



Windows Server Hybrid Administrator (Windows Server 2025 + Azure Hybrid)

Duration: 3 Months

Training Hours: 96 Hours (8 Hours/Week)

Prerequisites

- Basic Computer Knowledge
- Basic Networking Concepts
- No Prior Server Experience Required

MONTH 1 – Windows Server Fundamentals & Active Directory Administration

Week 1 – Windows Server & Domain Fundamentals

Module 1: Introduction to Windows Server Infrastructure

What You'll Learn

Understand why organizations use server operating systems and learn the differences between Workgroup and Domain environments. Build a strong foundation in Active Directory and Hybrid Cloud concepts.

Topics Covered

- Why Organizations Need Servers
- Server Operating System vs Desktop Operating System
- Workgroup Environment

- Domain Environment
- Advantages & Disadvantages of Workgroup
- Benefits of Domain Infrastructure
- Introduction to Active Directory
- What is a Domain Controller?
- How Domain Authentication Works
- Introduction to Hybrid Infrastructure
- On-Premises and Azure Integration Overview

Practical Labs

- Design a Domain Environment
- Compare Workgroup vs Domain Setup
- Understand Enterprise Infrastructure Architecture

Week 2 – Active Directory, DNS & Azure Foundations

Module 2: Core Infrastructure Services

What You'll Learn

Learn the foundational services that power enterprise networks, including Active Directory, DNS, IIS, networking concepts, and Azure cloud basics.

Topics Covered

- Active Directory Domain Services (AD DS)
- DNS Service
- IIS Service
- Port Numbers
- Packet Creation Process
- Ping Utility
- Telnet Utility
- Azure Portal Overview
- Azure Subscription
- Resource Groups
- Azure Virtual Network (VNet)
- Azure Subnet Creation
- Deploying Domain Controller in Azure

Practical Labs

- Create Azure Resource Group
- Create Azure Virtual Network
- Deploy Windows Server VM
- Configure Initial Server Settings

Week 3 – Active Directory Deployment & User Management

Module 3: Domain Controller Administration

What You'll Learn

Deploy Active Directory services, create a Domain Controller, manage administrative groups, and perform user account management.

Topics Covered

- Installing Active Directory Domain Services
- Domain Controller Creation
- Domain Admin Group
- Enterprise Admin Group
- RDP Manager
- User Account Creation
- Active Directory Administrative Tools
- Organizational Structure Planning

Practical Labs

- Install AD DS
- Promote Server to Domain Controller
- Create Domain Users
- Configure Administrative Groups
- Manage RDP Connections

Week 4 – Domain Joining & Authentication Services

Module 4: Client Administration

What You'll Learn

Join client systems to the domain and understand how enterprise authentication and directory services function.

Topics Covered

- Creating Client PCs
- Domain Join Process
- Login Authentication
- DNS Verification
- Active Directory Verification
- Open Port Identification
- Kerberos Authentication
- LDAP Protocol
- Authentication Workflow

Practical Labs

- Join Windows Client to Domain
- Login Using Domain Credentials
- Verify AD Connectivity
- Test DNS Resolution
- Analyze Open Ports

Skills Gained After Month 1

Students will be able to:

- Understand Windows Server Architecture.
- Deploy Active Directory Domain Services.
- Configure Domain Controllers.
- Manage Users and Administrative Groups.
- Join Computers to Domain.
- Understand Kerberos & LDAP Authentication.
- Deploy Hybrid Infrastructure Foundations.

MONTH 2 – File Services, Group Policy & Active Directory Management

Week 5 – File Server Administration & Access Control

Module 5: File & Folder Security

What You'll Learn

Implement secure file-sharing environments using NTFS permissions, share permissions, quotas, and file screening.

Topics Covered

- Shared Folder Concepts
- Share Permissions
- NTFS Permissions
- Permission Inheritance
- Read Permission
- Write Permission
- Modify Permission
- Full Control
- Hidden Shares
- Difference Between Share & Security Permissions
- File Server Resource Manager (FSRM)
- Quotas
- File Screening
- Event Viewer

Practical Labs

- Create Shared Folders
- Configure NTFS Permissions
- Configure Hidden Shares
- Implement Quotas
- Configure File Screening

Week 6 – Group Policy Administration

Module 6: Group Policy Management

What You'll Learn

Manage user and computer environments through Group Policy Objects (GPOs) and organizational units.

Topics Covered

- Group Policy Fundamentals
- Wallpaper Policy
- Organizational Units (OU)
- OU Design
- Applying GPOs
- User Policies
- Computer Policies
- Control Panel Restrictions
- USB Block Policies
- OU Deletion
- Policy Inheritance

Practical Labs

- Create Organizational Units
- Configure Wallpaper Policy
- Block USB Devices
- Restrict Control Panel Access

Week 7 – Advanced Group Policy Administration

Module 7: Enterprise Policy Management

What You'll Learn

Implement advanced Group Policy management techniques used in enterprise environments.

