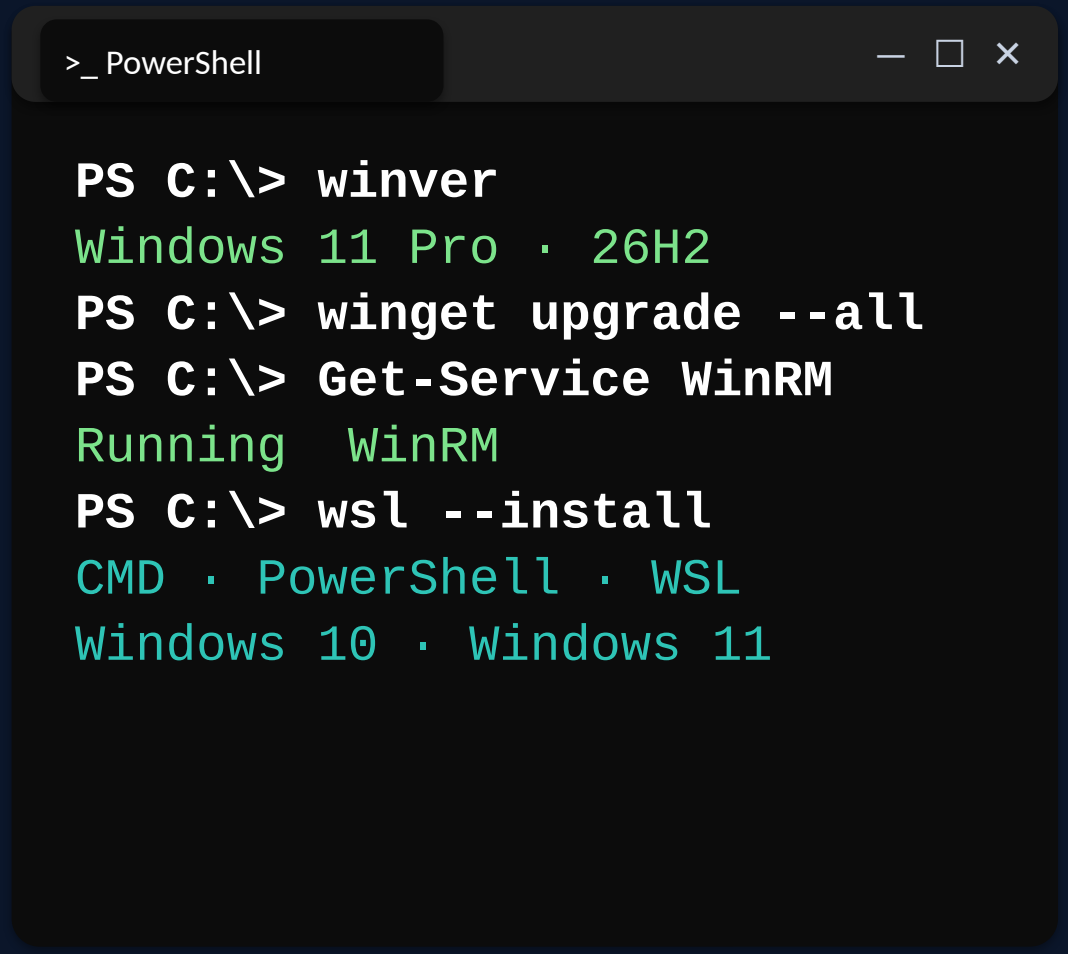


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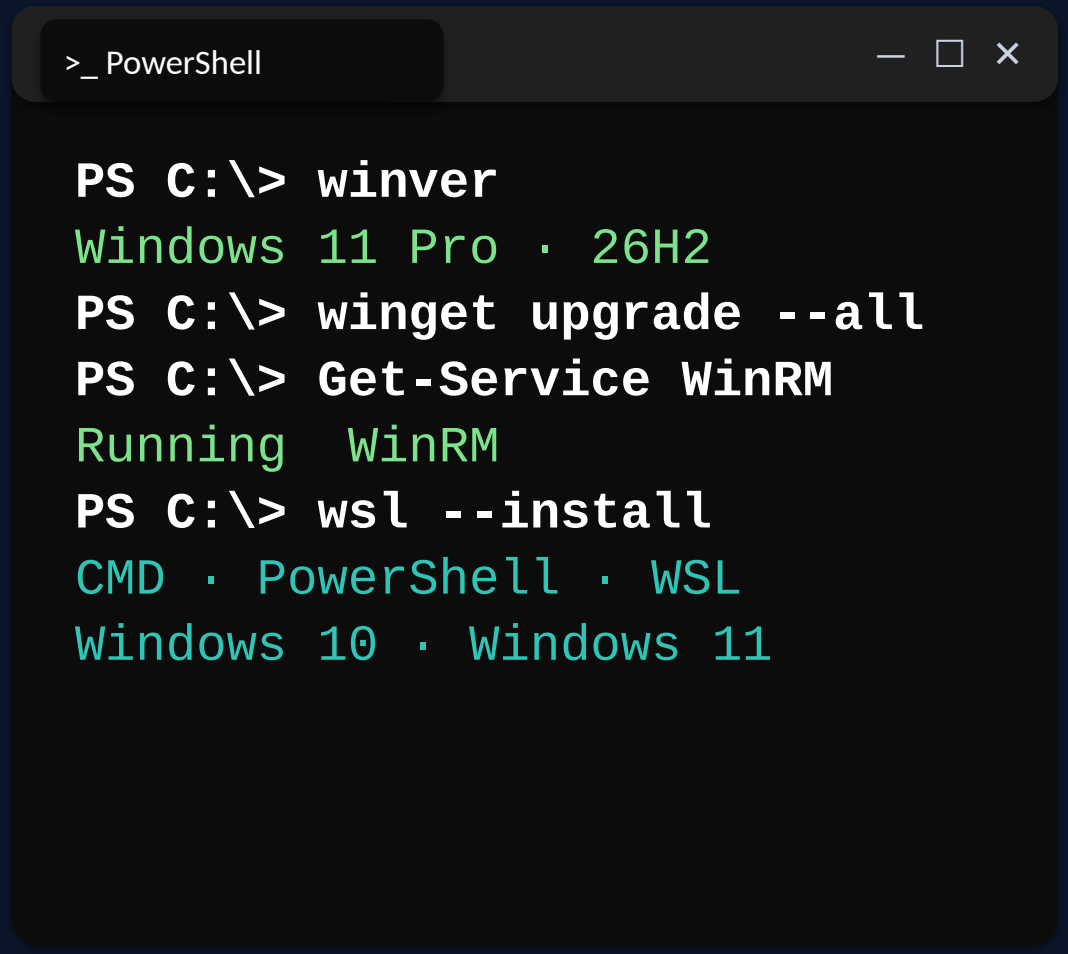
Windows 10 & 11

Desktop · Workstation · Laptop

From Installation to Administration: GUI, CMD & PowerShell

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

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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! 🙏

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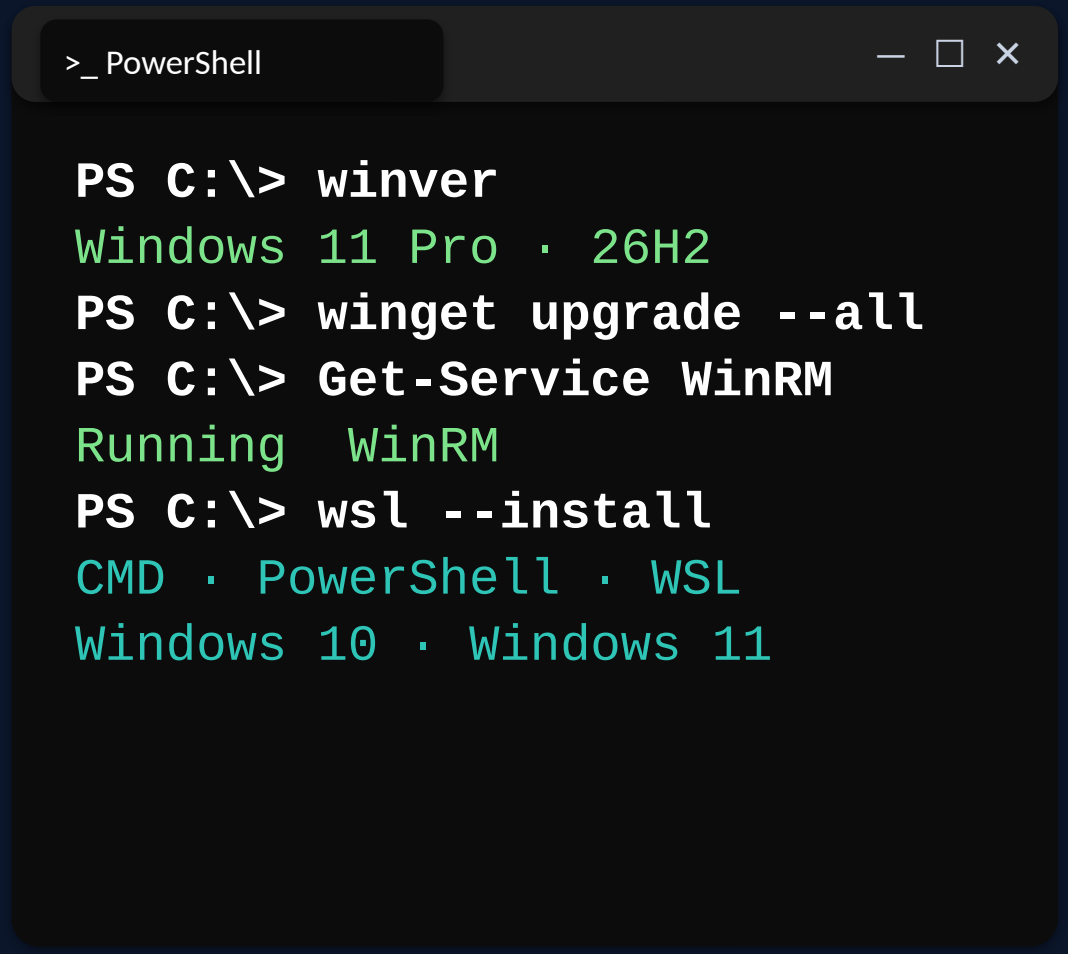
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LESSON 2 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Installing, Upgrading & Recovering Windows

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

What You Will Learn in Lesson 2

- Ways to get Windows 11 and the checklist before you start
- Creating and checking bootable installation media
- A clean install: boot menu, partitions and first-time setup (OOBE)
- Upgrading from Windows 10, and between Windows 11 versions
- Activation: digital licenses and product keys
- Windows Recovery Environment (WinRE), System Restore and Reset this PC
- Repairing system files with SFC and DISM

Ways to Get Windows 11

Method	When to use it
Windows Update	Eligible Windows 10 PCs: free upgrade offer in Settings
Installation Assistant	Upgrade one PC now, keeping files and apps
Media Creation Tool	Make a bootable USB drive (8 GB or larger)
ISO download	Virtual machines, in-place repair, or your own USB tool
New PC (OEM)	Preinstalled and activated by the manufacturer
Enterprise deployment	Windows Autopilot and Intune for many devices

Before You Install: The Checklist

- Back up your files, and test that the backup opens
- Save the BitLocker recovery key (account.microsoft.com/devices/recoverykey)
- Know your license: digital license, product key, or work account
- Download network and storage drivers from the PC maker
- Update the BIOS/UEFI firmware; enable TPM 2.0 and Secure Boot
- Laptops: plug in the charger; desktops: disconnect extra drives

Verify and Mount an ISO

```
PS C:\> Get-FileHash .\Win11_26H2_English_x64.iso -Algorithm SHA256
Algorithm  Hash                                   Path
SHA256     5E1A...C9F2                            C:\Users\wahid\Downloads\Win11...
# Compare with the SHA256 value published on the Microsoft download page

PS C:\> Mount-DiskImage -ImagePath C:\ISO\Win11_26H2_English_x64.iso
PS C:\> Get-Volume | Where-Object DriveType -eq CD-ROM     # find the drive letter
PS C:\> Dismount-DiskImage -ImagePath C:\ISO\Win11_26H2_English_x64.iso
```

The file name and hash above are examples — always use the values from your own download.

A Clean Install, Step by Step

Step	What you do
1. Boot from USB	Use the one-time boot menu (often F12, F11, F9 or Esc)
2. Setup screens	Language, keyboard, then 'Install Windows 11'
3. Product key	Enter it, or choose 'I don't have a product key'
4. Choose a disk	Select the drive; delete old partitions only if you are sure
5. Copy files	Setup copies Windows and restarts several times
6. OOBE	Region, network, account, privacy — the out-of-box experience

The Partitions Windows Creates (UEFI/GPT)

```
# During Setup press Shift+F10 for a command prompt
X:\Sources> diskpart
DISKPART> list disk
DISKPART> select disk 0
DISKPART> list partition
  Partition 1    System     100 MB     # EFI system partition (FAT32, boot files)
  Partition 2    Reserved    16 MB     # Microsoft Reserved (MSR)
  Partition 3    Primary    475 GB     # C: Windows (NTFS)
  Partition 4    Recovery   750 MB     # Windows Recovery Environment
DISKPART> exit
```

Careful: 'clean' in diskpart erases the selected disk immediately.

