

Windows Handbook

For beginners

Don't fear the command line. Start with a few commands. This section is for people who just installed Windows 11 or want to use it more efficiently: what to do after installing, installing software with winget, PowerShell basics, shortcuts and where each setting lives.

```
PS C:\Users\user> winget upgrade --all
```

PS shows you are in PowerShell · **C:\Users\user** the folder you are in (your home folder) · **>** where you type. A Terminal opened as administrator says "Administrator" in its title bar.

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Yellow italic text (like *<id>*) marks the parts you fill in. **PS**> means a normal Terminal, **Admin**> means Terminal (Admin). Read what a command does before running anything that changes the system.

After installing

After a fresh Windows 11 install or on a new computer, going through these in order is a good start.

1 Finish Windows Update

Settings > Windows Update > Check for updates. Restart whenever it asks and repeat until the list is empty. Optional updates include drivers too.

2 Back up the BitLocker recovery key

On many computers disk encryption is on automatically. After a BIOS update or hardware change it asks for this key; without it you can't reach your data. If you signed in with a Microsoft account, the key is at account.microsoft.com/devices/recoverykey. With a local account, show it with the command below and write it down.

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

3 Install apps with winget

Windows' package manager. Installs and updates apps like browsers, 7-Zip and VLC with one command.

```
PS> winget install --id Mozilla.Firefox -e
```

```
PS> winget install --id 7zip.7zip -e
```

```
PS> winget install --id VideoLAN.VLC -e
```

4 Update all apps

winget recognizes and updates many apps it didn't install itself.

```
PS> winget upgrade --all
```

5 Turn on System Restore

Lets you go back to an earlier point if a driver or update breaks the system. It may be off.

```
PS> Enable-ComputerRestore -Drive "C:\"
```

```
PS> Checkpoint-Computer -Description "Fresh install"
```

6 Show file extensions

To spot traps like "invoice.pdf.exe". File Explorer > View > Show > File name extensions; or:

```
PS> reg add HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced /v  
HideFileExt /t REG_DWORD /d 0 /f
```

7 Install PowerToys

Microsoft's free toolkit: window layouts (FancyZones), a quick launcher, color picker, bulk rename and more.

```
PS> winget install --id Microsoft.PowerToys -e
```

8 Set up backups

The Windows Backup app backs up your desktop, documents and settings to OneDrive. For backups to an external drive: Control Panel > File History.

Meet the terminal

On Windows 11, commands run in the Terminal app, which opens PowerShell by default. To open it, press Win+X and choose "Terminal". To open it as administrator, press Win+X, then "Terminal (Admin)".

TIP In this handbook, `PS>` in front of a command means a normal Terminal, `Admin>` means it needs "Terminal (Admin)".

TIP PowerShell is not case-sensitive. Put paths with spaces in quotes: `cd "C:\Program Files"`.

TIP Type part of a name and press **Tab**: the command, parameter or file name completes.
Ctrl + **Space** lists all options.

```
PS> Get-Help <command> -Examples
```

Help with examples for a command. The first time, download the help files with `Update-
Help` (Admin).

```
PS> Get-Command *<word>*
```

Finds commands containing a word.
Example: `Get-Command *net*`.

```
PS> Get-History
```

Commands you typed in this session. You can also step back with .

```
PS> cls
```

Clears the screen (Clear-Host).

```
PS> exit
```

Closes the terminal.

TIP Linux names like `ls`, `cd`, `cat`, `cp`, `mv` and `rm` also work in PowerShell; they're aliases for PowerShell commands.

WARNING To stop a running command, press  + . In Terminal,  +  copies when text is selected, and  +  pastes.

Files and folders

 means your home folder (C:\Users\username).  is the current folder,  the one above it.

```
PS> Get-Location
```

Prints the folder you are in (`pwd`).

```
PS> Get-ChildItem
```

Lists the files in the folder (`ls`, `dir`).

```
PS> Get-ChildItem -Force
```

Lists including hidden files.

```
PS> cd <folder>
```

Enters a folder. Example: `cd ~\Documents`.

```
PS> cd ..
```

Goes up one folder.

```
PS> New-Item -ItemType Directory <folder>
```

Creates a folder (`mkdir`).

```
PS> New-Item <file>
```

Creates an empty file.

```
PS> Copy-Item <source> <target>
```

Copies. Add `-Recurse` for folders.

```
PS> Move-Item <source> <target>
```

Moves.

```
PS> Rename-Item <old> <new>
```

Renames.

```
PS> Remove-Item <file>
```

Deletes; it doesn't go to the Recycle Bin. `-Recurse` for folders.

```
PS> Get-ChildItem ~ -Recurse -Filter *.pdf
```

Finds every PDF in your home folder.

```
PS> explorer .
```

Opens the current folder in File Explorer.

```
PS> Invoke-Item <file>
```

Opens a file with its default app (`ii`).

