uCertify

Course Outline

Linux Essentials for Cybersecurity

04 Aug 2025

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

   Number of Questions
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

   Syllabus

   Chapter 1: Introduction

   Chapter 2: Distributions and Key Components

   Chapter 3: Working on the Command Line

   Chapter 4: Getting Help

   Chapter 5: Editing Files

   Chapter 6: When Things Go Wrong

   Chapter 7: Managing Group Accounts

   Chapter 8: Managing User Accounts

   Chapter 9: Develop an Account Security Policy

   Chapter 10: File Permissions

   Chapter 11: Manage Local Storage: Essentials

   Chapter 12: Manage Local Storage: Advanced Features

   Chapter 13: Manage Network Storage

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   Chapter 15: crontab and at

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   Chapter 17: Common Automation Tasks

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Chapter 19: Networking Basics
Chapter 20: Network Configuration
Chapter 21: Network Service Configuration: Essential Services
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Chapter 31: Footprinting
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Chapter 37: CompTIA Linux+ LX0-103 and LPIC-1 (Exam 102)

Videos and How To

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Here's what you get

Features

10. Live labs

Lab Tasks

Here's what you get

11. Post-Assessment

1. Course Objective

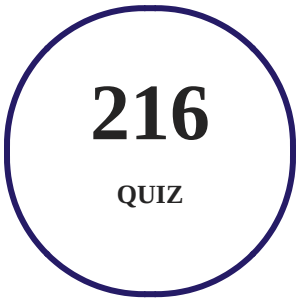
Gain hands-on expertise on the Linux cybersecurity principles with the Linux Essentials for Cybersecurity course and lab to gain the hands-on expertise required to understand the Linux cybersecurity principles. The lab is cloud-based, device-enabled, and can easily be integrated with an LMS. The Linux training course and lab provide knowledge and skills in managing local storage, group, and user accounts; working on the command line, editing files, developing a storage security policy, and 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. Quiz

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.



4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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

10. 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

Chapter 2: Distributions and Key Components

- Introducing Linux
- Linux Distributions
- Installing Linux
- Summary

Chapter 3: Working on the Command Line

- File Management
- Shell Features
- Advanced Commands
- Summary

Chapter 4: Getting Help

- Man Pages
- Command Help Options
- The help Command
- The info Command
- The /usr/share/doc Directory
- Internet Resources
- Summary

Chapter 5: Editing Files

- The vi Editor
- Additional Editors
- Summary

Chapter 6: When Things Go Wrong

- The Science of Troubleshooting
- Notifying Users
- Summary

Chapter 7: Managing Group Accounts

- What Are Groups Used For?
- Managing Groups
- Summary

Chapter 8: Managing User Accounts

- The Importance of User Accounts
- Managing Users
- Network-Based User Accounts
- Using su and sudo
- Restricting User Accounts
- Summary

Chapter 9: Develop an Account Security Policy

- Introducing Kali Linux
- Security Principles
- Creating a Security Policy
- Securing Accounts
- Security Tools
- Summary

Chapter 10: File Permissions

- Standard Permissions
- Default Permissions
- Special Permissions
- Access Control Lists (ACLs)
- Changing Ownership
- File Attributes
- Introduction to SELinux
- Summary

Chapter 11: Manage Local Storage: Essentials

- Filesystem Essentials
- Filesystem Types
- Additional Filesystem Tools
- Mounting Filesystems
- Summary

Chapter 12: Manage Local Storage: Advanced Features

- Encrypted Filesystems
- Managing autofs
- Logical Volume Manager
- Disk Quotas
- Hard and Soft Links
- Summary

Chapter 13: Manage Network Storage

- Samba
- Network File System
- Summary

Chapter 14: Develop a Storage Security Policy

- Developing the Plan
- Backing Up Data
- Summary

Chapter 15: crontab and at

- Using crontab
- Using at
- Summary

Chapter 16: Scripting

- Linux Programming
- Basics of BASH Scripting
- Flow Control Statements
- User Interaction
- Using Command Substitution
- Additional Information
- Summary

Chapter 17: Common Automation Tasks

- Exploring Scripts that Already Exist on Your System
- Creating Your Own Automation Scripts
- Summary

Chapter 18: Develop an Automation Security Policy

- Securing crontab and at
- Securing BASH Scripts
- Summary

Chapter 19: Networking Basics

- Network Terminology
- IPv4 Versus IPv6
- IPv4 Addresses
- Common Protocol Suites
- Network Ports
- Summary

Chapter 20: Network Configuration

- Ethernet Network Interfaces
- Persistent Network Configurations
- Network Troubleshooting Commands
- Access to Wireless Networks
- Summary

Chapter 21: Network Service Configuration: Essential Services

- DNS Servers
- Zone Files
- Securing BIND
- DHCP Server
- Email Servers
- Managing Local Email Delivery
- Remote Email Delivery
- Summary

Chapter 22: Network Service Configuration: Web Services

- Apache Web Server

- Basic Apache Web Server Configuration
- Apache Web Server Security
- Virtual Hosts
- HTTPS
- SSL and Apache
- Proxy Servers
- Summary

Chapter 23: Connecting to Remote Systems

- LDAP
- FTP Servers
- Secure Shell
- Summary

Chapter 24: Develop a Network Security Policy

- Kernel Parameters
- TCP Wrappers
- Network Time Protocol
- Summary

Chapter 25: Process Control

- Viewing Processes
- Running Processes
- Killing Process
- The nohup Command
- Process Priority
- Summary

