uCertify

Course Outline

CompTIA Linux+ (XK0-005)

02 May 2024

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2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary

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4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons

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   Chapter 2: Preparing Your Environment

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   Chapter 4: Managing Files, Directories, and Text

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   Chapter 8: Configuring Network Connections

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Chapter 31: Orchestrating the Environment
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1. Course Objective

Kickstart your prep for the CompTIA Linux+ XK0-005 exam with the CompTIA Linux+ (XK0-005) course and lab. The labs are designed to give you a hands-on experience of Linux. The course covers the XK0-005 exam objectives and provides knowledge in areas such as system management, security, scripting, containers, automation, and troubleshooting. It also contains performance-based, multiple-choice, and multiple-answer questions to provide you a better understanding of Linux concepts.

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

- The Exam Objectives

Chapter 2: Preparing Your Environment

- Setting Up a Learning Space
- Exploring Linux Distributions
- Locating a Terminal
- Summary

Chapter 3: Introduction to Services

- What Is a Linux Server?
- Serving the Basics
- Serving Local Networks
- Implementing Security
- Improving Performance
- Summary
- Exam Essentials

Chapter 4: Managing Files, Directories, and Text

- Handling Files and Directories
- Linking Files and Directories
- Reading Files
- Finding Information

- Summary
- Exam Essentials

Chapter 5: Searching and Analyzing Text

- Processing Text Files
- Redirecting Input and Output
- Editing Text Files
- Summary
- Exam Essentials

Chapter 6: Explaining the Boot Process

- The Linux Boot Process
- The Firmware Startup
- Linux Bootloaders
- System Recovery
- Summary
- Exam Essentials

Chapter 7: Maintaining System Startup and Services

- Looking at init
- Managing systemd Systems
- Managing SysV init Systems
- Digging Deeper into systemd
- Summary
- Exam Essentials

Chapter 8: Configuring Network Connections

- Configuring Network Features
- Command-Line Networking Tool
- Basic Network Troubleshooting
- Advanced Network Troubleshooting
- Summary
- Exam Essentials

Chapter 9: Comparing GUIs

- Focusing on the GUI
- Serving Up the GUI

- Using Remote Desktops
- Forwarding
- Summary
- Exam Essentials

Chapter 10: Adjusting Localization Options

- Understanding Localization
- Setting Your Locale
- Looking at Time
- Summary
- Exam Essentials

Chapter 11: Administering Users and Groups

- Managing User Accounts
- Managing Groups
- Setting Up the Environment
- Querying Users
- Managing Disk Space Usage
- Summary

- Exam Essentials

Chapter 12: Handling Storage

- Storage Basics
- Partitioning Tools
- Understanding Filesystems
- Formatting Filesystems
- Mounting Filesystems
- Managing Filesystems
- Storage Alternatives
- Summary
- Exam Essentials

Chapter 13: Protecting Files

- Understanding Backup Types
- Looking at Compression Methods
- Comparing Archive and Restore Utilities
- Securing Offsite/Off-System Backups

- Checking Backup Integrity
- Summary
- Exam Essentials

Chapter 14: Governing Software

- Working with Source Code
- Packaging Applications
- Using Application Containers
- Summary
- Exam Essentials

Chapter 15: Tending Kernel Modules

- Exploring Kernel Modules
- Installing Kernel Modules
- Removing Kernel Modules
- Summary
- Exam Essentials

Chapter 16: Applying Ownership and Permissions

- Looking at File and Directory Permissions
- Access Control Lists
- Context-Based Permissions
- Understanding Linux User Types
- Restricting Users and Files
- Summary
- Exam Essentials

Chapter 17: Looking at Access and Authentication Methods

- Getting to Know PAM
- Exploring PKI Concepts
- Using SSH
- Using VPN as a Client
- Summary
- Exam Essentials

Chapter 18: Implementing Logging Services

- Understanding the Importance of Logging
- Basic Logging Using rsyslog

- Journaling with systemd-journald
- Summary
- Exam Essentials

Chapter 19: Overseeing Linux Firewalls

- Providing Access Control
- Looking at Firewall Technologies
- Forwarding IP Packets
- Dynamically Setting Rules
- Summary
- Exam Essentials

