Course Ou

Networking Esse



28 Mar 2024

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Here's what you get

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1. Course Objective

Enroll yourself in the Networking Essentials course and lab to gain expertise on network methodologies and technologies. The lab provides a hands-on learning experience in a safe and online environment. The network training course provides the required knowledge and skills to design and implement functional networks, configure, manage, and maintain essential network devices, use devices such as switches and routers to segment network traffic and create resilient networks, and a lot more.

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.

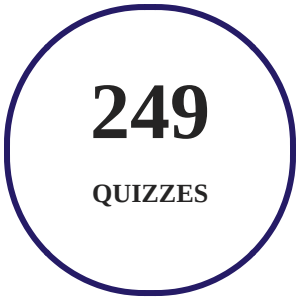
3. Exercises

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 to Computer Networks

- Introduction
- Network Topologies
- The OSI Model

- The Ethernet LAN
- Home Networking
- Assembling an Office LAN
- Testing and Troubleshooting a LAN
- Summary
- Questions and Problems

Chapter 2: Physical Layer Cabling: Twisted-Pair

- Introduction
- Structured Cabling
- Unshielded Twisted-Pair Cable
- Terminating CAT6/5e/5 UTP Cables
- Cable Testing and Certification
- 10 Gigabit Ethernet Over Copper
- Troubleshooting Cabling Systems
- Summary
- Questions and Problems

Chapter 3: Physical Layer Cabling: Fiber Optics

- Introduction
- The Nature of Light
- Fiber Attenuation and Dispersion
- Optical Components
- Optical Networking
- Safety
- Summary
- Questions and Problems

Chapter 4: Wireless Networking

- Introduction
- The IEEE 802.11 Wireless LAN Standard
- 802.11 Wireless Networking
- Bluetooth, WiMAX, RFID, and Mobile Communications
- Configuring a Point-to-Multipoint Wireless LAN: A Case Study
- Summary
- Questions and Problems

Chapter 5: Interconnecting LANs

- Introduction
- The Network Bridge
- The Network Switch
- The Router
- Interconnecting LANs with the Router
- Configuring the Network Interface: Auto-Negotiation
- The Console Port Connection
- Summary
- Questions and Problems

Chapter 6: TCP/IP

- Introduction
- The TCP/IP Layers
- Number Conversion
- IPv4 Addressing
- Subnet Masks
- CIDR Blocks
- IPv6 Addressing

- Summary
- Questions and Problems

Chapter 7: Introduction to Switch Configuration

- Introduction
- Introduction to VLANs
- Introduction to Switch Configuration
- Spanning-Tree Protocol
- Network Management
- Power Over Ethernet
- Switch Security
- Summary
- Questions and Problems

Chapter 8: Introduction to Router Configuration

- Introduction
- Router Fundamentals
- The Router's User EXEC Mode (Router>)

- The Router's Privileged EXEC Mode (Router#)
- Summary
- Questions and Problems

Chapter 9: Routing Protocols

- Introduction
- Static Routing
- Dynamic Routing Protocols
- Distance Vector Protocols
- Configuring RIP and RIPv2
- Link State Protocols
- Configuring the Open Shortest Path First (OSPF) Routing Protocol
- Advanced Distance Vector Protocol: Configuring Enhanced Interior Gateway Routing Protocol (EIGRP)
- IPv6 Routing
- Summary
- Questions and Problems

Chapter 10: Internet Technologies: Out to the Internet

- Introduction
- The Line Connection
- Remote Access
- Metro Ethernet/Carrier Ethernet
- Network Services: DHCP and DNS
- Internet Routing: BGP
- Analyzing Internet Data Traffic
- Summary
- Questions and Problems

Chapter 11: Troubleshooting

- Introduction
- Analyzing Computer Networks
- Analyzing Computer Networks: FTP Data Packets
- Analyzing Campus Network Data Traffic
- Troubleshooting the Router Interface
- Troubleshooting the Switch Interface
- Troubleshooting Fiber Optics: The OTDR

- Troubleshooting Wireless Networks
- Troubleshooting IP Networks
- Summary
- Questions and Problems

Chapter 12: Network Security

- Introduction
- Intrusion: How Attackers Gain Control of a Network
- Denial of Service
- Security Software and Hardware
- Managing Network Access
- Introduction to Virtual Private Networks
- Wireless Security
- Summary
- Questions and Problems

Chapter 13: Cloud Computing and Virtualization

- Introduction
- Virtualization

- Cloud Computing
- Enterprise Storage
- Summary
- Questions and Problems

Chapter 14: Codes and Standards

- Introduction
- Safety Standards and Codes
- Industry Regulatory Compliance
- Business Policies, Procedures, and Other Best Practices
- Business Continuity and Disaster Recovery
- Summary
- Questions and Problems

Videos and How To

uCertify course includes videos to help understand concepts. It also includes How Tos that help learners in accomplishing certain tasks.

