



WINDOWS 11 · POWERSHELL · WINGET

Windows Handbook

Installation guide

Clean-install Windows 11. Requirements and licensing, the install USB, firmware settings, the setup and first-run screens, reinstalling without losing files and common installation problems.

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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.

Preparation

A clean install wipes the disk. Check the requirements, the license and your backup before you start.

TIP Windows 11 requirements: TPM 2.0, UEFI with Secure Boot, a supported processor (Intel 8th gen / AMD Ryzen 2000 and later), 4 GB RAM, 64 GB of storage.

```
Admin> Get-Tpm
```

Whether a TPM is present and ready (TpmPresent, TpmReady).

```
Admin> Confirm-SecureBootUEFI
```

Returns True if Secure Boot is on.

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

PC Health Check: shows Windows 11 compatibility on one screen.

TIP License. On computers that shipped with Windows 10/11 the license is tied to the motherboard (digital license); installing the same edition (Home or Pro) activates it automatically. If it's linked to your Microsoft account, you can get it back after hardware changes too.

```
PS> (Get-CimInstance  
SoftwareLicensingService).OA3xOriginalProduct  
Key
```

Shows the product key embedded in the firmware (if any).

TIP Back up and write down your BitLocker recovery key: `manage-bde -protectors -get C:` (Admin).

TIP Get the storage driver ready. On many laptops with 11th-gen Intel and later, setup can't see the disk (Intel RST/VMD). Download the "Intel Rapid Storage Technology" driver from the manufacturer's support page and copy its folder to the install USB.

TIP Have a network cable or your Wi-Fi password ready; drivers for newer network cards may be missing from the install media.

Making the install USB

You need a USB drive of 8 GB or more; everything on it is erased.

TIP Media Creation Tool (microsoft.com/software-download/windows11): run it, choose language and edition, choose "USB flash drive". The most trouble-free route.

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

Rufus: writes an ISO downloaded from Microsoft. Partition scheme GPT, target UEFI.

TIP Before writing, Rufus offers options: remove the TPM/Secure Boot requirement, remove the online Microsoft account requirement, pre-create a local account. Installing on unsupported hardware carries the risk of not receiving updates.

TIP Preparing from macOS or Linux: the install.wim file in the Windows ISO is larger than 4 GB, so simply copying the ISO onto a FAT32 USB doesn't work. Ventoy is the easiest fix.

Booting from USB and firmware settings

To boot from USB, open the boot menu while the computer starts; press the key repeatedly while the manufacturer logo is showing.

Boot menu key	Dell F12 · HP F9 or Esc · Lenovo F12 · ASUS F8 or Esc · Acer F12 · MSI F11 · Gigabyte F12
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Firmware setup key	Usually F2 or Delete; F10 on HP, F1 or F2 on Lenovo.
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TIP TPM may be off in the firmware under the name "PTT" (Intel) or "fTPM" (AMD); turn it on.

TIP Secure Boot should be on and the boot mode UEFI (CSM/Legacy off).

TIP To boot the USB while Windows is running: hold Shift and choose Start > Restart > Use a device.

Installation steps

1 Language and keyboard

Pick time and currency format and keyboard layout. In the new setup screen choose "Install Windows 11" and tick "I agree everything will be deleted".

2 Product key

If you have a digital license, choose "I don't have a product key". If it asks for an edition, pick the one the computer had before (Home or Pro); the wrong edition won't activate.

3 Choose the disk

Delete the partitions on the target disk one by one; when the disk shows as "Unallocated space", select it and click Next. Windows creates the partitions it needs. Don't touch other disks or Linux partitions.

4 If the disk isn't listed

Click "Load driver" and point it at the Intel RST/VMD driver folder you copied to the USB. The disk appears once the driver loads.

5 Installation

Files are copied and the computer restarts several times. You can remove the USB after the first restart.

First-run screens

When setup finishes, Windows greets you with a short wizard.

1 Region, keyboard, network

Choose your region and keyboard, and connect to a network; the connection lets it download updates and drivers.

2 Device name

Name your computer; you can change it later in Settings > System > About.

3 Account

Home asks for a Microsoft account. On Pro, "Sign-in options > Domain join instead" creates a local account. Microsoft closes local-account workarounds from time to time; if you want a local account, Rufus's option to remove the account requirement is the most reliable route.

4 PIN and privacy

Create a Windows Hello PIN. On the privacy screen turn off location, diagnostic data, advertising ID and the like as you prefer.

Right after installing

Then continue with the "After installing" list in the Beginner tab.

Settings > Windows Update

Install updates until the list is empty; get drivers from optional updates too.

```
PS> Get-PnpDevice -Status Error
```

Devices missing a driver. If any, download the drivers for your model from the manufacturer's support page.

```
PS> slmgr /xpr
```

Shows whether Windows is activated. Settings > System > Activation shows the same.

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

Updates apps.

Reinstalling without losing files

If Windows is broken but still starts, you can reinstall the system without touching your files and apps.

Settings > System > Recovery >

Fix problems using Windows Update

Reinstalls the current version of Windows without touching your files (Windows 11 24H2 and later).

TIP In-place repair install: double-click the Windows ISO to mount it, run `setup.exe` inside and choose "Keep personal files and apps".

Settings > System > Recovery >
Reset this PC

With "Keep my files" and "Cloud download" it reinstalls Windows cleanly; apps are removed, personal files stay.

Installation problems

TIP "This PC can't run Windows 11". Turn on TPM (PTT/fTPM) and Secure Boot in the firmware and set the boot mode to UEFI.

TIP "No drives were found", the disk isn't listed. Provide the Intel RST/VMD driver with "Load driver", or turn off VMD in the firmware (if no other system is on the same disk).

TIP "Windows cannot be installed to this disk. The selected disk is of the GPT/MBR partition style". Press Shift+F10 in setup to open a command prompt: `diskpart , list disk , select disk N , clean , convert gpt , exit` . The whole selected disk is erased.

TIP It won't boot from the USB. Pick the USB entry starting with "UEFI:" in the boot menu; recreate the USB with the Media Creation Tool.

TIP Stuck on "Just a moment" for a long time. Disconnect from the internet and restart; get updates after setup.

TIP Windows isn't activated. Make sure you installed the right edition; Settings > System > Activation > Troubleshoot.

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.