



Cloud & DevOps Middleware Platform

Everything you wanted to know about
Red Hat Training & Certification





Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. And as the connective hub in a global network of enterprises, partners, and open source communities, Red Hat enables the creation of relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT. Red Hat is an S&P company with more than 85 offices spanning 35 countries across the globe, empowering our customers' businesses. More than 90% of the Fortune 500 use Red Hat Products and Solutions

Red Hat® Enterprise Linux® gives you the tools you need to modernize your infrastructure, boost efficiency through standardization and virtualization, and ultimately prepare your datacenter for an open, hybrid cloud IT architecture. Red Hat Enterprise Linux provides the stability to take on today's challenges and the flexibility to adapt to tomorrow's demands.

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RH124

Red Hat System Administration I (RHEL 7 or 8)

Part 1 of the core system administration tasks needed for Red Hat Enterprise Linux

This course relates to Red Hat® Enterprise Linux® 7. Red Hat System Administration I (RH124) is designed for IT professionals without previous Linux administration experience. The course focuses on providing students with Linux administration "survival skills" by focusing on core administration tasks.

Course overview:

Red Hat System Administration I provides a foundation for students wishing to become full-time Linux system administrators by introducing key command line concepts and other enterprise-level tools. These concepts are further developed in the follow-on course, Red Hat System Administration II (RH134).

Prerequisites:

There are no formal prerequisites for this course; however, previous operating system administration experience will be very beneficial.

Course contents:

1. Access the command line
2. Log in to a Linux system and run simple commands using the shell
3. Manage files from the command line
4. Copy, move, create, delete, and organize files from the bash shell prompt
5. Get help in Red Hat Enterprise Linux
6. Resolve problems by using online help systems and Red Hat support utilities
7. Create, view, and edit text files
8. Create, view, and edit text files from command output or in an editor
9. Manage local Linux users and groups
10. Manage local Linux users and groups, and administer local password policies
11. Control access to files with Linux file system permissions
12. Set Linux file system permissions on files and interpret the security effects of different permission settings
13. Monitor and manage Linux processes
14. Obtain information about the system, and control processes running on it
15. Control services and daemons
16. Control and monitor network services and system daemons using system
17. Configure and secure OpenSSH service
18. Access and provide access to the command line on remote systems securely using OpenSSH
19. Analyze and store logs
20. Locate and accurately interpret relevant system log files for troubleshooting purposes
21. Manage Red Hat Enterprise Linux networking
22. Configure basic IPv4 networking on Red Hat Enterprise Linux systems
23. Archive and copy files between systems
24. Archive files and copy them from one system to another
25. Install and update software packages
26. Download, install, update, and manage software packages from Red Hat and yum package repositories
27. Access Linux file systems
28. Access and inspect existing file systems on a Red Hat Enterprise Linux system
29. Use virtualized systems
30. Create and use Red Hat Enterprise Linux virtual machines with KVM and libvirt
31. Comprehensive review
32. Practice and demonstrate the knowledge and skills learned in this course

RH134

Red Hat System Administration II (RHEL 7 or 8)

Part 2 of the core system administration tasks needed for Red Hat Enterprise Linux

This course is specifically designed for students who have completed Red Hat® System Administration I (RH124). Red Hat System Administration II (RH134) focuses on the key tasks needed to become a full time Linux® administrator.

Course overview:

This course goes deeper into enterprise Linux administration including file systems and partitioning, logical volumes, SELinux, firewalling, and troubleshooting. Attending both Red Hat System Administration I and Red Hat System Administration II can help you in your preparation for the Red Hat Certified System Administrator exam (EX200).

Prerequisites:

Red Hat System Administration I (RH124)

Course contents:

1. Automate installation with Kickstart
2. Automate the installation of Red Hat Enterprise Linux systems with Kickstart
3. Use regular expressions with grep
4. Write regular expressions that, when partnered with grep, will allow you to quickly isolate or locate content within text files
5. Create and Edit text files with vim
6. Introduce the vim text editor, with which you can open, edit, and save text files
7. Schedule future Linux tasks
8. Schedule tasks to automatically execute in the future
9. Manage priority of Linux processes
10. Influence the relative priorities at which Linux processes run
11. Control access to files with access control lists (ACL)
12. Manage file security using POSIX access control lists.
13. Manage SELinux security
14. Manage the Security Enhanced Linux (SELinux) behavior of a system to keep it secure in case of a network service compromise
15. Connect to network-defined users and groups
16. Configure systems to use central identity management services
17. Add disks, partitions, and file systems to a Linux system
18. Manage simple partitions and file systems
19. Manage logical volume management (LVM) storage
20. Manage logical volumes from the command line
21. Access networked attached storage with network file system (NFS)
22. Access (secure) NFS shares
23. Access networked storage with SMB
24. Use autofs and the command line to mount and unmount SMB file systems
25. Control and troubleshoot the Red Hat Enterprise Linux boot process
26. Limit network communication with firewall
27. Configure a basic firewall
28. Comprehensive review
29. Practice and demonstrate knowledge and skills learned in this course

