



Red Hat Certifications: Red Hat Certified System Administrator (RHCSA)

Overview

Red Hat is pleased to announce a new addition to its line of performance-based certifications—Red Hat Certified System Administrator (RHCSA). The new RHCSA credential aligns with the critical skills required of today's system administrators. As with all of Red Hat certification exams, the RHCSA exam continues the practice of evaluating knowledge and skills through hands-on, lab-based exam.

To ensure this certification meets the needs of IT managers seeking qualified system administrators, Red Hat conducted an extensive survey and analysis of Red Hat certification holders worldwide. This survey sought to identify the most frequent and critical tasks that today's system administrators perform on the job. This survey helped shape the RHCSA credential, in addition to validating the more senior-level responsibilities that are tested by the RHCE exam. In addition to the survey, Red Hat has continually sought input on the certification program from its certified community through annual RHCE focus group sessions at Red Hat Summit, online focus groups with [Red Hat Certified Architects \(RHCA's\)](#), and informal discussions at RHCE Loopback events. This input has been central to changes made to the overall program in conjunction with the launch of RHCSA.

RHCT certification vs. RHCSA certification

IT professionals who earn a Red Hat Certified Technician (RHCT) certification have demonstrated the core system administrator skills that are sought and valued by companies and organizations using Red Hat Enterprise Linux. The job title these professionals typically hold is that of system administrator and job postings seeking their particular set of skills are usually for system administrators. Tellingly, salary surveys indicate that RHCTs earn more than system administrators holding certifications from other programs. In short, the term “technician” sells their skills short. With the launch of Red Hat Certified System Administrator (RHCSA), Red Hat will be offering a certification with a title that is far more aligned to usage in the marketplace and reflective of system administration skills.

The competency model of RHCSA is quite similar to that of RHCT. However, there are some Red Hat Certified Engineer (RHCE) competencies that will now become RHCSA and vice versa. This

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will allow a clear, defined, and simplified certification path, letting organizations make informed decisions based on their existing and future skill-set requirements.

Earning an RHCSA certification

To earn RHCSA credential, candidates must demonstrate the skills required to be a successful Linux administrator through a hands-on, half-day exam. This exam can be purchased separately (EX200) or bundled with a class at the time of enrollment.

Red Hat Certified System Administrator Preparation Guide

Overview

This guide provides information candidates may use in preparing to take the RHCSA exam. Red Hat is not responsible for the content or accuracy of other guides, books, online resources, or any other information provided by organizations or individuals other than Red Hat Training and Certification. Red Hat reserves the right to change this guide when appropriate. Candidates who have enrolled in forthcoming classes or exams are advised to check this guide periodically for changes.

Prospective employers of RHCSAs should verify any and all claims by people claiming to hold this certification by requesting their certificate number and verifying it.

Performance-based Exams

The Red Hat Certified System Administrator exam is a performance-based evaluation of Red Hat Enterprise Linux system administration skills and knowledge. Candidates perform a number of routine system administration tasks and are evaluated on whether they have met specific objective criteria. Performance-based testing means that candidates must perform tasks similar to what they must perform on the job.

Authorized Training Partners

Only Red Hat and Red Hat Certified Training Partners administer the RHCSA exam. Prospective candidates should exercise due diligence when purchasing a seat in an RHCSA exam from a provider other than Red Hat itself. They should verify that the provider is, in fact, an authorized training partner or reseller in good standing. Please notify greymarket@redhat.com about organizations that purport to offer the RHCSA exam but are not Red Hat Certified Training Partners.

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Scores and Reporting

Official scores for the RHCSA exams come exclusively from Red Hat Certification Central. Red Hat does not authorize examiners, training partners or other departments or individuals within Red Hat to report results to candidates. Scores on the exam are reported within three (3) US business days.

Exam results are reported as section scores. Red Hat does not report performance on individual items, nor will it provide additional information upon request.

Format of the RHCSA Exam

The RHCSA exam is a hands-on, practical exam that lasts 2.0 hours. Internet access is not provided during the exam. Outside materials are not permitted. Documentation that ships with Red Hat Enterprise Linux is included.

