



POP!_OS 24.04 LTS · COSMIC · APT · FLATPAK

Pop!_OS Handbook

Installation guide

Install Pop!_OS step by step. Making the install USB with Rufus, starting from the USB, every installer screen, drive encryption, the COSMIC welcome wizard, updates from COSMIC Store, installing alongside Windows and common problems.

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Yellow italic text (like *<package>*) marks the parts you fill in. In the terminal, paste is Ctrl+Shift+V and copy is Ctrl+Shift+C. Commands that start with `sudo` change the system; read what they do before running them.



sudogrimoire.com/popos/

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Before you start

Set aside half an hour for these. Most installation problems come from skipping them.

TIP System requirements. 64-bit processor, at least 4 GB RAM, at least 16 GB of disk (50 GB or more recommended).

TIP Back up. Installing can erase the disk. Copy your documents, photos and browser bookmarks to an external drive or the cloud, and open one or two files from the copy to be sure it worked.

TIP A USB drive of 8 GB or more. Writing erases everything on it, so use an empty one.

TIP Your Wi-Fi password. Write it down; the installer asks for it.

TIP Keeping Windows on the same computer? Save your BitLocker recovery key first. On your phone, open aka.ms/myrecoverykey, sign in with the Microsoft account you use on this computer, and take a photo of the key. Windows may ask for it once after you install Linux.

TIP Download the ISO: system76.com/pop. Choose the **NVIDIA** ISO for NVIDIA graphics cards, otherwise the **Intel/AMD** ISO.

Keep Windows or not?

Decide this before you start. It changes one choice in the installer.

Not sure yet

Click “Try Demo Mode” in the installer and use Pop!_OS from the USB drive. Your computer stays exactly as it is.

Only Pop!_OS

Back up your files, then let the installer use the whole disk. This is the simplest path. It erases Windows and everything else on the disk.

Pop!_OS and Windows

Follow “Installing alongside Windows” below. Set aside an extra half hour: you first make room on the disk in Windows, then share it in the installer.

Making the install USB

You can't simply copy the downloaded file (the ISO) onto the USB drive. A small program writes it so the computer can start from it.

1 Download Rufus

Get Rufus from **rufus.ie**; the "Portable" version needs no installing. Download the Pop!_OS ISO from **system76.com/pop**. Plug in the USB drive.

2 Open Rufus

In **File Explorer** > **Downloads**, double-click **rufus**. When Windows asks for permission, click **Yes**.

3 Pick the USB drive and the ISO

Under **Device**, make sure your USB drive is selected. Click **SELECT**, pick the Pop!_OS ISO and click **Open**.

4 Start

Leave the other settings as they are, and click **START**.

5 Choose DD Image mode

Choose **"Write in DD Image mode"**, and click **OK**.

6 Confirm and wait

Rufus warns that it will erase everything on the USB drive. Check the name and size, then click **OK**. When the bar turns green and says **READY**, click **CLOSE**.

TIP On macOS or Linux, use **balenaEtcher** (etcher.balena.io).

WARNING Writing erases the selected drive completely. Before you press the final button, check that the drive name and size belong to your USB drive and not to your backup disk.

Starting the computer from the USB

A computer normally starts from its own disk. To start it from the USB drive, you open a one-time boot menu.

1 Plug in the USB and restart

Leave the USB drive plugged in and restart the computer.

2 Press the boot menu key

As soon as the screen turns on, tap the key for your brand (see the list below) again and again until a menu appears.

3 Choose the USB drive

Select your USB drive with the arrow keys and press Enter. If it appears twice, choose the one that starts with "UEFI:".

Boot menu key

Dell F12 · HP F9 or Esc · Lenovo F12 (Novo button on some models) · ASUS F8 or Esc · Acer F12 · MSI F11 · Gigabyte F12

TIP No luck with the key? Start from Windows instead: Settings > System > Recovery > Advanced startup > **Restart now**, then **Use a device** and pick your USB drive.

