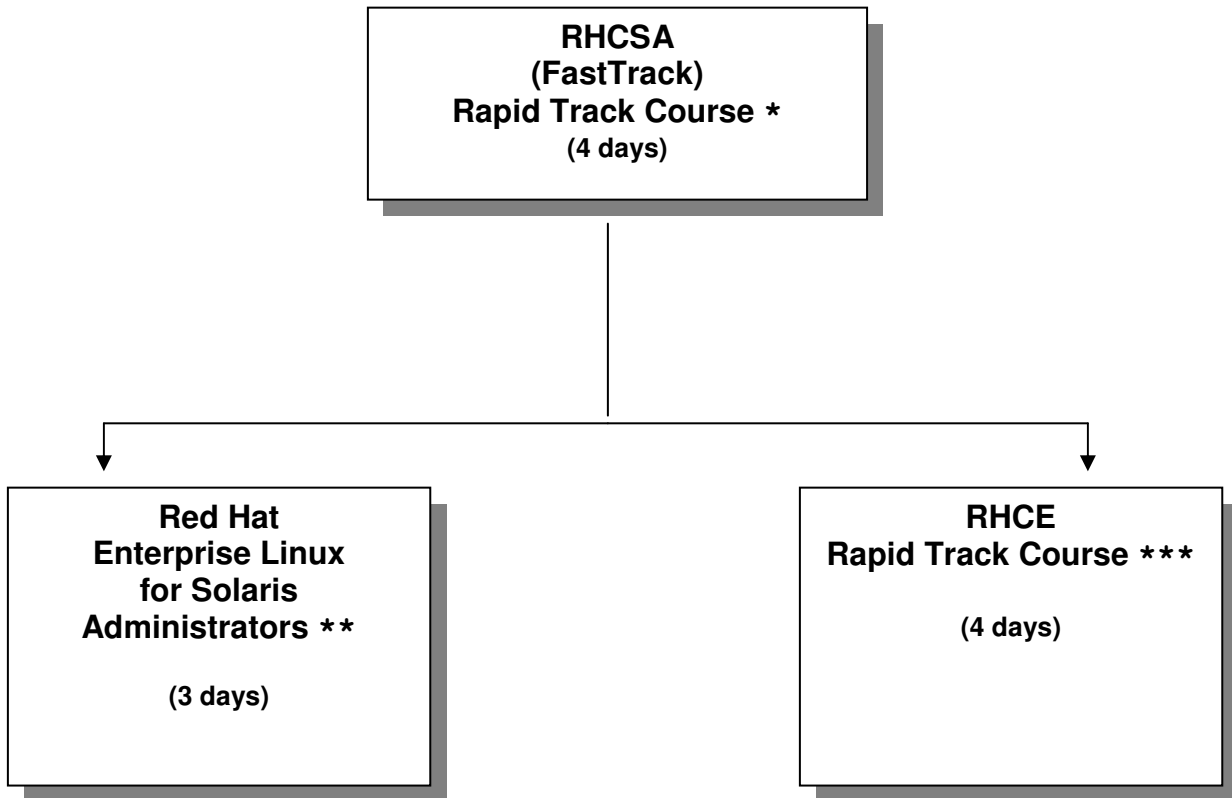


Red Hat Enterprise Linux (RHEL 7) Courses



- equivalent to Red Hat courses: *(199) **(290) *** (254)
- all participants use their own virtualized RHEL 7 system for hands-on and lab exercises

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RHCSA (FastTrack) Rapid Track

COURSE DESCRIPTION

This course presents the working environment of a **RHEL 7** system.

It introduces commonly required operations that can be performed by entering commands interactively in a command terminal, along with functions available in the **GNOME** Desktop Environment . This course will concentrate on **Red Hat Enterprise Linux (RHEL), version 7 (all update levels)**.

This course is the **equivalent** of **Red Hat** course **199**, to prepare for the **RHCSA 7** examination.

COURSE OBJECTIVES

Each participant will be able to use **RHEL 7 Bash Shell** techniques and commands to maintain collections of files, create files using interactive editor utilities, create and execute basic command procedures, communicate with other users, and tailor the interactive environment to meet their needs. Major administrative features to setup and control a functioning **RHEL 7** system will also be shown.

COURSE TOPICS

Accessing the Command Line

- graphical login

- non-graphical login

- Unix / Linux** standards

- BASH** command line format

- RHEL 7** help information

- command line operations - remote host - **ssh**

- using the **root** account

RHCSA (FastTrack) Rapid Track

COURSE TOPICS

Managing Files from the Command Line

- system directories hierarchy
- file manipulation commands
- file characteristics information
- defining and using hard links
- defining and using symbolic links
- standard input, output, error, and pipelines
- vim** editor
- tar**, **gzip**, **gunzip** utilities
- remote file operations - **ssh**
- regular expression

Monitoring and Managing Linux Processes

- user working environment
- process information
- adjusting process priority
- process monitoring tools