RH199

RHCSA Rapid Track Course

Combines Red Hat System Administration I and II at a rapid pace

The RHCSA Rapid Track course (RH199) relates to Red Hat® Enterprise Linux® 7 and is designed for students who already have significant experience with Linux administration. The course reviews the tasks covered in Red Hat System Administration I (RH124) and II (RH134) at an accelerated pace.

Course overview:

On completion of course materials, students should be prepared to take the Red Hat Certified System Administrator (RHCSA) exam.

Prerequisites:

Students for the class should have 1-3years of full time Linux administration experience.

Course contents:

1. Accessing the command line
2. Log in to a Linux system and run simple commands using the shell
3. Managing files from the command line
4. Work with files from the bash shell prompt
5. Managing local Linux users and groups
6. Manage Linux users and groups and administer local password policies
7. Controlling access to files with Linux file system permissions
8. Set access permissions on files and interpret the security effects of different permission settings
9. Managing SELinux security
10. Use SELinux to manage access to files and interpret and troubleshoot SELinux security effects
11. Monitoring and managing Linux processes
12. Monitor and control processes running on the system
13. Installing and updating software packages
14. Download, install, update, and manage software packages from Red Hat and yum package repositories.
15. Controlling services and daemons
16. Control and monitor network services and system daemons using systemd
17. Managing Red Hat Enterprise Linux networking
18. Configure basic IPv4 networking on Red Hat Enterprise Linux systems
19. Analyzing and storing logs
20. Locate and interpret relevant system log files for troubleshooting purposes
21. Managing storage and file systems
22. Create and use disk partitions, logical volumes, file systems, and swap spaces
23. Scheduling system tasks
24. Schedule recurring system tasks using cron and system timer units
25. Mounting network file systems
26. Mount network file system (NFS) exports and server message block (SMB) shares from network file servers
27. Limiting network communication with firewall
28. Configure a basic local firewall
29. Virtualization and kickstart
30. Manage KVMs and install them with Red Hat Enterprise Linux using Kickstart

RH236

Red Hat Gluster Storage Administration

Deploy scalable, highly available storage on off-the-shelf hardware and in cloud environments

This course is for senior system and storage administrators who are interested in deploying scalable, highly available storage on off-the-shelf hardware and in cloud environments. This course is based on Red Hat Gluster Storage 3.

Course overview:

Students will learn how to install, configure, and maintain a cluster of Red Hat Storage servers. The course will also explore highly available common Internet file systems (CIFS) and network file systems (NFS) using Clustered Trivial DataBase (CTDB), unified file and object storage, and geo-replication. Finally, students will learn about the Hadoop plugin for Red Hat Storage, snapshots, and geo-replication.

This course can help you prepare for the Red Hat Certificate of Expertise in Hybrid Cloud Storage Exam (EX236).

Prerequisites:

- Red Hat Certified System Administrator (RHCSA) certification or an equivalent level of knowledge is highly recommended

For candidates who have not earned their RHCSA, confirmation of the needed skills can be obtained by passing the online skills assessment.

Course contents:

1. **Introduction to Red Hat Storage**
Understand Red Hat Storage server features and terminology.
2. **Install Red Hat Gluster Storage**
Install Red Hat Gluster Storage.
3. **Configure Red Hat Gluster Storage**
Build and configure a Red Hat Gluster Storage volume.
4. **Create Volumes**
Create different volume types.
5. **Configure Clients**
Access data on Red Hat Gluster storage volumes with various clients.
6. **Configure ACLs and Quotas**
Implement POSIX ACLs and quotas.
7. **Extend Volumes**
Grow storage volumes online.
8. **Configure IP Failover**
Configure IP failover.
9. **Configure Georeplication**
Configure georeplication for disaster recovery.
10. **Troubleshooting**
Perform basic troubleshooting tasks.
11. **Manage Snapshots**
Manage volume snapshots.
12. **Install Red Hat Gluster Storage Console**
Install Red Hat Gluster Storage Console.
13. **Manage Tiering**
Manage storage tiering for a volume.
14. **Monitor Red Hat Gluster Storage**
Monitor Red Hat Gluster Storage performance.
15. **Configure Network Encryption**
Configure Network Encryption for Red Hat Gluster Storage.
16. **Comprehensive review**
Practice and demonstrate knowledge and skills learned in Red Hat Gluster Storage Administration.