WARNING Don't run commands from the internet that start with `Remove-Item -Recurse -Force` unless you understand them.

Reading and editing files

```
PS> Get-Content <file>
```

Shows the file's contents (`cat`).

```
PS> Get-Content <file> -Tail 50 -Wait
```

Shows the last 50 lines and follows new lines live (for log files).

```
PS> Get-Content <file> | more
```

Reads a long file page by page.

```
PS> notepad <file>
```

Opens the file in Notepad.

```
PS> Select-String -Path <file> -Pattern "<text>"
```

Searches a file for text (Linux's `grep`).

```
PS> winget install --id  
Microsoft.VisualStudioCode -e
```

Visual Studio Code for code and config files.
Then `code .` opens the folder.

Installing software: winget and Microsoft Store

winget is the package manager built into Windows 10 and 11. It can install Microsoft Store apps too.

```
PS> winget search <name>
```

Searches for an app and shows its ID.

```
PS> winget install --id <id> -e
```

Installs an app by its exact ID. Example:

```
winget install --id Google.Chrome -e .
```

```
PS> winget upgrade
```

Lists apps with available updates.

```
PS> winget upgrade --all
```

Updates them all.

```
PS> winget list
```

Installed apps (including those installed without winget).

```
PS> winget uninstall --id <id> -e
```

Removes an app.

```
PS> winget show --id <id> -e
```

Publisher, version and description.

Settings > Apps > Installed apps

Uninstall and app settings in the graphical interface.

Microsoft Store > Library

Updates for Store apps.

System information and resources

Open Task Manager with **Ctrl** + **Shift** + **Esc**. The same information is available in the terminal.

```
PS> winver
```

Windows version and build number.

```
PS> Get-ComputerInfo -Property  
OsName,OsVersion,CsProcessors,CsTotalPhysical  
Memory
```

Operating system, processor and RAM summary.

```
PS> systeminfo
```

Detailed system summary (including install date and updates).

```
PS> Get-Volume
```

Drives and free space.

```
PS> Get-Process | Sort-Object CPU -Descending  
| Select-Object -First 10
```

The 10 processes using the most CPU.

```
PS> Stop-Process -Name <name>
```

Closes a frozen program. Example: `Stop-Process -Name chrome`.

```
PS> taskkill /IM <program>.exe /F
```

Force-closes a program (the classic way).

```
PS> msinfo32
```

The System Information window: hardware, drivers, BIOS.

```
PS> dxdiag
```

Graphics card and DirectX information.

Shut down, restart, sessions

```
PS> shutdown /s /t 0
```

Shuts the computer down now.

```
PS> shutdown /r /t 0
```

Restarts.

```
PS> shutdown /r /o /t 0
```

Restarts into Advanced startup options (Safe Mode, System Restore).

```
PS> shutdown /l
```

Signs out.

Win + **L**

Locks the screen.

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

Lock, switch user, sign out, Task Manager.

TIP On the desktop, **Alt** + **F4** opens the shutdown menu.

Windows shortcuts

Win is the key with the Windows logo.

Win	Start menu. Start typing right away to find apps, files and settings.
Win + E	File Explorer.
Win + I	Settings.
Win + X	Quick link menu: Terminal, Device Manager, Disk Management.
Win + R	Run box (e.g. <code>control</code> , <code>services.msc</code>).
Win + D	Show / restore the desktop.
Alt + Tab	Switch between windows.
Win + Tab	Task View and virtual desktops.
Win + 1 ... Win + 9	The 1st ... 9th app on the taskbar.
Win + ← or Win + →	Snap the window to the left / right half of the screen.
Win + ↑ or Win + ↓	Maximize / minimize.
Win + Z	Snap Layouts.
Win + Shift + ← or Win + Shift + →	Move the window to the other monitor.
Win + Ctrl + D	New virtual desktop. Win+Ctrl+F4 closes it.
Win + Ctrl + ← or Win + Ctrl + →	Switch between virtual desktops.
Win + Shift + S	Snipping Tool: area, window or full screen; copied to the clipboard.

