



LINUX MINT 22 · CINNAMON · APT · FLATPAK

Linux Mint Handbook

For beginners

Don't fear the terminal. Start with a few commands. This section is for people who just installed Linux Mint, many of them coming from Windows: what to do after installing, the Update Manager and Timeshift, installing software, basic terminal commands, Cinnamon shortcuts and where each setting lives.

```
user@mint:~$ sudo apt update
```

user your username · **mint** the computer name · **~** the folder you are in (your home folder) · **\$** means a normal user, **#** means root (administrator). Nothing appears on screen while you type a password; that is normal.

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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.

After installing



sudogrimoire.com/mint/

Free, searchable handbooks for Linux, Windows and macOS. After a clean Linux Mint install, going through these in order is a good start. Most of them are also listed on the Welcome screen under First Steps.

1 Install the updates

Click the shield icon at the bottom right, then **Install Updates**. Restart when it asks you to.

```
$ sudo apt update && sudo apt upgrade
```

```
$ flatpak update
```

2 Set up Timeshift

System snapshots let you undo a bad update. Open Timeshift from the menu, choose **RSYNC**, pick a disk and keep the suggested schedule.

3 Check the Driver Manager

Proprietary drivers for NVIDIA graphics or some Wi-Fi cards. Menu > Driver Manager, pick the recommended driver and click **Apply Changes**.

```
$ sudo ubuntu-drivers install
```

4 Install codecs

If you didn't tick multimedia codecs during installation: Welcome screen > First Steps > Multimedia Codecs, or the command below.

```
$ sudo apt install mint-meta-codecs
```

5 Turn on the firewall

ufw comes installed but disabled. Graphical route: Menu > Firewall Configuration > Status on.

```
$ sudo ufw enable
```

6 Pick a look

Menu > Themes: light or dark, accent color. Welcome screen > First Steps > Desktop Colors does the same.

7

Update firmware

Firmware for laptops, docks and other devices that support LVFS.

```
$ fwupdmgr refresh && fwupdmgr get-updates
```

```
$ fwupdmgr update
```

Meet the terminal

The terminal is the window where you give the computer commands by typing. On Mint the quickest way is **Ctrl** + **Alt** + **T**. You can also click the terminal icon in the panel, or open the menu and type "terminal".

TIP Linux is case-sensitive: **Documents** and **documents** are different folders. Put names with spaces in quotes: `cd "New Folder"`.

TIP Type part of a name and press **Tab**: the command or file name completes itself. Press it twice to list the options. This habit saves more time than anything else.

```
$ man <command>
```

Opens the manual page for a command. Quit with **q**, search inside with `/word`.

```
$ <command> --help
```

Shows a short help text and the command's options.

```
$ sudo <command>
```

Runs the command with administrator (root) rights. It asks for your own password; nothing shows while you type.

```
$ clear
```

Clears the screen. Shortcut: **Ctrl** + **L**.

```
$ history
```

Lists the commands you typed before. You can also step back with **↑**.

```
$ which <command>
```

Shows which file a command runs from.

```
$ exit
```

Closes the terminal (or a remote session).

WARNING To stop a running command, press **Ctrl** + **C**. In the terminal, copy is **Ctrl** + **Shift** + **C** and paste is **Ctrl** + **Shift** + **V**.

Files and folders

`~` means your home folder (`/home/username`). `.` is the current folder, `..` the one above it.

```
$ pwd
```

Prints the folder you are in.

```
$ ls
```

Lists the files in the current folder.

```
$ ls -la
```

Detailed list including hidden files (size, date, permissions). Names starting with a dot are hidden.

```
$ ls -lh
```

Shows sizes in readable KB/MB/GB.

```
$ cd <folder>
```

Enters a folder. Example: `cd Documents`.

```
$ cd ..
```

Goes up one folder.

```
$ cd
```

On its own, goes back to your home folder. `cd -` returns to the previous folder.

```
$ mkdir <folder>
```

Creates a folder. For nested folders: `mkdir -p a/b/c`.

```
$ touch <file>
```

Creates an empty file (or updates the date of an existing one).

```
$ cp <source> <target>
```