TIP Secure Boot. Pop!_OS does not support Secure Boot; turn it off in the firmware settings before installing.

TIP If the USB drive isn't in the menu, or the installer later says it can't find a disk, see **Installation problems** near the end.

Installing alongside Windows (optional)

Only for the "Pop!_OS and Windows" path. If Pop!_OS will be the only system, skip this section.

1 Turn off Fast Startup

Windows' Fast Startup leaves the disk half shut down, and that can damage files. Open **Control Panel > Power Options > Choose what the power buttons do**. Click **Change settings that are currently unavailable**, clear **Turn on fast startup** and click **Save changes**.

2 Open Disk Management

Right-click the **Start** button and click **Disk Management**.

3 Shrink the C: drive

Right-click the **C:** partition and click **Shrink Volume**. In **Enter the amount of space to shrink in MB**, type at least **51200** (50 GB); 102400 (100 GB) gives you more room. Click **Shrink**.

4 Leave the new space empty

A black bar labeled **Unallocated** appears next to C:. Leave it as it is: do not create a partition and do not format it. The installer uses this space.

5 Pick the free space in the installer

In the installer, choose "Custom (Advanced)", then the free space for / and Windows' EFI partition for /boot/efi. Never choose the option that erases the whole disk.

6 Choose the system at every start

After installing, a menu appears at every start. Pick Pop!_OS or Windows with the arrow keys and press Enter. If the computer goes straight into Windows, see "Installation problems".

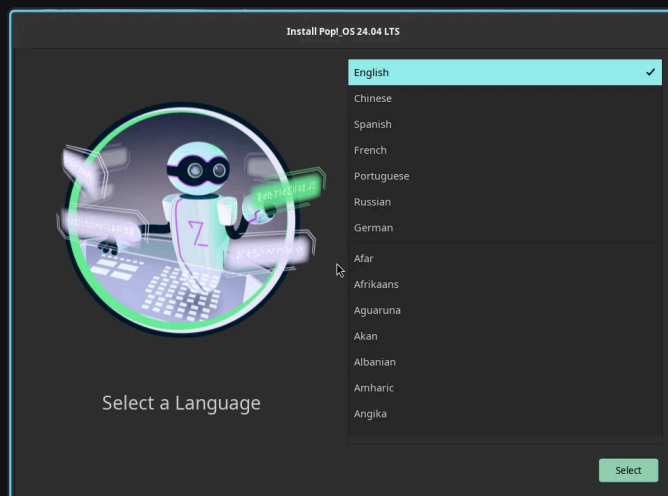
TIP If Windows asks for the BitLocker recovery key once after this, type the key you saved in "Before you start".

Installation steps

Start the computer from the USB drive. Pop!_OS starts straight into a live COSMIC desktop and opens the installer by itself. These steps are for Pop!_OS 24.04 LTS.

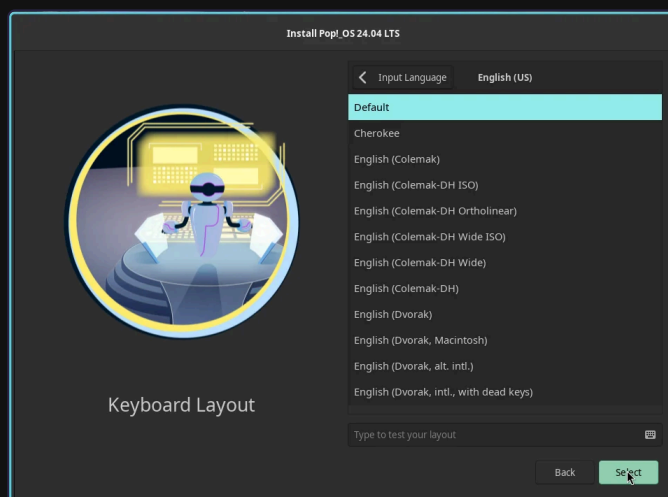
1 Language and region

Keep **English** and click **Select**, then keep your region and click **Select** again.



