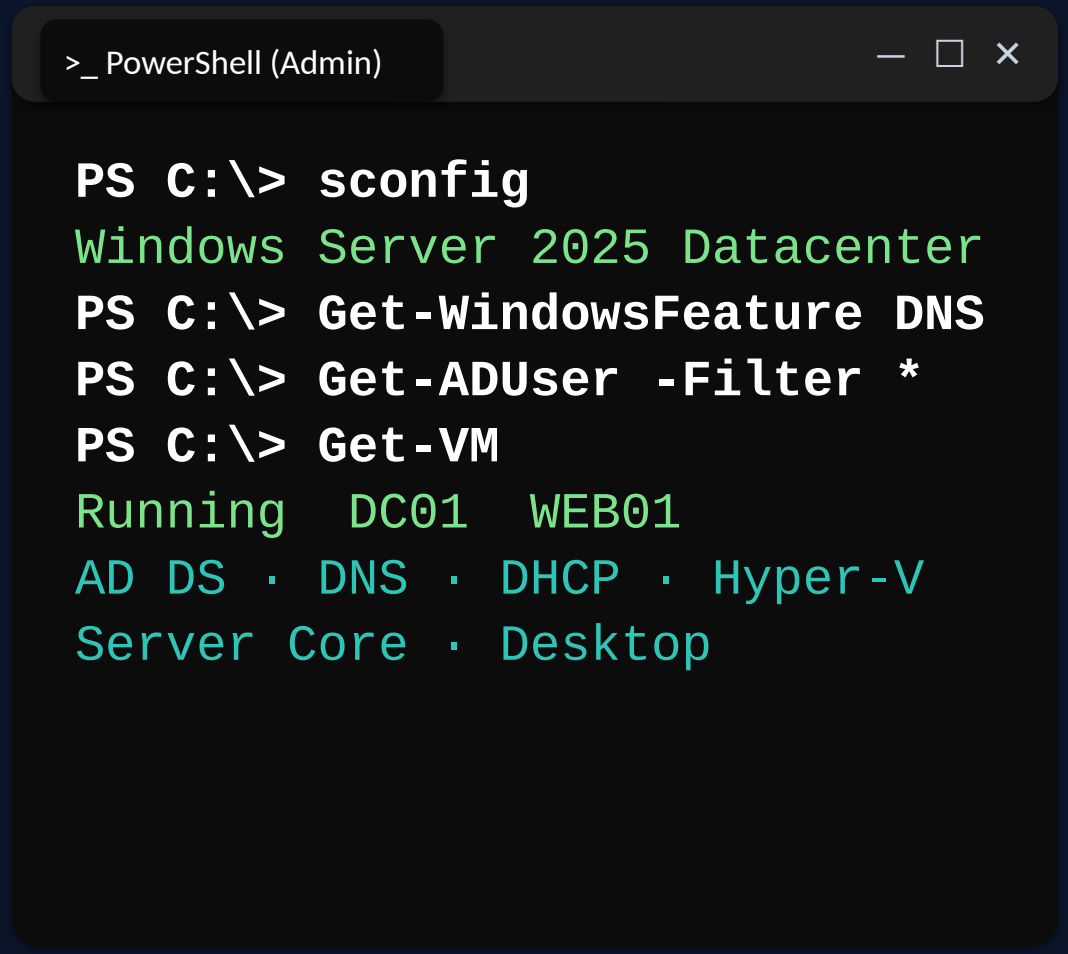


LESSON 10 OF 12

Windows Server 2025

Install · AD · Hyper-V · Admin

Web Server (IIS), Remote Desktop Services & Remote Access

Full Course · Windows Server 2025 (build 26100)

What You Will Learn in Lesson 10

- IIS concepts: sites, bindings, application pools, logs
- Installing IIS and creating a website with PowerShell
- HTTPS bindings and certificates
- Application pools and IIS security
- Remote Desktop Services: roles, collections and RemoteApp
- Remote access: VPN, RD Gateway and SMB over QUIC
- A security checklist for anything facing the internet

IIS Concepts

Term	Meaning
Site	A website with its own folder, bindings and settings
Binding	Protocol + IP + port + host name, e.g. https *:443 intranet.lab…
Application pool	An isolated worker process (w3wp.exe) that runs one or more apps
Virtual directory / application	A folder or app inside a site
Physical path	Where the files live, e.g. C:\inetpub\intranet
Logs	C:\inetpub\logs\LogFiles — every request, status code, time

Install IIS and Create the Intranet Site

```
PS C:\> Install-WindowsFeature Web-Server -IncludeManagementTools    # inetmgr is the GUI
PS C:\> New-Item C:\inetpub\intranet -ItemType Directory
PS C:\> Set-Content C:\inetpub\intranet\index.html `
           '<h1>MyWebUniversity Lab Intranet</h1><p>Served by IIS on Windows Server 2025</p>'

PS C:\> Import-Module IISAdministration
PS C:\> New-IISSite -Name Intranet -PhysicalPath C:\inetpub\intranet `
           -BindingInformation '*:80:intranet.lab.mywebuniversity.local'
PS C:\> Get-IISSite
PS C:\> Invoke-WebRequest http://intranet.lab.mywebuniversity.local -UseBasicParsing |
           Select-Object StatusCode, Content
```

