

# 70-742: Identity in Windows Server 2016

## Course Overview

This course provides students with the knowledge and skills to install and configure domain controllers, manage Active Directory objects, secure Active Directory Domain Services, work with complex AD DS infrastructures, implement Group Policy, understand Microsoft Azure AD and Directory Synchronization, monitor and recover AD DS, and implement Active Directory Certificate, Federation, and Rights Management Services.

<b><u>Course Introduction</u></b>	8m
Course Introduction	
<b><u>Chapter 01 - Installing and Configuring Domain Controllers</u></b>	2h 31m
Topic A: Overview of Active Directory Domain Services	
Information Protection Concepts	
Identity and Access (IDA)	
Authentication and Authorization	
AD DS Terms	
Access Tokens	
Access Control Lists	
The Kerberos Logon Process	
Workgroup vs. Domain	
Understanding AD DS Domains	
AD DS Components and Concepts	
Active Directory Database	
Physical Data Store	
Logical Partitions	
Active Directory Schema	
Domains	
Trees and Forests	
Organizational Units	
AD DS Sites	
Controlling Replication	
Trust Relationships	
Topic B: Overview of Domain Controllers	
Introducing Domain Controllers	
Global Catalog Servers	
Read-Only Domain Controllers	
FSMO Roles	
Demo - Working with FSMO Roles	
Locating Domain Controllers	
Demo - Viewing SRV Records	
Topic C: Deploying Domain Controllers	
Reasons for Multiple Domain Controllers	
Installing from Server Manager	

Considerations for Installing Domain Controllers  
Demo - Installing a Domain Controller  
Installing on Server Core  
Demo - Promoting a Server Core DC  
Upgrading Domain Controllers  
Additional Installation Options  
Cloning Domain Controllers  
Demo - Cloning Domain Controllers  
Chapter 01 Review

## **Chapter 02 - Managing Active Directory Objects**

3h 40m

Topic A: Overview of AD DS Object Management  
Understanding AD DS Objects  
Names for AD DS Objects  
Management Tools  
Demo - Overview of AD DS Management Tools  
Topic B: Managing User Accounts  
The Importance of the User Account  
Naming Considerations  
Configuring User Passwords  
Creating User Accounts  
Demo - Creating AD DS Users  
Managing User Attributes  
User Account Management  
Demo - Managing Users  
Topic C: Managing Groups  
Group Types and Scopes  
Types of Groups  
Group Scopes  
Domain Local and Global Groups  
Universal Groups  
Group Nesting  
Group Naming Considerations  
Creating and Configuring Groups  
Demo - Creating and Configuring Groups  
Introduction to Default Groups  
Identifying Default Groups  
Administrative Groups  
Demo - Configuring Default Groups  
Using Special Identities  
Strategies for Using Groups  
Group Nesting Strategies  
Demo - Group Nesting  
Topic D: Managing Computer Accounts  
Introduction to Computer Accounts  
Creating Computer Accounts  
Working with Secure Channel Passwords  
Offline Domain Joins  
Demo - Working with Computer Accounts  
Topic E: Managing Organizational Units

Planning Organizational Units  
OU Hierarchy Considerations  
Creating OUs  
Demo - Creating an OU Hierarchy  
Object Security in AD DS  
AD DS Object Permissions  
Demo - Viewing Object Permissions in Active Directory  
Delegating Administrative Control  
Modifying Delegated Rights  
Best Practices for Administrative Delegation  
Demo - Delegating Administrative Control  
Chapter 02 Review

**Chapter 03 - Securing Active Directory Domain Services**

2h 7m

Topic A: Securing Domain Controllers  
Understanding Security Risks  
Using Group Policy  
Group Policy Security Settings  
Securing the Authentication Process  
Physical Access Security  
Branch Office Domain Controllers  
RODC Features  
RODC Limitations and Considerations  
Deploying RODCs  
Demo - Installing an RODC  
Password Replication Policies  
Topic B: Implementing Account Security  
Account Security in Windows Server 2016  
Complexity Options  
Password Policies  
Account Lockout Policies  
Configuring Domain Password and Lockout Policies  
Demo - Configuring Account Policies in Group Policy  
Configuring Fine-Grained Password Policies  
Demo - Configuring Fine-Grained Password Policies  
Restricted Groups  
Protected Users Security Groups  
Authentication Policies  
Authentication Silos  
Enhancing Password Authentication  
Topic C: Auditing AD DS  
Utilizing Auditing  
The Purpose of Auditing  
Types of Events  
Auditing Goals  
Auditing File and Object Access  
Advanced Auditing  
Demo - Configuring Auditing  
Topic D: Configuring Managed Service Accounts  
Overview of Service Accounts

