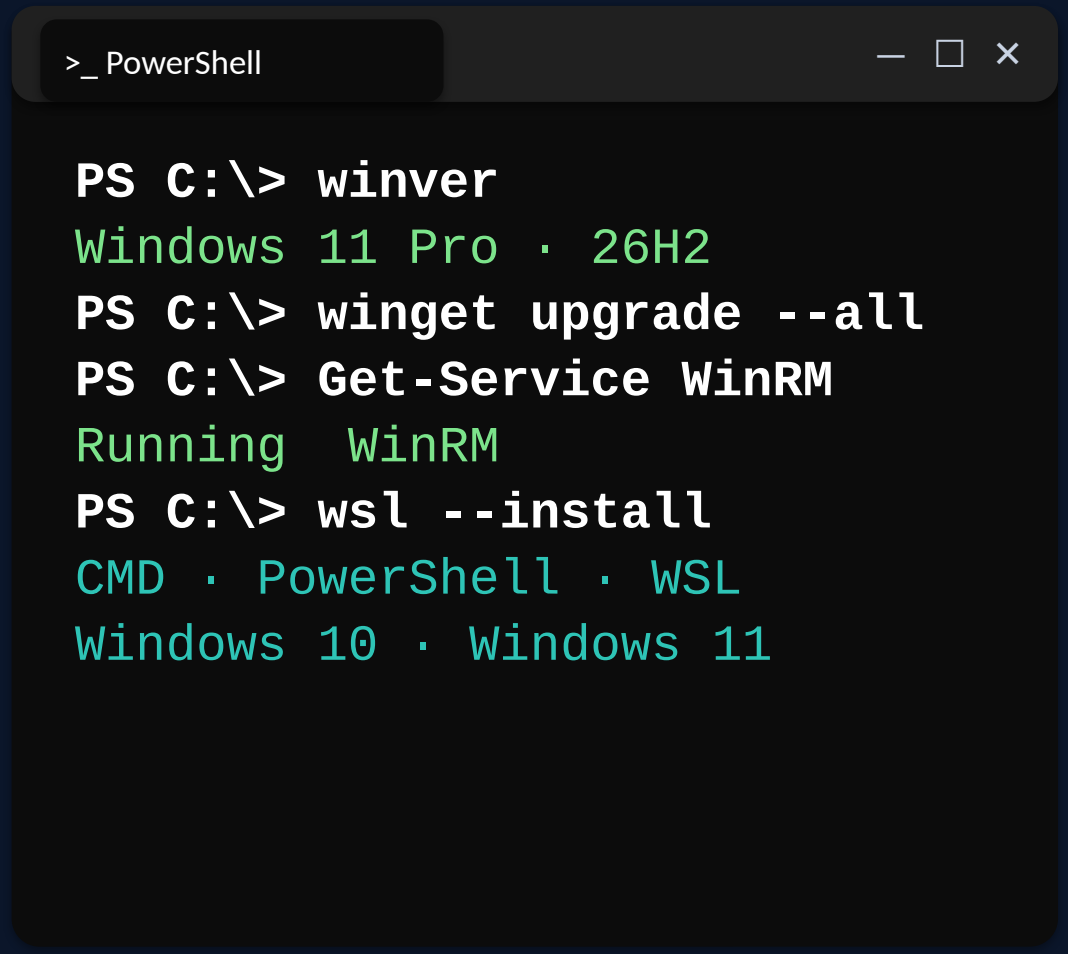



LESSON 1 OF 12

# Windows 10 & 11

## Desktop · Workstation · Laptop

## Windows History, Editions, Architecture & Your Lab

Full Course · Windows 11 26H2 · Windows 10 22H2

# What You Will Learn in Lesson 1

- A short history: from MS-DOS to Windows NT, 10 and 11
- Windows 10 end of support and Extended Security Updates (ESU)
- Windows 11 versions: 24H2, 25H2, 26H2 — and how updates work
- Editions: Home, Pro, Pro for Workstations, Enterprise, Education
- Windows 11 hardware requirements: TPM 2.0, Secure Boot, CPU
- Inside Windows: kernel mode, user mode, drivers and services
- Your lab: Hyper-V, VirtualBox, Windows Sandbox and evaluation ISOs

# From MS-DOS to Windows 11

| | |
|---|---|
| **1981** | MS-DOS ships with the IBM PC |
| **1985** | Windows 1.0: a graphical shell on top of DOS |
| **1993** | Windows NT 3.1: a new 32-bit kernel, built for reliability |
| **1995** | Windows 95: Start menu and taskbar |
| **2001** | Windows XP: home users move to the NT kernel |
| **2009** | Windows 7 |
| **2015** | Windows 10: 'Windows as a service' |
| **2021** | Windows 11: new design, TPM 2.0 required |

# Windows 10: End of Support and ESU

| Date | What happened |
| --- | --- |
| Oct 14, 2025 | Windows 10 reached end of support; 22H2 is the final version |
| Consumer ESU | Security-only updates for personal PCs, now through Oct 12, 2027 |
| Commercial ESU | Paid, yearly, for organizations (up to three years) |
| What ESU is not | No new features, no general technical support |
| Best plan | Upgrade eligible PCs to Windows 11; replace or repurpose the rest |