First-Time Setup (OOBE) and Accounts

- Home: setup needs internet and a Microsoft account
- Pro: 'Set up for work or school' joins Microsoft Entra ID
- Pro, Enterprise: can also join a classic Active Directory domain later
- Choose privacy settings carefully: location, diagnostics, ads ID
- Create a Windows Hello PIN; add local accounts later in Settings
- After OOBE: Windows Update, drivers, then your apps

Upgrading: Windows 10 → 11, and 24H2 → 26H2

Path	How	Keeps files and apps?
Windows 10 22H2 → 11	Windows Update or Installation Assistant	Yes
In-place upgrade	Run setup.exe from the mounted ISO	Yes (choose 'Keep files and apps')
24H2 / 25H2 → 26H2	Small enablement package, one restart	Yes
Go back	Settings > System > Recovery > Go back	Within 10 days of a feature upgrade
Clean install	Boot from USB, delete partitions	No — restore from backup

Activation: Check and Fix

```
# GUI: Settings > System > Activation  (Troubleshoot button)
C:\> slmgr /xpr          # is Windows permanently activated?
C:\> slmgr /dli          # license type and partial product key
C:\> slmgr /ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX   # install a product key
C:\> slmgr /ato          # activate now

# Digital license: linked to the hardware and your Microsoft account.
# After a motherboard change, use the Activation troubleshooter.
```

Windows Recovery Environment (WinRE)

Tool	Use it when
Startup Repair	Windows will not start after a crash or a bad shutdown
Uninstall Updates	Problems started right after an update
System Restore	Undo driver or software changes to a restore point
Command Prompt	Manual repairs: diskpart, bcdboot, sfc, chkdsk
UEFI Firmware Settings	Change boot order, TPM, Secure Boot
Reset this PC	Reinstall Windows: keep my files, or remove everything

Recovery and Repair Commands

```
C:\> reagentc /info                    # is WinRE enabled? where is it?
C:\> shutdown /r /o /t 0               # restart straight into WinRE
C:\> rstrui                            # System Restore wizard
C:\> RecoveryDrive                     # create a USB recovery drive

# Repair damaged system files (run as Administrator, in this order):
C:\> DISM /Online /Cleanup-Image /RestoreHealth
C:\> sfc /scannow
C:\> chkdsk C: /scan                   # check the file system online
```

Summary & Homework

- Back up and save the BitLocker recovery key before any install
- Verify ISOs with Get-FileHash; know the four UEFI partitions
- In-place upgrade keeps files and apps — and repairs Windows
- WinRE: Startup Repair, System Restore, Uninstall Updates, Reset this PC
- Repair order: DISM /RestoreHealth, then sfc /scannow
- Homework: install Windows 11 in a VM; create a recovery drive

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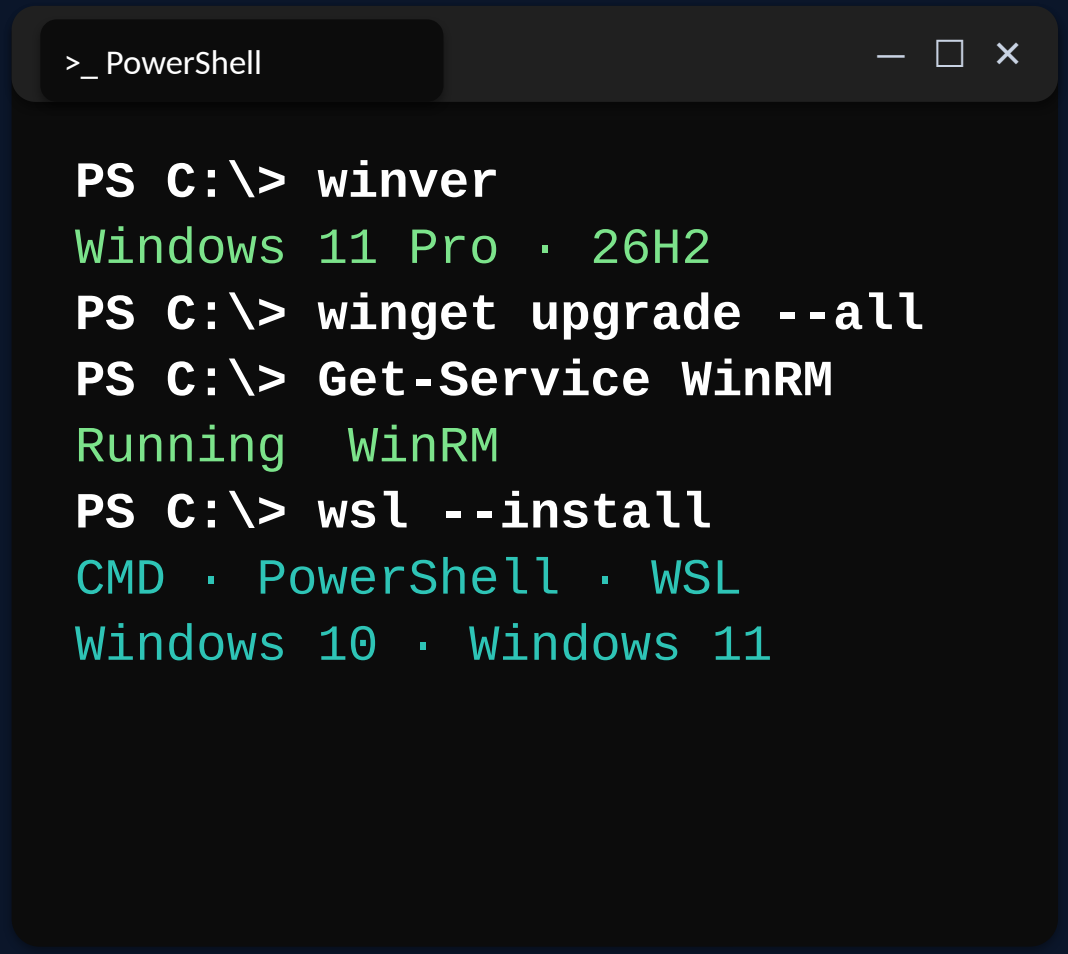
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LESSON 3 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

The Desktop, Settings & Built-in Tools

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

What You Will Learn in Lesson 3

- A tour of the Windows 11 desktop (and what changed from Windows 10)
- Keyboard shortcuts every administrator uses
- File Explorer power skills and special folders
- Settings vs Control Panel: where the admin pages live
- The management consoles (.msc tools)
- Task Manager, Resource Monitor and other built-in tools
- Opening any tool fast from Run, Search or Terminal

A Tour of the Desktop

Part	What it does	Shortcut
Start	Pinned apps, All apps, Recommended files, power	Win
Search	Find apps, files, settings and web results	Win + S
Taskbar	Running apps; centered on 11, left-aligned option	Win + T
File Explorer	Files, folders, drives, network	Win + E
Settings	Modern settings app	Win + I
Quick Settings	Wi-Fi, Bluetooth, volume, brightness, battery	Win + A
Notifications	Notification center and calendar	Win + N

Shortcuts Every Administrator Uses

Shortcut	What it opens
Win + X	Power User menu: Terminal (Admin), Device Manager, Disk Management
Win + R	Run box: type any tool name, such as services.msc
Ctrl + Shift + Esc	Task Manager, directly
Win + L	Lock the screen — every time you walk away
Win + V	Clipboard history
Win + Shift + S	Screenshot of an area (Snipping Tool)
Win + Tab / Win + Z	Task View and virtual desktops / Snap layouts

File Explorer Power Skills

- View > Show > File name extensions — always turn this on
- View > Show > Hidden items — see AppData and other hidden folders
- Type cmd, powershell or wt in the address bar to open a shell there
- Right-click > Copy as path (Ctrl + Shift + C)
- Tabs (Ctrl + T) and split panes with Snap
- Paste a path such as %APPDATA% into the address bar

Special Folders and Environment Paths

```
%USERPROFILE%       C:\Users\wahid              # your home folder
%APPDATA%           ...\AppData\Roaming           # app settings that roam
%LOCALAPPDATA%      ...\AppData\Local             # caches, local app data
%TEMP%              ...\AppData\Local\Temp        # temporary files
%ProgramFiles%      C:\Program Files              # 64-bit apps
%SystemRoot%        C:\Windows                    # the OS itself
shell:startup       your Startup folder (runs at sign-in)

C:\> echo %USERPROFILE%
PS C:\> $env:USERPROFILE ; Get-ChildItem Env:
```

Settings vs Control Panel

Task	Where to go
Version, rename PC, device specs	Settings > System > About
Storage, Storage Sense, cleanup	Settings > System > Storage
Recovery, reset, advanced startup	Settings > System > Recovery
Uninstall apps, startup apps	Settings > Apps > Installed apps / Startup
Updates, update history, pause	Settings > Windows Update
Classic tools: Programs and Features, Device and Printers	Control Panel (still available)

The Management Consoles (.msc)

Command	Console	Use it for
compmgmt.msc	Computer Management	Many tools in one window
devmgmt.msc	Device Manager	Drivers, unknown devices, disable hardware
diskmgmt.msc	Disk Management	Partitions, drive letters, new disks
services.msc	Services	Start, stop and configure services
eventvwr.msc	Event Viewer	System and application logs
taskschd.msc	Task Scheduler	Run programs on a schedule
lusrmgr.msc / gpedit.msc	Local Users / Group Policy	Pro and higher editions

Reading Task Manager Like an Administrator

- Processes: CPU, memory, disk, network per app — sort by the busiest
- Performance: CPU, memory, disk, Wi-Fi/Ethernet, GPU graphs
- Startup apps: disable what you do not need at sign-in
- Users: who is signed in and what they use
- Details: process IDs (PID), priority, command line
- Services: quick view; right-click to open services.msc

More Built-in Tools

Command	Tool	Why it matters
resmon	Resource Monitor	Which process uses the disk or network right now
perfmon /rel	Reliability Monitor	A timeline of crashes, failures and updates
msinfo32	System Information	Hardware, drivers, BIOS mode, Secure Boot
msconfig	System Configuration	Safe Mode boot, boot options
dxdiag	DirectX Diagnostic	Graphics and sound details
cleanmgr	Disk Cleanup	Remove old update files and temp files

Open Any Tool Fast

```
C:\> start ms-settings:windowsupdate     # a Settings page by its URI
C:\> start ms-settings:about
C:\> control                             # classic Control Panel
C:\> explorer .                          # File Explorer in this folder
C:\> compmgmt.msc                        # any console by name

PS C:\> Start-Process taskmgr
PS C:\> Start-Process powershell -Verb RunAs     # new admin window (UAC)
```

Lab: Your Admin Toolkit

```
# 1. Turn on extensions and hidden items in File Explorer (View > Show)
# 2. Pin Terminal to the taskbar; set Terminal to open as Administrator
# 3. Try each shortcut: Win+X, Win+R, Ctrl+Shift+Esc, Win+V, Win+L
C:\> perfmon /rel                          # read your Reliability history
C:\> msinfo32                              # note BIOS Mode and Secure Boot
PS C:\> Get-ChildItem Env: | Sort-Object Name | Select-Object -First 10
PS C:\> explorer shell:startup             # what runs when you sign in?
```

Summary & Homework

- Win + X, Win + R and Ctrl + Shift + Esc are the admin's best friends
- Always show file extensions and hidden items
- Settings for modern tasks; Control Panel and .msc consoles for classic ones
- Task Manager and Reliability Monitor: first stops for a slow or unstable PC
- Homework: open all seven .msc consoles from the Run box
- Homework: disable one unneeded startup app and measure sign-in time

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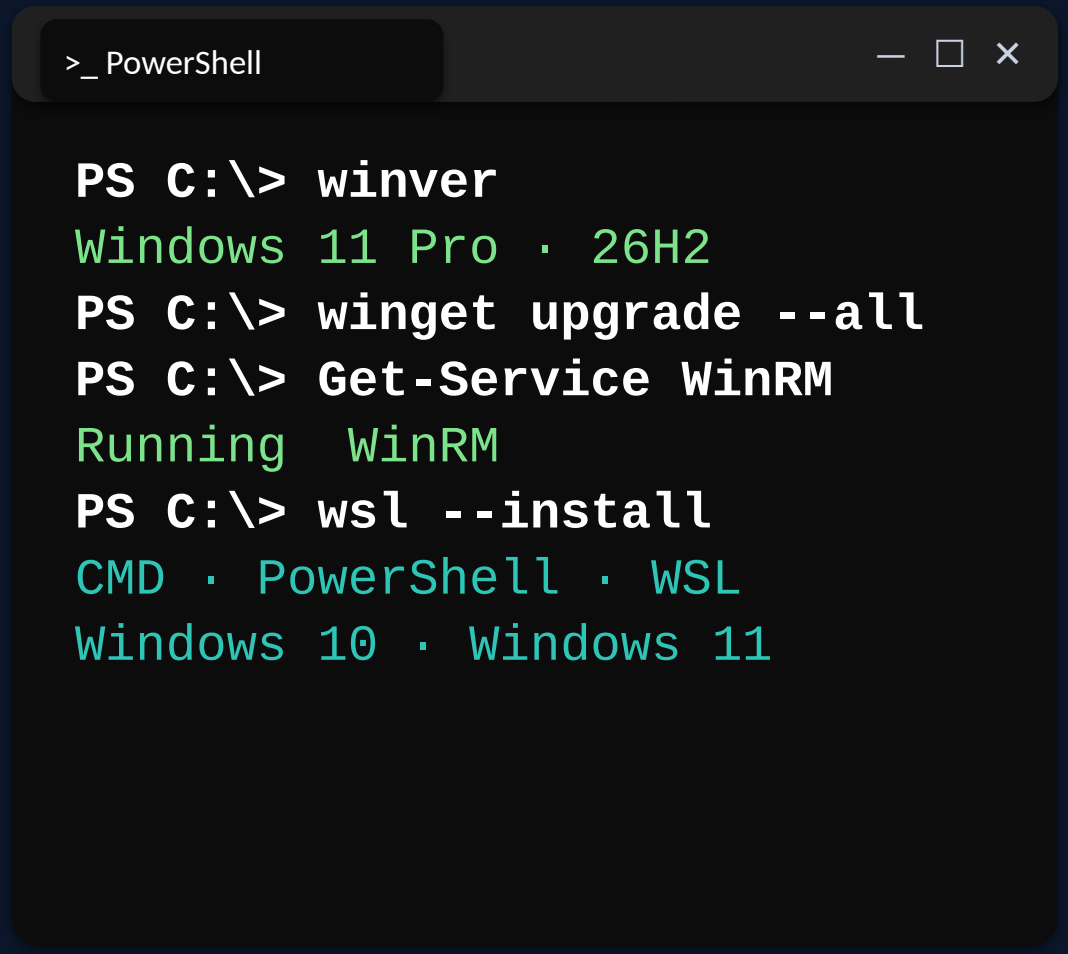
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LESSON 4 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Command Line: CMD, PowerShell, Windows Terminal & NTFS

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

What You Will Learn in Lesson 4

- The shells: CMD, Windows PowerShell 5.1, PowerShell 7 and WSL
- Windows Terminal: tabs, profiles, admin sessions and sudo
- CMD vs PowerShell vs Linux: the same tasks side by side
- PowerShell thinking: Verb-Noun, objects and the pipeline
- Paths, drives and the NTFS file system
- Working with files in CMD and PowerShell, including robocopy
- Your first batch file and PowerShell script

The Shells in Windows

Shell	Program	Notes
Command Prompt	cmd.exe	Classic; batch files (.bat, .cmd); still everywhere
Windows PowerShell 5.1	powershell.exe	Built in; frozen at 5.1; still used by many scripts
PowerShell 7.6 (LTS)	pwsh.exe	Modern, open source, on .NET 10; Windows, macOS, Linux
WSL (bash)	wsl.exe	A real Linux shell and distro (Lesson 6)
Windows Terminal	wt.exe	The window that hosts them all; default on Windows 11

Install PowerShell 7 and Check Versions

```
PS C:\> winget install --id Microsoft.PowerShell --source winget
PS C:\> pwsh                                    # start PowerShell 7
PS C:\> $PSVersionTable.PSVersion
Major  Minor  Patch
7      6      4

C:\> ver                                        # CMD: Windows version
Microsoft Windows [Version 10.0.26300.xxxx]
```

Version numbers change with updates — yours may be newer.