Copies a file. For folders use `cp -r`.

```
$ mv <source> <target>
```

Moves or renames. Example: `mv old.txt new.txt`.

```
$ rm <file>
```

Deletes a file. It does not go to the trash and cannot be undone.

```
$ rm -r <folder>
```

Deletes a folder and everything in it. Add `-i` to confirm each file.

```
$ gio trash <file>
```

Sends the file to the Trash instead of deleting it, so it can be restored like on the desktop.

```
$ find ~ -name "*.pdf"
```

Finds every file ending in .pdf in your home folder.

```
$ ln -s <target> <link-name>
```

Creates a shortcut (symbolic link) to a file or folder.

WARNING Never run commands from the internet that start with `sudo rm -rf` unless you understand them. They can wipe the system in seconds.

Reading and editing files

A simple editor that runs in the terminal is enough for changing configuration files. nano is the easiest. It comes preinstalled on Linux Mint.

```
$ cat <file>
```

Prints a short file to the screen.

```
$ less <file>
```

Reads a long file page by page. Space: next page, `/` search, `q` quit.

```
$ head -n 20 <file>
```

Shows the first 20 lines.

```
$ tail -n 50 <file>
```

Shows the last 50 lines. `tail -f` follows new lines live.

```
$ nano <file>
```

Opens the file in nano. For system files add sudo: `sudo nano /etc/hosts`.

```
Ctrl + O
```

nano: save (then Enter).

```
Ctrl + X
```

nano: quit. Asks if there are unsaved changes.

```
Ctrl + W
```

nano: search in the file.

```
Ctrl + K or Ctrl + U
```

nano: cut / paste a line.

```
$ xdg-open <file>
```

Opens the file with its default app (PDF, image, folder...). `xdg-open .` opens the current folder in the file manager.

Installing software: APT

APT is Linux Mint's package manager: it downloads software from the repositories, installs, updates and removes it. `apt update` only refreshes the package list; `apt upgrade` does the actual updating.

```
$ sudo apt update
```

Refreshes the package list from the repositories. Run it before installing or upgrading.

```
$ sudo apt upgrade
```

Updates installed packages.

```
$ sudo apt full-upgrade
```

Also allows removing packages if an upgrade requires it (needed for kernel transitions).

```
$ sudo apt install <package>
```

Installs software. You can list several: `sudo apt install vlc gimp`.

```
$ sudo apt remove <package>
```

Removes software; system-wide config files stay.

```
$ sudo apt purge <package>
```

Removes software together with its config files.

```
$ sudo apt autoremove
```

Cleans up packages that nothing needs anymore.

```
$ apt search <word>
```

Searches package names and descriptions.

```
$ apt show <package>
```

Shows a package's version, size and description.

```
$ apt list --installed
```

Lists all installed packages. To filter: `apt list --installed | grep firefox`.

```
$ apt list --upgradable
```

Packages with pending updates.

```
$ sudo apt install ./<file>.deb
```

Installs a downloaded .deb file with its dependencies. The leading `./` matters.

TIP `apt` is for everyday use. `apt-get`, which you'll see in scripts and older guides, does the same job; its output doesn't change between versions, so scripts prefer it.

Update Manager

Mint's Update Manager installs updates for APT packages, Flatpak apps, Cinnamon add-ons and the kernel. It sits in the panel as a shield icon.

Panel > shield icon

Opens the Update Manager. A dot on the icon means updates are waiting.

Update Manager > Install Updates

Installs everything that is ticked. Type your password when asked.

Edit > Preferences > Automation

Automatic updates (installed in the background after a snapshot) and automatic removal of old kernels.

View > Linux Kernels

Shows the installed and available kernels; you can install an older or newer one here.

Edit > Software Sources

Mirrors, PPAs, extra repositories and repair tools.

```
$ mintupdate-cli list
```

Lists available updates in the terminal.

```
$ sudo mintupdate-cli upgrade
```

Installs them from the terminal (the same as Install Updates).