2 Keyboard

Pick your keyboard language and click **Select**, then keep **Default** and click **Select**.



3 Clean Install

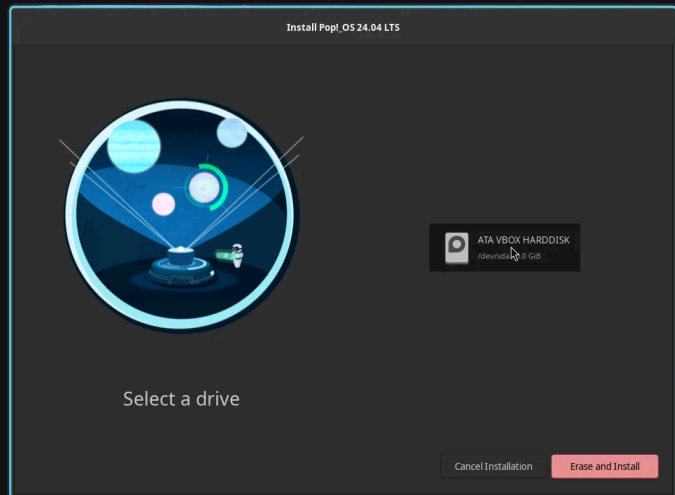
Choose **Clean Install**: it erases the whole disk and installs a fresh copy. **Custom (Advanced)** is for manual partitions, for example to keep Windows. **Try Demo Mode** lets you use Pop!_OS from the USB drive. Click **Clean Install**.



4

Select a drive

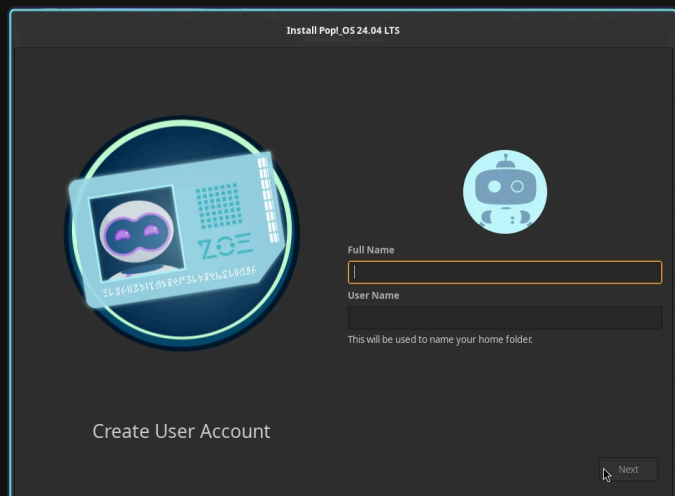
Click the disk, and click **Erase and Install**. Everything on it is deleted.



5

Your account

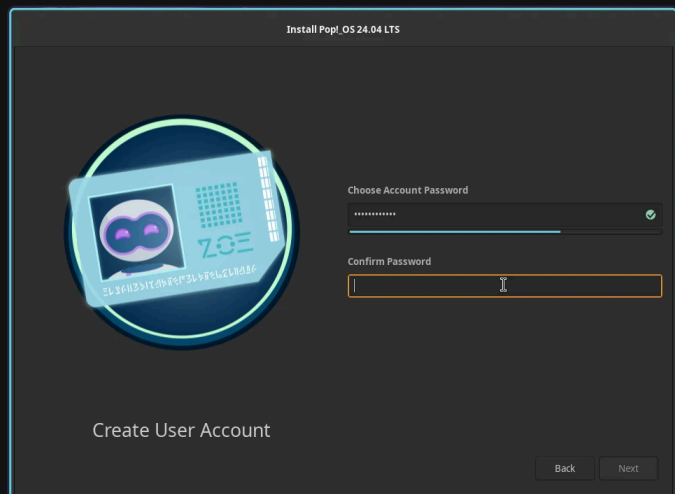
Type your full name; the username fills in by itself. Click **Next**.