Topics Covered

- Registry Policies
- Policy Backup & Restore
- Link & Unlink Policies
- Block Inheritance
- Enforced Policies
- GPO Processing Order
- WMI Filters
- Command Prompt Restrictions
- Screen Saver Policies

- Troubleshooting GPOs

Practical Labs

- Configure Registry Restrictions
- Create WMI Filters
- Apply User-Specific Policies
- Test Policy Processing

Week 8 – Active Directory Replication & FSMO Roles

Module 8: Multi-Domain Controller Environment

What You'll Learn

Understand Active Directory replication and FSMO role management for highly available enterprise infrastructures.

Topics Covered

- Additional Domain Controller (ADC)
- Benefits of ADC
- AD Replication
- Site & Subnet Creation
- Intra-Site Replication
- Inter-Site Replication
- Replication Monitoring
- FSMO Roles Overview
- Schema Master
- Domain Naming Master
- RID Master
- Infrastructure Master
- PDC Emulator
- FSMO Transfer
- FSMO Seizure

Practical Labs

- Deploy Additional Domain Controller
- Configure Replication
- Transfer FSMO Roles
- Test Replication Health

Skills Gained After Month 2

Students will be able to:

- Configure Secure File Servers.
- Implement Access Control.
- Manage Group Policy Infrastructure.
- Design Organizational Units.
- Configure Multiple Domain Controllers.
- Manage FSMO Roles.
- Monitor Active Directory Replication.

MONTH 3 – Enterprise Services, Backup & Hybrid Cloud Integration

Week 9 – DNS, Backup & Disaster Recovery

Module 9: DNS & Recovery Services

What You'll Learn

Configure enterprise DNS services and implement Active Directory backup and recovery solutions.

Topics Covered

- DNS Records
- Host Records
- DNS Cache
- Host File
- DNS Forwarders
- Root Hints
- Active Directory Recycle Bin
- Functional Levels
- System State Backup
- Hybrid Backup to Azure

Practical Labs

- Create DNS Records
- Configure Forwarders
- Enable AD Recycle Bin
- Perform System State Backup
- Restore Active Directory Objects

Week 10 – DFS, DHCP & Certificate Services

Module 10: Infrastructure Services

What You'll Learn

Implement enterprise file replication, IP address management, and secure web communication using certificates.

Topics Covered

- DFS Namespace
- DFS Replication
- SYSVOL Replication
- DHCP DORA Process
- DHCP Scope
- DHCP Reservation
- DHCP Lease Management
- Web Server Creation
- Active Directory Certificate Services (AD CS)
- SSL Certificates
- HTTPS Configuration

Practical Labs

- Configure DFS
- Configure DHCP Server
- Create DHCP Reservations
- Install Certificate Authority
- Secure Website with HTTPS

Week 11 – Azure Hybrid Integration

Module 11: Windows Server Hybrid Administration

What You'll Learn

Extend on-premises infrastructure to Microsoft Azure and synchronize file services and identities.

Topics Covered

- Azure Storage Account
- Azure File Share
- Azure File Sync
- Storage Sync Service
- Sync Groups
- Azure File Sync Agent
- Hybrid File Services
- Cloud-Based Data Synchronization

Practical Labs

- Create Storage Account
- Configure Azure File Share
- Install Azure File Sync Agent
- Configure Synchronization
- Test Hybrid File Access

Week 12 – Hybrid Identity & Security Administration

Module 12: Advanced Active Directory & Hybrid Identity

What You'll Learn

Implement enterprise security, hybrid identity, password policies, and synchronization between Active Directory and Microsoft Entra ID.

Topics Covered

- Read Only Domain Controller (RODC)
- Child Domain
- Global Catalog
- Password Policies

- Fine-Grained Password Policies
- Account Lockout Policies
- Delegated Administration
- Microsoft Entra Connect
- Password Hash Synchronization
- Single Sign-On (SSO)
- Hybrid Identity Management

Practical Labs

- Configure RODC
- Create Child Domain
- Configure Password Policies
- Implement Delegation
- Synchronize AD with Entra ID
- Configure Single Sign-On

Capstone Project

Students will deploy a complete **Hybrid Windows Server Infrastructure** including:

- Active Directory Domain Services
- Multiple Domain Controllers
- DNS & DHCP Services
- File Server & FSRM
- Group Policy Management
- DFS Namespace & Replication
- Certificate Services
- Azure Storage Integration
- Azure File Sync
- Hybrid Backup Solution
- Microsoft Entra ID Integration
- Single Sign-On
- Hybrid Identity Management
- Active Directory Security Hardening

Course Outcomes

Upon successful completion of this course, learners will be able to:

- Deploy and administer Windows Server 2025 environments.
- Install and manage Active Directory Domain Services.
- Configure DNS, DHCP, DFS, and Certificate Services.
- Implement enterprise file-sharing and access control.
- Manage Group Policies and Organizational Units.
- Configure replication, FSMO roles, and multiple domain controllers.
- Implement backup and disaster recovery strategies.
- Integrate on-premises infrastructure with Microsoft Azure.
- Configure Azure File Sync and Hybrid Identity.
- Synchronize Active Directory with Microsoft Entra ID.
- Deploy Single Sign-On and Hybrid Authentication solutions.