Add HTTPS

```
# LAB: a self-signed certificate.  PRODUCTION: a certificate from AD CS or a public CA
PS C:\> $cert = New-SelfSignedCertificate -DnsName intranet.lab.mywebuniversity.local `
            -CertStoreLocation Cert:\LocalMachine\My
PS C:\> New-IISSiteBinding -Name Intranet -Protocol https `
            -BindingInformation '*:443:intranet.lab.mywebuniversity.local' `
            -CertificateThumbPrint $cert.Thumbprint -CertStoreLocation 'Cert:\LocalMachine\My' -
SslFlag Sni
PS C:\> Get-IISSiteBinding -Name Intranet
PS C:\> Get-NetFirewallRule -DisplayGroup 'World Wide Web Services*' | Select-Object DisplayName,
Enabled
```

Application Pools and IIS Security

Practice	Why
One app pool per application	Isolation: a crash or compromise stays contained
ApplicationPoolIdentity	Each pool runs as its own low-privilege virtual account
HTTPS only; redirect HTTP	Protects passwords and data in transit
Install only needed features	Fewer modules = smaller attack surface
Request filtering, logging	Block bad requests; investigate problems
Apps	ASP.NET Core Hosting Bundle; PHP/Python via FastCGI or HttpPlatformHandler

App Pools and Logs with PowerShell

```
PS C:\> Import-Module WebAdministration
PS C:\> New-WebAppPool -Name IntranetPool
PS C:\> Set-ItemProperty IIS:\Sites\Intranet -Name applicationPool -Value IntranetPool
PS C:\> Get-IISAppPool | Select-Object Name, State, ManagedRuntimeVersion
PS C:\> Restart-WebAppPool IntranetPool

PS C:\> icacls C:\inetpub\intranet /grant 'IIS AppPool\IntranetPool:(OI)(CI)RX'

PS C:\> Get-ChildItem C:\inetpub\logs\LogFiles -Recurse -File |
            Sort-Object LastWriteTime | Select-Object -Last 1 | Get-Content -Tail 10
```

Remote Desktop Services (RDS)

Role	Job
RD Session Host	Runs the desktops and apps that many users share
RD Connection Broker	Sends users to the right host; reconnects sessions
RD Web Access	Web page listing published desktops and RemoteApps
RD Gateway	Secure HTTPS entry from the internet — no open port 3389
RD Licensing	Issues RDS CALs (120-day grace period to start)
VDI (alternative)	Each user gets their own VM instead of a shared session

Quick RDS Deployment and a RemoteApp

```
# All roles on SRV01 for the lab (production: separate servers)
PS C:\> $s = 'srv01.lab.mywebuniversity.local'
PS C:\> New-RDSessionDeployment -ConnectionBroker $s -WebAccessServer $s -SessionHost $s
#       (the server restarts; sign in again as LAB\Administrator)
PS C:\> New-RDSessionCollection -CollectionName Staff -SessionHost $s -ConnectionBroker $s
PS C:\> Set-RDSessionCollectionConfiguration -CollectionName Staff -UserGroup 'LAB\GG_Teachers'
PS C:\> New-RDRemoteApp -CollectionName Staff -DisplayName 'Notepad' `
          -FilePath 'C:\Windows\System32\notepad.exe' -ConnectionBroker $s

# On CL01 as a teacher:  https://srv01.lab.mywebuniversity.local/RDWeb
```

Remote Access: The Safe Options

Option	Best for	Notes
VPN (RRAS / Always On VPN)	Full network access for managed laptops	IKEv2 or SSTP; certificates; MFA
RD Gateway	Remote desktops and RemoteApps	HTTPS 443; add MFA
SMB over QUIC	File shares from anywhere	No VPN; certificate-based; all editions
Web apps behind a reverse proxy	Intranet sites	WAF, MFA, HTTPS
Never	Open RDP (3389) or SMB (445) to the internet	Attackers scan constantly

Checklist for Anything Facing the Internet

- HTTPS everywhere, with certificates from a trusted CA
- Multi-factor authentication on every external entry point
- Only ports 443 (and VPN ports) open; nothing else
- Patch monthly — internet-facing servers first
- Least privilege: app pool identities, no domain admins on web servers
- Logs collected centrally and reviewed (Lesson 12)

Summary & Homework

- IIS: sites, host-name bindings, one app pool per app, logs
- New-IISSite, New-IISSiteBinding -Protocol https, Get-IISAppPool
- RDS: Session Host, Broker, Web Access, Gateway, Licensing
- New-RDSessionDeployment, New-RDSessionCollection, New-RDRemoteApp
- Homework: build the HTTPS intranet site with its own app pool
- Homework: publish one RemoteApp and open it from CL01

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.