6

Password

Choose a password and type it again. You use it to log in and to install software. Click **Next**.



7

Drive encryption

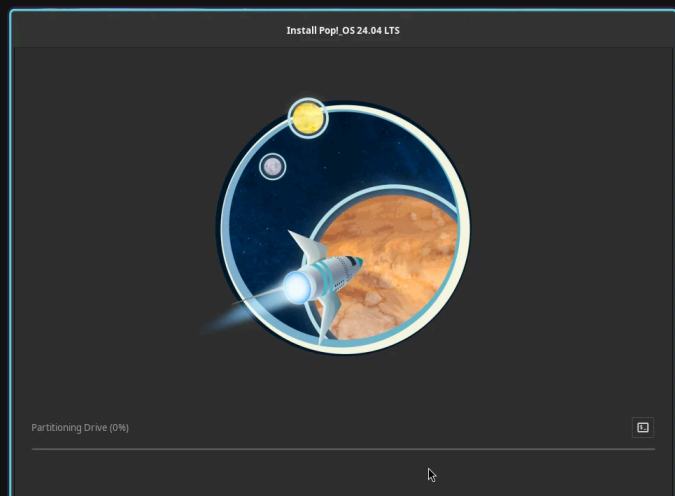
Encryption protects your files if the computer is lost or stolen; you type the password at every start. A good idea on a laptop. Click **Encrypt**, or **Don't Encrypt**.



8

Wait while it installs

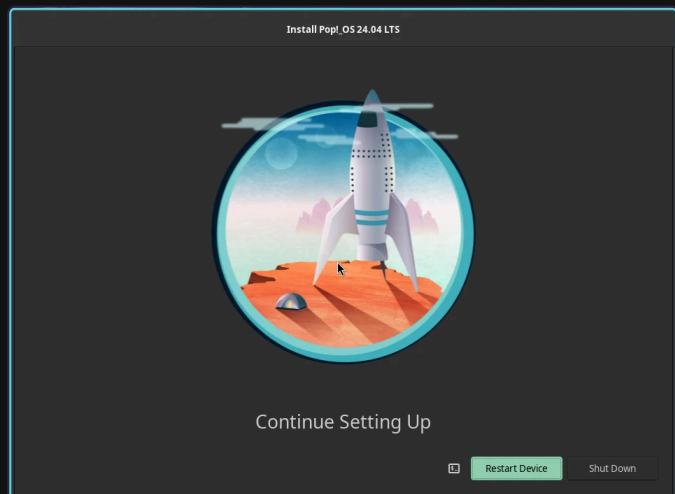
Pop!_OS copies its files. This takes a few minutes.



9

Restart

Click **Restart Device**, and remove the USB drive while it restarts.

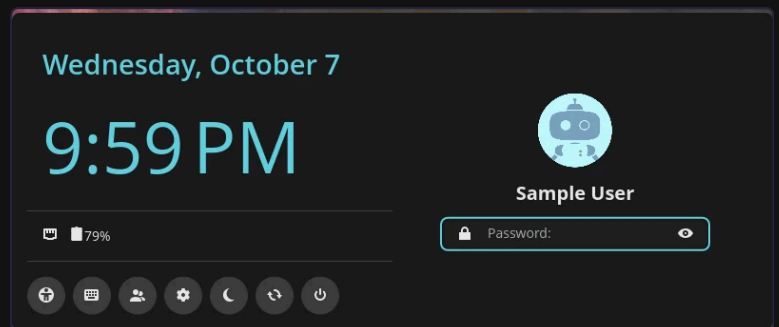


First start

After the restart, Pop!_OS starts from the disk and a short COSMIC welcome wizard opens.

