

GL254 – System Administration III for Red Hat Enterprise Linux



Days: 5

Prerequisites: Students should have completed Red Hat Enterprise Linux System Administration I and II or possess equivalent experience administering Red Hat Enterprise Linux systems, including user management, networking, package management, and system services.

Audience: Experienced Linux system administrators, DevOps engineers, and infrastructure professionals responsible for deploying, securing, and maintaining enterprise Red Hat Enterprise Linux servers and network services.

Description: This course builds advanced Red Hat Enterprise Linux administration skills by focusing on enterprise network services, security, storage, scripting, and service management. Students gain practical experience configuring DNS, email, web, storage, databases, networking, and automation while strengthening Linux security and troubleshooting skills through extensive hands-on labs.

Course Objectives: With a focus on practical applications, the course covers:

- Linux Kernel Administration
- Systemd Services
- IPv6 Networking
- Network Security
- DNS
- Email Services
- Storage Services
- MariaDB
- Apache HTTP Server
- Bash Scripting
- Shell Environment
- Linux Containers

OUTLINE:

LEARNING PATH: MANAGE THE LINUX KERNEL AND SYSTEM SERVICES

LESSONS:

- Configure Linux kernel modules
- Manage hardware devices
- Configure udev rules
- Control services with systemd
- Implement service sandboxing

LEARNING PATH: CONFIGURE ADVANCED NETWORKING

LESSONS:

- Configure IPv6 networking
- Implement link aggregation
- Configure network bridges
- Manage bonded interfaces
- Troubleshoot network connectivity

LEARNING PATH: SECURE NETWORK SERVICES

LESSONS:

- Configure firewalld security
- Manage SELinux policies
- Configure SELinux booleans
- Secure service ports
- Harden network services

LEARNING PATH: IMPLEMENT ENTERPRISE NETWORK SERVICES

LESSONS:

- Configure BIND DNS
- Configure Postfix email services
- Deploy Apache HTTP Server
- Configure virtual hosts

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- Secure web services with TLS

LEARNING PATH: CONFIGURE ENTERPRISE STORAGE

LESSONS:

- Configure iSCSI targets
- Configure iSCSI initiators
- Implement NFS services
- Configure Samba file sharing
- Secure storage services

LEARNING PATH: ADMINISTER DATABASE SERVICES

LESSONS:

- Install MariaDB
- Manage databases
- Configure users and privileges
- Perform SQL administration
- Secure database access

LEARNING PATH: AUTOMATE WITH BASH

LESSONS:

- Create Bash scripts
- Use variables and conditionals
- Implement loops
- Parse command-line options
- Automate administration tasks

LEARNING PATH: CUSTOMIZE THE LINUX ENVIRONMENT

LESSONS:

- Configure shell startup files
- Customize the command prompt
- Manage command history
- Configure shell editing modes
- Improve administrator productivity

LEARNING PATH: INTRODUCTION TO LINUX CONTAINERS

LESSONS:

- Understand Linux container concepts
- Explore namespaces and cgroups

- Review Open Container Initiative standards
- Deploy basic containers
- Understand container administration fundamentals