Same Task, Three Shells

Task	CMD	PowerShell	Linux bash
List files	dir	Get-ChildItem (ls, dir)	ls -l
Change folder	cd	Set-Location (cd)	cd
Copy / move	copy / move	Copy-Item / Move-Item	cp / mv
Delete	del, rmdir	Remove-Item (rm)	rm, rmdir
Show a file	type	Get-Content (cat)	cat
Search text	findstr	Select-String	grep
Clear screen	cls	Clear-Host (cls)	clear

Thinking in PowerShell

- Commands are Verb-Noun cmdlets: Get-Service, Stop-Process, New-Item
- Output is objects with properties, not just text
- The pipeline | passes objects to the next command
- Get-Command finds commands; Get-Help explains them (-Examples)
- Get-Member shows the properties and methods of any object
- -WhatIf previews a change; -Confirm asks first

The Pipeline in Action

```
PS C:\> Get-Process | Sort-Object CPU -Descending | Select-Object -First 5 Name, CPU, Id

PS C:\> Get-Service | Where-Object Status -eq 'Running' | Measure-Object

PS C:\> Get-ChildItem C:\Windows -File | Measure-Object Length -Sum

PS C:\> Get-Command *service*              # find commands
PS C:\> Get-Help Get-Service -Examples     # learn by example
PS C:\> Get-Service WinRM | Get-Member     # what is inside the object?
```

Paths, Drives and NTFS

Topic	What to know
Drive letters	C: is Windows; D:, E: for other disks, USB, DVD
Paths	Backslash: C:\Users\wahid; network: \\server\share (UNC)
Case	Not case-sensitive, but case-preserving
NTFS features	Permissions (ACLs), journaling, compression, EFS, hard links
Other file systems	ReFS (workstations, servers), FAT32 and exFAT (USB drives)
Gotchas	Reserved names (CON, PRN, NUL); 260-character path limit by default

Files in CMD (including robocopy)

```
C:\> mkdir C:\Lab\Reports & cd /d C:\Lab
C:\Lab> echo Hello Windows > notes.txt
C:\Lab> copy notes.txt Reports\           & dir /a Reports
C:\Lab> type notes.txt                     & attrib +h notes.txt
C:\Lab> tree /f C:\Lab

C:\> robocopy C:\Lab D:\Backup\Lab /E /R:1 /W:1 /LOG:C:\robocopy.log
#  /E copy subfolders   /MIR mirror (DELETES extra files at the destination!)
```

Files in PowerShell

```
PS C:\> New-Item -ItemType Directory C:\Lab\Scripts
PS C:\> Set-Content C:\Lab\todo.txt 'Learn PowerShell'
PS C:\> Add-Content C:\Lab\todo.txt 'Practice every day'
PS C:\> Get-Content C:\Lab\todo.txt
PS C:\> Copy-Item C:\Lab C:\Lab2 -Recurse
PS C:\> Remove-Item C:\Lab2 -Recurse -WhatIf      # preview first!
PS C:\> Test-Path C:\Lab\todo.txt
PS C:\> Get-Content C:\Windows\Logs\CBS\CBS.log -Tail 20 -Wait   # follow a log
```

Your First Scripts

```
:: hello.bat  — a batch file
@echo off
echo Hello %USERNAME%, today is %DATE%

# hello.ps1  — a PowerShell script
param([string]$Name = $env:USERNAME)
"Hello $Name, you have $((Get-Process).Count) processes running."

PS C:\Lab> Get-ExecutionPolicy                    # RemoteSigned on Windows 11
PS C:\Lab> .\hello.ps1 -Name Student              # dot-backslash runs it
```

Windows Terminal Like a Pro

- Profiles: PowerShell 7, Windows PowerShell, CMD, WSL, Azure Cloud Shell
- Settings > Startup: choose the default profile (PowerShell 7)
- Ctrl + Shift + T new tab; Alt + Shift + D split pane
- Right-click a profile > Run as administrator
- sudo for Windows: Settings > System > Advanced > Enable sudo
- Your profile script: notepad $PROFILE (aliases, prompt, modules)

Summary & Homework

- CMD for classic tasks; PowerShell 7 for modern administration
- PowerShell = Verb-Noun + objects + pipeline; use Get-Help and -WhatIf
- Know NTFS, paths and UNC; robocopy for reliable copies
- Scripts: .bat for CMD, .ps1 for PowerShell (execution policy)
- Homework: install PowerShell 7 and make it the Terminal default
- Homework: write hello.ps1 and list your top 5 CPU processes

Thank You! 🙏

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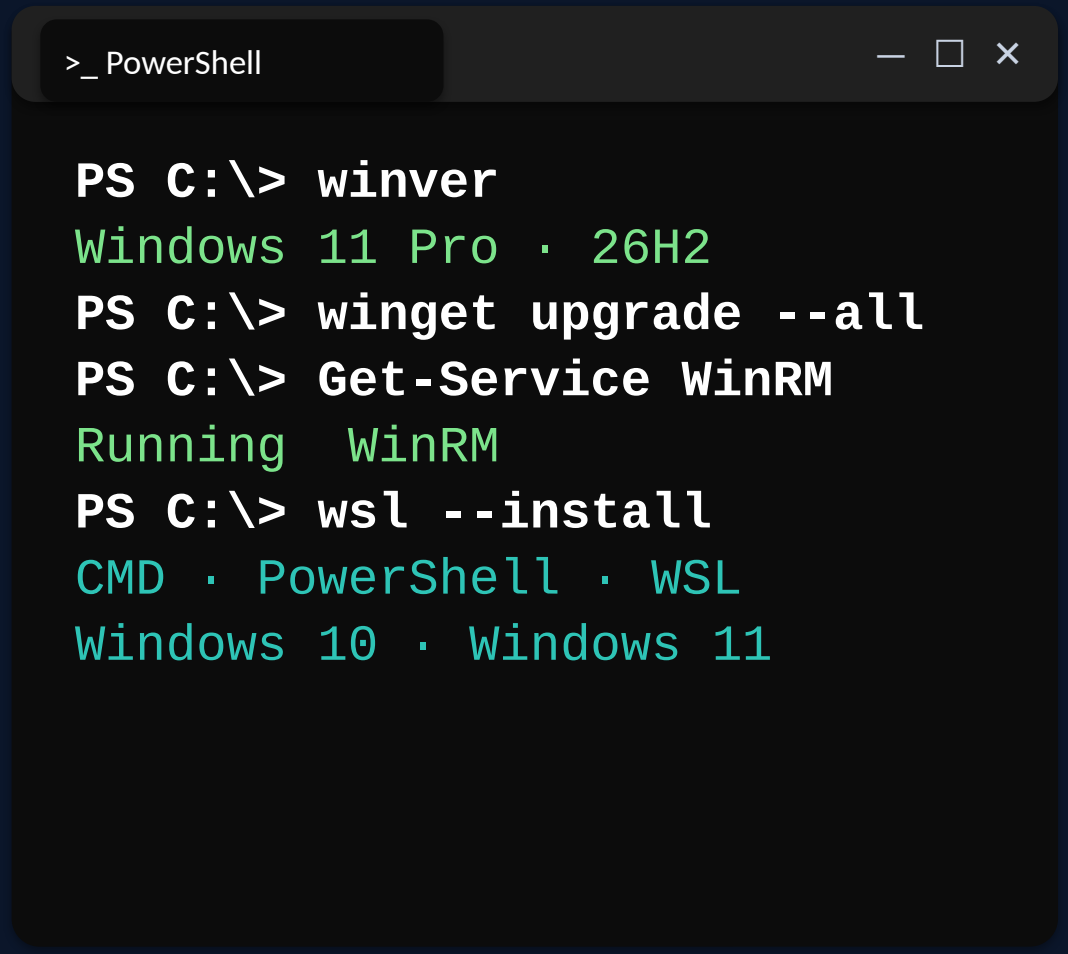
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LESSON 5 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Installing Software: winget, Microsoft Store, MSI & More

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

What You Will Learn in Lesson 5

- The ways software reaches a Windows PC
- Safety rules: official sources, signatures and SmartScreen
- winget: search, install, upgrade, uninstall, export and import
- MSI and EXE installers, including silent installs
- Where programs live, and the PATH variable
- Community managers: Chocolatey and Scoop
- Windows optional features and capabilities

How Software Reaches Windows

Method	What it is	Updates
Microsoft Store	Curated apps, MSIX packages, sandboxed	Automatic
winget	Windows Package Manager, built in (App Installer)	winget upgrade
MSI installer	Windows Installer package; good for silent installs	Vendor or IT tools
EXE installer	Vendor's own setup program	Vendor updater
Portable / ZIP	Unzip and run; no installation	Manual
Chocolatey / Scoop	Community package managers	choco / scoop update

Safety Rules for Installing Software

- Download only from the vendor's official site or a trusted manager
- Watch for fake 'Download' buttons and look-alike websites
- Check the digital signature: right-click > Properties > Digital Signatures
- Respect SmartScreen and UAC warnings — read before you click
- Use a standard account day to day; elevate only to install
- Uninstall what you no longer use, and keep the rest updated

winget Essentials

```
PS C:\> winget search "visual studio code"
PS C:\> winget show --id Microsoft.VisualStudioCode       # publisher, version, URL
PS C:\> winget install --id Microsoft.VisualStudioCode -e
PS C:\> winget install --id Git.Git -e --silent
PS C:\> winget list                       # everything installed (even non-winget)
PS C:\> winget upgrade                    # what has updates?
PS C:\> winget upgrade --all              # update everything
PS C:\> winget uninstall --id Git.Git -e
```

Rebuild a PC in Minutes: Export and Import

```
PS C:\> winget export -o C:\Lab\my-apps.json      # save your app list
PS C:\> Get-Content C:\Lab\my-apps.json | Select-Object -First 12

# On a new or freshly reset PC:
PS C:\> winget import -i C:\Lab\my-apps.json --accept-package-agreements

# Advanced: describe a whole machine in a YAML file (WinGet Configuration)
PS C:\> winget configure -f C:\Lab\dev-machine.winget
```

MSI and EXE Installers

Task	Command
Install silently, with a log	msiexec /i app.msi /qn /l*v C:\Logs\app.log
Uninstall an MSI	msiexec /x app.msi /qn (or the product code {GUID})
Repair an MSI	msiexec /fa app.msi
EXE silent switches	Vary by vendor: /S, /silent, /quiet — try setup.exe /?
Exit codes	0 = success; 3010 = success, restart required

Where Programs Live

Location	What goes there
C:\Program Files	64-bit applications for all users
C:\Program Files (x86)	32-bit applications
%LOCALAPPDATA%\Programs	Per-user installs (no admin needed), e.g. VS Code user setup
C:\Program Files\WindowsApps	Microsoft Store (MSIX) apps — protected
%APPDATA%, %LOCALAPPDATA%	Each user's settings and caches
Registry ...\Uninstall	The list behind 'Installed apps'

Find Installed Software and Fix PATH

```
PS C:\> $keys = 'HKLM:\Software\Microsoft\Windows\CurrentVersion\Uninstall\*',
                'HKCU:\Software\Microsoft\Windows\CurrentVersion\Uninstall\*'
PS C:\> Get-ItemProperty $keys | Where-Object DisplayName |
          Sort-Object DisplayName | Select-Object DisplayName, DisplayVersion

PS C:\> $env:Path -split ';'              # folders searched for commands
PS C:\> where.exe python                  # which python runs?
PS C:\> Get-Command code | Select-Object Source
# Edit PATH: sysdm.cpl > Advanced > Environment Variables (then open a new terminal)
```

winget vs Chocolatey vs Scoop

	winget	Chocolatey	Scoop
Made by	Microsoft (built in)	Community / company	Community
Admin rights	Often (per app)	Usually	No (user folder)
Package count	Very large	Very large	Large (buckets)
Best for	Everyone, IT departments	Long-time automation scripts	Developer CLI tools
Install it	Already there	Install script from chocolatey.org	Install script from scoop.sh

Optional Features and Capabilities

```
# GUI: Settings > System > Optional features
PS C:\> Get-WindowsCapability -Online | Where-Object Name -like 'OpenSSH*'
PS C:\> Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0

PS C:\> Get-WindowsOptionalFeature -Online | Where-Object FeatureName -like '*NetFx3*'
PS C:\> Enable-WindowsOptionalFeature -Online -FeatureName NetFx3   # .NET 3.5

C:\> DISM /Online /Get-Features /Format:Table
```

Lab: A Developer PC in Five Commands

```
PS C:\> winget install --id Microsoft.PowerShell -e
PS C:\> winget install --id Microsoft.VisualStudioCode -e
PS C:\> winget install --id Git.Git -e
PS C:\> winget install --id Python.Python.3.15 -e
PS C:\> winget export -o $HOME\Documents\my-apps.json

# Open a NEW terminal, then check:
PS C:\> git --version ; python --version ; code --version
```

Package IDs change over time — confirm them with winget search.