Scheduling System Tasks

- submitting a batch job with **at**
- submitting a batch job with **crontab**
- crontab** file entry layout
- uses of **crontab** entries
- periodic processing via **crond**
- periodic processing via a **systemd** timer

Control Access to Files with Linux File System Permissions

- standard file permissions
- special file attributes (**SUID**, **SGID**, **STICKY**)
- special directory attributes (**SGID**, **STICKY**)
- Access Control Lists (**ACLs**)

RHCSA (FastTrack) Rapid Track

COURSE TOPICS

Installing and Updating Software Packages

managing **RHEL 7** software packages

rpm command usage

yum command usage

yum repository setup

Apache web server configuration

building a **kickstart** file

initiating Installation via a **kickstart** file

Controlling Services and Daemons

RHEL 7 startup sequence

Grand Unified Boot Loader (**GRUB**)

Grand Unified Boot Loader (**GRUB**) - components

Grand Unified Boot Loader (**GRUB**) - variables

Grand Unified Boot Loader (**GRUB**) - menuentries

RHEL 7 reset forgotten root password

systemd target files

systemd services

systemd actions

boot logging

systemd journal logging

shutdown

Analyzing and Storing Logs

system logging mechanism

kernel message logging

system logging configuration

Managing RHEL 7 Networking

network configuration

host configuration

gateway configuration

maintaining system time via an **ntp** server

maintaining system time via **chrony**

time zone manipulation

RHCSA (FastTrack) Rapid Track

COURSE TOPICS

Mounting Network File Systems

setting up the Network File System
starting up the Network File System
using the Network File System
automounter - direct / indirect maps
Samba / CIFS system software
Samba / CIFS usage

Limiting Network Communication with firewalld

service specific access control
firewalld components
iptables firewall

Managing Local Linux Users and Groups

user account management
/etc/passwd file
/etc/group file
user account creation
environment files
password aging
account deletion
LDAP resolver (client) host

Managing Storage and File Systems

disk device and partition operations
disk device information
MBR partition table concepts
GPT partition table concepts
RHEL 7 system (boot) disk
MBR partition operations
GPT partition operations
file system operations
RHEL 7 ext* file system layout
ext4 filesystem
RHEL 7 xfs file system layout
xfs filesystem
swapping and paging spaces

RHCSA (FastTrack) Rapid Track

COURSE TOPICS

Managing Storage and File Systems

- logical volume management concepts
- logical volume management utilities
- using the logical volume manager
- physical volumes
- volume groups
- logical volumes
- using logical volumes as swap space

Managing SELinux Security

- SELinux** concepts
- SELinux** files and utilities

Virtualization and Kickstart

- virtual machine requirements
- virtual machine creation
- kickstart with **kvm** installation
- virtual machine control
- virtual machine console

Comprehensive review - practice test

COURSE DURATION

This course normally requires **four** (4) days, approximately 50% lecture and 50% lab time.

COURSE PREREQUISITES

This course is a concentrated preparation for the RHCSA 7 examination.

Participants are assumed to be (**Red Hat Enterprise**) **Linux** system administrators working on production level configurations, and have used and demonstrated competencies in **Linux** fundamentals and entry-level administrative functions.

Red Hat Enterprise Linux 7 for Solaris Administrators

COURSE DESCRIPTION

This course presents selected parts of a **RHEL7** system environment. It shows best practices in areas that include: shell command line and graphical environments, security, scripting (languages), performance management, task automation, and package management and building.

This course is the **equivalent** of **Red Hat** course **290**.

COURSE TOPICS

The Userspace / System Environment

- Comparison of **BASH** and **Korn** shells (features)

- Script development

- Additions to file level security

 - ACLs** - file and directory (default)

 - chattr** and **lsattr**

 - SELinux**

 - file operation auditing

- Additions to system level security

 - root** account history file control

 - GRUB** level (passwords)

 - PAM** (pluggable authentication)

- Text Editors

 - vim** extended features

 - gvim**, **gedit**, **nedit**

- Automating Tasks

 - Additional **cron** features

 - Understanding **anacron**

Package Management Environment

- Comparison of **rpm** and **yum**

- Advanced features of **rpm**

- Steps in building a **yum** repository

 - Building binary distribution packages

Red Hat Enterprise Linux for Solaris Administrators

COURSE TOPICS

Startup and Shutdown

- Components involved in the **Linux** boot
- Grub** loader stages and configuration
- Default bootstrap
- Boot to single-user mode
- Linux** startup methods, tools, and procedures
- Understanding **run levels**
- Adding procedures to the startup mechanisms
- Shutdown methods and control

Managing Disk and Tape Volumes

- Commands to manipulate disks/filesystems
 - partitioning disk surfaces with **fdisk**
 - creating **ext4/xfs** file systems (**mkfs**)
 - manipulating file system structures
 - verifying file system structures (**fsck**)
 - making file systems available to software (**mount**)
 - configuring swap space(s)
 - Logical Volume Management (**LVM**)

Network Setup and Configuration

- TCP/IP** address selection
- Host names and related files
- Configuring network devices
- Network testing with **ping**

Basic Server Setups (Procedures and Mechanisms)