Chapter 20: Embracing Best Security Practices

- User Security
- Network Security
- Summary
- Exam Essentials

Chapter 21: Analyzing System Properties and Remediation

- Troubleshooting the Network
- Troubleshooting Storage Issues
- Troubleshooting the CPU
- Troubleshooting Memory
- Surviving a Lost Root Password
- Summary
- Exam Essentials

Chapter 22: Optimizing Performance

- Looking at Processes
- Monitoring Processes in Real Time
- Managing Processes
- Summary
- Exam Essentials

Chapter 23: Investigating User Issues

- Troubleshooting Access
- Examining File Obstacles

- Exploring Environment and Shell Issues
- Summary
- Exam Essentials

Chapter 24: Dealing with Linux Devices

- Communicating with Linux Devices
- Working with Devices
- Using Hot-Pluggable Devices
- Summary
- Exam Essentials

Chapter 25: Troubleshooting Application and Hardware Issues

- Dealing with Storage Problems
- Uncovering Application Permission Issues
- Analyzing Application Dependencies
- Looking at SELinux Context Violations
- Exploring Firewall Blockages
- Troubleshooting Additional Hardware Issues
- Summary

- Exam Essentials

Chapter 26: Deploying Bash Scripts

- The Basics of Shell Scripting
- Advanced Shell Scripting
- Writing Script Programs
- Summary
- Exam Essentials

Chapter 27: Automating Jobs

- Running Scripts in Background Mode
- Running Scripts without a Console
- Sending Signals
- Job Control
- Running Like Clockwork
- Summary
- Exam Essentials

Chapter 28: Controlling Versions with Git

- Understanding Version Control
- Setting Up Your Git Environment
- Committing with Git
- Tags
- Merging Versions
- Summary
- Exam Essentials

Chapter 29: Understanding Cloud and Virtualization Concepts

- Considering Cloud Services
- Understanding Virtualization
- Exploring Containers
- Summary
- Exam Essentials

Chapter 30: Inspecting Cloud and Virtualization Services

- Focusing on VM Tools
- Understanding Bootstrapping

- Exploring Storage Issues
- Considering Network Configurations
- Summary
- Exam Essentials

Chapter 31: Orchestrating the Environment

- Understanding Orchestration Concepts
- Provisioning the Data Center
- Looking at Container Orchestration Engines
- Summary
- Exam Essentials

12. Practice Test

Here's what you get

90	2	90
PRE-ASSESSMENTS QUESTIONS	FULL LENGTH TESTS	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

Preparing Your Environment

- Updating Ubuntu

Introduction to Services

- Exploiting LDAP-Based Authentication
- Configuring a Proxy Server

Managing Files, Directories, and Text

- Using Basic Linux Commands
- Finding a File

Searching and Analyzing Text

- Processing a Text File
- Redirecting Output

Explaining the Boot Process

- Managing GRUB2 Parameters
- Booting Linux into Single-User Mode

Maintaining System Startup and Services

- Finding the System Initialization Method
- Managing Services with systemctl

Configuring Network Connections

- Using Basic Linux Commands 2

- Performing Basic Network Troubleshooting
- Capturing Network Packets Using tcpdump

Adjusting Localization Options

- Using the timedatectl Command to Set the System Time

Administering Users and Groups

- Reviewing Account Settings
- Using usermod to Lock an Account
- Querying about Users

Handling Storage

- Creating Partitions and Filesystems
- Creating a Physical Volume, Volume Group, Logical Volume, and File Systems

Protecting Files

- Using tar for Backups

Governing Software

- Exploring Basic RPM Commands
- Using Red Hat Package Management Tools

Tending Kernel Modules

- Managing Kernel Modules from the Command Line

Applying Ownership and Permissions

- Changing Permissions on a File
- Assigning Additional ACLs to a File
- Exploring SELinux
- Managing Users and Groups

Looking at Access and Authentication Methods

- Exploring PAM
- Configuring an SSH Server

Implementing Logging Services

- Viewing the System Logs

Overseeing Linux Firewalls

- Using the firewalld Service

Analyzing System Properties and Remediation

- Viewing Disk Usage

Optimizing Performance

- Displaying Process Information
- Managing a Process
- Watching the Stopped Processes

Deploying Bash Scripts

- Creating an Advanced Script
- Creating a Simple Script File

Automating Jobs

- Running Scripts in Background Mode
- Using the Foreground Mode

Controlling Versions with Git

- Using Git

Inspecting Cloud and Virtualization Services

- Exploring the Contents of the Anaconda File

Here's what you get

42	42	01
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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