Summary & Homework

- Prefer winget or the Microsoft Store; always use official sources
- winget: search, install --id -e, upgrade --all, export / import
- Silent MSI: msiexec /i app.msi /qn /l*v log.txt
- Use where.exe and $env:Path to solve 'command not found'
- Homework: export your app list and keep it with your backup
- Homework: run winget upgrade --all once a week

Thank You! 🙏

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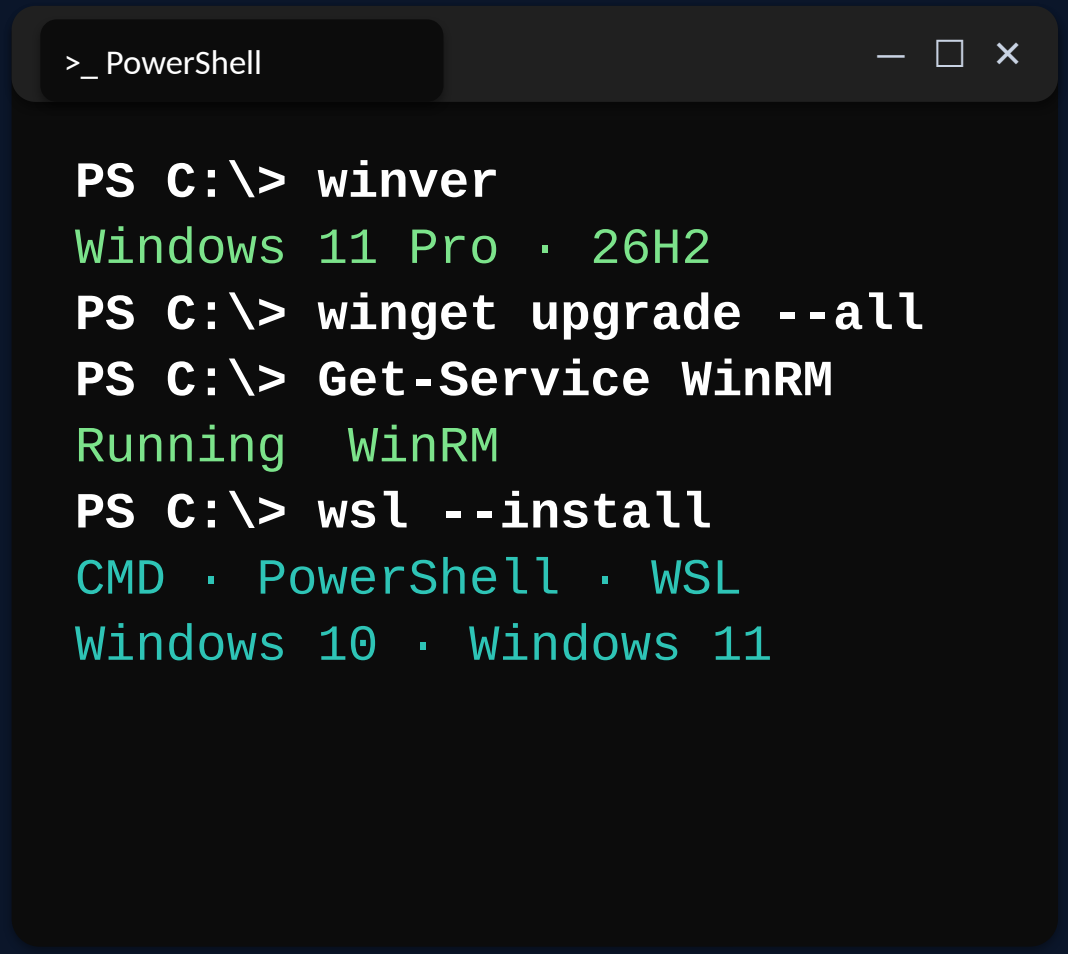
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LESSON 6 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Developer Setup: Compilers, Interpreters, VS Code & WSL

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

What You Will Learn in Lesson 6

- The modern Windows developer toolbox
- Languages: Python, C and C++, .NET, Java, Node.js, Go, Rust
- Python the right way: py launcher and virtual environments
- Compiling C, C++ and C# on Windows
- WSL 2: real Linux inside Windows
- VS Code and Git essentials
- Dev Drive, developer settings and Windows Sandbox

The Windows Developer Toolbox

Tool	Why you want it
Windows Terminal + PowerShell 7	A modern command line (Lesson 4)
VS Code	Free editor for every language; extensions; remote and WSL support
Git	Version control; GitHub, GitLab, Azure DevOps
WSL 2	Ubuntu, Debian, Kali and more, running a real Linux kernel
Visual Studio / Build Tools	MSVC C and C++ compiler, .NET, Windows apps
Docker Desktop or Podman	Containers (uses WSL 2 underneath)

Languages on Windows

Language	Install with winget (example ID)	Check
Python 3.15	Python.Python.3.15	py --version
Node.js LTS	OpenJS.NodeJS.LTS	node -v ; npm -v
Java (OpenJDK)	Microsoft.OpenJDK.21	java --version
.NET SDK 10	Microsoft.DotNet.SDK.10	dotnet --info
C / C++ (MSVC)	Microsoft.VisualStudio.2022 .BuildTools	cl (Developer PowerShell)
Go / Rust	GoLang.Go / Rustlang.Rustup	go version ; rustc -V

Package IDs and newest versions change — confirm with winget search before installing.

Python the Right Way

```
PS C:\> py --list                    # every Python installed
PS C:\> py -3.15 --version
PS C:\> mkdir C:\Code\hello-py ; cd C:\Code\hello-py
PS C:\Code\hello-py> py -m venv .venv          # a private environment
PS C:\Code\hello-py> .\.venv\Scripts\Activate.ps1
(.venv) PS C:\Code\hello-py> python -m pip install requests pandas
(.venv) PS C:\Code\hello-py> python -c "import pandas; print(pandas.__version__)"
(.venv) PS C:\Code\hello-py> pip freeze > requirements.txt
(.venv) PS C:\Code\hello-py> deactivate
```

Compile C, C++ and C#

```
# Start > 'Developer PowerShell for VS'  (sets up the MSVC compiler)
PS C:\Code> cl /W4 /EHsc hello.cpp          # -> hello.exe
PS C:\Code> .\hello.exe
Hello from MSVC!

# Alternative: GCC through MSYS2 (UCRT64 shell) or inside WSL
$ gcc -Wall -O2 hello.c -o hello

PS C:\Code> dotnet new console -n HelloCS ; cd HelloCS
PS C:\Code\HelloCS> dotnet run
```

WSL 2: Real Linux Inside Windows

Command	What it does
wsl --install	Install WSL with Ubuntu (restart once)
wsl --list --online	Distributions you can install
wsl --install -d Debian	Add another distribution
wsl -l -v	Installed distros and WSL version
wsl --update / wsl --shutdown	Update WSL / stop all distros
\\wsl.localhost\Ubuntu and /mnt/c	Linux files from Windows / Windows files from Linux

A Quick WSL Session

```
PS C:\> wsl --install                          # first time only, then restart
PS C:\> wsl                                    # open your default distro
$ uname -a ; cat /etc/os-release | head -3
$ sudo apt update && sudo apt install -y build-essential python3-venv git
$ explorer.exe .                               # open this Linux folder in File Explorer
$ code .                                       # open it in VS Code (WSL extension)
$ exit
PS C:\> wsl -l -v
  NAME      STATE     VERSION
* Ubuntu    Stopped   2
```

VS Code Essentials

- Extensions: Python, C/C++, C#, PowerShell, WSL, Remote - SSH, GitLens
- Ctrl + ` opens the integrated terminal (PowerShell or WSL bash)
- Ctrl + Shift + P: the Command Palette for every action
- Built-in Git: stage, commit, push from the Source Control panel
- Debugging: breakpoints and variables for Python, C++, C#, Node.js
- Settings Sync with your GitHub or Microsoft account

Git Setup on Windows

```
PS C:\> git config --global user.name  "Your Name"
PS C:\> git config --global user.email "you@example.com"
PS C:\> git config --global core.autocrlf true     # CRLF on Windows, LF in the repo
PS C:\> git config --global init.defaultBranch main

PS C:\> ssh-keygen -t ed25519 -C "you@example.com"   # key for GitHub
PS C:\> Get-Content $HOME\.ssh\id_ed25519.pub        # paste into GitHub > SSH keys

PS C:\Code\hello-py> git init ; git add . ; git commit -m "First commit"
```

Dev Drive, Developer Settings and Sandbox

Feature	What it gives you
Dev Drive	ReFS volume tuned for code; Defender performance mode = faster builds
Create it	Settings > System > Storage > Disks & volumes > Create Dev Drive
Developer settings	Settings > System > Advanced: long paths, sudo, File Explorer + Git
Windows Sandbox	Test unknown tools and installers in a throwaway desktop
Hyper-V	Full VMs: Windows Server, Linux servers, test networks

Lab: Your Developer Workstation

```
PS C:\> winget install -e --id Python.Python.3.15
PS C:\> winget install -e --id OpenJS.NodeJS.LTS
PS C:\> winget install -e --id Microsoft.DotNet.SDK.10
PS C:\> wsl --install                       # restart, then create your Linux user

PS C:\> py -m venv C:\Code\lab\.venv ; C:\Code\lab\.venv\Scripts\Activate.ps1
(.venv) PS C:\> python -c "print('Python OK')" ; node -e "console.log('Node OK')"
PS C:\> dotnet new console -n Lab6 ; dotnet run --project Lab6
PS C:\> wsl -e bash -c "gcc --version | head -1"
```

Summary & Homework

- One winget command per language; confirm IDs with winget search
- Python: py launcher + a virtual environment per project
- MSVC via Developer PowerShell; GCC via MSYS2 or WSL
- WSL 2 = real Linux; keep Linux projects in the Linux file system
- Homework: push a small project to GitHub using an SSH key
- Homework: create a Dev Drive (or a VHD) and build a project on it

Thank You! 🙏

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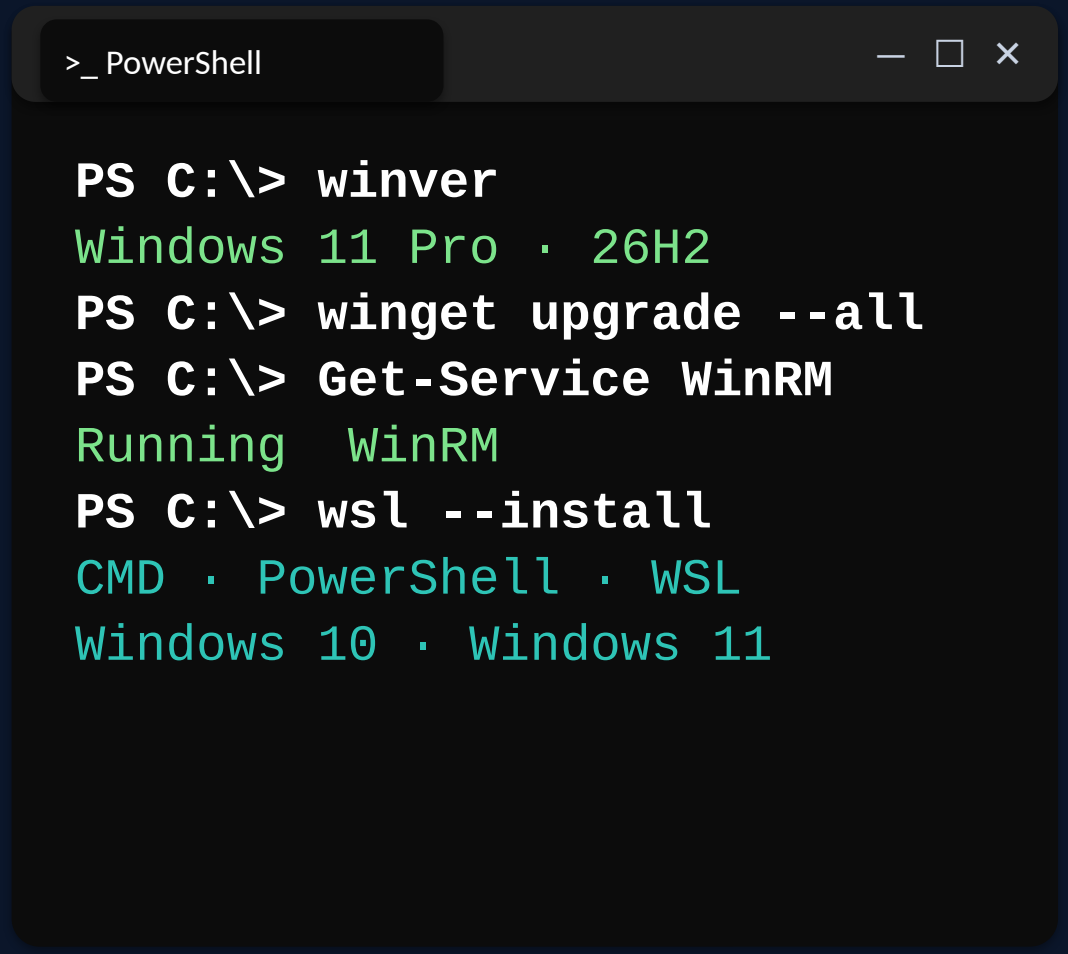
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LESSON 7 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Databases on Windows: SQL Server, SQLite, MySQL & PostgreSQL

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

What You Will Learn in Lesson 7

- Choosing a database: embedded file vs database server
- SQLite: a complete database in one file
- SQL Server Express and Developer editions, SSMS and sqlcmd
- PostgreSQL and MySQL / MariaDB on Windows
- Database services, ports and the firewall
- Backups: BACKUP DATABASE, pg_dump and mysqldump
- Connecting from Python

Which Database?