191	20:04
VIDEOS	HOURS

12. Practice Test

Here's what you get

117	112
PRE-ASSESSMENTS QUESTIONS	POST-ASSESSMENTS QUESTIONS

Features

uCertify provides video training courses that contain videos and test set questions based on the exam. These courses are interactive and engaging and the learners can view the content at their own pace, in their own time, and on any device. Learners can easily track the engagement levels so they immediately know which course components are easy to understand and which are more difficult. Test set in the courses closely follow the exam objectives and are designed to simulate real exam conditions.

Each pre and post assessment comes with interactive questions which help users in better understanding of the subject matter.

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. Performance Based Labs

uCertify's performance-based labs are simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

Lab Tasks

- Identifying network topologies
- Understanding functions of OSI layers
- Installing a NIC
- Obtaining MAC address
- Understanding IEEE wireless standards
- Creating a network manually
- Connecting Cable Internet Access for your Network
- Configuring Windows 10 Wireless Settings

- Connecting a Wireless Router to a Laptop
- Assembling Components to Complete the Workstation
- Connecting a Workstation to the LAN and Configuring IPv4 Properties
- Connecting a New Workstation to the Internet
- Checking IP connectivity between two network devices
- Understanding ipconfig commands
- Connecting Patch Cables between the Patch Panel and Switch Ports
- Terminating a cable with an RJ-45 plug
- Understanding types of dispersion
- Identifying components of an optical fiber
- Identifying fiber connectors
- Understanding intermediate components between transmitter and receiver
- Understanding characteristics of light detectors
- Preparing a Temporary Server for the Network or Internet Connection
- Understanding optical ethernet numeric
- Configuring a Wireless Client
- Connecting a system to a wireless network
- Turning on bluetooth
- Understanding WiMAX
- Understanding RFID
- Identifying wireless protocols
- Using a switch to interconnect the networking devices
- Connecting a hub to a switch
- Using ping command
- Understanding modes to forward frames
- Identifying components of a Cisco 2800 series router
- Identifying network symbols
- Connecting systems to the Internet through a router
- Identifying TCP/IP protocol layers
- Identifying TCP/IP layers
- Identifying abbreviations for various Internet layer protocols
- Viewing TCP frame details using Network Monitor
- Converting a Decimal Number to Binary
- Configuring IPv4 address
- Obtaining Automatic Private IP Addressing

- Configuring Automatic Private IP Addressing
- Using a Subnet Calculator
- Understanding types of IPv6 data flows
- Configuring and testing IPv6 addresses
- Adding and removing an IPv6 address
- Understanding types of VLANs
- Configuring IP address on a switch interface
- Identifying Spanning-Tree Protocol states
- Identifying benefits of PoE
- Understanding Router Prompts
- Configuring password protection
- Understanding commands used to configure static routing
- Understanding route metrics
- Learning the issues associated with dynamic routing protocols
- Understanding components of EIGRP
- Displaying route summary
- Configuring IPv6 routing
- Understanding CSU/DSU alarm modes
- Checking properties of and deleting a dial-up connection
- Creating a dial-up connection
- Identifying client and server
- Connecting Devices in a Peer- To- Peer Architecture
- Adding static routes in RRAS
- Understanding Ethernet service types
- Creating IPv6 scope
- Configuring a DHCP Role with Error Notification
- Creating DNS domains
- Connecting the DHCP server and laptop to the VLAN
- Adding DNS server
- Using the nslookup command
- Installing wireshark
- Capturing packet using Wireshark
- Viewing system reliability details
- Configuring IP address on a router's interface
- Finding out switched path

- Diagnosing Networking Issues
- Understanding troubleshooting approaches based on the OSI seven-layer model
- Using the netstat command
- Identifying strategies for password protection
- Scanning using nmap
- Identifying attack types
- Identifying the steps of IP address spoofing
- Identifying stages of a forensics examination
- Running Antivirus
- Understanding firewall technologies
- Creating a new inbound rule
- Setting Up a DMZ on a SOHO Router
- Turning on Windows Firewall
- Connecting to a server using Remote Desktop Connection
- Analyzing network paths with tracert
- Creating a remote access VPN connection
- Configuring VPN client in Windows 10
- Configuring VPN client in Windows Server 2016
- Understanding types of Virtual Private Networks
- Configuring a new server
- Configuring SSID
- Connecting to a Password Protected Network
- Configuring a client system to get event logs
- Installing Hyper-V
- Creating a new virtual machine
- Performing a clean install of Windows 10
- Creating a virtual switch
- Identifying cloud computing categories
- Understanding cloud infrastructures
- Understanding storage technologies used in a SAN
- Understanding federal laws
- Learning about change management software
- Understanding service agreements
- Identifying steps in incident response
- Configuring password policy

- Changing Passwords for the Router
- Understanding metrics of disaster recovery
- Understanding types of backups
- Understanding types of disaster recovery sites

Here's what you get

117	63	18:40
PERFORMANCE BASED LAB	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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