

**Red Hat Enterprise Linux 9 (RHEL 9) System Administration II**

**Course Number:** LNX-140
**Duration:** 5 days

**Overview**

This Red Hat Enterprise Linux 9 (RHEL 9) System Administration II training course teaches attendees the commands and methods needed to set up and manage a RHEL 9 system using a problem-solving approach with advanced topics for long-term management.

This course is comparable to [Red Hat course 134.](https://www.redhat.com/en/services/training/rh124-red-hat-system-administration-i) Along with Accelebrate's [Red Hat Enterprise Linux 9 (RHEL 9) System Administration I](file:////training/rhel-9-administration-i) class, this course is preparation for the [RHCSA 9 certification examination](https://www.redhat.com/en/services/training/ex200-red-hat-certified-system-administrator-rhcsa-exam).

**Prerequisites**

Students should have taken [Accelebrate's RHEL 9 System Administration I](file:////training/rhel-9-administration-i) course, or have the equivalent experience.

**Materials**

All Red Hat Linux training attendees receive comprehensive courseware.

**Software Needed on Each Student PC**

Attendees will not need to install any software on their computer for this class. The class will be conducted in a remote environment that Accelebrate will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will be fine.

**Objectives**

* Install, update, and boot the RHEL 9 operating system
* Set up user accounts and directories
* Perform backups for integrity and performance
* Monitor the system for performance and do basic setup of network software and capabilities

**Outline**

* Introduction
* Improve Command Line Productivity
	+ Vim editor
	+ Invoking vim
	+ .vimrc file
	+ Key vim features
	+ Advanced vim features
	+ Gvim
	+ Using command aliases and shell scripts
* Using Regular Expressions with grep
	+ Regular expressions
* Schedule Future Tasks
	+ Submitting a batch job with at
	+ Batch job logging with at
	+ Submitting a batch job with crontab
	+ Crontab file entry layout
	+ Uses of crontab entries
	+ System level periodic processing via crond
	+ Periodic processing via a systemd timer
* Control Access to Files with ACLs
	+ Special file attributes (SUID, SGID, STICKY)
	+ Special directory attributes (SGID, STICKY)
	+ Access Control Lists (ACLs)
	+ Default directory access control lists (dACLs)
* Install Red Hat Enterprise Linux 9 (with kickstart)
	+ Building a kickstart File
	+ Initiating Installation via a kickstart File
	+ Upgrading Red Hat Enterprise Linux 9
	+ KVM virtual machine requirements
	+ KVM virtual machine creation
* Control the Boot Process
	+ RHEL 9 system initialization sequence
	+ Grand Unified Boot Loader (GRUB 2)
	+ Grand Unified Boot Loader (GRUB 2) - components
	+ Grand Unified Boot Loader (GRUB 2) - variables
	+ Grand Unified Boot Loader (GRUB 2) - menuentries
	+ RHEL 9 server single user mode
	+ RHEL reset forgotten root password
	+ kernel boot parameters
	+ shutdown
	+ install rescue mode
* Maintain Basic Storage
	+ Disk device and partition operations
	+ Disk device information
	+ MBR partition table concepts
	+ GPT partition table concepts
	+ Red Hat Enterprise Linux 9 system (boot) disk
	+ MBR partition operations
	+ GPT partition operations
	+ File system operations
	+ Red Hat Enterprise Linux 9 ext\* file system layout
	+ Ext4 filesystem
	+ Superblock backup areas
	+ Red Hat Enterprise Linux 9 xfs file system layout
	+ Xfs filesystem
	+ Unmounting filesystems
	+ Swapping and paging spaces
	+ Encrypted filesystems
	+ Changes to /tmp
* Manage Logical Volumes
	+ Logical volume management concepts
	+ Logical volume management utilities
	+ Using the logical volume manager
	+ Physical volumes
	+ Volume groups
	+ Logical volumes
	+ Logical volume mirroring
	+ Logical volume backup
	+ Using logical volumes as swap space
* Implement Advanced Storage Features
	+ Stratis volume management concepts
	+ Using Stratis as a volume managing filesystem
	+ Stratis volume management commands
	+ Using Stratis
	+ VDO volume management concepts
	+ Using VDO for volume compression
	+ VDO volume management commands
	+ Using VDO
* Manage Network Security
	+ Service-specific access control
	+ Firewalld components
	+ Firewall interface - firewall-cmd
	+ Firewall interface - cockpit
	+ Iptables firewall
* Access Network-Attached Storage
	+ Network File System concepts
	+ Network File System configuration
	+ Setting up the Network File System
	+ Starting up the Network File System
	+ Using the Network File System
	+ Automounter - direct / indirect maps
* Manage SELinux Security
	+ SELinux concepts
	+ SELinux files and utilities
* Tune System Performance
	+ Overview of performance management
	+ Utilities for performance monitoring
	+ Changing system and kernel parameters
	+ Using tuned to define performance profiles
* Running Containers
	+ Download an existing container
	+ Start, run and stop a container using podman
	+ Run a service inside a container
	+ Attach persistent storage to a container
* Conclusion