Database	Type	Cost / license	Great for
SQLite	Embedded file	Free, public domain	Apps, prototypes, data science
SQL Server Express	Server	Free (size-limited)	Small apps, learning T-SQL
SQL Server Developer	Server	Free, not for production	Full-feature development
PostgreSQL	Server	Free, open source	Web apps, analytics, GIS
MySQL / MariaDB	Server	Free community editions	Web apps, WordPress, LAMP skills

SQLite: A Database in One File

```
PS C:\> winget install -e --id SQLite.SQLite
PS C:\Lab> sqlite3 school.db
sqlite> CREATE TABLE students (id INTEGER PRIMARY KEY, name TEXT, grade INTEGER);
sqlite> INSERT INTO students (name, grade) VALUES ('Maryam', 95), ('Ahmad', 88);
sqlite> SELECT name, grade FROM students ORDER BY grade DESC;
Maryam|95
Ahmad|88
sqlite> .tables
sqlite> .quit
```

SQL Server on Windows

Piece	What it is
Download	microsoft.com/sql-server: choose Express or Developer; 'Basic' install
Instance names	Express: localhost\SQLEXPRESS; Developer: localhost (default)
SSMS	SQL Server Management Studio: the main graphical tool
VS Code + MSSQL extension	Query SQL Server from your editor
sqlcmd	Command line client: winget install -e --id Microsoft.Sqlcmd
Authentication	Windows authentication (recommended) or SQL logins

T-SQL with sqlcmd

```
PS C:\> sqlcmd -S localhost\SQLEXPRESS -E -Q "SELECT @@VERSION"

PS C:\> sqlcmd -S localhost\SQLEXPRESS -E
1> CREATE DATABASE School;
2> GO
1> USE School;
2> CREATE TABLE Students (Id INT IDENTITY PRIMARY KEY, Name NVARCHAR(50), Grade INT);
3> INSERT INTO Students (Name, Grade) VALUES (N'Maryam', 95), (N'Ahmad', 88);
4> SELECT * FROM Students WHERE Grade > 90;
5> GO
```

PostgreSQL on Windows

```
PS C:\> winget search PostgreSQL           # pick the current major version
# The installer sets a password for the 'postgres' user and port 5432
PS C:\> Get-Service postgresql*
PS C:\> psql -U postgres -h localhost
postgres=# CREATE DATABASE school;
postgres=# \c school
school=# CREATE TABLE students (id SERIAL PRIMARY KEY, name TEXT, grade INT);
school=# INSERT INTO students (name, grade) VALUES ('Maryam', 95);
school=# \dt          -- list tables      \q  -- quit
```

MySQL and MariaDB on Windows

```
PS C:\> winget search MySQL ; winget search MariaDB
# Installer: set the root password; service listens on port 3306
PS C:\> Get-Service MySQL*, MariaDB*
PS C:\> mysql -u root -p
mysql> CREATE DATABASE school;
mysql> CREATE USER 'student'@'localhost' IDENTIFIED BY 'Use-A-Strong-Password!';
mysql> GRANT ALL PRIVILEGES ON school.* TO 'student'@'localhost';
mysql> SHOW DATABASES;
mysql> exit
```

Database Services, Ports and Safety

Server	Windows service	Default port
SQL Server	MSSQL$SQLEXPRESS / MSSQLSERVER	1433 (TCP)
PostgreSQL	postgresql-x64-<version>	5432
MySQL / MariaDB	MySQL<version> / MariaDB	3306
Keep it local	Listen on localhost on a laptop or desktop	Do not open the port
If you must share	Firewall rule for one subnet; TLS; strong passwords	Never to the internet

Backups for Every Database

```
# SQL Server (T-SQL)
PS C:\> sqlcmd -S localhost\SQLEXPRESS -E -Q "BACKUP DATABASE School TO DISK='C:\Backup\School.bak'"

# PostgreSQL
PS C:\> pg_dump -U postgres -h localhost -F c -f C:\Backup\school.dump school

# MySQL / MariaDB
PS C:\> cmd /c "mysqldump -u root -p school > C:\Backup\school.sql"

# SQLite: copy the file while no program is writing to it
PS C:\> Copy-Item C:\Lab\school.db C:\Backup\
```

Connect from Python

```
import sqlite3
con = sqlite3.connect(r"C:\Lab\school.db")
for name, grade in con.execute("SELECT name, grade FROM students"):
    print(name, grade)

# Other servers (pip install in your venv):
#   SQL Server -> pyodbc or mssql-python     PostgreSQL -> psycopg
#   MySQL      -> mysql-connector-python     All of them -> SQLAlchemy, pandas.read_sql
import pandas as pd
print(pd.read_sql("SELECT * FROM students", con))
```

Summary & Homework

- SQLite = one file; SQL Server, PostgreSQL, MySQL = services on ports
- SQL Server Express (production, limited) vs Developer (full, non-production)
- Use Windows authentication or separate app users — never root/sa for apps
- Keep databases on localhost; back up and test restores
- Homework: create the School database in SQLite and one server
- Homework: back it up, delete it, and restore it

Thank You! 🙏

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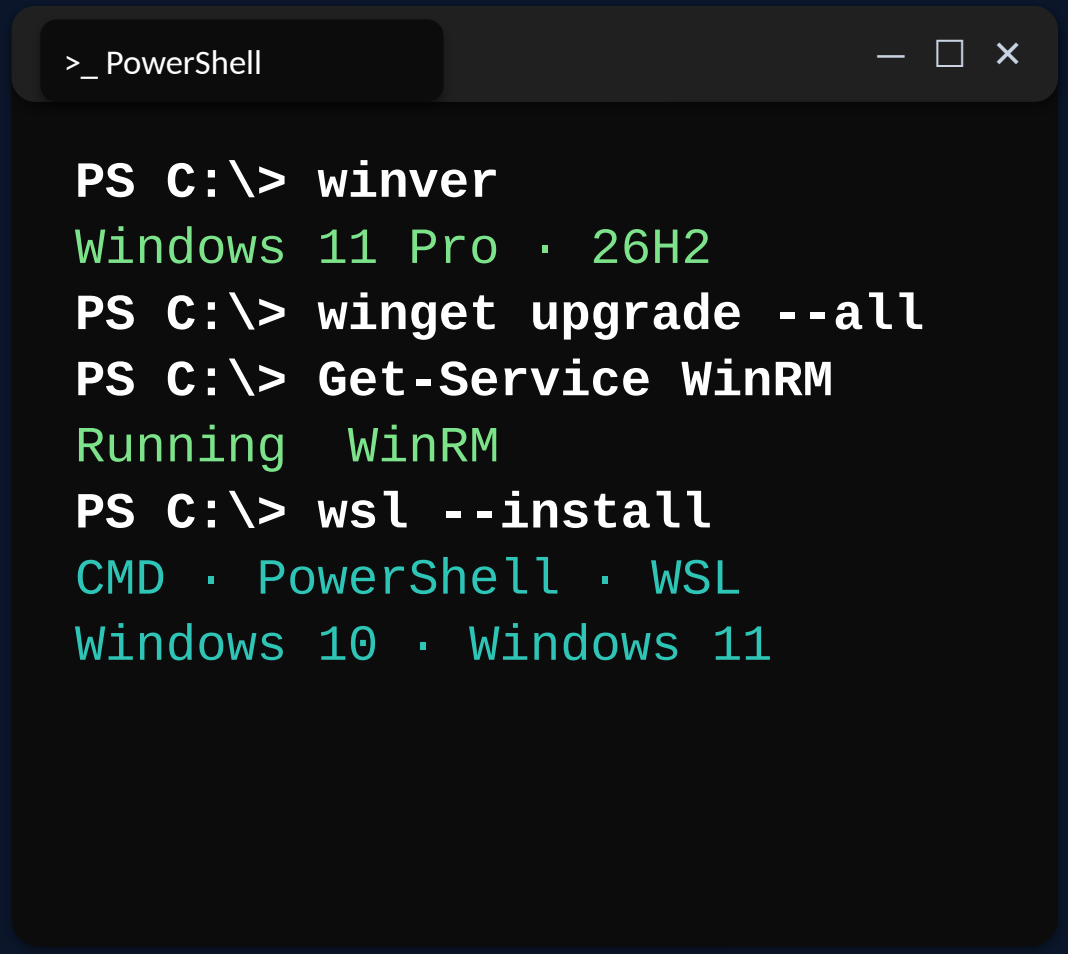
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LESSON 8 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Account Management: Users, Groups, UAC & Sign-in

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

What You Will Learn in Lesson 8

- Account types: Microsoft, local, work or school, domain
- Standard users vs administrators, and how UAC protects you
- Managing users with Settings, lusrmgr.msc, net user and PowerShell
- Built-in groups and what they allow
- Sign-in options: Windows Hello, PIN, passkeys and passwords
- User profiles, runas and password policies
- Best practices for families, schools and offices

Types of Accounts

Account	Signs in with	Typical use
Microsoft account	Email + Windows Hello / password	Home PCs; OneDrive, Store, BitLocker key backup
Local account	User name + password, this PC only	Labs, shared or offline PCs
Work or school	Microsoft Entra ID account	Organizations using Microsoft 365 and Intune
Domain account	Active Directory (DOMAIN\user)	Companies with on-premises servers
Built-in Administrator	Disabled by default	Recovery only — leave it disabled
Family (child) account	Microsoft Family Safety	Screen time and content limits for kids

Standard User vs Administrator

	Standard user	Administrator
Run apps, browse, documents	Yes	Yes
Install software for everyone	No (asks for admin credentials)	Yes, after a UAC prompt
Change system settings, drivers	No	Yes, after a UAC prompt
Manage other users	No	Yes
Risk if malware runs	Limited to the user's files	Can change the whole system

How UAC Protects You

- Admins run with a standard token until a task needs more
- Consent prompt (admins): 'Do you want to allow this app…?' — Yes/No
- Credential prompt (standard users): type an admin name and password
- Prompts appear on the Secure Desktop, which malware cannot click
- Check the publisher name before you click Yes
- Never turn UAC off: UserAccountControlSettings.exe

Users and Groups with CMD (net)

```
C:\> whoami /groups | findstr /i "Administrators"      # am I an admin?
C:\> net user                                          # list local users
C:\> net user student * /add                           # * = prompt for the password
C:\> net user student                                  # details, last logon, groups
C:\> net localgroup Administrators                     # who are the admins?
C:\> net localgroup "Remote Desktop Users" student /add
C:\> net user student /active:no                       # disable the account
C:\> net user student /delete
```

Users and Groups with PowerShell

```
PS C:\> Get-LocalUser | Select-Object Name, Enabled, LastLogon
PS C:\> $pw = Read-Host -AsSecureString 'Password'
PS C:\> New-LocalUser -Name student -Password $pw -FullName 'Lab Student'
PS C:\> Add-LocalGroupMember -Group Users -Member student
PS C:\> Get-LocalGroupMember -Group Administrators
PS C:\> Disable-LocalUser -Name student
PS C:\> Remove-LocalUser -Name student -WhatIf

# GUI: Settings > Accounts > Other users   |   lusrmgr.msc (Pro and higher)
```

Important Built-in Groups

Group	Members can
Administrators	Do anything on this computer
Users	Run apps and use their own files (standard users)
Remote Desktop Users	Sign in through Remote Desktop (Lesson 10)
Backup Operators	Back up and restore files, even without file permissions
Hyper-V Administrators	Manage virtual machines without being full admins
Event Log Readers / Performance Log Users	Read logs / collect performance data

Sign-in Options

Option	Notes
Windows Hello PIN	Tied to this device and its TPM — safer than a reused password
Face / fingerprint	Windows Hello biometrics on supported cameras and readers
Passkeys	Phishing-resistant sign-in to websites, stored by Windows Hello
Security key	A USB or NFC FIDO2 key
Password	Still needed for some cases; use long passphrases
Dynamic lock	Locks the PC when your paired phone walks away

Profiles, runas and Password Policy

```
PS C:\> Get-CimInstance Win32_UserProfile | Select-Object LocalPath, LastUseTime
# Delete old profiles: sysdm.cpl > Advanced > User Profiles > Settings

C:\> runas /user:%COMPUTERNAME%\admin2 "mmc compmgmt.msc"   # run as another user

C:\> net accounts                          # password and lockout policy
C:\> net accounts /minpwlen:12 /lockoutthreshold:10
C:\> secpol.msc                            # Local Security Policy (Pro and higher)
```

Best Practices

- Use a standard account every day; keep a separate admin account
- Every person gets their own account — never share one
- Long, unique passphrases plus Windows Hello; save recovery codes
- Remove or disable accounts that are no longer used
- Families: child accounts with Microsoft Family Safety
- Organizations: Windows LAPS rotates local admin passwords

Lab: Least Privilege in Action

```
PS C:\> $pw = Read-Host -AsSecureString
PS C:\> New-LocalUser labuser -Password $pw ; Add-LocalGroupMember Users labuser
# Sign out, sign in as labuser, then try:
#   - install an app for all users  -> UAC credential prompt
#   - open C:\Windows\System32 and create a file -> Access denied
C:\> whoami /groups
C:\> whoami /priv
# Back as admin: add labuser to 'Remote Desktop Users', then disable the account
PS C:\> Disable-LocalUser labuser
```