Win + **Print Screen**

Saves a full-screen screenshot to Pictures > Screenshots.

Win + **Alt** + **R**

Start / stop screen recording with Game Bar.

Win + **V**

Clipboard history (you're asked to turn it on the first time).

Win + **.**

Emoji and symbol panel.

Win + **A**

Quick settings (Wi-Fi, sound, brightness).

Win + **N**

Notifications and calendar.

Win + **Space**

Switch keyboard layouts.

Win + **H**

Voice typing.

Win + **P**

Projection mode (PC only, duplicate, extend).

Ctrl + **Shift** + **Esc**

Task Manager.

Win + **Ctrl** + **Shift** + **B**

Restarts the graphics driver; try it when the screen freezes or stays black.

Terminal and PowerShell shortcuts

The first group belongs to the Windows Terminal window, the second to the PowerShell command line (PSReadLine).

Ctrl + **Shift** + **T**

New tab.

Ctrl + **Shift** + **W**

Close tab or pane.

Ctrl + **Tab** or **Ctrl** + **Shift** + **Tab**

Switch between tabs.

Alt + Shift + D	Split the pane.
Ctrl + Shift + P	Command palette: every Terminal command.
Ctrl + ,	Terminal settings (default profile, font, theme).
Ctrl + Shift + F	Search the output.
Ctrl + + or Ctrl + -	Bigger / smaller text.
Tab	Complete. Press again: next option.
Ctrl + Space	Show all completion options as a menu.
↑ or ↓	Previous / next command.
Ctrl + R	Search history.
F2	Toggle prediction view between inline and list.
Ctrl + C	Stop the running command (copies if text is selected).
Ctrl + L	Clear the screen.
Esc	Clear the line you typed.
Ctrl + Backspace	Delete the previous word.
Ctrl + ← or Ctrl + →	Move word by word.

File Explorer shortcuts

Ctrl + T	New tab.
------------------------	----------

Ctrl + N	New window.
Ctrl + Shift + N	New folder.
F2	Rename.
Alt + Enter	Properties.
Alt + ↑	Go up to the parent folder.
Alt + ← or Alt + →	Back / forward.
Ctrl + L	Type a path into the address bar.
Ctrl + E	Jump to search.
Ctrl + Shift + C	Copy the selected item's path.
Delete or Shift + Delete	Send to Recycle Bin / delete permanently.
Alt + P	Preview pane.
Shift + F10	The classic (full) right-click menu.
File Explorer > View > Show > Hidden items	Shows hidden files. "File name extensions" is in the same menu.

Where is that setting?

Open Settings with Win+I. Typing a setting's name into Start also opens the right page.

Settings > System > Display	Resolution, scale, refresh rate, multiple monitors, Night light, HDR.
Settings > System > Sound	Output/input device, volume mixer.

Settings > System > Notifications

Do not disturb, per-app notifications.

Settings > System > Power & battery

Power mode, screen and sleep timeouts, battery saver.

Settings > System > Storage

Disk usage, cleaning up temporary files, Storage Sense.

Settings > System > Multitasking

Snap windows, Alt+Tab behavior, virtual desktops.

Settings > System > Recovery

Reset this PC, Advanced startup.

Settings > System > About

Rename this PC, device specifications, Windows version.

Settings > Bluetooth & devices

Bluetooth, printers, mouse, touchpad, AutoPlay.

Settings > Network & internet

Wi-Fi, Ethernet, VPN, mobile hotspot, Advanced network settings > Network reset.

Settings > Personalization

Background, Colors (light/dark mode), Taskbar (alignment), Start.

Settings > Apps

Installed apps, Default apps, Startup (apps that run at sign-in).

Settings > Accounts

Sign-in options (PIN, Windows Hello), other users, Windows backup.

Settings > Time & language

Date/time, Language & region, Typing > Advanced keyboard settings.

Settings > Accessibility

Text size, magnifier, Narrator, sticky keys.

Settings > Privacy & security

Windows Security (Defender), Find my device, app permissions (camera, microphone, location), Device encryption.

