CentOS 9 Linux Administration - Level I

Duration: 40 Hours (5 Days)

Overview

The CentOS 9 Linux Administration - Level I course is designed to provide learners with a comprehensive foundation in managing CentOS Linux systems. The course begins with Module 1: Installing CentOS Linux 8, which covers the installation process and prepares students for setting up a CentOS environment.As learners progress through the course, they will gain essential skills through modules such as Using Essential Tools, Essential File Management Tools, Working with Text Files, and Connecting to CentOS Linux 8. These sections provide the knowledge to navigate the shell environment, edit files, manage file systems, and establish secure connections.Modules on User and Group Management and Permissions Management are crucial for understanding access control, while Managing Processes and Working with Systemd delve into system maintenance and service management.The course also addresses key system administration areas, including Configuring Logging and Configuring Networking, ensuring students can maintain system logs and manage network settings effectively.Lastly, in the Operating Running Systems module, learners explore package management and system updates, which are essential for system security and stability.By the end of the course, students will have a solid understanding of CentOS administration, equipped with practical skills for real-world application. The course is structured to ensure a hands-on approach with lab exercises to reinforce the lessons learned, making it an invaluable resource for aspiring Linux administrators.

Audience Profile

The CentOS 9 Linux Administration - Level I course equips learners with foundational skills for managing CentOS Linux 8 systems.

- System Administrators new to CentOS or Linux environments
- IT Professionals transitioning from other operating systems to Linux
- DevOps Engineers interested in mastering CentOS for development and production environments
- Technical Support Specialists responsible for Linux-based infrastructure
- Network Administrators aiming to enhance their Linux networking skills
- Security Professionals seeking to fortify their systems with CentOS Linux
- Database Administrators managing databases on Linux platforms
- Programmers and Developers looking for a deeper understanding of their deployment platforms
- Computer Science and Information Technology students specializing in Linux-based systems
- Hobbyists and Linux enthusiasts wanting to get formal training on CentOS administration

Course Syllabus

Module 1 – Using Essen&al Tools

- Basic Shell Skills
- Edi7ng Files with vim
- Lab: Vim editor for edi7ng files
- Understanding the Shell Environment

- Finding Help
- Lab: Finding Help

Module 2 - Essen&al File Management Tools

- Working with the File System Hierarchy
- Managing Files
- Using Links
- Lab: Difference between Hardlinks and soTlinks
- Working with Archives and Compressed Files
- Lab: Compressing files with gzip,bzip2 and xz tools

Module 3 - Working with Text Files

- Using Common Text File–Related Tools
- A Primer to Using Regular Expressions
- Using grep to Analyze Text
- Lab: Using grep to analyze text
- Working with Other Useful Text Processing U7li7es

Module 4 - SSH

- Working on Local Consoles
- Using SSH and Related U7li7es
- Configuring Key-Based Authen7ca7on with Passphrases
- Lab: Configure ssh key-based authen7ca7on

Module 5 - User and Group Management

- Different User Types
- Managing User Accounts
- Lab: Manage local user accounts
- Crea7ng and Managing Group Accounts
- Lab: Manage local group accounts

Module 6 – Permissions Management

- Managing File Ownership
- Lab: Changing file ownership
- Managing Basic Permissions
- Lab: Changing file permissions
- Managing Advanced Permissions
- Lab: Changing advance permissions
- Managing ACLs
- Lab: Changing file ACL permissions
- Se\ng Default Permissions with umask
- Lab: Changing Umask value
- Working with User-Extended A]ributes

Module 7 - Managing Processes

- Introduc7on to Process Management
- Managing Shell Jobs
- Lab: Managing shell jobs
- Using Common Command-Line Tools for Process Management
- Lab: Managing command-line tools
- Using top to Manage Processes
- Using tuned to Op7mize Performance
- Lab: Configure performance tunning

Module 8 – Working with Systemd

- Understanding Systemd
- Managing Units Through Systemd
- Lab: Managing services with systemd

Module 9 - Configuring Logging

- Understanding System Logging
- Configuring rsyslogd
- Lab: Configuring rsyslog
- Rota7ng Log Files
- Lab: Configure log rota7on
- Working with journal
- Lab: Configure and managing journal

Module 10 - Configuring Networking

- Networking Fundamentals
- Managing Network Addresses and Interfaces Valida7ng
- Lab: Managing network addresses
- Network Configura7on
- Configuring Network Configura7on with nmtui and nmcli
- Lab: Network configura7on with nmtui and nmcli
- Se\ng Up Hostname and Name Resolu7on
- Lab: Se\ng up hostname and name resolu7on
- Understanding Local Time
- Lab: Configuring Local Time

Module 11 - Opera&ng Running Systems

- Founda7on Topics
- Managing SoTware Packages with yum
- Lab: Managing soTware packages with yum
- Using yum
- Lab: Configure yum repositories
- Managing Package Module Streams
- Lab: Managing package modules
- Managing SoTware Packages with rpm
- Lab: Managing soTware packages with rpm

Module 12 - Installing CentOS Linux 9

- Preparing to Install CentOS Linux 9
- Performing a Manual Installa7on
- Lab: CentOS 9 Installa7on