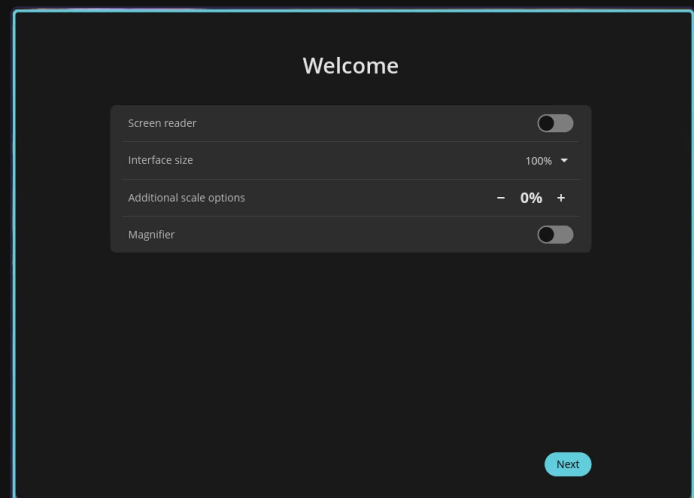
1 Log in

Type your password and press Enter.



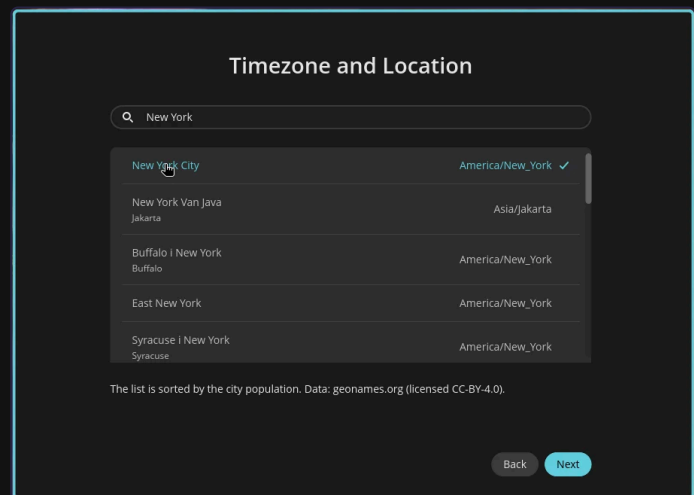
2 Welcome

Accessibility options are on the first page. Click **Next** on each page: Wi-Fi, language and keyboard.



3 Time zone

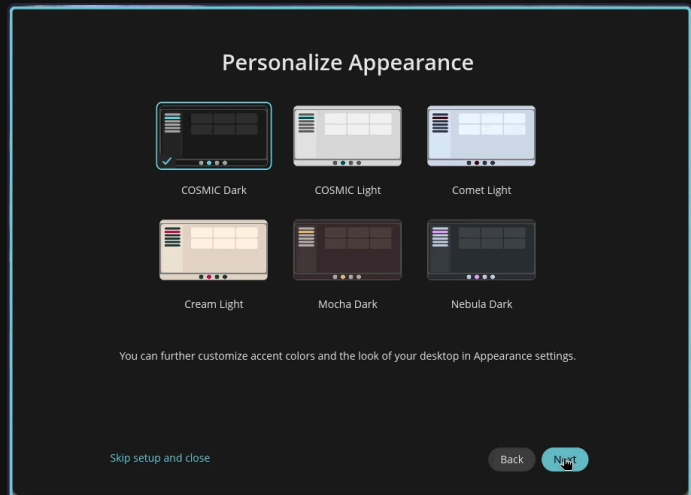
Type your city in the search box and pick it from the list. Click **Next**.



4

Appearance and tips

Pick a dark or light style, then click through the pages about the dock, workspaces, window tiling and keyboard shortcuts.