Summary & Homework

- Microsoft, local, work/school and domain accounts serve different needs
- Standard user daily + UAC = far less damage from mistakes and malware
- net user / net localgroup and *-LocalUser / *-LocalGroupMember cmdlets
- Windows Hello PIN and passkeys beat reused passwords
- Homework: audit your PC — list users and the Administrators group
- Homework: move your daily work to a standard account

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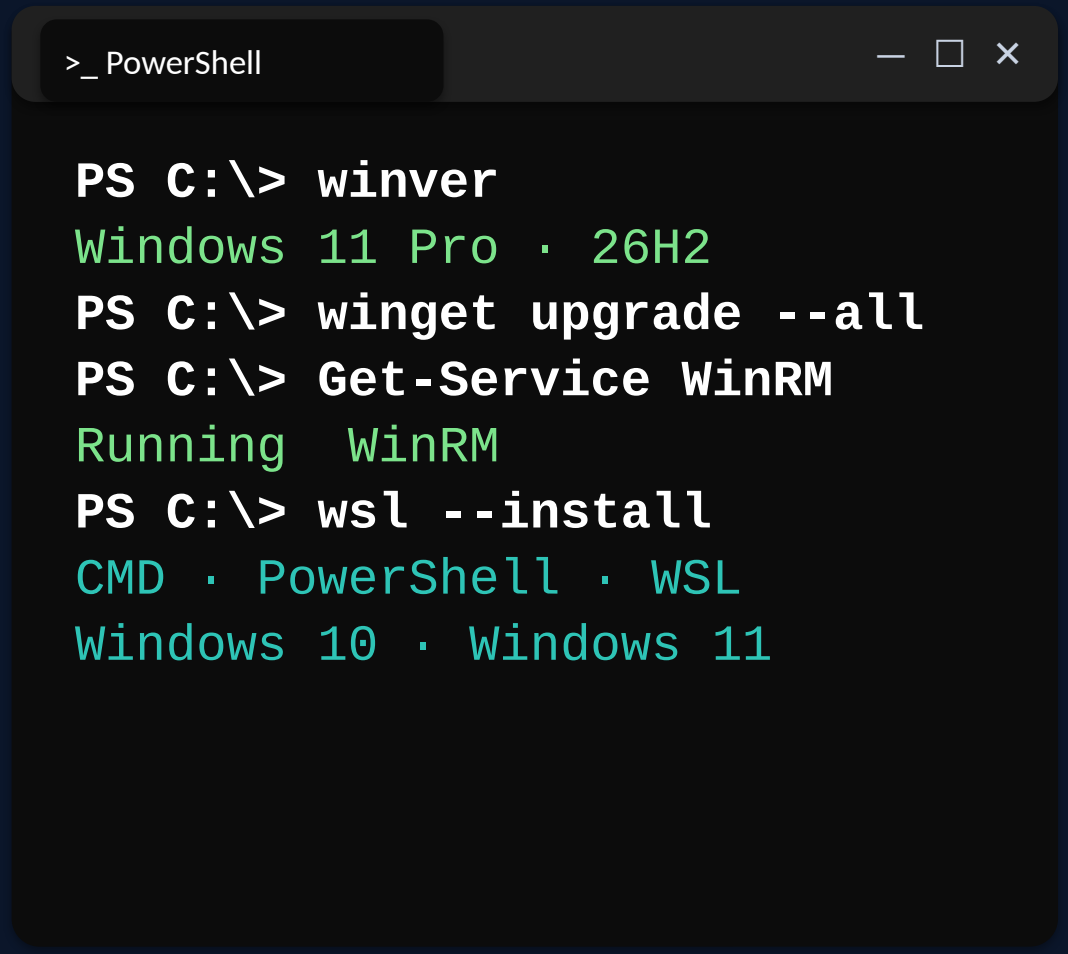
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LESSON 9 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Processes, Services, Scheduled Tasks & Event Logs

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

What You Will Learn in Lesson 9

- Processes, threads, PIDs and svchost.exe
- Listing and stopping processes: tasklist, taskkill, Get-Process
- Services: startup types, accounts, dependencies and recovery
- Everything that starts automatically, and how to control it
- Task Scheduler: run jobs on a schedule or at an event
- Event Viewer and Get-WinEvent: reading the logs like a detective
- Sysinternals: Process Explorer, Autoruns and Process Monitor

Processes: The Basics

Term	Meaning
Process	A running program with its own memory, e.g. notepad.exe
Thread	A path of execution inside a process; processes have one or many
PID	Process ID, a number that identifies the process right now
Session 0	Where services run, separate from users' desktops
svchost.exe	A host that runs one or more Windows services
Elevated	Running with full administrator rights (after UAC)

Processes with CMD

```
C:\> tasklist                                    # every process, PID, memory
C:\> tasklist /svc /fi "imagename eq svchost.exe" # which services each svchost runs
C:\> tasklist /fi "memusage gt 500000"           # using more than ~500 MB
C:\> start notepad
C:\> taskkill /im notepad.exe                     # ask it to close
C:\> taskkill /im notepad.exe /f                  # force
C:\> taskkill /pid 4321 /t /f                     # a PID and its child processes
```

Processes with PowerShell

```
PS C:\> Get-Process | Sort-Object WS -Descending | Select-Object -First 8 Name, Id,
          @{n='MemMB'; e={[int]($_.WS / 1MB)}}, CPU

PS C:\> $p = Start-Process notepad -PassThru ; $p.Id
PS C:\> Stop-Process -Id $p.Id
PS C:\> Get-Process chrome -ErrorAction SilentlyContinue | Stop-Process -WhatIf

PS C:\> Get-CimInstance Win32_Process -Filter "Name='pwsh.exe'" |
          Select-Object ProcessId, ParentProcessId, CommandLine
```

Services: What to Know

Setting	Options and meaning
Startup type	Automatic, Automatic (Delayed Start), Manual, Disabled
Trigger start	Starts when an event happens, e.g. a USB device or network
Log on as	LocalSystem (most powerful), LocalService, NetworkService, a user
Dependencies	Services that must run first — check before stopping
Recovery	What to do on failure: restart the service, run a program
Golden rule	Do not disable services you do not understand

Services with sc and PowerShell

```
C:\> sc query wuauserv                    # Windows Update service state
C:\> sc qc Spooler                        # configuration: start type, account

PS C:\> Get-Service | Where-Object Status -eq Running | Measure-Object
PS C:\> Get-Service Spooler | Select-Object Name, Status, StartType, DependentServices
PS C:\> Restart-Service Spooler                       # fix a stuck print queue
PS C:\> Set-Service Spooler -StartupType Manual       # run as Administrator
PS C:\> Get-CimInstance Win32_Service | Where-Object StartName -like '*LocalSystem*' |
            Select-Object -First 5 Name, StartMode, PathName
```

Everything That Starts Automatically

Location	How to manage it
Startup apps	Settings > Apps > Startup, or Task Manager > Startup apps
Startup folders	shell:startup (you) and shell:common startup (everyone)
Run registry keys	HKCU / HKLM \Software\Microsoft\Windows\CurrentVersion\Run
Scheduled tasks	taskschd.msc — many apps add update tasks here
Services and drivers	services.msc, Device Manager
See it all at once	Sysinternals Autoruns

Task Scheduler from the Command Line

```
C:\> schtasks /query /fo table | more
C:\> schtasks /create /tn "LabBackup" /sc daily /st 22:00 ^
      /tr "robocopy C:\Lab D:\Backup\Lab /E /R:1 /W:1"

PS C:\> $a = New-ScheduledTaskAction -Execute 'pwsh.exe' -Argument '-File C:\Lab\backup.ps1'
PS C:\> $t = New-ScheduledTaskTrigger -Daily -At 10pm
PS C:\> Register-ScheduledTask -TaskName 'LabBackupPS' -Action $a -Trigger $t
PS C:\> Start-ScheduledTask -TaskName 'LabBackupPS'
PS C:\> Get-ScheduledTaskInfo -TaskName 'LabBackupPS'    # LastRunTime, LastTaskResult
```

Event Logs: Where Windows Writes Everything

Event ID	Log	Meaning
41	System (Kernel-Power)	Restarted without a clean shutdown (crash, power loss)
1074	System	Who or what started a shutdown or restart
6005 / 6006	System	Event Log service started / stopped (boot / shutdown)
7036 / 7034	System	A service changed state / stopped unexpectedly
1000	Application	An application crashed
4624 / 4625	Security	Successful / failed sign-in

Reading Logs with PowerShell

```
PS C:\> Get-WinEvent -LogName System -MaxEvents 10 | Format-Table TimeCreated, Id, LevelDisplayName, Message -Wrap

PS C:\> Get-WinEvent -FilterHashtable @{LogName='System'; Id=41,1074,6008} -MaxEvents 20

PS C:\> Get-WinEvent -FilterHashtable @{LogName='Application'; Level=2; StartTime=(Get-Date).AddDays(-7)}

PS C:\> Get-WinEvent -FilterHashtable @{LogName='Security'; Id=4625} -MaxEvents 10   # admin

C:\> wevtutil qe System /c:5 /rd:true /f:text      # CMD alternative
```

Sysinternals: The Pro Toolkit (Free)

- Process Explorer: Task Manager on steroids; check processes with VirusTotal
- Autoruns: every auto-start location; uncheck to disable safely
- Process Monitor: live file, registry and process activity
- TCPView: which process has which network connection
- Get them: learn.microsoft.com/sysinternals or the Microsoft Store
- Also: PsExec, Sysmon, RAMMap, Disk2vhd

Lab: Be the Detective

```
PS C:\> Get-Process | Sort-Object CPU -Descending | Select-Object -First 5 Name, Id, CPU
PS C:\> Get-Service | Where-Object {$_.StartType -eq 'Automatic' -and $_.Status -ne 'Running'}
PS C:\> Get-WinEvent -FilterHashtable @{LogName='System'; Id=41,6008} -MaxEvents 5
PS C:\> Get-WinEvent -FilterHashtable @{LogName='System'; Id=6005} -MaxEvents 5 |
          Select-Object TimeCreated          # your last five boots
# Create the LabBackupPS task, run it, then check:
PS C:\> Get-ScheduledTaskInfo LabBackupPS | Select-Object LastRunTime, LastTaskResult
```

Summary & Homework

- tasklist / taskkill and Get-Process / Stop-Process manage processes
- Services: know startup types and accounts; never disable blindly
- Control auto-start: Startup apps, Task Scheduler, Autoruns
- Logs: 41, 1074, 6005, 1000, 4625 — Get-WinEvent -FilterHashtable
- Homework: schedule a daily backup with Register-ScheduledTask
- Homework: use Autoruns to review everything that starts on your PC

Thank You! 🙏

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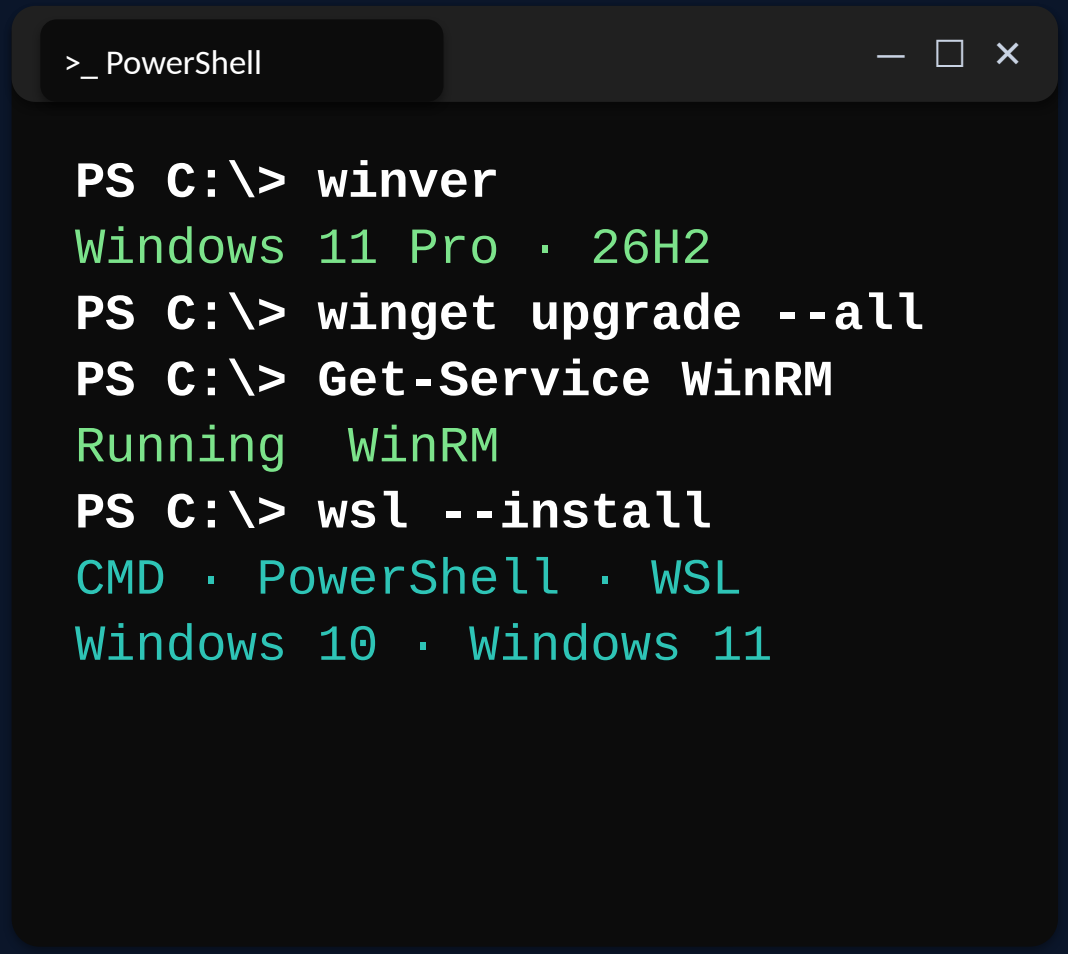
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LESSON 10 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Networking, Firewall, Remote Desktop & SSH

