

## WS-011T00-A: Windows Server 2019 Administration

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### Course Summary

#### Description

This five-day instructor-led course is designed primarily for IT professionals who have some experience with Windows Server. It is designed for professionals who will be responsible for managing identity, networking, storage and compute by using Windows Server 2019, and who need to understand the scenarios, requirements, and options that are available and applicable to Windows Server 2019. The course teaches IT professionals the fundamental administration skills required to deploy and support Windows Server 2019 in most organizations.

#### Topics

- Windows Server Administration Overview
- Identity Services in Windows Server
- Network Infrastructure services in Windows Server
- File Servers and Storage management in Windows Server
- Hyper-V virtualization and containers in Windows Server
- High Availability in Windows Server
- Disaster recovery in Windows Server
- Windows Server security
- RDS in Windows Server
- Remote access and web services in Windows Server
- Server and performance monitoring in Windows Server
- Upgrade and migration in Windows Server

#### Audience

This course is intended for Information Technology (IT) Professionals who have some experiencing working with Windows Server and are looking for a single five-day course that covers core administration components and technologies in Windows Server 2019. This course also helps server administrators from previous Windows Server versions to update their knowledge and skills related to Windows Server 2019. Additionally, this course can help individuals looking for preparation materials to pass exams related to Windows Server. The course is also to individuals from a service desk role who wish to transition into server maintenance.

#### Prerequisites

- Some exposure to and experience with Active Directory Domain Services (AD DS) concepts and technologies in Windows Server 2012 or Windows Server 2016.
- Some exposure to and experience with Active Directory Domain Services (AD DS) concepts and technologies in Windows Server 2012 or Windows Server 2016.
- Experience and an understanding of core networking technologies such as IP addressing, name resolution, and Dynamic Host Configuration Protocol (DHCP).
- Experience working with and an understanding of Microsoft Hyper-V and basic server virtualization concepts.
- An awareness of basic security best practices.
- Experience working hands-on with Windows client operating systems such as Windows 8, Windows 8.1 or Windows 10.
- Basic experience with Windows PowerShell.

#### Duration

Five days

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### Course Outline

#### *I. Windows Server Administration Overview*

This module describes how to distinguish different Windows Server 2019 editions and techniques for deployment, servicing and activation. The module also introduces Windows Server Core and compares it with the Desktop Experience version. The module describes tools and concepts for administering Windows Server, such as Windows Admin Center, PowerShell, and delegation of privileges.

- A. Introducing Windows Server 2019
- B. Windows Server Core Overview
- C. Windows Server administration principles and tools overview

Lab : Deploying and configuring Windows Server  
 Deploying and configuring Server Core  
 Implementing and using remote server administration

#### *II. Identity Services in Windows Server*

This module introduces identity services and describes Active Directory Domain Services (AD DS) in a Windows Server environment. The module describes how to deploy domain controllers in AD DS, as well as the Azure Active Directory (AD) and the benefits of integrating Azure AD with AD DS. The module also covers Group Policy basics and how to configure group policy objects (GPOs) in a domain environment. Finally, the module describes the role of Active Directory certificate services and certificate usage.

- A. AD DS Overview
- B. Deploying Windows Server domain controllers
- C. Azure AD overview
- D. Implementing Group Policy
- E. Active Directory Certificate Services overview

Lab : Implementing Identity Services and Group Policy  
 Deploying new domain controller on Server Core  
 Configuring Group Policy  
 Deploying and using certificate services  
 Explain Group Policy basics and configure GPOs in a domain environment  
 Describe the role of Active Directory certificate services and certificate usage

#### *III. Network Infrastructure services in Windows Server*

This module describes how to implement core network infrastructure services in Windows Server. The module covers how to deploy, configure and manage DNS and IPAM. The module also describes how to use Remote Access Services.

- A. Deploying and managing DHCP
- B. Deploying and managing DNS service
- C. Deploying and managing IPAM
- D. Remote Access Services in Windows Server

Lab : Implementing and configuring network infrastructure services in Windows Server  
 Deploying and configuring DHCP  
 Deploying and configuring DNS  
 Implementing Web Application Proxy

#### *IV. File Servers and Storage management in Windows Server*

This module describes how to configure file servers and storage in Windows Server. The module covers file sharing and deployment of Storage Spaces technology. The module describes how to implement data deduplication, iSCSI based storage in Windows Server, and finally, how to deploy DFS.

