ...  
Unpacking libcc1-0:amd64 (10.3.0-1ubuntu1~20.04) ...  
Selecting previously unselected package libc6-dbg:amd64.  
Preparing to unpack .../5-libc6-dbg_2.31-0ubuntu9.2_amd64.deb ...  
Unpacking libc6-dbg:amd64 (2.31-0ubuntu9.2) ...  
Setting up libdw1:amd64 (0.176-1.1build1) ...  
Setting up libc6-dbg:amd64 (2.31-0ubuntu9.2) ...  
Setting up libbabeltrace1:amd64 (1.5.8-1build1) ...  
Setting up gdbserver (9.2-0ubuntu1~20.04) ...  
Setting up libcc1-0:amd64 (10.3.0-1ubuntu1~20.04) ...  
Setting up gdb (9.2-0ubuntu1~20.04) ...  
Processing triggers for man-db (2.9.1-1) ...  
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...  
john@oho:~$
```

15. Looks like it did install gdb.

To check, type:

**% which gdb**

The which command tells us the location of the gdb command. In this case, we see gdb is found in the /usr/bin directory.

```
john@oho:~$ which gdb
/usr/bin/gdb
john@oho:~$
```

**16. Let's see what version of gdb was installed by typing: gdb --version**

```
john@oho:~$ which gdb
/usr/bin/gdb
john@oho:~$
john@oho:~$ gdb --version
GNU gdb (Ubuntu 9.2-0ubuntu1~20.04) 9.2
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
john@oho:~$
```

**Congratulations! You just installed Ubuntu 24.04.1 LTS onto your laptop.**

### **Just a Note**

The very long location where Ubuntu gets installed on your system is:

**C:\Users\<username>\AppData\Local\Packages\CanonicalGroupLimited.UbuntuonWindows\_79rhkp1fndgsc\LocalState\rootfs\usr\bin**

Windows short cut to the above root directory using File Manager is: [\\wsl\\$](#)

This is a note that you will forget but wish you didn't.