

CentOS 10 Linux Administration - Level II

Duration: 40 Hours (5 Days)

Overview

The CentOS 10 Linux Administration - Level II course builds upon the foundational Linux administration skills acquired in Level I and focuses on advanced system administration tasks using CentOS Stream 10. Learners gain hands-on experience with shell scripting, SELinux, storage management, boot troubleshooting, firewall administration, network storage, containers, and performance tuning. The course follows modern Enterprise Linux administration practices while using CentOS Stream 10 as the practical lab environment. Enterprise-specific Red Hat features are introduced through instructor-led demonstrations to provide exposure to enterprise Linux technologies.

Audience Profile

This course is designed for Linux System Administrators, DevOps Engineers, Cloud Engineers, Infrastructure Engineers, Technical Support Professionals, and IT Administrators who have completed Linux Administration Level I or possess equivalent Linux administration experience and want to advance their Enterprise Linux administration skills.

Course Syllabus

Module 1 – Shell Scripting and Automation

- Shell Scripting and the Command Line
- Writing Simple Bash Shell Scripts
- Variables and Shell Environment
- Command-Line Automation
- Lab: Creating Basic Shell Scripts
- Lab: Automating Administrative Tasks

Module 2 – Text Processing and Task Scheduling

- Using Regular Expressions for Practical Applications
- Searching and Matching Text using Regular Expressions
- Scheduling User Tasks using at and crontab
- Scheduling System Tasks using cron

- Lab: Working with Regular Expressions
- Lab: Configuring Scheduled Tasks

Module 3 – Log Management and Archiving

- Analyzing and Storing Logs
- Understanding System Log Files
- Working with System Journals
- Archiving Files
- Creating Compressed Archives
- Lab: Analyzing System Logs
- Lab: Creating and Restoring Archives

Module 4 – Security Administration

- Managing Security with SELinux
- Understanding SELinux Modes
- Managing SELinux Contexts
- Managing Network Security
- Configuring the Linux Firewall
- Managing SELinux Network Policies
- Lab: Managing SELinux
- Lab: Configuring Firewall Rules

Module 5 – File Transfer and Performance Tuning

- Transferring Files Securely
- Using SCP and rsync
- Tuning System Performance
- Managing Tuning Profiles
- Adjusting Process Priorities
- Lab: Secure File Transfers
- Lab: Performance Tuning

Module 6 – Managing Basic Storage

- Understanding Linux Storage Devices
- Managing Basic Storage
- Creating Partitions
- Creating File Systems
- Managing Swap Space
- Mounting File Systems
- Lab: Creating and Managing Partitions
- Lab: Creating File Systems and Swap Space

Module 7 – Logical Volume Management (LVM)

- Understanding Logical Volume Manager
- Creating Physical Volumes
- Creating Volume Groups
- Creating Logical Volumes
- Extending and Reducing Logical Volumes
- Lab: Configuring LVM
- Lab: Managing Logical Volumes

Module 8 – Boot Process and System Recovery

- Controlling and Troubleshooting the Boot Process
- Understanding the GRUB Boot Loader
- Boot Targets
- Recovering Superuser Access
- Boot-Time Troubleshooting
- Lab: Troubleshooting Boot Issues
- Lab: Recovering Administrative Access

Module 9 – Network Storage

- Accessing Network-attached Storage
- Configuring NFS Clients
- Using the Automounter (autofs)
- Lab: Mounting NFS File Systems
- Lab: Configuring autofs

Module 10 – Installing Enterprise Linux

- Installing CentOS Stream 10
- Understanding Enterprise Linux Installation
- Interactive Installation
- Automated Installation using Kickstart (Instructor-Led Demonstration)
- Lab: Installing CentOS Stream 10

Module 11 – Container Management with Podman

- Managing Containers with Podman
- Managing Container Images
- Running Containers
- Managing Container Storage
- Basic Container Networking
- Lab: Working with Podman
- Lab: Managing Container Images

Module 12 – Image-based Linux Administration (Instructor-Led Demonstration)

- Working with Image-based Red Hat Enterprise Linux
- Understanding Image-based Operating Systems
- Image Mode Concepts
- Creating and Managing Bootable Images
- Installing and Upgrading Image-based Systems
- Overview of Image-based Enterprise Linux Management