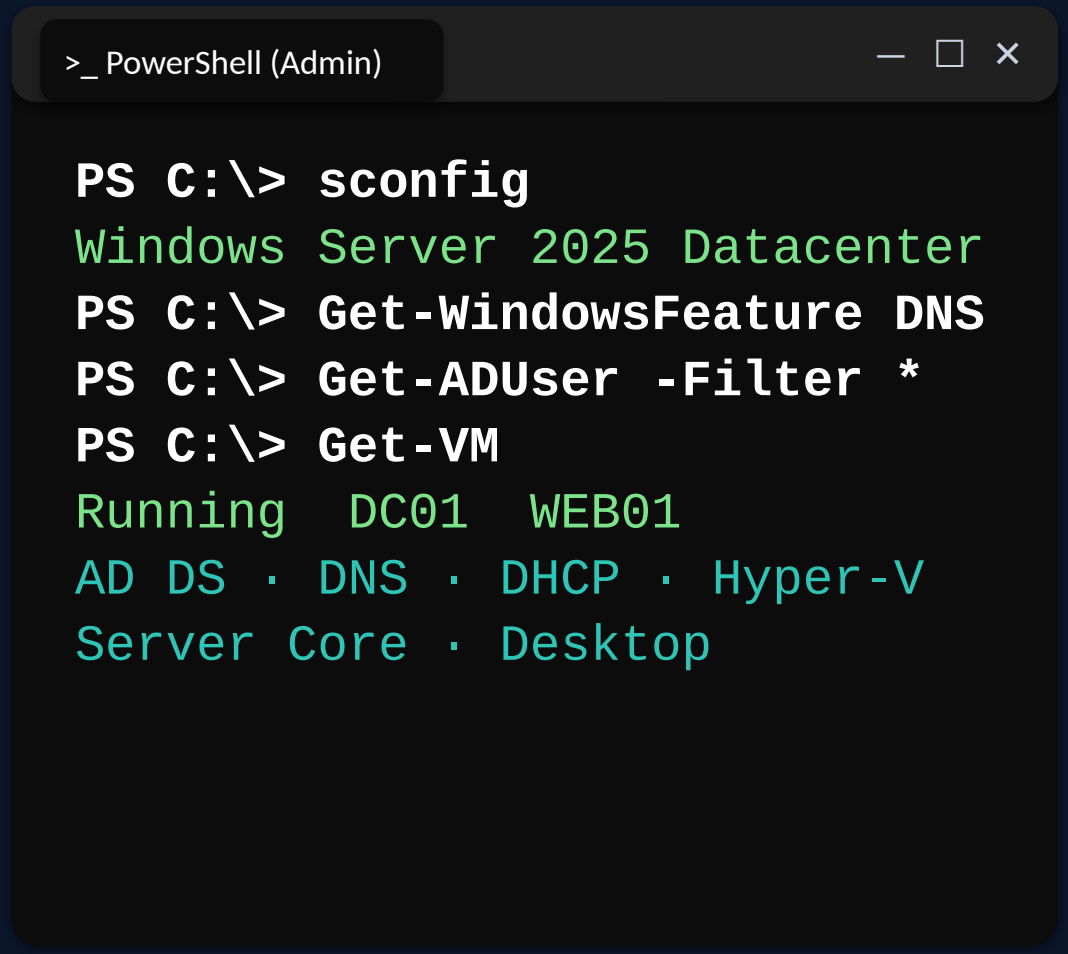


LESSON 1 OF 12

Windows Server 2025

Install · AD · Hyper-V · Admin

Windows Server 2025: Editions, Licensing, Lifecycle & Lab

Full Course · Windows Server 2025 (build 26100)

What You Will Learn in Lesson 1

- What a server does, and a short history of Windows Server
- Support lifecycle: 2025 vs 2022, 2019 and 2016
- What's new in Windows Server 2025
- Editions: Standard, Datacenter, Datacenter: Azure Edition, Essentials
- Licensing basics: cores, CALs and pay-as-you-go
- Hardware requirements; Server Core vs Desktop Experience
- Your course lab: three virtual machines on Hyper-V

What Does a Windows Server Do?

Role	What it provides	Lesson
Active Directory (AD DS)	Central sign-in, users, groups, computers	4-6
DNS and DHCP	Names and IP addresses for the network	7
File server	Shared folders, permissions, quotas, DFS	8
Hyper-V host	Virtual machines	9
Web server (IIS)	Websites and web applications	10
Remote Desktop Services	Desktops and apps for many users	10
WSUS / Backup / Monitoring	Updates, protection, health	11-12

A Short History of Windows Server

1993	Windows NT 3.1 Advanced Server
2000	Windows 2000 Server: Active Directory arrives
2008	Server Core and Hyper-V
2012 R2	Storage Spaces, PowerShell everywhere, cloud-ready
2016	Containers, Nano Server, Shielded VMs
2019	Windows Admin Center, hybrid with Azure
2022	Secured-core server, TLS 1.3 by default
2025	Hotpatch, AD improvements, GPU partitioning