- A. Volumes and File Systems in Windows Server
- B. Implementing sharing in Windows Server
- C. Implementing Storage Spaces in Windows Server
- D. Implementing Data Deduplication
- E. Implementing iSCSI
- F. Deploying Distributed File System

Lab : Implementing storage solutions in Windows Server  
 Implementing Data Deduplication  
 Configuring iSCSI storage  
 Configuring redundant storage spaces  
 Implementing Storage Spaces Direct

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### Course Outline (cont'd)

#### *V. Hyper-V virtualization and containers in Windows Server*

This module describes how to implement and configure Hyper-V VMs and containers. The module covers key features of Hyper-V in Windows Server, describes VM settings, and how to configure VMs in Hyper-V. The module also covers security technologies used with virtualization, such as shielded VMs, Host Guardian Service, admin-trusted and TPM-trusted attestation, and KPS.

- A. Hyper-V in Windows Server
- B. Configuring VMs
- C. Securing virtualization in Windows Server
- D. Containers in Windows Server
- E. Overview of Kubernetes

Lab : Implementing and configuring virtualization in Windows Server

Creating and configuring VMs

Installing and configuring containers

#### *VI. High Availability in Windows Server*

This module describes current high availability technologies in Windows Server. The module describes failover clustering and considerations for implementing it, and how to create and configure failover clustering. The module also explains stretch clusters and options for achieving high availability with Hyper-V VMs.

- A. Planning for failover clustering implementation
- B. Creating and configuring failover cluster
- C. Overview of stretch clusters
- D. High availability and disaster recovery solutions with Hyper-V VMs

Lab : Implementing failover clustering

Configuring storage and creating a cluster

Deploying and configuring a highly available file server

Validating the deployment of the highly available file server

#### *VII. Disaster recovery in Windows Server*

This module describes disaster recovery technologies in Windows Server and how to implement them. The module covers how to configure and use Hyper-V Replica and describes Azure Site Recovery. The module also

covers how to implement Windows Server backup and describes the Azure Backup service.

- A. Hyper-V Replica
- B. Backup and restore infrastructure in Windows Server

Lab : Implementing Hyper-V Replica and Windows Server Backup

Implementing Hyper-V Replica

Implementing backup and restore with Windows Server Backup

#### *VIII. Windows Server security*

This module describes Windows Server security features and how to implement them. The module covers credentials used in Windows Server and explains how to implement privileged access protection. In addition to describing methods and technologies for hardening Windows Server security, the module explains how to configure Just Enough Administration (JEA) and how to secure SMB traffic. Finally, the module covers Windows Update, its deployment and management options.

- A. Credentials and privileged access protection
- B. Hardening Windows Server
- C. JEA in Windows Server
- D. Securing and analyzing SMB traffic
- E. Windows Server update management

Lab : Configuring security in Windows Server

Configuring Windows Defender Credential Guard

Locating problematic accounts

Implementing LAPS

#### *IX. RDS in Windows Server*

This module describes key Remote Desktop Protocol (RDP) and Virtual Desktop Infrastructure (VDI) features in Windows Server. The module covers how to deploy session-based desktops and describes personal and pooled virtual desktops.

- A. Overview of RDS
- B. Configuring a session-based desktop deployment

Overview of personal and pooled virtual desktops

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### Course Outline (cont'd)

Lab : Implementing RDS in Windows Server  
Implementing RDS

Configuring Session Collection Settings and using RDC

Configuring a virtual desktop template

#### *X. Module 10: Remote access and web services in Windows Server*

This module describes how to implement virtual private networks (VPNs), Network Policy Server (NPS), and Microsoft Internet Information Services (IIS). The module describes Always On VPN functionality, as well as how to configure NPS and Web Server (IIS) in Windows Server.

- A. Implementing VPNs
- B. Implementing Always On VPN
- C. Implementing NPS
- D. Implementing Web Server in Windows Server

Lab : Deploying network workloads

Implementing VPN in Windows Server

Deploying and Configuring Web Server

#### *XI. Module 11: Server and performance monitoring in Windows Server*

This module describes how to implement service and performance monitoring, and apply troubleshooting in Windows Server. The module highlights monitoring tools and describes how to monitor performance, including event logging and how to perform event logging monitoring for troubleshooting purposes.

- A. Overview of Windows Server monitoring tools
- B. Using Performance Monitor
- C. Monitoring event logs for troubleshooting

Lab : Monitoring and troubleshooting Windows Server

Establishing a performance baseline

Identifying the source of a performance problem

Identifying the source of a performance problem

Identifying the source of a performance problem

Describe monitoring tools in Windows Server.

Describe performance monitoring and use it in Windows Server.

Describe event logging and perform event

logging monitoring for troubleshooting purposes.

#### *XII. Module 12: Upgrade and migration in Windows Server*

This module describes how to perform upgrades and migrations for AD DS, Storage, and Windows Server. The module covers tools to use for AD DS migration. The module also covers the Storage Migration Service, and finally, Windows Server migration tools and usage scenarios.

- A. AD DS migration
- B. Storage Migration Service
- C. Windows Server migration tools

Lab : Migrating Server workloads

Implementing Storage Migration Service