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

What You Will Learn in Lesson 10

- Network basics: IP, subnet, gateway, DNS, DHCP and network profiles
- Reading the configuration: ipconfig and Get-NetIPConfiguration
- Troubleshooting step by step: ping, tracert, nslookup, Test-NetConnection
- Static IP, DNS servers and Wi-Fi on laptops
- Microsoft Defender Firewall: profiles and rules
- Remote Desktop and the OpenSSH server
- File sharing with SMB

Network Basics in One Slide

Term	Meaning	Example
IP address	This computer's address on the network	192.168.1.25 / fe80::1c2b…
Subnet / prefix	Which addresses are local	255.255.255.0 = /24
Default gateway	The router that leads to other networks	192.168.1.1
DNS server	Turns names into IP addresses	Router, 1.1.1.1, 8.8.8.8
DHCP	Hands out addresses automatically	Most home and office networks
Network profile	Public (strict) or Private (trusted)	Cafe = Public, home = Private

Read the Network Configuration

```
C:\> ipconfig                          # IP, mask, gateway per adapter
C:\> ipconfig /all                     # + MAC, DHCP server, DNS servers, lease
C:\> ipconfig /release & ipconfig /renew   # ask DHCP for a new address
C:\> ipconfig /flushdns                # clear the DNS cache

PS C:\> Get-NetAdapter | Select-Object Name, Status, LinkSpeed, MacAddress
PS C:\> Get-NetIPConfiguration
PS C:\> Get-NetIPAddress -AddressFamily IPv4 | Select-Object InterfaceAlias, IPAddress, PrefixLength
```

Troubleshoot Step by Step

```
PS C:\> ping 127.0.0.1                    # 1. is TCP/IP working on this PC?
PS C:\> ping 192.168.1.1                  # 2. can I reach my gateway (router)?
PS C:\> ping 1.1.1.1                      # 3. can I reach the internet by IP?
PS C:\> Resolve-DnsName microsoft.com  # 4. does DNS work?  (CMD: nslookup)
PS C:\> Test-NetConnection microsoft.com -Port 443   # 5. can I reach the service?
PS C:\> tracert microsoft.com             # where does the path stop?
PS C:\> Get-NetTCPConnection -State Listen | Sort-Object LocalPort |
            Select-Object LocalPort, OwningProcess        # (CMD: netstat -ano)
```

Static IP and DNS Servers

```
# Run as Administrator. Check your adapter name first: Get-NetAdapter
PS C:\> New-NetIPAddress -InterfaceAlias Ethernet -IPAddress 192.168.1.50 `
           -PrefixLength 24 -DefaultGateway 192.168.1.1
PS C:\> Set-DnsClientServerAddress -InterfaceAlias Ethernet -ServerAddresses 1.1.1.1, 8.8.8.8

# Back to automatic (DHCP):
PS C:\> Remove-NetIPAddress -InterfaceAlias Ethernet -AddressFamily IPv4 -Confirm:$false
PS C:\> Set-NetIPInterface -InterfaceAlias Ethernet -Dhcp Enabled
PS C:\> Set-DnsClientServerAddress -InterfaceAlias Ethernet -ResetServerAddresses
# GUI: Settings > Network & internet > Ethernet/Wi-Fi > IP assignment > Edit
```

Wi-Fi and Laptops

Task	How
Current Wi-Fi details	netsh wlan show interfaces (signal, band, speed)
Saved networks	netsh wlan show profiles
Wi-Fi health report	netsh wlan show wlanreport (HTML report)
Metered connection	Settings > Network > Wi-Fi > network > Metered (saves data)
Mobile hotspot	Settings > Network & internet > Mobile hotspot
VPN	Settings > Network & internet > VPN, or your company's VPN app

Microsoft Defender Firewall

Idea	What it means
Profiles	Domain, Private, Public — each with its own rules
Default	Inbound connections blocked; outbound allowed
Rules	Allow or block by program, port, protocol, address
Console	wf.msc: Windows Defender Firewall with Advanced Security
Golden rule	Open only what you need, only on the profile you need
Never	Turn the firewall off to 'fix' a problem — add a rule instead

Firewall with PowerShell

```
PS C:\> Get-NetFirewallProfile | Select-Object Name, Enabled, DefaultInboundAction
PS C:\> Get-NetConnectionProfile | Select-Object Name, NetworkCategory
PS C:\> Set-NetConnectionProfile -InterfaceAlias Ethernet -NetworkCategory Private

PS C:\> New-NetFirewallRule -DisplayName 'Lab Web 8080' -Direction Inbound `
           -Protocol TCP -LocalPort 8080 -Action Allow -Profile Private
PS C:\> Get-NetFirewallRule -DisplayName 'Lab*' | Select-Object DisplayName, Enabled, Profile
PS C:\> Remove-NetFirewallRule -DisplayName 'Lab Web 8080'
```

Remote Desktop (RDP)

```
# The computer you connect TO must run Pro, Enterprise or Education
# GUI: Settings > System > Remote Desktop > On  (keep NLA required)
PS C:\> Set-ItemProperty 'HKLM:\System\CurrentControlSet\Control\Terminal Server' `
           -Name fDenyTSConnections -Value 0
PS C:\> Enable-NetFirewallRule -DisplayGroup 'Remote Desktop'
PS C:\> Add-LocalGroupMember 'Remote Desktop Users' -Member student

C:\> mstsc /v:PC01                          # connect (or use the Windows App)
# Port 3389: NEVER expose it to the internet — use a VPN or a gateway
```

OpenSSH: Client and Server

```
PS C:\> ssh admin@192.168.1.10           # the client is built in
PS C:\> scp .\report.pdf admin@server:/tmp/

# Install and start the SSH server (Administrator)
PS C:\> Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0
PS C:\> Start-Service sshd ; Set-Service sshd -StartupType Automatic
PS C:\> Get-NetFirewallRule -Name *OpenSSH* | Select-Object Name, Enabled

# From another computer:  ssh student@PC01   -> a Windows command prompt over SSH
# Keys: C:\Users\<you>\.ssh\authorized_keys  (admins: C:\ProgramData\ssh\
administrators_authorized_keys)
```

Share Files with SMB

```
# Run as Administrator; network profile should be Private
PS C:\> New-SmbShare -Name Lab -Path C:\Lab -ReadAccess Everyone `
           -FullAccess "$env:COMPUTERNAME\student"
PS C:\> Get-SmbShare
PS C:\> Get-SmbSession                      # who is connected now?

C:\> net use Z: \\PC01\Lab /persistent:yes   # map a drive on another PC
PS C:\> New-PSDrive -Name L -PSProvider FileSystem -Root \\PC01\Lab -Persist
PS C:\> Remove-SmbShare -Name Lab
```

Summary & Homework

- ipconfig /all and Get-NetIPConfiguration show the full picture
- Troubleshoot in order: 127.0.0.1 → gateway → internet IP → DNS → port
- Firewall: precise rules, right profile; never turn it off
- RDP needs Pro on the host; never expose 3389 to the internet
- Homework: turn on the OpenSSH server in your VM and connect to it
- Homework: create, use and remove an SMB share between two VMs

Thank You! 🙏

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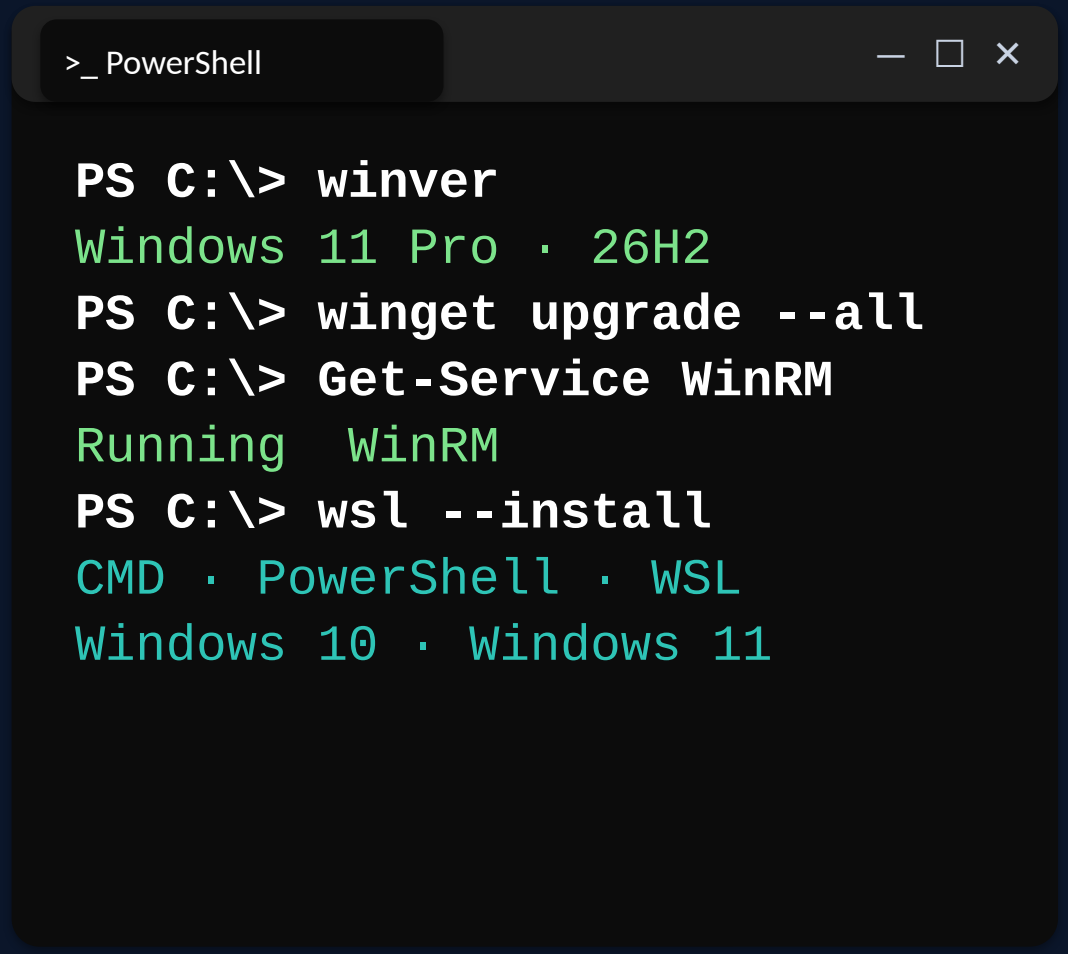
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LESSON 11 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Storage, Security, Updates & Backup

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

What You Will Learn in Lesson 11

- Disks, partitions and volumes in the GUI and PowerShell
- NTFS permissions with icacls and Get-Acl
- BitLocker and device encryption — and the recovery key
- Windows Security: Defender Antivirus, SmartScreen, memory integrity
- Managing Windows Update like an administrator
- Backups: the 3-2-1 rule, File History, Windows Backup, restore points
- A lab that protects a real folder end to end

Disks and Volumes with PowerShell

```
PS C:\> Get-PhysicalDisk | Select-Object FriendlyName, MediaType, HealthStatus,
           @{n='GB'; e={[int]($_.Size/1GB)}}
PS C:\> Get-Disk ; Get-Partition ; Get-Volume

# Prepare a NEW empty disk (check the number twice!)
PS C:\> Initialize-Disk -Number 1 -PartitionStyle GPT
PS C:\> New-Partition -DiskNumber 1 -UseMaximumSize -AssignDriveLetter |
           Format-Volume -FileSystem NTFS -NewFileSystemLabel Data

PS C:\> Optimize-Volume -DriveLetter C -ReTrim -Verbose    # SSD TRIM
```

GUI: diskmgmt.msc, or Settings > System > Storage > Advanced storage settings > Disks & volumes

NTFS Permissions

Permission	Allows
Full control	Everything, including changing permissions and taking ownership
Modify	Read, write, and delete files and folders
Read & execute	Open files and run programs
Read / Write	View content / create and change content
Inheritance	Child folders get the parent's permissions unless you stop it
With shares	Share and NTFS permissions both apply — the most restrictive wins

Permissions with icacls and Get-Acl

```
C:\> icacls C:\Lab                                  # who has what
C:\> icacls C:\Lab /grant student:(OI)(CI)M         # Modify, inherited by all
C:\> icacls C:\Lab /remove student
C:\> icacls C:\Lab /save C:\Backup\lab-acl.txt /T   # back up permissions
C:\> takeown /f C:\Old\locked.txt                   # take ownership (admin)

PS C:\> (Get-Acl C:\Lab).Access | Select-Object IdentityReference, FileSystemRights, IsInherited
#  (OI) object inherit  (CI) container inherit  F=Full  M=Modify  RX=Read&Execute
```

BitLocker and Device Encryption

Feature	Notes
Device encryption	Many Home PCs: turns on automatically with a Microsoft account
BitLocker	Pro and higher: full control, TPM + PIN, policies
BitLocker To Go	Encrypt USB drives with a password
Protects against	Stolen or lost laptops and removed disks
Recovery key	48 digits — Microsoft account, work account (Entra ID), or print it
Before BIOS/hardware changes	Suspend BitLocker, or have the recovery key ready

BitLocker from the Command Line

```
C:\> manage-bde -status                          # every volume: encrypted? method?
C:\> manage-bde -protectors -get C:              # shows the recovery password ID

PS C:\> Get-BitLockerVolume | Select-Object MountPoint, VolumeStatus, EncryptionPercentage,
ProtectionStatus
PS C:\> Enable-BitLocker -MountPoint D: -EncryptionMethod XtsAes256 -RecoveryPasswordProtector
PS C:\> (Get-BitLockerVolume D:).KeyProtector     # save this recovery password!
PS C:\> Suspend-BitLocker -MountPoint C: -RebootCount 1     # before a BIOS update
PS C:\> Resume-BitLocker -MountPoint C:
```