RH254

Red Hat System Administration III (RHEL 7)

Broaden your ability to administer Linux systems and prepare for your Red Hat Certified Engineer (RHCE) exam.

Course overview:

The course is focused on deploying and managing network servers running caching Domain Name Service (DNS), MariaDB, Apache HTTPD, Postfix SMTP nullclients, network file sharing with Network File System (NFS) and Server Message Block (SMB), iSCSI initiators and targets, advanced networking and firewall configurations, and the use of Bash shell scripting to help automate, configure, and troubleshoot the system. Through lectures and hands-on labs, students who have already earned the RHCSA certification will be exposed to all competencies covered by the Red Hat Certified Engineer (RHCE) exam (EX300).

Prerequisites:

RHCSA certification or equivalent experience. For candidates who have not earned their RHCSA certification, confirmation of the correct skills and knowledge can be obtained by passing the online skills assessment.

Course contents:

- 1. Control services and daemons**
Review how to manage services and the boot-up process using systemctl
- 2. Manage IPv6 networking**
Configure and troubleshoot basic IPv6 networking on Red Hat Enterprise Linux systems
- 3. Configure link aggregation and bridging**
Configure and troubleshoot advanced network interface functionality including bonding, teaming and local software bridges
- 4. Control network port security**
Permit and reject access to network services using advanced SELinux and firewall filtering techniques
- 5. Manage DNS for servers**
Set and verify correct DNS records for systems and configure secure DNS caching
- 6. Configure email delivery**
Relay all email sent by the system to an SMTP gateway for central delivery
- 7. Provide block-based storage**
Provide and use networked iSCSI block devices as remote disks
- 8. Provide file-based storage**
Provide NFS exports and SMB file shares to specific systems and users
- 9. Configure MariaDB databases**
Provide a MariaDB SQL database for use by programs and database administrators
- 10. Provide Apache HTTPD web service**
Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts
- 11. Write Bash scripts**
Write simple shell scripts using Bash
- 12. Bash conditionals and control structures**
Use Bash conditionals and other control structures to write more sophisticated shell commands and scripts
- 13. Configure the shell environment**
Customize Bash startup and use environment variables, Bash aliases, and Bash functions
- 14. Linux containers preview**
Preview the capabilities of Linux containers, Docker, and other related technologies in Red Hat Enterprise Linux 7
- 15. Comprehensive review**
Practice and demonstrate knowledge and skills learned in Red Hat System Administration III

RH259

Red Hat Enterprise Linux for SAP Solutions

Red Hat Enterprise Linux for SAP Solutions (RH259) is designed to teach Linux® administrators how to adapt Red Hat® Enterprise Linux for the installation and operation of the in-memory database SAP HANA. This course discusses the system architecture with a focus on performance tuning and troubleshooting in order to meet the requirements of SAP. This course is based on Red Hat Enterprise Linux 7.4.

Prerequisites:

Be a Red Hat Certified System Administrator (RHCSA), or demonstrate equivalent experience

Course contents:

- 1. Get help in Red Hat Enterprise Linux**
Resolve problems using Red Hat support utilities and on-line systems.
- 2. Perform service management and boot troubleshooting**
Control and monitor system daemons and troubleshoot the Red Hat Enterprise Linux boot process.
- 3. Configure system tunables**
Learn several methods to configure operating system tuning parameters.
- 4. Manage IPV4 networking review**
Configure and troubleshoot basic IPV4 networking on Red Hat Enterprise Linux systems.
- 5. Execute network teaming**
Learn how to configure 803.3ad network link aggregation.
- 6. Update software packages**
Download, install, update, and manage software packages from Red Hat and YUM package repositories.
- 7. Manage tuned profiles**
Deploy the automatic tuning daemon and create tuned profiles.
- 8. Limit resource usage**
Configure POSIX resource limits and manage control groups.
- 9. Understand storage profiling**
Describe and use tools to generate a storage profile.
- 10. Tune file systems**
Tune Linux filesystems for a database workload.
- 11. Explore SAP HANA architecture**
Understand the core concepts of the SAP HANA
- 12. Learn Red Hat Enterprise Linux for SAP HANA**
Understand the requirements of and how to install the SAP HANA add-on for Red Hat Enterprise Linux and SAP HANA Express.
- 13. Consider Red Hat Enterprise Linux for SAP HANA deployment options**
Learn various ways to deploy Red Hat Enterprise Linux for SAP HANA in the cloud or using Red Hat® Satellite or Red Hat® Ansible Automation.