Chapter 26: System Logging

- Syslog
- The logrotate Command
- The journalctl Command
- Summary

Chapter 27: Red Hat–Based Software Management

- Red Hat Packages
- Using the rpm Command
- The yum Command

- Additional Tools
- Summary

Chapter 28: Debian-Based Software Management

- Managing Packages with dpkg
- Managing Packages with APT
- Listing Package Information with APT Commands
- Summary

Chapter 29: System Booting

- Phases of the Boot Process
- GRUB
- Kernel Components
- The init Phase
- Summary

Chapter 30: Develop a Software Management Security Policy

- Ensuring Software Security
- xinetd

- Summary

Chapter 31: Footprinting

- Understanding Footprinting
- Common Footprinting Tools
- Kali Linux Utilities
- Summary

Chapter 32: Firewalls

- Introduction to Firewalls
- Essentials of the iptables Command
- Using iptables to Filter Incoming Packets
- Using iptables to Filter Outgoing Packets
- Implementing NAT
- Summary

Chapter 33: Intrusion Detection

- Introduction to Intrusion Detection Tools
- Intrusion Detection Network Tools

- Intrusion Detection File Tools
- Additional Intrusion Detection Tools
- Summary

Chapter 34: Additional Security Tasks

- The fail2ban Service
- OpenVPN
- gpg
- Security Alert Services
- Summary

Chapter 35: Appendix A: Resource Guide

- Resources by Lesson

Chapter 36: CompTIA Linux+ LX0-103 and LPIC-1 (Exam 101)

Chapter 37: CompTIA Linux+ LX0-103 and LPIC-1 (Exam 102)

Videos and How To

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

216	12:52
VIDEOS	HOURS

11. Practice Test

uCertify provides full length practice tests. These tests closely follow the exam objectives and are designed to simulate real exam conditions. Each course has a number of test sets consisting of hundreds of items to ensure that learners are prepared for the certification exam.

Here's what you get

100	101
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.

12. 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

Distributions and Key Components

- Installing Kali Linux
- Installing Ubuntu
- Installing CentOS

Working on the Command Line

- Managing Files Using the Command Line
- Using Shell Features
- Compressing Files

Getting Help

- Getting Help Using the man Command
- Getting Help Using the info Command

Editing Files

- Editing Files using the Vim Editor

When Things Go Wrong

- Troubleshooting Linux Issues
- Configuring User Notifications

Managing Group Accounts

- Managing Group Accounts
- Managing Group Administrators

Managing User Accounts

- Managing User Accounts
- Securing User Accounts
- Configuring sudo

Develop an Account Security Policy

- Developing an Account Security Policy
- Testing the Security of Accounts

File Permissions

- Managing File Permissions
- Managing Special Permissions
- Enabling Access Control Lists
- Managing File Ownership and Attributes
- Monitoring Security Issues with SELinux

Manage Local Storage: Essentials

- Creating Partitions and Filesystems
- Mounting Filesystems at Boot
- Managing Swap Devices

Manage Local Storage: Advanced Features

- Managing Encrypted Filesystems
- Managing Hard and Soft Links

Manage Network Storage

- Configuring Samba
- Administering NFS

Develop a Storage Security Policy

- Backing Up a Filesystem
- Developing a Backup Security Policy

crontab and at

- Managing crontab
- Configuring at Commands

Scripting

- Using the Bash Shell Script to Display System Info
- Validating the User Input

Common Automation Tasks

- Performing a System Check
- Using Script that will Back Up All the Files

Develop an Automation Security Policy

- Securing crontab and at
- Creating an Automation of Security Policy

Networking Basics

- Obtaining the Standard Ports for the Protocols

Network Configuration

- Understanding Network Configuration on CentOS
- Understanding Network Configuration on Ubuntu

Network Service Configuration: Essential Services

- Configuring a BIND Server
- Configuring a Postfix Server

Network Service Configuration: Web Services

- Configuring and Administering an Apache Server
- Configuring a Proxy Server

Connecting to Remote Systems

- Configuring an FTP Server
- Administering an SSH Server

Develop a Network Security Policy

- Administering Kernel Security Parameters
- Securing a System with TCP Wrappers
- Examining an Intrusion Detection Security Policy
- Configuring Chrony

Process Control

- Managing System Processes
- Displaying System Information

System Logging

- Managing Log Files
- Configuring Log Rotation

Red Hat–Based Software Management

- Managing Software Packages with rpm
- Managing Software Packages with dnf

Debian-Based Software Management

- Managing Software Packages with dpkg

System Booting

- Managing the Startup Process
- Configuring GRUB Security

Develop a Software Management Security Policy

- Exploring Common Vulnerabilities and Exposure Reports
- Managing and Securing Legacy Services

Footprinting

- Using Probing Tools
- Scanning the Network

Firewalls

- Configuring Linux Firewall using iptable

Intrusion Detection

- Examining an Intrusion Detection Security Policy

Additional Security Tasks

- Configuring fail2ban
- Encrypting Files with gpg

Here's what you get

70	70	02:31
LIVE LABS	VIDEO TUTORIALS	HOURS

13. 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.

You can’t stay away! Get in touch with our team to