

Administering Windows Server Hybrid Core Infrastructure

This course provides comprehensive training on administering Windows Server hybrid environments, covering Active Directory Domain Services (AD DS), hybrid identity, networking, security, high availability, and disaster recovery. It is designed for IT professionals who want to manage Windows Server environments on-premises, in hybrid setups, or in the cloud using Azure services.

Required Prerequisites

- Basic knowledge of Windows Server (2016/2019/2022) administration.
- Understanding of Active Directory Domain Services (AD DS) and Group Policy.
- Familiarity with networking fundamentals (DNS, DHCP, VPN, firewalls, etc.).
- Basic PowerShell scripting skills.
- Some experience with Microsoft Azure and hybrid cloud concepts is recommended but not mandatory.

Table of contents & 3-Week Study Plan

Week 1: Active Directory & Hybrid Identity

Day 1: Introduction to Windows Server Hybrid Infrastructure

- Overview of Windows Server roles and features.
- Understanding hybrid infrastructure in Windows Server.
- Introduction to Microsoft Entra ID & Hybrid Identity.

Day 2: Deploy & Manage Active Directory Domain Services (AD DS)

- Installing and configuring domain controllers (on-prem & cloud).
- Deploying Read-Only Domain Controllers (RODCs).
- Managing FSMO roles and AD DS replication.

Day 3: Multi-Domain, Multi-Forest, and Group Policy Management

- Configuring multi-site, multi-domain, and multi-forest environments.
- Implementing trust relationships between domains.
- Managing Group Policy Objects (GPOs) and security policies.

Day 4: Hybrid Identity & Microsoft Entra ID

- Microsoft Entra Connect Sync & Cloud Sync.
- Managing authentication methods in hybrid environments.
- Conditional Access & MFA policies for secure authentication.

Day 5: Group Policy & Security Configurations

- Implementing Group Policy in AD DS.
- Configuring password policies, account lockout policies, and security baselines.
- Hardening AD DS against attacks (e.g., Kerberos, NTLM vulnerabilities).

Week 2: Windows Server Management & Networking

Day 6: Managing Windows Servers in a Hybrid Environment

- Deploying and using Windows Admin Center.
- Configuring PowerShell Remoting & Just Enough Administration (JEA).
- Azure Arc, Azure Monitor, and Update Management for hybrid environments.

Day 7: Virtualization & Containers

- Managing Hyper-V and nested virtualization.
- Implementing Windows Server containers and networking.
- Configuring VM high availability and performance tuning.

Day 8: Networking in a Hybrid Environment

- Configuring DNS with AD DS & Azure DNS.
- Implementing DHCP, IPAM, and troubleshooting hybrid networks.
- Securing DNS traffic with DNSSEC.

Day 9: Remote Access & VPN Configurations

- Implementing Microsoft Entra Application Proxy & VPNs.
- Configuring Azure Virtual WAN for hybrid networking.

- Managing Remote Access roles & Web Application Proxy.

Day 10: Storage & File Services

- Implementing Azure File Sync & DFS migration.
- Managing Storage Spaces Direct (S2D) and Storage Replica.
- Configuring File Server Resource Manager (FSRM) & quotas.

Week 3: Security, High Availability & Disaster Recovery

Day 11: Windows Server Security & Hardening

Configuring Microsoft Defender for Identity & Sentinel.

Implementing Just-in-Time Administration & Privileged Access Workstations.

Hardening Windows Server with security policies.

Day 12: Authentication & Identity Security

- Configuring MFA, Conditional Access, and Microsoft Entra ID policies.
- Securing Windows Defender Antivirus, Credential Guard & BitLocker.

Day 13: High Availability & Load Balancing

- Implementing Failover Clustering & Network Load Balancing (NLB).
- Configuring Hyper-V Replica for disaster recovery.
- Deploying Storage Replica in hybrid environments.

Day 14: Disaster Recovery & Backup Solutions

- Implementing Azure Backup & Windows Server Backup.
- Active Directory disaster recovery & restoring deleted objects.
- Planning site recovery solutions for hybrid environments.

Day 15: Final Review & Practice

- Reviewing all key concepts from the last 3 weeks.
- Hands-on labs & practice tests.

Identifying weak areas for improvement.