RH294

Red Hat System Administration III: Linux Automation with Ansible (RHEL 8)

Learn how to automate Linux system administration tasks with Ansible

Red Hat System Administration III: Linux Automation with Ansible (RH294) is designed for Linux® system administrators and developers who need to automate provisioning, configuration, application deployment, and orchestration. You will learn how to install and configure Ansible® on a management workstation; prepare managed hosts for automation; write Ansible Playbooks to automate tasks; and run playbooks to ensure servers are correctly deployed and configured. This course is based on Red Hat® Enterprise Linux 8 and Red Hat® Ansible Engine 2.8.

Course overview:

- Install Ansible / Red Hat Ansible Engine on control nodes.
- Create and update inventories of managed hosts and manage connections to them.
- Automate administration tasks with Ansible Playbooks and ad hoc commands.
- Write effective playbooks at scale.
- Protect sensitive data used by Ansible with Ansible Vault.
- Reuse code and simplify playbook development with Ansible roles.

Prerequisites

Pass the Red Hat Certified System Administrator (RHCSA) exam (EX200), or demonstrate equivalent Red Hat Enterprise Linux knowledge and experience

Course contents:

1. **Introduce Ansible**
Describe Ansible concepts and install Red Hat Ansible Engine.
2. **Deploy Ansible**
Configure Ansible to manage hosts and run ad hoc Ansible commands.
3. **Implement playbooks**
Write a simple Ansible Playbook and run it to automate tasks on multiple managed hosts.
4. **Manage variables and facts**
Write playbooks that use variables to simplify management of the playbook and facts to reference information about managed hosts.
5. **Implement task control**
Manage task control, handlers, and task errors in Ansible Playbooks.
6. **Deploy files to managed hosts**
Deploy, manage, and adjust files on hosts managed by Ansible.
7. **Manage large projects**
Write playbooks that are optimized for larger, more complex projects.
8. **Simplify playbooks with roles**
Use Ansible roles to develop playbooks more quickly and to reuse Ansible code.
9. **Troubleshoot Ansible**
Troubleshoot playbooks and managed hosts.
10. **Automate Linux administration tasks**
Automate common Linux system administration tasks with Ansible.

RH299

RHCE Certification Lab (RHEL 7)

Prepare for the Red Hat Certified Engineer exam (EX300)

The RHCE® Certification lab (RH299) is designed for students seeking a hands-on, lab-based review prior to taking the Red Hat Certified Engineer (RHCE) exam. Students taking this course should have already completed their classroom training and simply be preparing to take or retake the exam.

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.

Prerequisites:

To qualify for this course, students must:

- 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 contents:

1. **Local and remote logins**
Review methods for accessing the system and engaging Red Hat Support
2. **File system navigation**
Copy, move, create, delete, link, and organize files while working from the Bash shell prompt
3. **Users and groups**
Manage Linux users and groups and administer local password policies
4. **File permissions**
Control access to files and directories using permissions and access control lists (ACLs)
5. **SELinux permissions**
Manage the SELinux behavior of a system to keep it secure in case of a network service compromise
6. **Process management**
Evaluate and control processes running on a Red Hat Enterprise Linux system
7. **Updating software packages**
Download, install, update, and manage software packages from Red Hat and yum package repositories
8. **Creating and mounting file systems**
Create and manage disks, partitions, and file systems from the command line
9. **Service management and boot troubleshooting**
Control and monitor system daemons and troubleshoot the Red Hat Enterprise Linux boot process
10. **Network configuration**
Configure basic IPv4 networking on Red Hat Enterprise Linux systems
11. **System logging and ntp**
Locate and accurately interpret relevant system log files for troubleshooting purposes
12. **Logical volume management**
Create and manage logical volumes from the command line

13. **Scheduled processes**
Schedule tasks to automatically execute in the future
14. **Mounting network file systems**
Use autofs and the command line to mount and unmount network storage with NFS and SMB
15. **Firewall configuration**
Configure a basic firewall
16. **Virtualization and kickstart**
Automate the installation of Red Hat Enterprise Linux on virtual machines with kernel-based virtual machine (KVM) and libvirt
17. **Managing IPv6 networking**
Configure and troubleshoot basic IPv6 networking on Red Hat Enterprise Linux systems
18. **Configuring link aggregation and bridging**
Configure and troubleshoot advanced network interface functionality including bonding, teaming, and local software bridges
19. **Controlling network port security**
Permit and reject access to network services using advanced SELinux and firewalld filtering techniques
20. **Managing DNS for Servers**
Set and verify correct DNS records for systems and configure secure-caching DNS
21. **Configuring E-mail Delivery**
Relay all e-mail sent by the system to a SMTP gateway for central delivery
22. **Providing block-based storage**
Provide and use networked iSCSI block devices as remote disks
23. **Providing file-based storage**
Provide NFS exports and SMB file shares to specific systems and users
24. **Configuring MariaDB databases**
Provide a MariaDB SQL database for use by programs and database administrators
25. **Providing Apache HTTPD Web Service**
Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts
26. **Writing Bash scripts**
Write simple shell scripts using Bash
27. **Bash conditionals and control structures**
Use Bash conditionals and other control structures to write more sophisticated shell commands and scripts
28. **Configuring the shell environment**
Customize Bash startup and use environment variables, Bash aliases, and Bash functions