Support Lifecycle (Long-Term Servicing Channel)

Version	Mainstream support ends	Extended support ends
Windows Server 2025	Nov 13, 2029	Nov 14, 2034
Windows Server 2022	Ended Oct 13, 2026	Oct 14, 2031
Windows Server 2019	Ended Jan 2024	Jan 2029
Windows Server 2016	Ended Jan 2022	January 2027 (then paid ESU only)
Mainstream	Security + non-security fixes, features	
Extended	Security updates only	

What's New in Windows Server 2025

Area	Highlights
Updates	Hotpatch: security updates without restarts (Azure Arc)
Upgrades	In-place upgrade from 2012 R2 and later; also via Windows Update
Active Directory	New functional level, optional 32k database pages, stronger LDAP security
Accounts	Delegated Managed Service Accounts (dMSA)
Files	SMB over QUIC in all editions; SMB signing required by default
Hyper-V and storage	GPU partitioning, bigger VMs, faster NVMe storage

Editions Compared

Edition	Best for	Key points
Standard	Physical or lightly virtualized servers	Rights to 2 VMs per fully licensed host
Datacenter	Highly virtualized data centers	Unlimited VMs; Storage Spaces Direct, SDN
Datacenter: Azure Edition	Azure and Azure Local	Cloud-first features such as hotpatch on Azure
Essentials	Small businesses (from PC makers)	Up to 25 users / 50 devices; small servers

Licensing Basics

Concept	What to know
Core-based	License the physical cores: minimum 8 per processor, 16 per server
CALs	Each user or device that uses the server needs a Client Access License
RDS CALs	Extra licenses for Remote Desktop Services users
Virtualization	Standard: 2 VMs per licensed host; Datacenter: unlimited
Pay-as-you-go	Monthly billing through Azure Arc instead of buying licenses
Evaluation	Free 180-day evaluation ISO for learning and testing

Hardware Requirements (Minimum)

Item	Minimum	Recommended for the lab
Processor	1.4 GHz 64-bit, SSE4.2 and POPCNT	2+ virtual CPUs
Memory	512 MB (Server Core), 2 GB (Desktop Experience)	4 GB per VM
Storage	32 GB	60-80 GB per VM
Network	Gigabit Ethernet adapter	One internal lab switch
Firmware	UEFI; TPM 2.0 and Secure Boot for security features	Generation 2 VMs

Server Core vs Desktop Experience

	Server Core	Desktop Experience
Interface	Command line, sconfig, PowerShell	Full desktop, Server Manager
Size and updates	Smaller, fewer updates and restarts	Larger
Attack surface	Smaller — more secure	Larger
Managed by	Remotely: Windows Admin Center, RSAT, PowerShell	Locally or remotely
Choose it for	Domain controllers, DNS, Hyper-V, file servers	Learning, apps that need a GUI
Switch later?	No — choose at install time	No

Your Course Lab

VM	OS	Role in the course
DC01	Windows Server 2025, Server Core	Domain controller, DNS, DHCP
SRV01	Windows Server 2025, Desktop Experience	File server, IIS, WSUS, admin tools
CL01	Windows 11 Pro or Enterprise (evaluation)	Domain client for testing
Host	Windows 11 Pro/Enterprise or Windows Server with Hyper-V	16 GB RAM or more recommended
Network	Internal switch 'LabNet', 10.0.0.0/24	Domain: lab.mywebuniversity.local

Lab: Create the Network and VMs with PowerShell

```
# On the Hyper-V host, PowerShell as Administrator
PS C:\> New-VMSwitch -Name LabNet -SwitchType Internal
PS C:\> $iso = 'C:\ISO\WindowsServer2025_Eval.iso'          # your downloaded file
PS C:\> foreach ($n in 'DC01','SRV01') {
          New-VM -Name $n -Generation 2 -MemoryStartupBytes 4GB -SwitchName LabNet `
                 -NewVHDPath "C:\VMs\$n.vhdx" -NewVHDSizeBytes 80GB
          Set-VMProcessor $n -Count 2
          Add-VMDvdDrive $n -Path $iso
          Set-VMFirmware $n -FirstBootDevice (Get-VMDvdDrive $n) }
PS C:\> Get-VM
```

Download the 180-day evaluation ISO from the Microsoft Evaluation Center; your file name will differ.

Summary & Homework

- Windows Server 2025: released Nov 1, 2024; supported to Nov 14, 2034
- Standard (2 VMs) vs Datacenter (unlimited VMs); Essentials for small business
- Licensing: cores + CALs; free 180-day evaluation for learning
- Server Core for most infrastructure roles; Desktop Experience to learn
- Homework: download the evaluation ISO and a Windows 11 evaluation
- Homework: create LabNet, DC01 and SRV01 in Hyper-V

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.