Preparation for the RHCSA Exam

Red Hat encourages all candidates for RHCSA to consider taking one or more of its official training courses to help prepare. Attendance in these classes is not required, and one can choose to take just an exam. Many successful candidates who have come to class already possessing substantial skills and knowledge report that the class made a positive difference for them.

To help you determine the best courses to take, Red Hat provides online skills assessment.

While attending Red Hat's classes can be an important part of one's preparation, attending class does not guarantee success on the exam. Previous experience, practice, and native aptitude are also important determinants of success.

Many books and other resources on system administration for Red Hat's OS products are available. Red Hat does not officially endorse any as preparation guides for any exams. Nevertheless, you may find additional reading deepens understanding and can prove helpful.

Exam Objectives

Candidates should be able to do the following:

- Boot, reboot, and shutdown the system normally
- Diagnose and correct problems at boot
- Boot systems into different runlevels for troubleshooting and system maintenance
- Use single-user mode to gain access to a system for which the root password is not known
- Diagnose and correct misconfigured networking settings

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- Diagnose and correct hostname resolution problems
- Diagnose and address permissions problems and SELinux policy violations
- Diagnose and correct non-hardware disk storage problems
- Adding new partitions, logical volumes, filesystems, and swap areas to a system non-destructively
- Manually open, mount, unmount, and close LUKS-encrypted filesystems
- Extend existing unencrypted ext4-formatted logical volumes
- Login or switch user to the root account
- Use ssh and VNC to access remote systems
- Locate and read on-line documentation using man, info, and files in /usr/share/doc
- Locate and analyze system log files
- Understand how to use grep and regular expressions to analyze text output
- Access a bash shell prompt and issue commands with correct syntax; use pipelines and I/O redirection
- Use text editors such as gedit and vim to create and edit text files
- Manage system resources: identify CPU/memory intensive processes, adjust process priority with renice, kill processes
- Manage files and directories: create/delete/copy/move; create hard and soft links
- Use tar, gzip, and bzip2 to archive and compress files
- Install Red Hat Enterprise Linux manually with the graphical installer from network installation media
- Install Red Hat Enterprise Linux automatically using Kickstart
- Configure a physical machine as a RHEL-based virtualization host
- Manage virtual machines: install/start/stop/configure to start at boot/access a VM's graphical console
- Manage disk partitions: understand MBR-style partitions (primary,extended,logical); list/create/delete partitions
- Manage logical volumes: create/remove physical volumes, assign PVs to volume groups, create/delete logical volumes
- Create and configure LUKS-encrypted partitions and logical volumes to prompt for password and mount decrypted filesystem at boot
- Manage ext4 filesystems: create, label, mount, mount automatically at boot (by UUID or label), unmount
- Mount and unmount CIFS and NFS network filesystems, manually or by configuring autofs
- Manage network devices: understand basic IP networking/routing, configure IP addresses/default route statically or dynamically
- Manage name resolution: set local hostname, configure /etc/hosts, configure to use existing DNS server
- Manage network services: check status, start, stop, configure to start automatically at boot
- Configure the scheduling of tasks using cron and at
- Manage local user and group accounts: create, delete, change passwords, adjust password aging, adjust group memberships
- Use network user and group accounts stored on an existing LDAP directory service
- Manage standard permissions: list, interpret, change ugo/rwx

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- Use sgid directories for collaboration
- Set and manage Access Control Lists (ACLs)
- Manage SELinux security: set enforcing/permissive modes, list file and process context, restore default file context, use "booleans" to adjust policy
- Manage default firewall settings with basic tools
- Install and update software packages from RHN or remote repository, or from the local filesystem
- Update the kernel package appropriately to ensure a bootable system
- Modify the system bootloader
- Configure the system to synchronize system time using remote NTP servers
- Deploy a VNC server that allows multiple desktops to be shared
- Deploy file sharing services with HTTP/FTP

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