RHCE (Red Hat Certified Engineer) Version 9 Course Outline

Total Classes: 30
Duration per Class: 3 hours
Total Hours: 90

Module 1: Introduction to RHCE and Linux Fundamentals

📌 Class 1: Introduction to RHCE and RHEL 9

- Overview of RHCSA and RHCE certifications
- Features of RHEL 9
- Linux shell and command-line basics

📌 Class 2: Linux File System & Management

- Understanding Linux directory structure
- Managing files and directories
- File permissions and ownership (chmod, chown, chgrp)

📌 Class 3: User and Group Management

- Creating and managing users
- Understanding user authentication and password policies
- Managing groups and permissions

Module 2: System Administration and Process Management

📌 Class 4: Managing Processes & System Performance

- Understanding processes in Linux
- Using `top`, `htop`, `ps`, and `kill` commands
- Managing system performance and logs

📌 Class 5: Package Management with DNF

- Installing, updating, and removing packages
- Managing repositories
- Using DNF modules

📌 Class 6: Kernel Management & System Boot

- Managing GRUB boot loader
- Kernel tuning and boot process
- Recovering from boot failures

Module 3: Storage and File System Management

📌 Class 7: Disk Partitioning & LVM (Logical Volume Management)

- Understanding partitions and filesystems
- Creating and managing LVM partitions
- Extending and reducing LVM volumes

📌 Class 8: Mounting and Managing File Systems

- Mounting and unmounting file systems
- Working with NFS and SMB/CIFS shares
- Auto-mounting file systems using `fstab`

📌 Class 9: Managing Swap and RAID

- Configuring swap space
- Understanding RAID levels
- Setting up software RAID

Module 4: Networking and Security Administration

📌 Class 10: Network Configuration & Management

- Configuring network interfaces
- Managing IP addresses (IPv4 & IPv6)
- Working with `nmcli` and `nmtui`

📌 Class 11: Firewall & SELinux Configuration

- Understanding `firewalld` and firewall rules
- Enforcing SELinux policies
- Managing ports and services

📌 Class 12: SSH & Secure Remote Administration

- Configuring SSH for secure remote access
- Key-based authentication
- Restricting SSH access

Module 5: Automating Tasks with Bash Scripting

📌 Class 13: Introduction to Bash Scripting

- Writing and executing shell scripts

- Using variables and loops
- Implementing conditional statements

📌 Class 14: Advanced Bash Scripting & Automation

- Managing cron jobs and scheduled tasks
- Automating system tasks with scripts
- Logging and debugging scripts

📌 Class 15: Managing Services with Systemd

- Working with `systemctl`
- Creating and managing services
- Understanding system logs

Module 6: Advanced Networking & Security

📌 Class 16: Configuring DNS & DHCP Services

- Understanding DNS concepts
- Setting up and managing a DNS server
- Configuring a DHCP server

📌 Class 17: Apache Web Server Configuration

- Installing and configuring Apache
- Managing virtual hosts
- Securing Apache with SSL/TLS

📌 Class 18: FTP & NFS Server Setup

- Setting up and managing an FTP server
- Configuring NFS for network file sharing
- Secure file transfer methods

Module 7: Containers & Virtualization

📌 Class 19: Introduction to Containers & Podman

- Understanding containers and images
- Installing and using Podman
- Running and managing containers

📌 Class 20: Deploying Applications with Podman

- Building and running containerized applications
- Managing container storage and networks
- Troubleshooting container issues

📌 **Class 21: Virtualization with KVM**

- Setting up a KVM host
- Creating and managing virtual machines
- Configuring VM networking

Module 8: Ansible Automation (RHCE Focus Area)

📌 **Class 22: Introduction to Ansible for Automation**

- Overview of Ansible
- Installing and configuring Ansible
- Understanding YAML and inventory files

📌 **Class 23: Writing and Running Ansible Playbooks**

- Writing basic playbooks
- Using variables and templates
- Debugging playbooks

📌 **Class 24: Managing Systems with Ansible**

- Automating package installations
- Managing users and services
- Configuring network settings with Ansible

Module 9: Advanced Ansible Automation & Security

📌 **Class 25: Ansible Roles & Best Practices**

- Using Ansible roles for modular automation
- Structuring playbooks efficiently
- Implementing security best practices

📌 **Class 26: Automating Security with Ansible**

- Managing firewall and SELinux with Ansible
- Securing SSH access using Ansible
- Automating compliance tasks

📌 **Class 27: Troubleshooting and Debugging Ansible Playbooks**

- Identifying common Ansible issues
- Using verbose mode and debugging tools
- Log management and troubleshooting

Module 10: Final Exam Preparation & Practical Sessions

📌 Class 28: RHCE Exam Preparation & Lab Practice

- Review of RHCE syllabus topics
- Hands-on lab exercises
- Mock test simulation

📌 Class 29: Troubleshooting & Final Q&A

- Handling real-world troubleshooting scenarios
- Exam strategy discussion
- Final Q&A session

📌 Class 30: Final Mock Exam & Certification Guidance

- Full-length practice exam
- Review of mock test results
- Certification process and next steps