Windows Security at a Glance

Area	What to check
Virus & threat protection	Microsoft Defender Antivirus on, real-time, up to date
Ransomware protection	Controlled folder access; OneDrive file recovery
Account protection	Windows Hello, Dynamic lock
Firewall & network protection	All profiles on (Lesson 10)
App & browser control	SmartScreen; Smart App Control on new installs
Device security	Core isolation (memory integrity), TPM, Secure Boot

Microsoft Defender from PowerShell

```
PS C:\> Get-MpComputerStatus | Select-Object AntivirusEnabled, RealTimeProtectionEnabled,
          AntivirusSignatureLastUpdated, QuickScanEndTime
PS C:\> Update-MpSignature                          # get the newest definitions
PS C:\> Start-MpScan -ScanType QuickScan
PS C:\> Start-MpScan -ScanType CustomScan -ScanPath D:\Downloads
PS C:\> Get-MpThreatDetection                       # what was found and when
PS C:\> Set-MpPreference -EnableControlledFolderAccess Enabled   # ransomware shield
```

Managing Windows Update

Setting	Where / why
Patch Tuesday	Security updates on the second Tuesday of each month
Active hours	Prevents restarts while you work
Pause updates	Up to a few weeks — then updates install before you can pause again
Optional updates	Advanced options > Optional updates: drivers, previews
Update history	See what installed; uninstall a problem update
Command line	Get-HotFix | winget upgrade --all for apps

Backups: The 3-2-1 Rule

Tool	Protects	Notes
3-2-1 rule	Everything	3 copies, 2 different media, 1 off-site (cloud)
Windows Backup app	Settings, apps list, folders	To OneDrive; restores during new PC setup
OneDrive folder backup	Desktop, Documents, Pictures	Version history, ransomware recovery
File History	Your files, many versions	To an external drive or network share
System image (wbadmin)	The whole C: drive	Legacy but useful before big changes
Restore points	System files, drivers, registry	Not a backup of your documents

Lab: Protect a Folder End to End

```
PS C:\> Checkpoint-Computer -Description 'Before Lesson 11 lab' -RestorePointType MODIFY_SETTINGS
PS C:\> icacls C:\Lab /save C:\Backup\lab-acl.txt /T
PS C:\> robocopy C:\Lab E:\Backup\Lab /E /R:1 /W:1 /LOG:C:\Backup\robocopy.log
PS C:\> Get-BitLockerVolume E: | Select-Object VolumeStatus, ProtectionStatus
PS C:\> Start-MpScan -ScanType CustomScan -ScanPath C:\Lab
# Test the restore: delete one file in C:\Lab, then copy it back from E:\Backup\Lab
C:\> wbadmin start backup -backupTarget:E: -include:C: -allCritical -quiet   # system image
```

Summary & Homework

- Get-PhysicalDisk health, Get-Volume, Optimize-Volume -ReTrim
- icacls: grant (OI)(CI)M, /save before big changes
- BitLocker everywhere; know where every recovery key is
- Windows Security all green; Patch Tuesday; winget upgrade for apps
- Backups: 3-2-1, and test a restore
- Homework: find your BitLocker recovery key online right now

Thank You! 🙏

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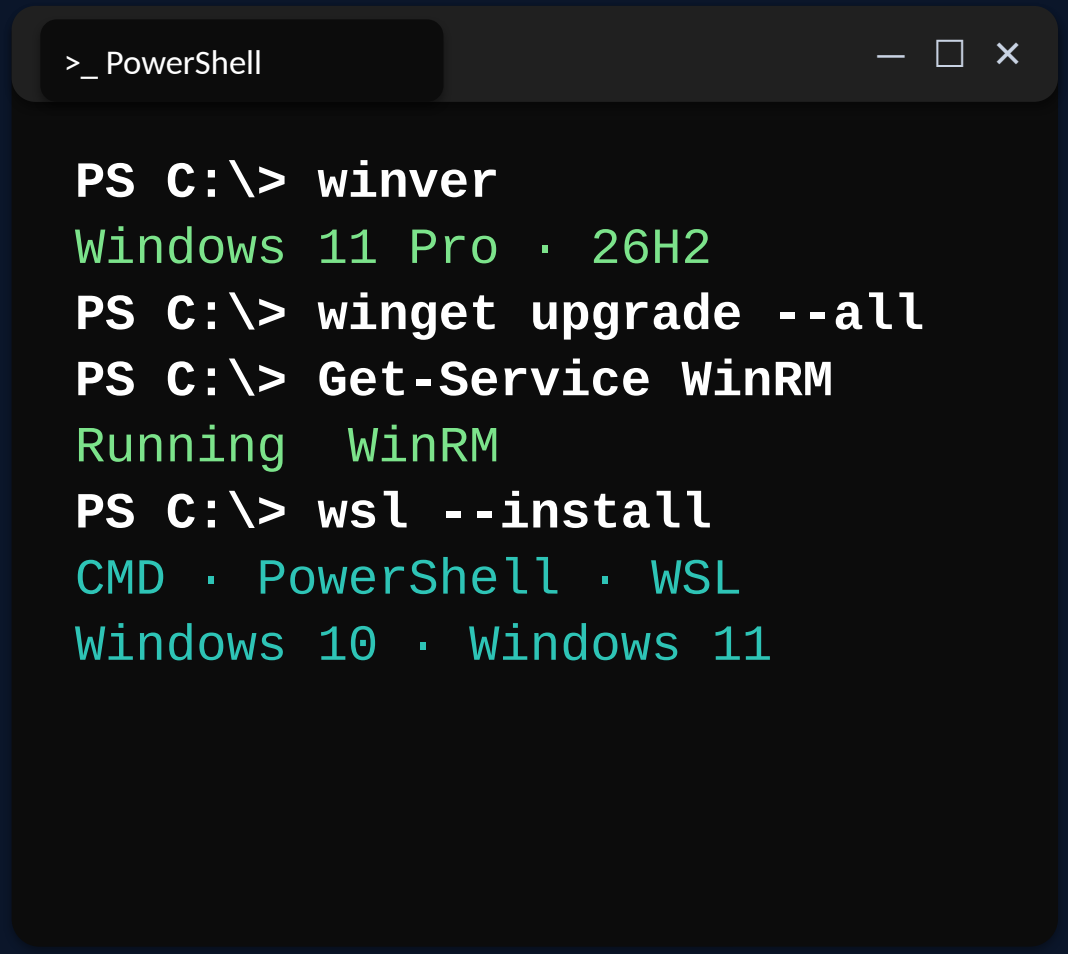
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LESSON 12 OF 12

Windows 10 & 11

Desktop · Workstation · Laptop

Administering Windows: Desktop, Workstation & Laptop

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

What You Will Learn in Lesson 12

- Desktop vs workstation vs laptop: what changes for the admin
- Group Policy and the Registry — safely
- Power, battery and sleep on laptops (powercfg)
- Drivers and firmware: Device Manager, pnputil, vendor tools
- Workstation tuning for engineering, video and data science
- Managing many PCs: Intune, Autopilot, LAPS, PowerShell Remoting, Quick Assist
- The Windows 10 → 11 migration and your admin checklist

Desktop vs Workstation vs Laptop

	Desktop	Workstation	Laptop
Typical work	Office, school, home	CAD, video, data science, VMs	Everything, on the move
Edition	Home or Pro	Pro for Workstations / Enterprise	Pro (BitLocker!)
Admin focus	Updates, accounts, backup	Drivers, GPU, RAM, storage speed	Battery, encryption, Wi-Fi, VPN
Biggest risk	Malware, user mistakes	Downtime of expensive work	Loss or theft
Must-have	Standard accounts	Certified drivers, cooling, ECC RAM	BitLocker + recovery key

Group Policy (Pro and higher)

```
C:\> gpedit.msc              # Local Group Policy Editor
#  Computer Configuration > Administrative Templates > Windows Components > Windows Update
#  Computer Configuration > Administrative Templates > System > Removable Storage Access
#  User Configuration     > Administrative Templates > Control Panel

C:\> gpupdate /force                          # apply policies now
C:\> gpresult /r                              # which policies apply to me?
C:\> gpresult /h C:\Reports\gp.html            # full HTML report (admin)
```

The Registry, Safely

Hive	Contains
HKEY_LOCAL_MACHINE (HKLM)	Settings for the whole computer: software, services, drivers
HKEY_CURRENT_USER (HKCU)	Settings for the signed-in user
HKEY_USERS (HKU)	All loaded user profiles
HKEY_CLASSES_ROOT (HKCR)	File associations and COM registration
Rule 1	Export a key before you change it
Rule 2	Prefer Settings or Group Policy; edit the registry only from trusted guides

Registry from the Command Line

```
C:\> reg query "HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion" /v DisplayVersion
    DisplayVersion    REG_SZ    26H2
C:\> reg export "HKCU\Software\MyLabApp" C:\Backup\mylabapp.reg     # back up first

PS C:\> Get-ItemProperty 'HKLM:\SOFTWARE\Microsoft\Windows NT\CurrentVersion' |
          Select-Object ProductName, DisplayVersion, CurrentBuild
PS C:\> New-Item 'HKCU:\Software\MyLabApp' -Force
PS C:\> New-ItemProperty 'HKCU:\Software\MyLabApp' -Name Theme -Value Dark -PropertyType String
PS C:\> Remove-Item 'HKCU:\Software\MyLabApp' -Recurse -WhatIf
```

Laptops: Power, Battery and Sleep

```
C:\> powercfg /batteryreport /output C:\Reports\battery.html   # design vs full charge capacity
C:\> powercfg /sleepstudy /output C:\Reports\sleep.html        # Modern Standby drain
C:\> powercfg /energy /output C:\Reports\energy.html           # 60-second efficiency check (admin)
C:\> powercfg /a                    # available sleep states (S3, S0 Modern Standby, hibernate)
C:\> powercfg /requests             # what is keeping the PC awake?
C:\> powercfg /hibernate on
# GUI: Settings > System > Power & battery: power mode, screen and sleep, lid actions
```

Drivers and Firmware

```
PS C:\> Get-PnpDevice -Status ERROR, DEGRADED, UNKNOWN   # devices with problems
C:\> pnputil /enum-devices /problem                       # same, in CMD
C:\> pnputil /enum-drivers | more                         # third-party driver packages
C:\> driverquery /v /fo table | more
C:\> pnputil /add-driver D:\Drivers\*.inf /subdirs /install

# Updates: Windows Update > Advanced options > Optional updates (drivers)
# Vendors: Dell Command Update, Lenovo Vantage/System Update, HP Support Assistant
# BIOS/UEFI update: plug in power, Suspend-BitLocker first (Lesson 11)
```

Tuning a Workstation

Area	What to do
Edition	Pro for Workstations: up to 4 CPUs, 6 TB RAM, ReFS, SMB Direct
GPU	Certified studio/pro drivers for CAD and video; check GPU in Task Manager
Data science	NVIDIA CUDA drivers on Windows; WSL 2 can use the GPU for ML
Storage	NVMe for active projects, Dev Drive for code, separate disk for data
Power	Best performance mode; disable sleep during long renders or training
Memory	Plenty of RAM (32-128 GB+); ECC where the hardware supports it

Managing Many PCs

Tool	What it does
Microsoft Entra ID	Cloud identity: users sign in with work accounts
Microsoft Intune	Cloud management: policies, apps, updates, compliance
Windows Autopilot	A new laptop configures itself at first sign-in
Windows LAPS	Unique, rotating local admin password on every PC
Active Directory + Group Policy	Classic on-premises management (Windows Server course)
PowerShell Remoting / Quick Assist	Run commands on many PCs / help a user see-and-fix

Remote Management in Practice

```
# On each managed PC (domain or lab network), as Administrator:
PS C:\> Enable-PSRemoting -Force

# From the admin PC:
PS C:\> Invoke-Command -ComputerName PC01, PC02 -ScriptBlock {
           Get-ComputerInfo -Property CsName, OsName, OsVersion }
PS C:\> Invoke-Command -ComputerName PC01 -ScriptBlock { Get-HotFix | Select-Object -Last 3 }
PS C:\> Enter-PSSession -ComputerName PC01       # an interactive remote prompt
[PC01]: PS C:\> Get-Service Spooler ; exit

# Help desk: Start > Quick Assist (user shares a code, you see and fix the screen)
```

Windows 10 → 11 Migration Checklist

Step	Action
1. Inventory	List PCs, CPU, TPM, Secure Boot, RAM (Lesson 1 commands)
2. Decide	Upgrade eligible PCs; ESU for a bridge; replace the rest
3. Prepare	Back up, save BitLocker keys, update firmware and drivers
4. Pilot	Upgrade a few PCs first; test key apps and printers
5. Roll out	Windows Update, Installation Assistant or Intune
6. Verify	winver, activation, Windows Security green, apps work

Your Administrator Checklist

- Daily: read alerts; Windows Security green; respond to user tickets
- Weekly: winget upgrade --all; check backups ran; review failed sign-ins (4625)
- Monthly: Patch Tuesday; Reliability Monitor; disk health; restore test
- Every PC: standard daily accounts, BitLocker key saved, firewall on
- Document everything: changes, passwords in a vault, recovery keys
- Keep learning: Windows Server, PowerShell, Linux, cloud — all free here

Course Summary & Final Project

- Lessons 1-4: history, install, desktop, command line
- Lessons 5-7: software, developer setup, databases
- Lessons 8-11: accounts, processes, networking, security and backup
- Lesson 12: administration of desktops, workstations and laptops
- Final project: build, secure and document a Windows 11 lab PC
- Next course: Windows Server 2025 — coming to MyWebUniversity

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