Challenges to Managing Service Accounts  
Managed Service Accounts  
Group MSAs  
Demo - Configuring Group MSAs  
Chapter 03 Review

**Chapter 04 - Working with Complex AD DS Infrastructures**

1h 58m

Topic A: Overview of Advanced AD DS Deployments  
Domain Boundaries  
Forest Boundaries  
Reasons for Implementing Multiple Domains  
Reasons for Implementing Multiple Forests  
Deploying Domain Controllers in Azure  
Managing Objects  
Topic B: Deploying a Distributed AD DS Environment  
Domain Functional Levels  
Forest Functional Levels  
Deploying AD DS Domains  
DNS Considerations  
UPN Considerations  
Demo - Deploying a Child Domain  
Understanding Trust Relationships  
Types of Trusts  
How Trusts Work  
Forest Trusts  
Advanced Trust Settings  
Demo - Configuring a Forest Trust  
Topic C: Overview of AD DS Replication  
AD DS Partitions  
AD DS Replication  
Types of Replication  
Resolving Replication Conflicts  
Topic D: Configuring AD DS Sites  
Reasons for Sites  
Planning for Sites  
Overview of Sites and Subnets  
Moving Domain Controller Accounts  
Domain Controller Placement  
Demo - Creating Sites  
Controlling Inter-Site Replication  
Defining Site Links  
Site Links  
Site Link Properties  
Demo - Creating Site Links  
Bridgehead Servers  
Bridging Site Links  
Monitor and Manage Replication  
Chapter 04 Review

## **Chapter 05 - Implementing Group Policy**

3h 14m

Topic A: Overview of Group Policy

What is Group Policy?

Group Policy Settings

Local Group Policies

Policies vs. Preferences

Demo - Examining Policy Settings

Domain Policies

GPO Storage

Linking GPOs

GPO Processing Order

Controlling Inheritance

Determining Inheritance

GPO Link Options

Security Filtering

WMI Filtering

Refreshing Policies

Other Processing Options

Topic B: Creating and Configuring GPOs

Creating GPOs

Starter GPOs

Administrative Templates

Group Policy Preferences

Demo - Creating and Configuring Policies

Group Policy Management

Delegation of Control

Demo - Managing GPOs

Topic C: Monitoring and Troubleshooting Group Policy

Troubleshooting Group Policy Application

Demo - Troubleshooting Group Policy Application

Topic D: Security Management Using Group Policy

Security Management Using Group Policy

Configuring User Rights

Managing Security Options

User Account Control

Demo - Managing Security Options

Controlling Applications

Software Restriction Policies

Security Levels

AppLocker

Support for AppLocker

AppLocker Rules

Creating Default Rules

Demo - Controlling Applications Using Group Policy

Configuring the Windows Firewall

Windows Firewall with Advanced Security

Firewall Profiles

Creating Firewall Rules

Configuring the Windows Firewall

Types of Rules

Connection Security Rules  
Demo - Configuring Firewalls using Group Policy  
Topic E: Managing User Environments  
Using Scripts in Group Policy  
What is Folder Redirection?  
Common Folders for Redirection  
Redirection Options  
Demo - Configuring Folder Redirection  
Deploying Software Using Group Policy  
How Software Distribution Works  
Using Windows Installer  
Software Life Cycle  
Deploying Software  
Deployment Options  
Maintaining Software through Group Policy  
Removing Software Deployments  
Chapter 05 Review

## **Chapter 06 - Understanding Microsoft Azure AD and Directory Synchronization**

53m

Topic A: Planning Directory Synchronization  
Overview of Azure AD  
Limitations of AD DS  
Extending AD DS Authentication  
Comparing AD DS and Azure AD  
Authentication Options  
Planning Directory Synchronization  
Enabling AD DS Synchronization  
Topic B: Implementing Azure AD Connect  
What is Azure AD Connect?  
Azure AD Connect Requirements  
Azure AD Connect Express Settings  
Azure AD Connect Custom Installation  
Monitoring Azure AD  
Privileged Identity Management  
Topic C: Managing Identities with Directory Synchronization  
Managing Users  
Managing Groups  
Filtering Azure AD Connect  
Monitoring Directory Synchronization  
Troubleshooting Directory Synchronization  
Chapter 06 Review