RH318

Red Hat Enterprise Virtualization

Get the skills required to deploy and manage virtual environments

Red Hat® Enterprise Virtualization (RH318) teaches experienced system administrators how to use the virtualization features of Red Hat Enterprise Linux® managed through the Red Hat Enterprise Virtualization suite.

Course overview:

Students acquire the skills and knowledge to effectively create, deploy, manage, and migrate Linux and Microsoft Windows virtual machines hosted on either dedicated Red Hat Enterprise Virtualization Hypervisor nodes or Red Hat Enterprise Linux servers using Red Hat Enterprise Virtualization Manager. With hands-on labs and a deep dive into the technology, this training course is the perfect first step for enterprise planning or executing a virtualization deployment strategy. This course also helps candidates prepare for the Red Hat Enterprise Virtualization Administrator exam (EX318), which, if passed, earns them the Red Hat Certified Virtualization Administrator (RHCVA) certification.

Prerequisites:

- IT professionals who have earned an Red Hat Certified System Administrator (RHCSA) certification or maintain the equivalent experience with Linux
- System administration experience on Microsoft Windows operating systems is beneficial but not necessary for this course

Course contents:

1. **Red Hat Enterprise Virtualization overview**
Understand general virtualization, KVM concepts, and Red Hat® Enterprise Virtualization platform
2. **Red Hat Enterprise Virtualization Manager**
Install, test, remove, and troubleshoot Red Hat Enterprise Virtualization Manager
3. **Red Hat Enterprise Virtualization Hypervisor**
Install, configure, upgrade, and troubleshoot Red Hat Enterprise Virtualization Hypervisor
4. **Red Hat Enterprise Virtualization environment configuration**
Create and configure datacenters, clusters, storage domains, and logical networks
5. **Red Hat Enterprise Virtualization for Servers**
Install, perform basic management of, and troubleshoot virtual servers and images
6. **Red Hat Enterprise Virtualization for Desktops**
Install virtual desktops and configure paravirtualized drivers.
7. **Virtual machine templates**
Create Microsoft Windows and Red Hat Enterprise Linux® virtual machines with template images
8. **Pools and users**
Use pools and deploy the user portal with multilevel administrative roles
9. **Monitoring and reports**
Monitor Red Hat Enterprise Virtualization and create custom reports
10. **Advanced Red Hat Enterprise Virtualization**
Back up and restore Red Hat Enterprise Virtualization; CLI and API interfaces
11. **Red Hat Enterprise Linux hosts**
Manage virtual machines with Red Hat Network
12. **Migration and high availability**
Migrate a virtual machine and explore high availability
13. **Comprehensive review**
Apply the performance objectives learned throughout the course

RH342

Red Hat Enterprise Linux Diagnostics and Troubleshooting (RHEL 7)

The Red Hat Enterprise Linux Diagnostics and Troubleshooting course (RH342) provides system administrators with the tools and techniques they need to successfully diagnose, and fix, a variety of potential issues. Students will work through hands-on problems in various subsystems to diagnose and fix common issues.

Course overview:

Students will learn how to apply the scientific method to a structured form of troubleshooting. This approach is then used troubleshooting various types of problems, including boot issues, hardware issues, storage issues, RPM issues, network issues, third-party application issues, security issues, and kernel issues. At the end of the course students can complete various comprehensive review labs to test their skills.

Prerequisites:

Red Hat recommends these prerequisites:

- Have earned a Red Hat Certified System Administrator (RHCSA) or have similar experience
- It is recommended to students who have earned a Red Hat Certified Engineer (RHCE) or have similar experience

Course contents:

1. **Introduction to troubleshooting**
Describe a generalized strategy for troubleshooting.
2. **Take proactive steps to prevent small issues**
Prevent small issues from becoming large problems by employing proactive system administration techniques.
3. **Troubleshoot boot issues**
Identify and resolve issues that can affect a system's ability to boot.
4. **Identify hardware issues**
Identify hardware problems that can affect a system's ability to operate.
5. **Troubleshoot storage issues**
Identify and fix issues related to storage.
6. **Troubleshoot RPM issues**
Identify and fix problems in, and using, the package management subsystem.
7. **Troubleshoot network issues**
Identify and resolve network connectivity issues.
8. **Troubleshoot application issues**
Debug application issues.
9. **Deal with security issues**
Identify and fix issues related to security subsystems.
10. **Troubleshoot kernel issues**
Identify kernel issues and assist Red Hat Support in resolving kernel issues.
11. **Red Hat Enterprise Linux Diagnostics and Troubleshooting comprehensive review**
Practice and demonstrate knowledge and skills learned in Red Hat Enterprise Linux Diagnostics and Troubleshooting.

