55152A: Fundamentals of Active Directory

Duration: 8 Hours (1 Day)

Course Overview

The 55152A: Fundamentals of Active Directory course is an in-depth training program designed for individuals seeking comprehensive knowledge and skills in managing and implementing Active Directory in a Windows Server environment. Targeting IT professionals, this course covers the core principles of Active Directory, from its architecture and development to its integration with modern cloud services. Through the course's modular structure, learners will understand key concepts such as LDAP, NTLM, Kerberos, and how to manage operating systems with GPOs, Workplace Join, and Intune. Crucial for those aiming for Microsoft Active Directory certification, the course also delves into WAN management, ensuring participants can handle traffic, replication, and sites effectively important skills for Active Directory administration. By the end of the program, students will be adept at creating, managing, and troubleshooting Group Policy Objects (GPOs), understanding the nuances of domain and forest functional levels, and implementing Active Directory in diverse environments. This comprehensive course lays the foundation for IT professionals to advance their careers with essential Active Directory skills.

Audience Profile

The 55152A: Fundamentals of Active Directory course provides essential knowledge for IT professionals managing or implementing Active Directory environments.

- IT professionals tasked with managing and maintaining Active Directory infrastructure
- System administrators responsible for Active Directory design and implementation
- Network administrators overseeing network resources and security using Active Directory
- Technical support engineers providing Active Directory troubleshooting and support
- IT security specialists focused on identity management and access control
- Infrastructure architects designing organizational Active Directory strategies
- Active Directory consultants offering expertise in optimizing and securing AD environments
- Helpdesk technicians requiring a foundational understanding of Active Directory for user support
- Windows Server administrators who manage domain controllers and group policies
- Professionals preparing for Microsoft certifications related to Active Directory and Windows Server
- IT managers needing to understand Active Directory components for strategic planning and decision-making
- Cloud solutions architects integrating on-premises Active Directory with cloud services like Azure AD
- Software developers writing applications that interact with Active Directory services

Course Syllabus

Module 1: Principles of Active Directory

This module provides the fundamental understanding of Active Directory, from management and design to integration with other forests and the cloud. It covers key terminology and standards used in Active Directory, clearly defining and explaining the concepts.

Lessons:

- Development of Active Directory
- What is X.500
- LDAP
- Active Directory Architecture
- NTLM and Kerberos
- Managing operating systems with GPOs, Workplace Join, and InTune
- Active Directory Groups: Domain Local, Global, and Universal
- Using and Managing Active Directory Domain Controllers
- Forest and Domain Functional Levels
- Introduction to Active Directory Partitions and the Global Catalog
- Basic Forest Structure and Design
- Basic Domain Structure and Design
- Basic OU Structure and Design

Objectives:

- Describe the key features and editions of Active Directory.
- Understand the primary components of Active Directory, including Sites, Domains, OUs, and their usage.
- Explain the authentication mechanisms used by Active Directory and their implementation.
- Understand common design scenarios in Active Directory implementation.
- Describe how Active Directory manages computers and network resources.

Module 2: Fundamentals of WAN Management with Active Directory

This module covers the wide area networking (WAN) features of Active Directory, including Sites and Site Link Objects, to control and manage replication, login traffic, and site-aware applications.

Lessons:

- Understanding AD Sites and WAN Traffic Management
- Basic AD Sites and Logon Traffic
- Introduction to AD Sites and Replication Traffic
- Bridgehead Servers and Site Link Objects
- Site-Aware Applications

Objectives:

- Describe the key features of Active Directory for managing WAN logon and replication traffic.
- Understand the roles of the Knowledge Consistency Checker (KCC) and the Inter-Site Topology Generator (ISTG).
- Gain a basic understanding of WAN design with Active Directory.
- Resolve common WAN traffic issues.

Module 3: Introduction to Active Directory Group Policy Object (GPO)

This module explains how Active Directory Group Policy works, its functions, and its features and limitations. Students will learn how to implement GPOs effectively and avoid common issues.

Lessons:

- Introduction to Group Policy
- Administrative Templates
- Fundamental Concepts of GPO Scripts
- Creating and Using GPOs
- Principles of Managing Multiple GPOs
- Block, Enforce, and Inheritance
- GPOs and Active Directory Versions
- Controlling and Installing Software with GPOs, SRP, and AppLocker

Objectives:

- Describe the key features, editions, and hardware requirements of Active Directory Group Policy.
- Understand the principles of managing multiple GPOs and inheritance.
- Upgrade and migrate to new Administrative Templates.
- Understand Block, Enforce, GPO scripts, and container linking.
- Learn the basics of software installation with GPOs and application control.
- Resolve common GPO issues.

Module 4: Principles of Active Directory Integration

This module explains how Active Directory integrates with other forests, X.500 Realms, LDAP services, and cloud services.

Lessons:

- Active Directory and "The Cloud"
- User Principal Names, Authentication, and Active Directory Federated Services
- Active Directory and "The Cloud"

Labs:

What version of Active Directory are you running?

- Determine the server operating system version of a Domain Controller.
- Determine Domain Functional Level.
- Determine Forest Functional Level.
- Raise Domain and Forest Functional Levels.
- Create a logical Active Directory diagram.

Authenticate with a UPN login

- Authenticate and log in using both Pre-Windows 2000 and User Principal Name login methods.
- Understand the use and limitations of Active Directory authentication methods.

Explore Active Directory Objects and Utilities

- Explore and use the Active Directory Users and Computers utility.
- Create OU containers, users, and delegate rights and permissions.
- Explore the Active Directory Administrative Center.
- Understand common Active Directory issues.

Explore the default GPO configuration

- Use the Group Policy Management Editor to explore default Active Directory GPO settings.

Make your own GPO

- Create a new Group Policy Object using the Group Policy Management Editor.
- Apply and test the new GPO.

Objectives:

- Describe Active Directory's key features for WAN resource sharing.
- Understand cloud services and their advantages.
- Understand authentication principles outside an Active Directory Forest.
- Explain the roles of Kerberos, Single Sign-On, and User Principal Names.
- Use the primary Active Directory management tools covered in the course.
- Create, edit, and apply a Group Policy Object.