

€ TRAINING

Red Hat Linux System Administration





Red Hat Linux System Administration

Introduction:

This program is designed to prepare participants for the certification exam only.

This training program provides participants with comprehensive knowledge and practical skills essential for effectively managing and administering Red Hat Linux systems. It empowers them to manage Linux environments, ensuring system performance, security, and reliability.

Program Objectives:

By the end of this program, participants will be able to:

- Understand the fundamentals of Red Hat Linux operating systems.
- Perform system installation, configuration, and maintenance tasks.
- Manage users, groups, and file systems effectively.
- Configure and troubleshoot network services.
- Implement security measures and perform system monitoring.

Targeted Audience:

- System Administrators.
- Linux Administrators.
- IT Professionals managing Red Hat Linux systems.
- Network Administrators.
- Systems Engineers.

Program Outline:

Unit 1:

Introduction to Red Hat Linux:

- Overview of Red Hat Linux operating systems.
- Installing Red Hat Linux and initial system setup.

- Understanding the Linux file system structure.
- Basic command-line operations and utilities.
- Managing software packages with YUM and RPM.

Unit 2:

User and Group Management:

- Creating and managing user accounts and groups.
- Understanding and configuring user permissions.
- Using ACLs for fine-grained access control.
- Implementing sudo for administrative access.
- Automating user and group management tasks.

Unit 3:

File System Management:

- Partitioning and formatting disks.
- Mounting and unmounting file systems.
- Configuring and managing LVM Logical Volume Manager.
- Implementing file system quotas and disk usage monitoring.
- Backup and restore procedures.

Unit 4:

Network Configuration and Management:

- Configuring network interfaces and services.
- Understanding and managing IP addressing.
- Setting up DNS, DHCP, and NTP services.
- Implementing network bonding and VLANs.
- Troubleshooting network connectivity issues.

Unit 5:

Security Management:

- Implementing firewall rules using firewalld.
- Configuring SELinux for enhanced security.
- Managing SSH for secure remote access.
- Understanding and using security tools like fail2ban.
- Regular system updates and patch management.

Unit 6:

System Monitoring and Performance Tuning:

- Monitoring system performance with top, htop, and iostat.
- Using system logs and journalctl for troubleshooting.
- Setting up and using performance monitoring tools.
- Identifying and resolving performance bottlenecks.
- Implementing automated monitoring and alerting.

Unit 7:

Managing Network Services:

- Configuring and managing web servers Apache, Nginx.
- Setting up and managing FTP, SMTP, and IMAP services.
- Implementing and managing databases MySQL, PostgreSQL.
- Configuring and securing Samba and NFS shares.
- Understanding and managing container services Docker.

Unit 8:

Automation and Scripting:

- Writing and executing shell scripts.
- Automating administrative tasks with cron and systemd timers.

- Using Ansible for configuration management and automation.
- Implementing version control with Git.
- Practical exercises on scripting and automation.

Unit 9:

Troubleshooting and System Recovery:

- Diagnosing and resolving boot issues.
- Understanding and using rescue modes.
- Recovering from file system corruption and data loss.
- Managing and troubleshooting system processes and services.
- Real-world scenarios and case studies on system recovery.

Unit 10:

Advanced Topics and Best Practices:

- Virtualization with KVM and libvirt.
- Configuring and managing Red Hat Cluster Suite.
- Implementing high availability and load balancing.
- Best practices for system security and hardening.
- Preparing for Red Hat certification exams.

Note: This program is designed to prepare participants for the certification exam only.