# Windows 11 Versions and Updates

| Name | Meaning |
| --- | --- |
| 26H2 | Released Sept 29, 2026 — the 2026 annual feature update |
| 24H2 / 25H2 | Same platform as 26H2; a small enablement package moves you up |
| Support | 24 months for Home and Pro; 36 months for Enterprise and Education |
| Monthly updates | Patch Tuesday: security and quality fixes (2nd Tuesday) |
| 26H1 | A separate branch for new Snapdragon X2 PCs only |

# Which Windows Do I Have?

```
C:\> winver                              # the About Windows dialog
C:\> systeminfo | findstr /B /C:"OS"     # OS name, version, build

PS C:\> Get-ComputerInfo -Property OsName, OsVersion, OsArchitecture
OsName                    OsVersion   OsArchitecture
Microsoft Windows 11 Pro  10.0.26300  64-bit

# GUI: Settings > System > About   (or press Win + Pause)
```

# Windows Editions Compared

| Edition | Who it is for | Key extras |
| --- | --- | --- |
| **Home** | Personal PCs and laptops | Core features, Windows Security, Microsoft account |
| **Pro** | Small business, power users, students | BitLocker, Hyper-V, Remote Desktop host, Group Policy, domain join |
| **Pro for Workstations** | High-end workstations | Up to 4 CPUs and 6 TB RAM, ReFS, SMB Direct |
| **Enterprise** | Large organizations (volume licensing) | Advanced security and management, longer support |
| **Education** | Schools and universities | Enterprise features for academic licensing |

# Windows 11 Hardware Requirements

| Item | Minimum |
| --- | --- |
| Processor | 1 GHz, 2+ cores, 64-bit, on Microsoft's supported CPU list |
| Memory / storage | 4 GB RAM / 64 GB storage |
| Firmware | UEFI with Secure Boot capable |
| Security chip | TPM version 2.0 |
| Graphics / display | DirectX 12, WDDM 2.0 driver / 720p, larger than 9 inches |
| Setup | Internet and a Microsoft account (Home; Pro for personal use) |

# Check Windows 11 Readiness

```
PS C:\> Get-Tpm | Select-Object TpmPresent, TpmReady   # run as Administrator
TpmPresent TpmReady
      True     True
PS C:\> Confirm-SecureBootUEFI                         # True = Secure Boot on
True

C:\> tpm.msc          # TPM Management console (look for Specification 2.0)
C:\> msinfo32         # BIOS Mode: UEFI, Secure Boot State: On
# Or install the free PC Health Check app from Microsoft
```

# Inside Windows: The NT Architecture

| Layer | What lives there |
| --- | --- |
| User mode: apps | Your programs: Edge, Office, VS Code, games |
| User mode: subsystems | Win32 API, services (svchost.exe), WSL for Linux |
| Kernel mode: executive | ntoskrnl.exe: processes, memory, I/O, security |
| Kernel mode: drivers | Disk, network, graphics, USB drivers |
| HAL | Hardware Abstraction Layer: hides hardware differences |
| Data stores | NTFS file system and the Registry (configuration) |

# Build Your Practice Lab

| Option | Best for | Notes |
| --- | --- | --- |
| **Hyper-V** | Windows Pro, Enterprise, Education | Built in; Quick Create; checkpoints (snapshots) |
| **VirtualBox** | Any edition, including Home | Free from Oracle; also runs Linux VMs |
| **Windows Sandbox** | Quick, throwaway tests (Pro+) | Clean desktop every time; erased when closed |
| **Evaluation ISO** | Learning Enterprise for free | Windows 11 Enterprise evaluation (90 days) |
| **Old PC or laptop** | Real hardware practice | Great for install, drivers and BIOS lessons |

# Lab: Turn On Hyper-V and Windows Sandbox

```
# Run PowerShell as Administrator, then restart when asked
PS C:\> Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V -All
PS C:\> Enable-WindowsOptionalFeature -Online -FeatureName Containers-DisposableClientVM

PS C:\> Get-WindowsOptionalFeature -Online | Where-Object State -eq Enabled

# GUI: Start > 'Turn Windows features on or off' (optionalfeatures.exe)
# Then: Hyper-V Manager > Quick Create > Windows 11 dev environment
```

# Summary & Homework

- Every modern Windows, including 10 and 11, is built on the NT kernel
- Windows 10 support ended Oct 14, 2025; consumer ESU runs to Oct 12, 2027
- Windows 11 26H2 is the current annual version (Sept 29, 2026)
- Pro is the best edition for learning administration
- Homework: run winver and Get-ComputerInfo; check TPM and Secure Boot
- Homework: build one Windows 11 VM in Hyper-V or VirtualBox

# Thank You! 🙏

Free videos & PDFs: www.MyWebUniversity.com

Slides for this lesson: MyWebUniversity.com/presentations

**YouTube: @MyWebUniversity · @MyWebUniversity-Dari**

Wahidullah Lutfy — Founder and Director of IT of MyWebUniversity, and CS teacher

Book: The Direct Path to Linux Ubuntu (Amazon · Barnes & Noble)

**Learn it, then pass it on.**