RH354

Red Hat Enterprise Linux 8 New Features for Experienced Linux Administrators

Prepare yourself for Red Hat Enterprise Linux 8 by learning about changes to the operating system

Red Hat Enterprise Linux 8 New Features for Experienced Linux Administrators (RH354) introduces you to updates in the upcoming Red Hat® Enterprise Linux® release. Intended for experienced Linux system administrators, this course offers a rapid orientation to Red Hat Enterprise Linux 8 based on the pre-release beta. The offering prepares operators, managers, principal system administrators, and other IT professionals with experience in Red Hat Enterprise Linux 7 for deployments and migrations to the new release.

This course is based on Red Hat Enterprise Linux 8.

Course overview:

- Install Red Hat Enterprise Linux 8 using the new packaging, modularity, and appstream features.
- Upgrade from Red Hat Enterprise Linux 7 to Red Hat Enterprise Linux 8 using new tools.
- Perform integrated file system and volume management using Stratis.
- Use Cockpit for system management.
- Create system images with Composer.
- Configure Identity Management using authselect.
- Understand the Wayland graphical display server.
- Deploy containers using the new integrated OCI runtime and tools.
- Configure firewall rules that use the new NFT back end.

Prerequisites:

Become a Red Hat Certified System Administrator (RHCSA), or demonstrate equivalent knowledge of and experience with Red Hat Enterprise Linux.

Course contents:

1. **Preview Red Hat Enterprise Linux 8**
Describe the major improvements and feature enhancements in the upcoming Red Hat Enterprise Linux 8 release.
2. **Install and upgrade to Red Hat Enterprise Linux 8**
Install Red Hat Enterprise Linux 8 or upgrade an existing system from Red Hat Enterprise Linux 7 to Red Hat Enterprise Linux 8.
3. **Provision and manage servers**
Prepare standardized systems by generating system images for deployment, managing them with remote web-based administration, and automating provisioning with Red Hat Enterprise Linux System Roles for Red Hat® Ansible Engine.
4. **Adapt to core system changes**
Manage core system components that have had significant changes in Red Hat Enterprise Linux 8.
7. **Implement storage using new features**
Explore the major enhancements in local and remote file system and volume management components.
8. **Manage containers with the new runtime**
Explain the new container runtime engine and tools that replace the Docker container engine.
9. **Implement enhanced networking features**
Describe the major enhancements in network packet processing and network device management.
10. **Adapt to virtualization improvements**
Learn to implement the new features and management tools for virtualization management.

RH362

Red Hat Security: Identity Management and Active Directory Integration

Configure and manage Red Hat Identity Management (IdM)

Red Hat Security: Identity Management and Active Directory Integration (RH362) provides the skills to configure and manage IdM, the comprehensive Identity Management solution bundled with Red Hat® Enterprise Linux. This course is based on Red Hat Identity Manager 4.5 (bundled with RHEL), Red Hat® Enterprise Linux 7.4, Microsoft Windows Server 2016, Red Hat Satellite 6.3, Red Hat Ansible Tower 3.2.2, and Red Hat Ansible 2.5.

Course overview:

This course teaches you skills on the most requested Red Hat Identity Management (IdM) capabilities, including Active Directory trusts, multi-product federation, configuration management with Ansible, integrated certificate management, single sign-on, one-time passwords, and cybersecurity policy conformance.

Prerequisites:

- Be certified as a Red Hat Certified System Administrator (RHCSA) (required)
- Be certified as a Red Hat Certified Engineer (RHCE) (recommended, but not required)
- Attend Red Hat Server Hardening (RH413)

Course contents:

- 1. Install Red Hat Identity Management**
Describe and install Red Hat Identity Management (IdM).
- 2. Centralize Identity Management**
Explain the IdM server services, explore IdM clients access methods, and install an IdM client.
- 3. Authenticate identities with Kerberos**
Define the Kerberos protocol and configure services for Kerberos authentication.
- 4. Integrate IdM with Active Directory**
Create a trust relationship with Active Directory.
- 5. Control user access**
Configure users for authorized access to services and resources.
- 6. Manage a public key infrastructure**
Manage certificate authorities, certificates, and storing secrets.
- 7. Maintain IdM operations**
Troubleshoot and recover Identity Management.
- 8. Integrate Red Hat products with IdM**
Configure major services to share the IdM authentication database.
- 9. Install scalable IdM**
Construct a resilient and scalable Identity Management topology.