## **Chapter 07 - Monitoring and Recovering AD DS**

1h

Topic A: Monitoring AD DS  
Performance Monitoring Benefits  
Establishing Performance Baselines  
Introduction to Monitoring Tools  
Event Viewer  
Demo - Using Event Viewer  
Reliability Monitor

Real-Time Monitoring  
Data Collector Sets  
Data Collection Points  
Common AD DS Counters  
Best Practices  
Topic B: Database Management  
Physical Data Store  
Using NTDSUtil  
AD DS Maintenance  
Topic C: Backup and Recovery in AD DS  
Disaster Recovery for Active Directory  
Backing Up Active Directory  
Using Backup Tools  
Backup Requirements  
Restoring Data  
Additional Restore Options  
Demo - Enabling the AD Recycle Bin  
Best Practices for Backup and Recovery  
Chapter 07 Review

## **Chapter 08 - Implementing Active Directory Certificate Services**

1h 34m

Topic A: Overview of Public Key Infrastructure and AD CS  
What is a PKI?  
Encryption Types  
PKI Components  
PKI Enabled Applications  
Certificate Authorities  
CA Types  
Internal vs. External CAs  
AD CS in Windows Server 2016  
Topic B: Deploying Certificate Authority Hierarchy  
Decision Factors for CA Hierarchy  
CA Hierarchy Roles  
Best Practices for CA Hierarchies  
Installing Root CAs  
Demo - Installing a Root CA  
Installing Subordinate CAs  
Benefits of Using Subordinates  
Automating Installations  
Topic C: Administering Certificate Authorities  
Administration Tools  
Configuring CA Security  
Security Roles for CA Administration  
Policy and Exit Modules  
Certificate Revocation Lists (CRL)  
Publishing the CRL  
Publishing AIAs and CDPs  
Topic D: Deploying and Managing Certificates  
Digital Certificates  
Certificate Templates

Template Versions in Windows Server 2016  
Certificate Template Permissions  
Updating Templates  
Demo - Modifying and Enabling a Certificate Template  
Enrollment Types  
Manual Enrollment  
Automating Enrollment  
Autoenrollment Components  
Demo - Configuring Autoenrollment  
Credential Roaming  
Topic E: Managing Revocation and Distribution  
Certificate Revocation  
Online Responder  
Online Responder Process  
Comparing CRL and OCSP  
Configuring an Online Responder  
Topic F: Configuring Certificate Recovery  
Importance of Key Archival and Recovery  
Key Archival  
Data Recovery vs. Key Recovery  
Archival Methods  
Export Methods  
Automating Archival  
Recovering Lost Keys  
Chapter 08 Review

**Chapter 09 - Implementing Active Directory Federation Services (AD FS)**

1h 4m

Topic A: Overview of AD FS  
What is Identity Federation?  
Federation Benefits  
AD FS Components  
Additional AD FS Terms  
Identity Federation Scenarios  
Business to Business Scenario  
Business to Employee Scenario  
Business to Consumer Scenario  
New Features in Windows Server 2016  
Topic B: Planning and Deploying AD FS  
AD FS Requirements  
Server Roles  
Planning High Availability  
AD FS Claims  
AD FS Claim Rules  
Trust Relationships  
Installing AD FS  
Demo - Installing AD FS  
Configuring Partners  
Home Realm Discovery  
Managing AD FS  
Topic C: Overview of Web Application Proxy

Introducing the Web Application Proxy  
Web Application Proxy and AD FS Proxy  
Authentication Methods  
Publishing Software  
Chapter 09 Review

**Chapter 10 - Implementing Active Directory Rights Management Services**

45m

Topic A: Overview of AD RMS  
Introducing AD RMS  
The AD RMS Difference  
AD RMS Components  
Certificates and Licenses  
Protecting Content  
Consuming Content  
Azure RMS  
Topic B: Deploying AD RMS  
Deployment Scenarios  
Installation Overview  
AD RMS Configuration  
Demo - Installing AD RMS Cluster  
AD RMS Management  
External Sharing  
Topic C: Protecting Content with AD RMS  
Rights Policy Templates  
Configuring Templates for Offline Usage  
Demo - Configuring Rights Management Templates  
Exclusion Policies  
Chapter 10 Review  
Course Closure

**Total Duration: 18h 52m**