Settings > Windows Update >
Advanced options

Optional updates (drivers), active hours, update history.

```
PS> control
```

The classic Control Panel (File History, Credential Manager, Recovery).

```
PS> devmgmt.msc
```

Device Manager: drivers, problem hardware.

```
PS> diskmgmt.msc
```

Disk Management: partitions, drive letters.

```
PS> services.msc
```

Services.

```
PS> ncpa.cpl
```

Network connections (adapter settings, DNS).

```
PS> sysdm.cpl
```

System Properties: computer name, system protection (restore), environment variables.

```
PS> appwiz.cpl
```

Programs and Features; turn Windows features on or off.

Look and feel, PowerToys

Settings > Personalization > Taskbar >
Taskbar behaviors

Move the Start button to the left (Taskbar alignment: Left).

Settings > Personalization > Colors

Light/dark mode and accent color.

```
PS> winget install --id Microsoft.PowerToys -e
```

Installs PowerToys.

TIP PowerToys highlights: **FancyZones** (custom window zones; editor on Win+Shift+`), **Command Palette** (quick launcher), **PowerRename** (bulk rename), **Color Picker** (Win+Shift+C), **Text Extractor** (copy text from the screen, Win+Shift+T), **Always On Top** (Win+Ctrl+T).

```
PS> reg add "HKCU\Software\Classes\CLSID\
{86ca1aa0-34aa-4e8b-a509-
50c905bae2a2}\InprocServer32" /f /ve
```

Brings back the full Windows 10-style right-click menu. Restart File Explorer for it to take effect; to undo, delete the same key with `reg delete ... /f`.

USB drives and disks

File Explorer > This PC >
right-click the drive > Format

Wipes the USB drive. To use it on Windows, Mac and Linux, choose exFAT.

```
PS> Get-Disk
```

Connected disks and their numbers.

```
PS> diskmgmt.msc
```

Disk Management: create and shrink partitions, change drive letters.

```
PS> winget install --id Rufus.Rufus -e
```

Rufus: makes a bootable USB from an ISO file (Linux, Windows).

TIP For a Windows install USB, use Microsoft's Media Creation Tool (microsoft.com/software-download/windows11).

WARNING Inside `diskpart`, the `clean` command erases the whole selected disk. Selecting the wrong disk is the most common mistake.

Common problems

TIP It asks for a BitLocker recovery key at startup. From another device, sign in to account.microsoft.com/devices/recoverykey with your Microsoft account; the 48-digit key is there.

TIP A program isn't responding. Open Task Manager with `Ctrl+Shift+Esc`, select the program, "End task".

TIP The screen froze or went black. First try `Win+Ctrl+Shift+B` (restarts the graphics driver); otherwise `Ctrl+Alt+Delete`.

TIP The disk is full. Settings > System > Storage > Temporary files; turn on Storage Sense.
The classic tool: `cleanmgr` .

TIP Wi-Fi won't connect. Settings > Network & internet > Advanced network settings > Network reset (restarts; saved Wi-Fi networks are removed).

TIP No sound. Right-click the sound icon on the taskbar > Troubleshoot sound problems.
Check in Win+A that the right output device is selected.

TIP "running scripts is disabled on this system". Allow PowerShell scripts for your own user: `Set-ExecutionPolicy -Scope CurrentUser RemoteSigned` .

TIP "Access is denied" or "requires elevation". Open Terminal with Win+X > Terminal (Admin).

TIP An update is stuck or fails. Settings > System > Troubleshoot > Other troubleshooters > Windows Update. If that doesn't help, see "System repair" in the Advanced tab.

Glossary

PowerShell / cmdlet	Windows' command line and scripting language / its Verb-Noun commands (Get-Process, Remove-Item).
Command Prompt (cmd)	The older command line. It can be opened as a separate tab in Terminal.
winget	Windows Package Manager.
UAC	User Account Control: the confirmation window for actions that need administrator rights.
Registry	The database holding Windows and app settings; opened with regedit .
Driver	Software that lets hardware talk to Windows.
BitLocker / Device encryption	The feature that encrypts the disk; without the recovery key the data can't be reached.
Safe Mode	Boots with only basic drivers; for removing a problem driver or program.
WinRE	Windows Recovery Environment: repair, restore or reset a system that won't boot.
WSL	Windows Subsystem for Linux: runs a real Linux distribution inside Windows.
NTFS / exFAT	Windows' file system / a file system Windows, macOS and Linux can all read.

Commands are written for Windows 11 (Windows PowerShell 5.1 and PowerShell 7, winget); most also work on Windows 10. Menu names follow the English interface. Read what a command does before running anything that changes the system.