

uCertify

Course Outline

Linux Essentials for Cybersecurity
Pearson uCertify



Lesson



Practice test



Lab

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1. Course Objective

Gain hands-on expertise in Linux cybersecurity with the Linux Essentials for Cybersecurity course and lab. Lab simulates real-world, hardware, software, and command-line interface environments and can be mapped to any text-book, course or training. The course and lab provide knowledge and skills in managing local storage, group, and user accounts; working on the command line, editing files, managing local storage, managing user accounts, 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. 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.

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QUIZZES

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.



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FLASHCARDS

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.



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GLOSSARY OF
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 assignments. 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)

- Lesson 1: Performing Basic Tasks from a shell Environment
- Lesson 2: Processing and Working with text files
- Lesson 3: Performing Base File Management Task
- Lesson 4: Managing Processes

- Lesson 5: Design Hard Disk Layout
- Lesson 6: Creating Partitions and Filesystems
- Lesson 7: Common Filesystem Management Tasks
- Lesson 8: Managing Permissions
- Lesson 9: Managing Software
- Lesson 10: System Architecture
- Lesson 11: Boot the System
- Lesson 12: Managing the Boot Sequence
- Lesson 13: Install a Boot Manager
- Lesson 14: Managing shared Libraries

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

- Lesson 1: Using and Customizing the Shell Environment
- Lesson 2: Managing Printing
- Lesson 3: Managing User and Groups Accounts
- Lesson 4: Configuring Security
- Lesson 5: Scheduling Jobs
- Lesson 6: Maintaining System Time

- Lesson 7: Configuring System Logging
- Lesson 8: Configuring Networking
- Lesson 9: Managing MTA Basics
- Lesson 10: Using SSH
- Lesson 11: Customizing and Writing Shell Scripts
- Lesson 12: Accessibility and Internationalization
- Lesson 13: SQL Data Management
- Lesson 14: Managing User Interfaces and Desktops

Videos and How To

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

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VIDEOS

13:01

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

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PRE-ASSESSMENTS QUESTIONS

101

POST-ASSESSMENTS QUESTIONS

Features

Video Lessons

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.

Interactive Questions

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.

Learn, Test and Review Mode

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. Performance Based Labs

uCertify's performance-based labs are Live Labs. Learn the real world skills using Live 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

- Installing Kali Linux
- Installing Ubuntu
- Installing CentOS
- Managing Files using Command Line
- Using Shell Features
- Compressing Files
- Getting Help using man Command
- Getting Help using info Command
- Editing Files using the Vim Editor
- Troubleshooting Linux Issues
- Configuring User Notifications

- Managing Group Accounts
- Managing Group Administrators
- Managing User Accounts
- Securing User Accounts
- Configuring sudo
- Developing an Account Security Policy
- Testing the Security of Accounts
- Managing File Permissions
- Managing Special Permissions
- Enabling Access Control Lists
- Managing File Ownership and Attributes
- Monitoring Security Issues with SELinux
- Creating Partitions and Filesystems
- Mounting Filesystems at Boot
- Managing Swap Devices
- Managing Encrypted Filesystems
- Managing Hard and Soft Links
- Configuring Samba
- Administering NFS
- Backing Up a Filesystem
- Developing a Backup Security Policy
- Managing crontab
- Configuring at Commands
- Bash shell script for system info
- Bash shell script for validating user input
- Script to Perform System Check
- Script That Will Back Up All The Files
- Securing crontab and at
- Creating an Automation Security Policy
- Standard Ports for the Protocols
- Understanding Network Configuration on CentOS
- Understanding Network Configuration on Ubuntu
- Configuring a BIND Server

- Configuring a Postfix Server
- Configuring and Administering an Apache Server
- Configuring a Proxy Server
- Configuring an FTP Server
- Administering an SSH Server
- Administering Kernel Security Parameters
- Securing a System with TCP Wrappers
- Configuring Network Time Protocol
- Creating a Networking Security Policy
- Managing System Processes
- Displaying System Information
- Managing Log Files
- Configuring Log Rotation
- Managing Software Packages with rpm
- Managing Software Packages with yum
- Managing Software Packages with dpkg
- Configuring GRUB Security
- Managing the Startup Process
- Exploring Common Vulnerabilities and Exposure Reports
- Managing and Securing Legacy Services
- Using Probing Tools
- Scanning the Network
- Configuring Linux Firewall using iptable
- Examining an Intrusion Detection Security Policy
- Configuring fail2ban
- Encrypting Files with gpg

Here's what you get




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.

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