

CentOS 10 Linux Administration - Level I

Duration: 40 Hours (5 Days)

Overview

The CentOS 10 Linux Administration - Level I course provides a practical introduction to Linux system administration using CentOS Stream 10. Learners gain hands-on experience in Linux fundamentals, command-line operations, file management, user administration, software installation, process management, networking, and secure remote administration. The course follows modern Enterprise Linux administration practices and prepares learners to confidently administer Linux systems in development and production environments. Enterprise features such as Red Hat Subscription Management and RHEL Lightspeed are introduced through instructor-led demonstrations to provide exposure to Red Hat Enterprise Linux environments.

Audience Profile

This course is designed for System Administrators, IT Support Engineers, DevOps Engineers, Cloud Engineers, Developers, Network Administrators, and Linux enthusiasts who want to build a strong foundation in Linux administration using CentOS Stream 10 and prepare for Enterprise Linux administration roles.

Course Syllabus

Module 1 – Using Essential Tools

- Introduction to Open Source and Linux
- Linux Distributions
- Introduction to Enterprise Linux
- Introduction to CentOS Stream 10
- Accessing the Command Line

- Basic Shell Skills
- Understanding the Shell Environment
- Getting Help from Local Documentation
- Using man, info, and --help
- Lab: Basic Shell Commands
- Lab: Using Local Documentation

Module 2 – Essential File Management Tools

- Navigating the Linux File-system Hierarchy
- Understanding Absolute and Relative Paths
- Managing Files from the Command Line
- Creating, Copying, Moving and Deleting Files
- Creating and Managing Directories
- Viewing File Contents
- Lab: Working with Files and Directories

Module 3 – Working with Text Files

- Editing Text Files using vim
- Redirecting Shell Input and Output
- Redirecting Standard Input, Standard Output and Standard Error
- Using Pipes
- Combining Multiple Commands
- Lab: Editing Text Files
- Lab: Shell Input and Output Redirection

Module 4 – User and Group Management

- Understanding Root and sudo Access
- Managing Local Users and Groups
- Managing Password Policies
- Password Aging
- Lab: Managing Local User Accounts
- Lab: Managing Local Group Accounts

Module 5 – Permissions Management

- Understanding Linux File Permissions
- Controlling Access to Files
- Managing File Ownership
- Managing Standard File Permissions
- Understanding Permission Effects
- Lab: Managing File Ownership
- Lab: Managing File Permissions

Module 6 – Operating Running Systems

- Installing and Updating Software with RPM
- Installing, Updating and Removing Software Packages using DNF
- Managing DNF Repositories
- Installing and Updating Applications using Flatpak
- Lab: Installing and Updating Software using DNF
- Lab: Managing RPM Packages
- Lab: Installing Applications using Flatpak

Module 7 – Accessing File Systems

- Understanding Linux File Systems
- Accessing Removable Media
- Mounting and Unmounting File Systems
- Verifying Mounted File Systems
- Lab: Accessing Removable Media

Module 8 – Managing Processes

- Monitoring Linux Processes
- Managing Running Processes
- Controlling and Terminating Processes
- Monitoring System Performance
- Lab: Monitoring and Managing Linux Processes

Module 9 – Working with systemd

- Understanding systemd
- Controlling Services and Daemons
- Starting, Stopping and Restarting Services
- Enabling and Disabling Services
- Checking Service Status
- Lab: Managing Services using systemd

Module 10 – Configuring Networking

- Introduction to TCP/IP Networking
- Understanding Network Interfaces
- Viewing Current Network Configuration
- Managing Network Configuration
- Configuring Network Interfaces
- Verifying Network Connectivity
- Lab: Configuring Network Interfaces
- Lab: Verifying Network Connectivity

Module 11 – SSH Administration

- Configuring and Securing SSH
- Understanding SSH Host Keys
- Configuring SSH Key-Based Authentication
- Secure Remote Administration
- Secure File Transfer using SCP
- Lab: Configuring SSH Key-Based Authentication

Module 12 – Enterprise Linux Features (Instructor-Led Demonstration)

- Registering Systems for Red Hat Support
- Red Hat Subscription Manager Overview
- Red Hat Customer Portal Overview
- Getting AI-assisted Help with RHEL Lightspeed
- AI-powered Linux Administration and Troubleshooting using RHEL Lightspeed