

Linux Administrator Course Content

Part 1: Core Linux Administration

Module 1: Introduction to Linux and Accessing the Command Line

- Introduction to Linux
- Log in to a Linux system and run simple commands using the shell

Module 2: Managing Files from the Command Line

- Copy, move, create, delete, and organize files using the bash shell

Module 3: Getting Help in Red Hat Enterprise Linux

- Use man, info, and online help systems
- Use Red Hat support utilities

Module 4: Creating, Viewing, and Editing Text Files

- Use basic editors (nano, vim) to manage text files

Module 5: Managing Local Linux Users and Groups

- Create and manage users and groups
- Administer local password policies

Module 6: Controlling Access to Files with Linux File System Permissions

- Understand and apply standard Linux permissions (rwx)
- Use chmod, chown, umask

Module 7: Configuring and Securing the OpenSSH Service

- Securely access the command line on remote systems using OpenSSH
- Configure SSH key-based authentication
- Transfer files using scp and rsync

Module 8: Analyzing and Storing Logs

- Locate and interpret system log files for troubleshooting
- Use journalctl and rsyslog

Module 9: Managing Networking

- Configure basic IPv4 networking
- Use nmcli, ip, and hostnamectl

Module 10: Archiving and Copying Files Between Systems

- Archive using tar, gzip, bzip2

- Copy files with scp, rsync

Module 11: Installing and Updating Software Packages

- Manage software using yum, dnf, and repositories

Module 12: Accessing Linux File Systems

- Mount, unmount, and inspect file systems using mount, df, du

Module 13: Using Virtualized Systems

- Create and use VMs using KVM and libvirt tools (virt-manager, virsh)

Part 2: Advanced Linux Administration

Module 1: Automating Installation with Kickstart

- Create and deploy Kickstart-based automated installations

Module 2: Using Regular Expressions with grep

- Write and use regex patterns to find data in text

Module 3: Creating and Editing Text Files with vim

- Master vim editing modes, navigation, and saving

Module 4: Scheduling Future Linux Tasks

- Use cron, at, and systemd timers for scheduling tasks

Module 5: Managing Priority of Linux Processes

- Use nice, renice, and top to manage process priorities

Module 6: Controlling Access with Access Control Lists (ACL)

- Set and manage POSIX ACLs on files and directories

Module 7: Managing SELinux Security

- View and configure SELinux modes, booleans, and contexts

Module 8: Adding Disks, Partitions, and File Systems

- Create and manage partitions using fdisk, parted, mkfs

Module 9: Managing Logical Volume Management (LVM)

- Create and resize LVM volumes
- Use pvcreate, vgcreate, lvcreate, and lvextend

Module 10: Accessing Network Storage with NFS

- Configure and mount (secure) NFS shares

Module 11: Accessing Network Storage with SMB

- Use autofs and manual methods to mount/unmount SMB/CIFS shares

Module 12: Controlling and Troubleshooting the Boot Process

- Understand GRUB2, systemd, and rescue/emergency targets

Module 13: Limiting Network Communication with firewalld

- Configure firewall rules using firewalld and zones

Part 3: Extra / Advanced Content

1. RAID Configuration using LVM

2. Running Containers

- 2.1: Introduction to Containers and Podman
- 2.2: Creating and Managing Containers
- 2.3: Working with Container Image Registries
- 2.4: Managing Container Lifecycle (start, stop, remove, persist)

3. Working with Bash Scripting

4. OS Upgrades

- Upgrade from RHEL 7 to RHEL 8
- Upgrade from RHEL 8 to RHEL 9

5. Automation with Ansible

- 5.1: What is Ansible?
- 5.2: Working with inventory and ansible.cfg
- 5.3: Running Ad-hoc Commands
- 5.4: Creating and Executing Basic Playbooks

6. DNS Configuration

7. Migrating VMware VMs to Cloud

8. Introduction to Public Cloud

- Overview of AWS, GCP, and Azure basics (IaaS, VM provisioning, CLI access)