RH403

Red Hat Satellite 6 Administration

Red Hat Satellite 6 Administration (RH403) is a lab-based course that explores the concepts and methods necessary for successful large-scale management of Red Hat® Enterprise Linux® systems. You will learn how to configure Red Hat Satellite 6 on a server and populate it with software packages. You will use Red Hat® Satellite to manage the software development life cycle of a subscribed host and its configuration, and learn how to provision hosts integrated with software and Ansible® configuration management upon deployment.

This course is based on Red Hat® Enterprise Linux® 8 and Red Hat® Satellite 6.6.

Course overview:

- Verify a Red Hat Satellite 6.6 installation.
- Regulate Red Hat Satellite with organizations, locations, users, and roles.
- Manage software with Red Hat Satellite environments and content views.
- Use Red Hat Satellite to configure hosts with Ansible playbooks and roles.
- Provision hosts with integrated software and configuration management.
- Implement Metal-as-a-Service (MaaS) with Satellite discovery and provisioning of unprovisioned hosts.

Prerequisites:

- Be a Red Hat Certified Engineer (RHCE®) or demonstrate equivalent experience
- Have experience with Red Hat Satellite 6

Course contents:

- 1. Plan and deploy Red Hat Satellite**
Plan a Red Hat Satellite deployment, then perform installation and initial configuration of Red Hat Satellite servers.
- 2. Manage software life cycles**
Create and manage Red Hat software deployment life cycle environments.
- 3. Register hosts**
Register and configure your Red Hat Enterprise Linux systems to use Red Hat Satellite, then organize those systems into groups for easier management.
- 4. Deploy software to hosts**
Manage software deployment to registered hosts of your Red Hat Satellite infrastructure and practice managing environment paths, life cycle environments, and content views.
- 5. Deploy custom software**
Create, manage, and deploy custom software products and repositories.
- 6. Deploy Satellite capsule servers**
Perform installation and initial configuration of Red Hat Satellite capsule servers as components of a deployment plan.
- 7. Run remote execution commands**
Configure the ability to run ad hoc and scheduled tasks on managed hosts using a variety of configuration management tools.
- 8. Provision hosts**
Configure Satellite server for host deployment and perform host provisioning.
- 9. Manage Red Hat Satellite using the API**
Integrate Red Hat Satellite functionality with custom scripts or external applications that access the API over HTTP.
- 10. Plan a Red Hat Satellite deployment on a cloud platform**
Plan a Red Hat Satellite deployment, installation, and initial configuration on a cloud platform.

11. **Perform Red Hat Satellite server maintenance**
Manage Red Hat Satellite for security, recoverability, and growth.
12. **Comprehensive review**
Install and configure Red Hat Satellite Server, then provision content hosts.

RH415

Red Hat Security: Linux in Physical, Virtual, and Cloud (RHEL 7)

Red Hat Security: Linux in Physical, Virtual, and Cloud (RH415) is designed for security administrators and system administrators who need to manage the secure operation of servers running Red Hat® Enterprise Linux®, whether deployed on physical hardware, as virtual machines, or as cloud instances.

This course is based on Red Hat Enterprise Linux 7.5, Red Hat Satellite 6.3, Red Hat Ansible® Engine 2.5, Red Hat Ansible Tower 3.2, and Red Hat Insights.

Course overview:

Maintaining security of computing systems is a process of managing risk through the implementation of processes and standards backed by technologies and tools. In this course, you will learn about resources that can be used to help you implement and comply with your security requirements.

Prerequisites:

- Be a Red Hat Certified Engineer (RHCE®), or demonstrate equivalent Red Hat Enterprise Linux knowledge and experience

Course contents:

- 1. Manage security and risk**
Define strategies to manage security on Red Hat Enterprise Linux servers.
- 2. Automate configuration and remediation with Ansible**
Remediate configuration and security issues with Ansible Playbooks.
- 3. Protect data with LUKS and NBDE**
Encrypt data on storage devices with LUKS and use NBDE to manage automatic decryption when servers are booted.
- 4. Restrict USB device access**
Protect system from rogue USB device access with USBGuard.
- 5. Control authentication with PAM**
Manage authentication, authorization, session settings, and password controls by configuring pluggable authentication modules (PAMs).
- 6. Record system events with audit**
Record and inspect system events relevant to security, using the Linux kernel's audit subsystem and supporting tools.
- 7. Monitor file system changes**
Detect and analyze changes to a server's file systems and their contents using AIDE.
- 8. Mitigate risk with SELinux**
Improve security and confinement between processes by using SELinux and advanced SELinux techniques and analyses.
- 9. Manage compliance with OpenSCAP**
Evaluate and remediate a server's compliance with security policies by using OpenSCAP.
- 10. Automate compliance with Red Hat Satellite**
Automate and scale your ability to perform OpenSCAP checks and remediate compliance issues using Red Hat Satellite.
- 11. Analyze and remediate issues with Red Hat Insights**
Identify, detect, and correct common issues and security vulnerabilities with Red Hat Enterprise Linux systems by using Red Hat Insights.
- 12. Perform a comprehensive review**
Review the content covered in this course by completing hands-on review exercises.

RH436

Red Hat Enterprise Clustering and Storage Management

Manage Red Hat Enterprise Linux deployments

The intensive, hands-on Red Hat® Enterprise Clustering and Storage Management course teaches storage management, the Red Hat High Availability Add-On, and the shared storage technology delivered by Red Hat Global File System 2 (GFS2) and Red Hat Storage Server.

Course overview:

Created for senior Linux® system administrators, this four-day course strongly emphasizes lab-based activities. You'll learn how to deploy and manage shared storage and server clusters that provide highly available network services to a mission-critical enterprise environment.

This course also helps you prepare for the Red Hat Certificate of Expertise in Clustering and Storage Management exam (Ex436).

Prerequisites:

If you want to take this course without the exam (RH436) and have not earned your RHCE certification, you can confirm whether you have the correct skill-set knowledge by passing the online skills assessment.

Course contents:

- Clusters and storage**
Get an overview of storage and cluster technologies
- ISCSI configuration**
Set up and manage iSCSI
- UDEV**
Learn basic manipulation and creation of udev rules
- Multipathing**
Combine multiple paths to SAN devices into one fault-tolerant virtual device
- Red Hat high-availability overview**
Learn the architecture and component technologies in the Red Hat® High Availability Add-On
- Quorum**
Understand quorum and quorum calculations
- Fencing**
Understand fencing and fencing configuration
- Resources and resource groups**
Understand rgmanager and the configuration of resources and resource groups
- Advanced resource management**
Understand resource dependencies and complex resources
- Two-node cluster issues**
Understand the use and limitations of two-node clusters
- LVM management**
Review LVM commands and Clustered LVM (CLVM)
- Global File System 2**
Understand the GFS2 file system and use tools to create, maintain, and troubleshoot it
- XFS**
Explore the features of the XFS® file system and tools required for creating, maintaining, and troubleshooting
- Red Hat Storage**
Work with Gluster to create and maintain a scale-out storage solution
- Comprehensive review**
Set up high-availability services and storage

RH442

Red Hat Enterprise Performance Tuning (RHEL 7 or 8)

Performance tuning and capacity planning for Red Hat Enterprise Linux

Red Hat® Enterprise Performance Tuning is designed to teach senior Linux® system administrators the methodology of performance tuning for Red Hat Enterprise Linux.

Course overview:

This course discusses system architecture with an emphasis on understanding the implications on system performance, methods for testing the effects of performance adjustments, open source benchmarking utilities, methods for analyzing system and networking performance, and tuning configurations for specific application loads.

This course can help you prepare for the Red Hat Certificate of Expertise in Performance Tuning exam (EX442). This version of the course includes the exam.

Prerequisites:

RHCE certification or equivalent experience

Course contents:

- 1. Introduction to performance tuning**
Understand the basic principles of performance tuning and analysis
- 2. Collecting, graphing, and interpreting data**
Gain proficiency in using basic analysis tools and in evaluating data
- 3. General tuning**
Learn basic tuning theory and mechanisms used to tune the system
- 4. Hardware profiling**
Understand and analyze hardware
- 5. Software profiling**
Analyze CPU and memory performance of applications
- 6. Mail server tuning**
Learn about basic storage tuning using an email server as an example
- 7. Large memory workload tuning**
Understand memory management and tuning
- 8. HPC workload tuning**
Understand tuning for CPU-bound applications
- 9. File server tuning**
Understand storage and network tuning in the context of a file server application
- 10. Database server tuning**
Tune memory and network performance using a database application as an example
- 11. Power usage tuning**
Tune systems with power consumption in mind
- 12. Virtualization tuning**
Tune 'host' and 'guest' for efficient virtualization

Course outline is subject to change with technology advances and as the nature of the underlying job evolves. For questions or confirmation on a specific objective or topic, contact a training specialist.

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