uCertify

Course Outline

Windows Server 2019



28 Mar 2024

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1. Course Objective

Gain hands-on expertise on the Windows Server with Windows Server 2019 course and lab. The lab is cloud-based, device-enabled, and can easily be integrated with an LMS. The course and lab provide hands-on learning on the Windows Server basics and impart skills required to protect servers, clients, VMs, assets, and users with advanced Windows Server 2019 security features, and many more. The study guide will help students optimize the full Windows Server 2019 lifecycle.

2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

3. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.



4. Quizzes

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.



5. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



6. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



7. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

8. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

9. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

10. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been

recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution
    2. Best Virtual Learning Solution
    3. Best Student Assessment Solution
    4. Best Postsecondary Learning Solution
    5. Best Career and Workforce Readiness Solution
    6. Best Instructional Solution in Other Curriculum Areas
    7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform

2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**
  1. Best Virtual Learning Solution
  2. Best Content Authoring Development or Curation Solution
  3. Best Higher Education Learning Management Solution (LMS)

- **2020**
  1. Best College and Career Readiness Solution
  2. Best Cross-Curricular Solution
  3. Best Virtual Learning Solution

11.  Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction

- Changes since Windows Server 2016 Inside Out
- Acknowledgments
- Figure Credits

Chapter 2: Administration tools

- Remote not local
- Privileged Access Workstations
- Windows Admin Center
- Remote Server Administration Tools
- PowerShell
- Remote Desktop
- SSH

Chapter 3: Installation options

- Windows Server 2019 editions
- Windows Server servicing branches
- Server Core
- Server with Desktop Experience
- Roles and features

Chapter 4: Deployment and configuration

- Bare metal versus virtualized

- Windows images
- Answer files
- Windows Deployment Services
- Virtual Machine Manager
- Infrastructure configuration as code
- Desired State Configuration
- Chef Infra Server
- Puppet
- Package-management utilities

Chapter 5: Active Directory

- Managing Active Directory
- Domain controllers
- AD DS structure
- Accounts
- Group policy
- Restoring deleted items
- Managing AD DS with PowerShell

Chapter 6: DNS, DHCP, and IPAM

- DNS
- DHCP
- IPAM

Chapter 7: Hyper-V

- Dynamic memory
- Smart paging
- Resource metering
- Guest integration services
- Generation 2 VMs
- Enhanced Session Mode
- Discrete Device Assignment
- Nested virtualization
- PowerShell Direct
- HVC for Linux
- Virtual hard disks

- Managing checkpoints
- Virtual Fibre Channel adapters
- Storage QoS
- Hyper-V storage optimization
- Hyper-V virtual switches
- Virtual machine network adapters
- Optimizing network performance
- Virtual machine MAC addresses
- Network isolation
- Hyper-V replica
- Hyper-V failover clusters
- Hyper-V guest clusters
- Live migration
- Storage migration
- Exporting, importing, and copying VMs
- VM Network Health Detection
- VM drain on shutdown
- Domain controller cloning

- Shielded virtual machines
- Managing Hyper-V using PowerShell

Chapter 8: Storage

- Storage spaces and storage pools
- Storage Replica
- SMB 3.1.1
- iSCSI
- iSNS server
- Scale-Out File Servers
- Server for NFS
- Deduplication
- Storage Quality of Service
- ReFS
- Storage-related PowerShell cmdlets

Chapter 9: File servers

- Shared folder permissions

- File Server Resource Manager
- Distributed File System
- BranchCache
- PowerShell commands

Chapter 10: Internet Information Services

- Managing sites
- Application pools
- IIS users and delegation
- Managing FTP
- Managing IIS using PowerShell

Chapter 11: Containers

- Container concepts
- Isolation modes
- Managing containers with Docker
- Managing containers
- Applying updates
- Container networking

- Linux containers on Windows
- Container orchestration

Chapter 12: Clustering and high availability

- Failover clustering
- Network Load Balancing

Chapter 13: Active Directory Certificate Services

- CA types
- Certificate revocation lists
- Certificate Services role services
- Certificate templates
- Certificate autoenrollment and renewal
- CA management

Chapter 14: Active Directory Federation Services

- AD FS components
- Claims, claim rules, and attribute stores
- Claims provider

- Relying party
- Relying party trust
- Claims provider trust
- Configuring certificate relationship
- Attribute stores
- Claim rules
- Configure Web Application Proxy
- Workplace Join
- Multifactor authentication
- Managing AD FS with PowerShell
- Managing Web Application Proxy with PowerShell

Chapter 15: Dynamic Access Control and Active Directory Rights Management Services

- Dynamic Access Control
- Configuring Group Policy to support DAC
- Configuring User and Device Claims
- Configuring Resource Properties
- Central access rules