TIP Mint recommends a Timeshift snapshot before updates; the Update Manager reminds you if none is set up.

Software Manager and Flatpak

Software Manager is Mint's app store. It shows APT packages and Flatpak apps from Flathub side by side. Mint doesn't use Snap.

Menu > Software Manager

Search, install, remove. Apps marked "Flathub" are Flatpaks; the others are APT packages.

```
$ sudo apt install <package>
```

Installs an APT package from the terminal.

```
$ flatpak install flathub <app-id>
```

Installs a Flatpak app; the ID is shown on flathub.org.

```
$ flatpak list --app
```

Installed Flatpak apps.

```
$ flatpak uninstall --unused
```

Removes runtimes no app needs any more.

TIP No Snap. Mint blocks snapd by default (`/etc/apt/preferences.d/nosnap.pref`). Prefer the APT or Flatpak version of an app.

TIP A downloaded **.deb** file installs with a double-click (Package Installer), or with `sudo apt install ./file.deb`.

Installing apps with Flatpak

Flatpak apps run isolated from the system and bring their own libraries. When the distribution's version is old or missing, this is the easiest way to get desktop apps.

TIP Flatpak and Flathub come set up on Linux Mint; Software Manager shows Flatpak apps next to the APT ones.

```
$ flatpak search <name>
```

Searches Flathub and shows the full app ID (e.g. `com.spotify.Client`).

```
$ flatpak install flathub <app-id>
```

Installs the app. Example: `flatpak install flathub com.discordapp.Discord`.

```
$ flatpak update
```

Updates all Flatpak apps.

```
$ flatpak list --app
```

Lists installed Flatpak apps.

```
$ flatpak uninstall <app-id>
```

Removes the app. Add `--delete-data` to remove its data too.

```
$ flatpak uninstall --unused
```

Frees space by removing runtimes nothing uses anymore.

```
$ flatpak run <app-id>
```

Starts the app from the terminal; handy for seeing error messages.

TIP To edit Flatpak permissions (file access, camera, etc.) visually, install Flatseal: `flatpak install flathub com.github.tchx84.Flatseal`.

TIP If you downloaded an AppImage, make it executable: `chmod +x App.AppImage`, then `./App.AppImage`. If it doesn't start, you need `sudo apt install libfuse2t64`.

System information and resources

The equivalent of Windows Task Manager is System Monitor on both GNOME and KDE. The same information is available in the terminal.

```
$ cat /etc/os-release
```

Distribution name and version.

```
$ hostnamectl
```

Computer name, operating system, kernel and hardware summary.

```
$ uname -r
```

Version of the running Linux kernel.

```
$ df -h
```

Shows how much free space is left on each disk.

```
$ du -sh *
```

Space used by each file and folder in the current folder.

```
$ free -h
```

RAM and swap usage.

```
$ top
```

Live process list. Quit with `q`. For a nicer one: `sudo apt install htop` or `bttop`.

```
$ sudo apt install fastfetch
```

A tool that shows a system summary with a logo; run `fastfetch` after installing.

```
$ lscpu
```

Processor information.

```
$ lspci
```

Lists PCI devices such as the graphics and network cards.

```
$ lsusb
```

Lists connected USB devices.

```
$ pkill <program-name>
```

Closes a frozen program by name. Example: `pkill firefox`.

```
$ kill -9 <PID>
```

Force-kills a process by number (PID). `top` or `pgrep firefox` gives you the PID.

Shut down, restart, sessions

You can also use the desktop's power menu; the terminal equivalents are:

```
$ systemctl poweroff
```

Shuts the computer down.

```
$ systemctl reboot
```

Restarts.

```
$ systemctl suspend
```

Puts it to sleep (suspend).

```
$ loginctl terminate-session $XDG_SESSION_ID
```

Logs out (works regardless of desktop).

Super + **L**

Locks the screen (GNOME and KDE).

Ctrl + **Alt** + **Delete**

Opens the log out / power off dialog.