- NFS (server and client)**
- DNS (client)**
- FTP (server)**
- Web (Apache server)**
- Samba / CIFS**

Red Hat Enterprise Linux for Solaris Administrators

COURSE TOPICS

RHEL 7 Performance Management Capabilities

Monitoring tools provided with **RHEL7 (Review)**

***stat** family of programs

sar / sadc, watch

Third party / freely available tools

procinfo, atop, htop, nmon

Kernel tunables (viewing, changing via **sysctl**
and **/proc** based files)

Memory management

 caching (levels and controls)

CPU management

 defining (and using) processor sets

 isolating **CPU** (cores) at boot time

 specifying default affinity for scheduling

Disk I/O management

RHEL7 I/O elevator scheduling

 comparing I/O scheduling methods

 manipulating I/O priorities

COURSE DURATION

This course normally requires **three** (3) days, approximately 50% lecture and 50% lab time.

COURSE PREREQUISITES

Participants are assumed to be **Oracle Solaris 10 / 11** system administrators working on production level configurations, and have used and demonstrated competencies in **Linux** fundamentals and entry-level administrative functions.

RHCE Rapid Track

System Administration III

COURSE DESCRIPTION

This course will teach the commands and methods needed to setup and manage advanced networking, security, and performance management on a **RHEL 7** system. The course will also use a problem solving approach in the lab exercises to teach system administrators advanced topics, for long-term management of the system.

This course is the **equivalent** to **Red Hat** course **299**, is used for preparation for the **RHCE** certification examination.

Systems: **Red Hat Enterprise Linux Version 7 (all update levels)**.

COURSE OBJECTIVES

On completion of this course, a systems administrator should be able to install, update, and boot the **RHEL 6** operating system; setup a **RHEL 7** system to act as a: **DNS** server (and client), **VSFTPD** server, **Apache** web server, email server, **SAMBA** host. Topics covering basic encryption, performance management tools, and usage of **PAM** will also be covered.

COURSE TOPICS

Controlling Services and Daemons

- RHEL 7** startup configuration

- systemd target files

- systemd services and actions

- systemd journal logging

- RHEL 7** system initialization sequence

- GRUB** loader

- kernel maintained information (/proc based files)

- modifying **RHEL 7** kernel parameters

- supplied performance monitoring tools

- creating system utilization reports

- Kerberos** client setup

- maintaining system time via an **NTP** and **chrony** server

RHCE Rapid Track

System Administration III

COURSE TOPICS

Managing IPv6 Networking

- network configuration
- host configuration
- gateway configuration
- network configuration
- host configuration
- gateway configuration
- IPv6** networking addressing
- IPv6** network configuration
- IPv6** gateway configuration

Configuring Link Aggregation and Bridging

- channel bonded interfaces
- network teaming interfaces

Network Port Security

- service specific access control
- network ports
- firewalld** components
- firewalld** control
- ssh** key based authentication
- ssh** port forwarding
- SELinux** port labeling
- SELinux** booleans
- SELinux** context labels

Managing DNS for Servers

- setting up a **BIND** primary name server
- setting up a caching-only **BIND** name server
- controlling the **named** daemon

Configuring Email Transmissions

- mail components
- postfix** components
- postfix** null-client configuration

RHCE Rapid Track

System Administration III

COURSE TOPICS

Providing File-based 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
- Network File System with **Kerberos** authentication
- Samba/CIFS** configuration
- Samba/CIFS** usage

Web Server Additional Configuration

- Apache** Web Server operation
- Apache** Web Server standard configuration
- Apache** Web Server standard configuration
- Apache** Web Server **CGI**
- Apache** Web Server user public directories
- Apache** Web Server virtual hosts
- Apache** Web Server protected directories
- TLS**-enabled **Apache** Web Server

Configuring MariaDB Databases

- MariaDB** requirements
- MariaDB** installation
- MariaDB** usage
- MariaDB** backup (and restore)

Configuring the Shell Environment

- comparison of shell environments
- environment files
- environment settings
- environment variables

RHCE Rapid Track

System Administration III

COURSE TOPICS

Writing Bash Scripts

- shell variants
- shell versions
- comparison of shell scripting features
- shell script development
- debugging a shell script
- user defined variables
- obtaining a variable value from standard input
- command substitution
- command line arguments

Bash Conditionals and Control Structures

- if construct
- numeric variables
- while and until loops
- variable access within loops
- formatted output
- here documents
- case construct
- administrative menus
- advanced shell features
- for loops
- associative arrays
- options processing

Controlling Linux Containers with Docker

- introduction to **Linux** containers
- Docker**

Comprehensive review - practice test

RHCE Rapid Track

System Administration III

COURSE DURATION

This course normally requires **four** (4) days, approximately 60% lecture, and 40% lab time.

COURSE PREREQUISITES

This course is a concentrated preparation for the RHCE examination.

Participants are assumed to be (**Red Hat Enterprise**) **Linux** system administrators working on production level configurations, and have used and demonstrated competencies in **Linux** fundamentals and entry-level administrative functions.