- Central access policies
- Staging
- Access Denied Assistance
- Installing AD RMS
- AD RMS certificates and licenses
- AD RMS Templates
- AD RMS Administrators and Super Users
- Trusted User and Publishing Domains
- Exclusion policies
- Managing AD RMS with Windows PowerShell

Chapter 16: Routing and Remote Access

- Remote Desktop Gateway
- Virtual private networks
- LAN routing
- Network Address Translation (NAT)
- DirectAccess
- Managing Remote Access using PowerShell

Chapter 17: Remote Desktop Services

- Deployment
- Remote Desktop Connection Broker
- Deployment properties
- Remote Desktop Session Host
- Remote Desktop Virtualization Host
- Remote Desktop Web Access
- Remote Desktop licensing
- Managing Remote Desktop Services using PowerShell

Chapter 18: Azure IaaS and hybrid services

- Windows Server IaaS VMs
- Azure Active Directory
- Azure hybrid cloud services

Chapter 19: Windows Subsystem for Linux

- Linux on Windows Server
- Installing WSL

- WSL 2.0

Chapter 20: Hardening Windows Server and Active Directory

- Hardening Active Directory
- Hardening Windows Server
- Shielded VMs

Chapter 21: Security systems and services

- Security Compliance Toolkit
- Attack Surface Analyzer
- Credential Guard
- Windows Defender Application Control
- Virtualization-based security
- Controlled Folder Access
- Exploit Protection
- Windows Defender
- Windows Defender SmartScreen

Chapter 22: Maintenance and monitoring

- Data collector sets
- Alerts
- Event Viewer
- Network monitoring
- Azure Monitor
- Windows Server Backup
- Azure Backup
- Vssadmin
- Windows Server Update Services
- Azure Update Management
- Monitoring and maintenance related PowerShell cmdlets
- WSUS related PowerShell cmdlets

Chapter 23: Upgrade and migration

- Supported upgrade and migration paths
- Active Directory
- Active Directory Certificate Services
- DNS

- DHCP
- File and storage servers

Chapter 24: Troubleshooting

- Troubleshooting methodology
- Command-line tools
- Sysinternals tools

12. Practice Test

Here's what you get

53	52
PRE-ASSESSMENTS QUESTIONS	POST-ASSESSMENTS QUESTIONS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

13.  Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Deployment and configuration

- Importing an Image into WDS

Active Directory

- Performing an Authoritative Restore
- Changing the Default Tombstone Lifetime

DNS, DHCP, and IPAM

- Installing the DHCP Server
- Installing the IPAM Feature

Hyper-V

- Creating a VM with an Existing Virtual Hard Disk
- Creating and Disabling Checkpoints
- Creating a Virtual Machine

Storage

- Configuring the iSCSI Target Server
- Installing the iSNS Feature
- Configuring the NFS Data Store
- Enabling Data Deduplication

File servers

- Configuring a Classification Property
- Running a Storage Report
- Adding a Folder Target to an Existing Folder
- Creating a New Folder to Replicate
- Creating a DFS Namespace
- Installing the BranchCache Feature

Internet Information Services

- Creating an Authorization Rule
- Configuring an IP Address and Domain Name Restriction
- Modifying Custom Error Message Settings
- Creating a Web Application
- Adding a Virtual Directory Using the IIS Manager Console
- Creating a New Application Pool
- Delegating Administrative Permissions

Containers

- Installing Docker
- Creating a gMSA Account

Clustering and high availability

- Installing and Configuring NLB

Active Directory Certificate Services

- Revoking a Certificate
- Configuring CA to Issue a Specific Certificate Template
- Creating CA Backup and Recovery

Dynamic Access Control and Active Directory Rights Management Services

- Enabling Dynamic Access Control Resources
- Configuring Access-Denied Remediation
- Installing Active Directory Rights Management Services (ADRMS)

Routing and Remote Access

- Creating RD CAP and RD RAP
- Creating a New Network Policy

Remote Desktop Services

- Deploying Your Remote Desktop Environment

Azure IaaS and hybrid services

- Creating a Virtual Network
- Creating an Azure IaaS VM

Windows Subsystem for Linux

- Installing WSL on Windows Server 2019

Hardening Windows Server and Active Directory

- Resetting the KRBTGT Account Password
- Creating an Isolation Rule
- Creating a Server-To-Server Rule
- Creating a Tunnel Rule
- Enabling a Virtual Machine to Secure Boot and Shielding

Security systems and services

- Configuring Windows Defender with GPOs
- Enabling Device Guard
- Enabling a Virtual Machine Secure Boot and TPM

Maintenance and monitoring

- Creating a Data Collector Set
- Creating an Event Log View
- Installing a WSUS Server

Upgrade and migration

- Upgrading SYSVOL Replication to DFS from FRS

Here's what you get

52	55	02:07
LIVE LABS	VIDEO TUTORIALS	HOURS

14. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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