Cinnamon shortcuts

Cinnamon works much like Windows: a menu at the bottom left, a panel with your windows, and similar shortcuts. Change them in System Settings > Keyboard > Shortcuts.

Super	Opens the menu. Start typing to search apps and settings.
Ctrl + Alt + T	Opens a terminal.
Super + E	Opens the Home folder in Nemo.
Super + D	Shows the desktop (all windows minimized).
Super + L	Locks the screen.
Alt + Tab	Switches between windows.
Super + Left or Super + Right	Snap the window to the left or right half of the screen.
Super + Up or Super + Down	Maximizes / restores the window.
Ctrl + Alt + Left or Ctrl + Alt + Right	Switches workspace.
Ctrl + Alt + Up	Expo: all workspaces at a glance.
Ctrl + Alt + Down	Scale: all windows in this workspace.
Print	Screenshot of the whole screen; Shift+Print for an area, Alt+Print for the window.
Ctrl + Alt + Esc	Restarts Cinnamon if the desktop misbehaves; your open windows stay.

Terminal and Bash shortcuts

The first group belongs to the terminal window (mostly the same in GNOME Terminal, Console, Konsole and Ptyxis), the second to the command line itself (Bash).

Ctrl + Shift + T	New tab.
Ctrl + Shift + N	New window.
Ctrl + Shift + W	Close tab.
Ctrl + Page Up or Ctrl + Page Down	Switch between tabs.
Ctrl + Shift + C or Ctrl + Shift + V	Copy / paste.
Ctrl + + or Ctrl + -	Bigger / smaller text. Ctrl+0 resets.
Ctrl + Shift + F	Search the output.
F11	Full screen.
Tab	Complete a command or file name. Twice: list the options.
↑ or ↓	Previous / next command.
Ctrl + R	Search history: finds an old command as you type. Ctrl+R again goes further back, Enter runs it.
Ctrl + C	Stop the running command or cancel the line you typed.
Ctrl + D	Log out (same as exit on an empty line).
Ctrl + L	Clear the screen.
Ctrl + A or Ctrl + E	Move to the start / end of the line.

Ctrl + **U** or **Ctrl** + **K**

Delete from the cursor to the start / end of the line.

Ctrl + **W**

Delete the word before the cursor.

Alt + **B** or **Alt** + **F**

Move back / forward one word.

Ctrl + **Z**

Pause the running command and send it to the background. **fg** brings it back.

!!

Repeats the last command. Common use: **sudo !!** reruns the last command with sudo.

Files (Nemo)

Nemo is Mint's file manager. It has tabs, a split view and a right-click menu with many extras.

Ctrl + H	Shows or hides hidden files (names that start with a dot).
Ctrl + L	Type a path in the address bar.
Ctrl + T	New tab.
F3	Split view: two folders side by side.
Ctrl + D	Bookmarks the current folder in the sidebar.
F2	Renames the selected file.
Right-click > Open in Terminal	Opens a terminal in the current folder.
Right-click > Open as Root	Opens the folder with administrator rights. Be careful: you can damage the system here.
Edit > Preferences	Single or double click, default view, thumbnails, which items appear in the right-click menu.

Where is that setting?

Almost everything is in Menu > System Settings. Typing the setting's name in the menu also finds it.

System Settings > Display	Resolution, scaling (HiDPI), refresh rate, multiple monitors.
System Settings > Sound	Output and input devices, volume of each app.
System Settings > Network	Wired, Wi-Fi, VPN, proxy. The network icon in the panel is quicker for Wi-Fi.
System Settings > Keyboard > Layouts	Add a second keyboard layout; switch with the panel flag or Super+Space.
System Settings > Preferred Applications	Default web browser, mail, music, video, and which app opens which file.
System Settings > Startup Applications	Apps that start when you log in.
System Settings > Users and Groups	Add users, change passwords, make a user an administrator.
System Settings > Languages / Language Support	System language and missing language packs.
System Settings > Panel	Panel position, size, auto-hide; right-click the panel to add applets.
System Settings > Screensaver	Lock delay and the lock screen.
Menu > Driver Manager	Proprietary drivers (NVIDIA, Broadcom Wi-Fi).

