CentOS 9 Linux Administration

Rapid Track

Duration: 5days (8hrs/day)

Prerequisites: Knowledge of Linux

Course Objective: This is fast track course where participants will gain sufficient skill to perform core system administration tasks on CentOS 9 Linux Administration.

Lab Requirement: Koenig-DC (CentOS 9)

Module 1 – Using Essential Tools

Basic Shell Skills

Editing Files with vim

Lab: Vim editor for editing files

Understanding the Shell Environment

Finding Help

Lab: Finding Help

Module 2 - Essential File Management Tools

Working with the File System Hierarchy

Managing Files

Using Links

Lab: Difference between Hardlinks and softlinks

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 Utilities

Module 4 - Connecting to CentOS Linux 9

Working on Local Consoles

Using SSH and Related Utilities

Configuring Key-Based Authentication with Passphrases

Lab: Configure ssh key-based authentication

Module 5 - User and Group Management

Different User Types

Managing User Accounts

Lab: Manage local user accounts

Creating 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

Setting Default Permissions with umask

Lab: Changing Umask value

Working with User-Extended Attributes

Module 7 - **Managing Processes**

Introduction 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 Optimize 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

Rotating Log Files

Lab: Configure log rotation

Working with journal

Lab: Configure and managing journal

Module 10 - **Configuring Networking**

Networking Fundamentals

Managing Network Addresses and Interfaces Validating

Lab: Managing network addresses

Network Configuration

Configuring Network Configuration with nmtui and nmcli

Lab: Network configuration with nmtui and nmcli

Setting Up Hostname and Name Resolution

Lab: Setting up hostname and name resolution

Understanding Local Time

Lab: Configuring Local Time

Module 11 - Operating Running Systems

Foundation Topics

Managing Software Packages with yum

Lab: Managing software packages with yum

Using yum

Lab: Configure yum repositories

Managing Package Module Streams

Lab: Managing package modules

Managing Software Packages with rpm

Lab: Managing software packages with rpm

Module 12 - An Introduction to Bash Shell Scripting

Understanding Shell Scripting Core Elements

Using Variables and Input

Lab: Using variables and Input

Using Conditional Loops

Lab: Using conditional loops

Module 13 - Scheduling Tasks

Configuring Cron to Automate Recurring Tasks

Lab: Using Cron to automate jobs

Configuring at to Schedule Future Tasks

Lab: Using AT to schedule jobs

Module 14 - Basic Kernel Management

Understanding the Role of the Linux Kernel

Working with Kernel Modules

Lab: Managing kernel modules

Upgrading the Linux Kernel

Tuned

Lab: Using tuned for system performance

Module 15 - Managing Storage

Understanding MBR and GPT Partitions

Managing Partitions and File Systems

Lab: Creating partitions

Mounting File Systems

Lab: Mounting partitions

Module 16 - Managing Advanced Storage

Understanding LVM

Creating LVM Logical Volumes

Lab: Creating LVM

Resizing LVM Logical Volumes

Lab: Resizing LVM

Configuring Stratis

Lab: Configure Stratis

Configuring VDO

Lab: Configure VDO

Module 17 - Managing and Understanding the Boot Procedure

Managing Systemd Targets

Lab: Managing Targets

Working with GRUB 2

Lab: Working with GRUB2

Module 18 - Essential Troubleshooting Skills

Understanding the CentOS 9 Boot Procedure

Passing Kernel Boot Arguments

Lab: Passing Kernel boot arguments

Using a Rescue Disk

Lab: Using rescue disk

Fixing Common Issues

Recovering Access to a Virtual Machine

Lab: Recovering access to a virtual machine

Module 19 - Managing Apache HTTP Services

Configuring a Basic Apache Server

Lab: Apache Web Server Configuration

Understanding Apache Configuration Files

Creating Apache Virtual Hosts

Lab: Apache virtual web hosting

Module 20 - Managing SELinux

Understanding SELinux Working and Modes

Lab: Managing selinux modes

Understanding Context Settings and the Policy

Restoring Default File Contexts

Lab: Manage file contexts

Using Boolean Settings to Modify SELinux Settings

Lab: Managing Booleans

Diagnosing and Addressing SELinux Policy Violations

Lab: Selinux diagnosing

Module 21 - Configuring a Firewall

Understanding Linux Firewalling

Working with Firewalld

Lab: Managing firewalld

Module 22 - Accessing Network Storage

Using NFS Services

Lab: Configure NFS Server

Using CIFS Services

Lab: Configure SAMBA Server

Mounting Remote File Systems Through fstab

Lab: Persistent Mounting of remote file system

Module 23 - Installing CentOS Linux 9

Preparing to Install CentOS Linux 9

Performing a Manual Installation

Lab: CentOS 9 Installation