Right after installing

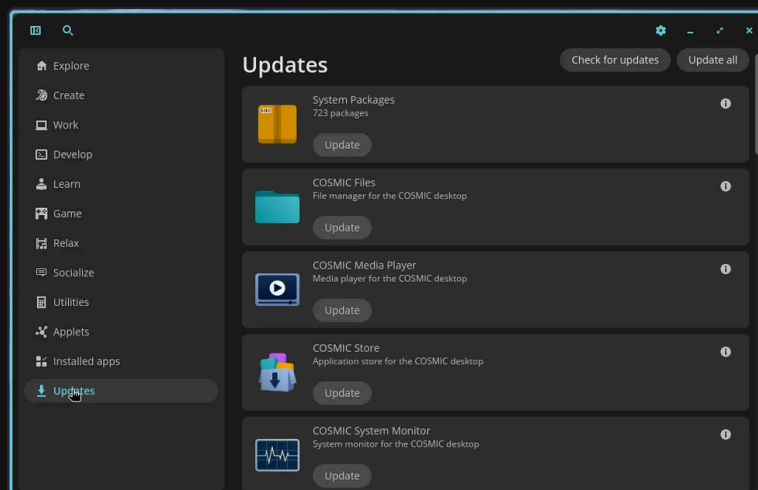
Your new system is ready. Do these two things first, then carry on with the Beginner book.

1 Open COSMIC Store

Click **COSMIC Store** in the dock.

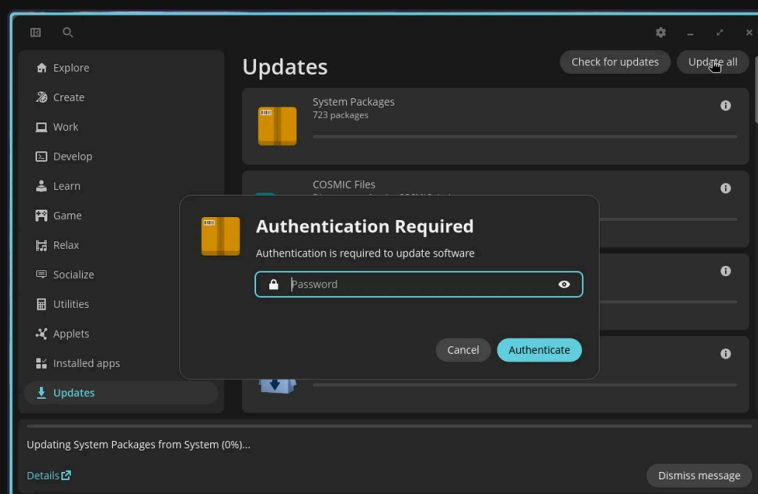
2 Update all

Click **Updates** on the left, then **Update all**.



3 Type your password

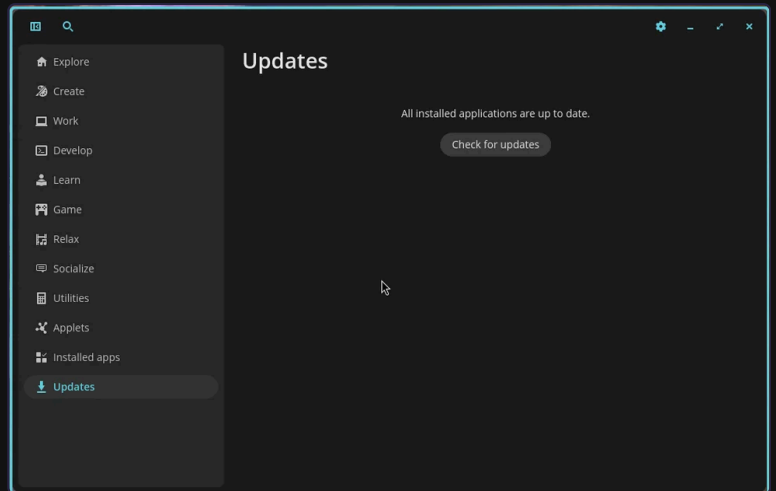
Type your password, and click **Authenticate**. The updates download and install.



4

Done

When it says "All installed applications are up to date", restart the computer.



TIP Next, open the **Beginner** tab. Its "After installing" section walks you through apps, drivers and settings one step at a time.

Installation problems

TIP The USB drive isn't in the boot menu. Plug it into another port (on a desktop, one on the back) and try again. If it still doesn't show, write the USB drive again.