Applets, desklets, extensions and themes

Cinnamon add-ons are called spices. Each kind has its own page in System Settings, with a Download tab for more.

System Settings > Applets

Small items in the panel: weather, workspace switcher, notes. Download tab > install, Manage tab > + to add it to the panel.

System Settings > Desklets

Widgets on the desktop: clock, photo frame, calendar.

System Settings > Extensions

Change how Cinnamon behaves, such as window effects. Install only what you need.

System Settings > Themes

Window borders, icons, controls, mouse pointer and desktop theme.

TIP Spices are updated by the Update Manager together with your other updates.

USB drives and disks

USB drives appear in the file manager's sidebar and are mounted under `/media/` or `/run/media/`. Click the  icon next to it before unplugging.

```
$ lsblk
```

Shows all disks and partitions as a tree (sda, nvme0n1, etc.).

```
$ lsblk -f
```

Also shows each partition's file system (ext4, btrfs, ntfs, exfat) and label.

```
$ udisksctl mount -b /dev/<sdb1>
```

Mounts a partition without sudo.

```
$ udisksctl unmount -b /dev/<sdb1>
```

Unmounts it safely.

Disks > select the device > ⋮ > Format Disk

Wipes the USB drive. To use it on both Windows and Linux, create an exFAT partition.

```
$ flatpak install flathub  
io.gitlab.adhami3310.Impression
```

Impression: writes an ISO file to a USB drive to make an install drive.

WARNING When writing a disk with `dd` in the terminal, picking the wrong target (`/dev/sdX`) erases that whole disk. Check twice with `lsblk` first.

Common problems

The situations new Mint users most often get stuck on, and the first thing to try.

TIP "Could not get lock /var/lib/dpkg/lock-frontent". The Update Manager or Software Manager is busy. Wait until it finishes; don't delete the lock file.

TIP An update broke something. Open Timeshift, pick the snapshot from before the update and click **Restore**.

TIP An Applimage won't start. `sudo apt install libfuse2t64`.

TIP Wi-Fi or NVIDIA doesn't work. Open the Driver Manager and apply the recommended driver; it may need an internet cable first.

TIP Black screen after installing. At the boot menu choose the recovery or compatibility entry, log in and install the driver from the Driver Manager.

```
$ systemctl --user restart pipewire wireplumber
```

If sound suddenly stops, restarts the sound system without logging out.

TIP The panel or desktop froze. Press Ctrl+Alt+Esc to restart Cinnamon. If that doesn't help, switch to a text console with Ctrl+Alt+F3, log in and run `sudo systemctl restart lightdm` (open work will be lost).

TIP "command not found". Mint usually suggests which package to install; run the command it suggests.

Glossary

Words you'll often see in forums and documentation.

Cinnamon / Xfce / MATE

Mint's three desktop editions. Cinnamon is the main one; Xfce is the lightest; MATE sits in between.

Base

Mint 22 is built on Ubuntu 24.04 LTS, so most Ubuntu instructions for 24.04 ("noble") also work on Mint.

LTS

Every Mint release is supported for about five years, until the Ubuntu LTS underneath it ends.

LMDE

Linux Mint Debian Edition: the same desktop built on Debian instead of Ubuntu.

Terminal / shell

The terminal is the window you type in; the shell is the program that interprets the commands. The default shell is Bash.

sudo

Means "run this command as administrator". The root account is locked; everything is done with sudo.

APT / .deb

The package system Mint inherits from Debian and Ubuntu, and its package format.

Flatpak / Flathub

A distribution-independent app format / its main store, built into Software Manager.

PPA

An extra repository published on Launchpad by individuals or teams.

Timeshift

Mint's system snapshot tool; it restores system files, not your personal files.

Commands are written for Linux Mint 22 Cinnamon (based on Ubuntu 24.04 LTS; APT, Flatpak). Most of them also work on the Xfce and MATE editions. Menu names follow the English interface. Commands that start with `sudo` change the system; read what they do before running them.