

[RH299]: RHCE Certification lab

Length : 4 days
Audience(s) : IT Professionals
Delivery Method : Instructor-led (Classroom)

Course Overview

During the 4-day course, students will work at their own pace through the complete set of labs from both the RHCSA (Red Hat Certified System Administrator) Rapid Track course (RH199) and Red Hat System Administration III (RH254). The RHCE Certification Lab course includes a few instructor lectures designed to review key technologies such as systemd, firewalld, and IPv6. For the classroom and virtual classroom versions of this course, an instructor will be available throughout the week to assist students as they work through the labs.

Note: This version of the course includes the Red Hat Certified System Administrator (RHCSA) EX200 and Red Hat Certified Engineer (RHCE) EX300 exams on the final day of the course.

Audience Profile

- RHCEs on Red Hat Enterprise Linux 6 or earlier who wish to recertify on Red Hat Enterprise Linux 7
- Students who previously attempted the RHCE exam, did not pass, and wish to retake the exam
- Students who have completed the RHCE track courses (Red Hat System Administration I, II, and III or equivalent) and would like additional hands-on practice prior to taking the RHCE exam

At Course Completion

After completing this course, students learn how to:

- Managing and troubleshooting systemd services during the boot process
- Network configuration and basic troubleshooting
- Managing local storage, creating and using file systems
- Firewall management with firewalld
- Automating installation of Red Hat Enterprise Linux® using kickstart
- Manage SELinux settings
- Using NFS and Samba shared filesystems
- Network port security and link aggregation
- iSCSI initiator and target configuration
- Domain Name System (DNS) troubleshooting and caching name server
- Providing Network File System (NFS) and Server Message Block (SMB) file servers
- Apache HTTPD web server management
- MariaDB SQL database configuration
- Postfix Simple Mail Transfer Protocol (SMTP) nullclient for servers
- Bash scripting for automation

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Pre-Requisites

- Students should have already completed Red Hat System Administration I, II, and III or equivalent training
- It is highly recommended students take our online skills assessment prior to enrolling in this course
- Extensive UNIX administration experience by itself is not adequate for most students

Course Outline

Module 1: Local and remote logins

Lessons

- Review methods for accessing the system and engaging Red Hat Support

Module 2: File system navigation

Lessons

- Copy, move, create, delete, link, and organize files while working from the Bash shell prompt

Module 3: Users and groups

Lessons

- Manage Linux users and groups and administer local password policies

Module 4: File permissions

Lessons

- Control access to files and directories using permissions and access control lists (ACLs)

Module 5: SELinux permissions

Lessons

- Manage the SELinux behavior of a system to keep it secure in case of a network service compromise

Module 6: Process management

Lessons

- Evaluate and control processes running on a Red Hat Enterprise Linux system

Module 7: Updating software packages

Lessons

- Download, install, update, and manage software packages from Red Hat and yum package repositories

Module 8: Creating and mounting file systems

Lessons

- Create and manage disks, partitions, and filesystems from the command line

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Module 9: Service management and boot troubleshooting

Lessons

- Control and monitor system daemons and troubleshoot the Red Hat Enterprise Linux boot process

Module 10: Network configuration

Lessons

- Configure basic IPv4 networking on Red Hat Enterprise Linux systems

Module 11: System logging and ntp

Lessons

- Locate and accurately interpret relevant system log files for troubleshooting purposes

Module 12: Logical volume management

Lessons

- Create and manage logical volumes from the command line

Module 13: Scheduled processes

Lessons

- Schedule tasks to automatically execute in the future

Module 14: Mounting network file systems

Lessons

- Use autofs and the command line to mount and unmount network storage with NFS and SMB

Module 15: Firewall configuration

Lessons

- Configure a basic firewall

Module 16: Virtualization and kickstart

Lessons

- Automate the installation of Red Hat Enterprise Linux on virtual machines with kernelbased virtual machine (KVM) and libvirt

Module 17: Managing IPv6 networking

Lessons

- Configure and troubleshoot basic IPv6 networking on Red Hat Enterprise Linux systems

Module 18: Configuring link aggregation and bridging

Lessons

- Configure and troubleshoot advanced network interface functionality including bonding, teaming, and local software bridges

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Module 19: Controlling network port security

Lessons

- Permit and reject access to network services using advanced SELinux and firewalld filtering techniques

Module 20: Managing DNS for Servers

Lessons

- Set and verify correct DNS records for systems and configure secure-caching DNS

Module 21: Configuring E-mail Delivery

Lessons

- Relay all e-mail sent by the system to a SMTP gateway for central delivery

Module 22: Providing block-based storage

Lessons

- Provide and use networked iSCSI block devices as remote disks

Module 23: Providing file-based storage

Lessons

- Provide NFS exports and SMB file shares to specific systems and users

Module 24: Configuring MariaDB databases

Lessons

- Provide a MariaDB SQL database for use by programs and database administrators

Module 25: Providing Apache HTTPD Web Service

Lessons

- Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts

Module 26: Writing Bash scripts

Lessons

- Write simple shell scripts using Bash

Module 27: Bash conditionals and control structures

Lessons

- Use Bash conditionals and other control structures to write more sophisticated shell commands and scripts

Module 28: Configuring the shell environment

Lessons

- Customize Bash startup and use environment variables, Bash aliases, and Bash functions

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