TIP Black screen or freeze while starting from the USB (common with NVIDIA cards). The NVIDIA ISO already includes the driver. On other cards, press **e** in the boot menu and add `nomodeset`. After installing, set up the graphics driver as shown in the Beginner book.

TIP The installer can't find a disk. Many new laptops keep the disk in a mode called Intel RST or VMD. You can change it in the firmware settings, but if Windows is on the same disk, Windows may stop starting. Read "Intel RST / VMD" in the last section before changing anything.

TIP Secure Boot or signature error. Turn Secure Boot off in the firmware settings; Pop!_OS is not signed for it.

TIP No Wi-Fi in the installer. Use a network cable, or connect your phone with a USB cable and turn on USB tethering. You can install the missing Wi-Fi driver afterwards.

TIP The computer goes straight into Windows. Open the boot menu (see "Starting the computer from the USB") and pick Pop!_OS. To make it permanent, move Pop!_OS (or "GRUB", "Linux Boot Manager") to the top of the boot order in the firmware settings (F2 or Delete at startup).

TIP Windows asks for a BitLocker recovery key. Type the key you saved. It happens once.

For experienced users (optional)

A normal installation needs nothing from this section. It collects command-line alternatives and fixes for special cases.

```
$ sha256sum <file>.iso
```

Checks the downloaded ISO on Linux. The result must match the CHECKSUM/SHA256 value on the download page.

```
PS> Get-FileHash <file>.iso -Algorithm SHA256
```

The same check in Windows PowerShell.

```
$ shasum -a 256 <file>.iso
```

The same check on macOS.

```
$ lsblk
```

On Linux, find the USB drive's name (e.g. /dev/sdb). Use the disk itself, not a partition (sdb1).

```
$ sudo dd if=<file>.iso of=/dev/<sdX> bs=4M  
status=progress oflag=sync
```

Writes the ISO straight to the USB drive on Linux.

WARNING `dd` erases the selected disk without asking. Check the name twice.

TIP Ventoy: prepare the USB drive once, then copy several ISO files onto it and pick one at startup. Handy for trying several systems.

TIP Rufus write mode. If a USB drive written in ISO mode doesn't start, write it again and choose "DD image mode" when Rufus asks.

```
PS> manage-bde -protectors -get C:
```

Shows the BitLocker recovery key (Terminal as administrator).

```
PS> Suspend-BitLocker -MountPoint C: -  
RebootCount 3
```

Pauses BitLocker for the next three restarts so boot changes don't trigger the recovery screen.

```
PS> powercfg /h off
```

Turns off Fast Startup and hibernation in one go.

```
PS> reg add  
HKLM\SYSTEM\CurrentControlSet\Control\TimeZoneIn  
formation /v RealTimeIsUniversal /t REG_DWORD /d  
1 /f
```

Fixes the wrong clock in Windows after using Linux (Windows then keeps the hardware clock in UTC like Linux).

TIP nomodeset by hand. In the USB drive's boot menu, highlight the entry, press `e`, add `nomodeset` to the end of the line that starts with `linux`, and start with Ctrl+X (or F10). It applies to that start only.

TIP Intel RST / VMD. In the firmware, set SATA mode to AHCI or turn VMD off. If Windows is on the same disk, first make Windows start once in Safe Mode (`bcdedit /set {current} safeboot minimal`, restart, change the firmware setting, then `bcdedit /deletevalue {current} safeboot` in Safe Mode) or Windows won't start.

```
$ sudo apt update && sudo apt full-upgrade &&  
flatpak update
```

Installs all updates from the terminal.

```
$ lsblk -f && df -h /
```

Shows the partitions and free space after installing.

```
$ ls /sys/firmware/efi
```

If the folder exists, you installed the system in UEFI mode.

Commands are written for Pop!_OS 24.04 LTS (based on Ubuntu 24.04 LTS; COSMIC, APT, Flatpak). Menu names follow the English interface. Commands that start with `sudo` change the system; read what they do before running them.