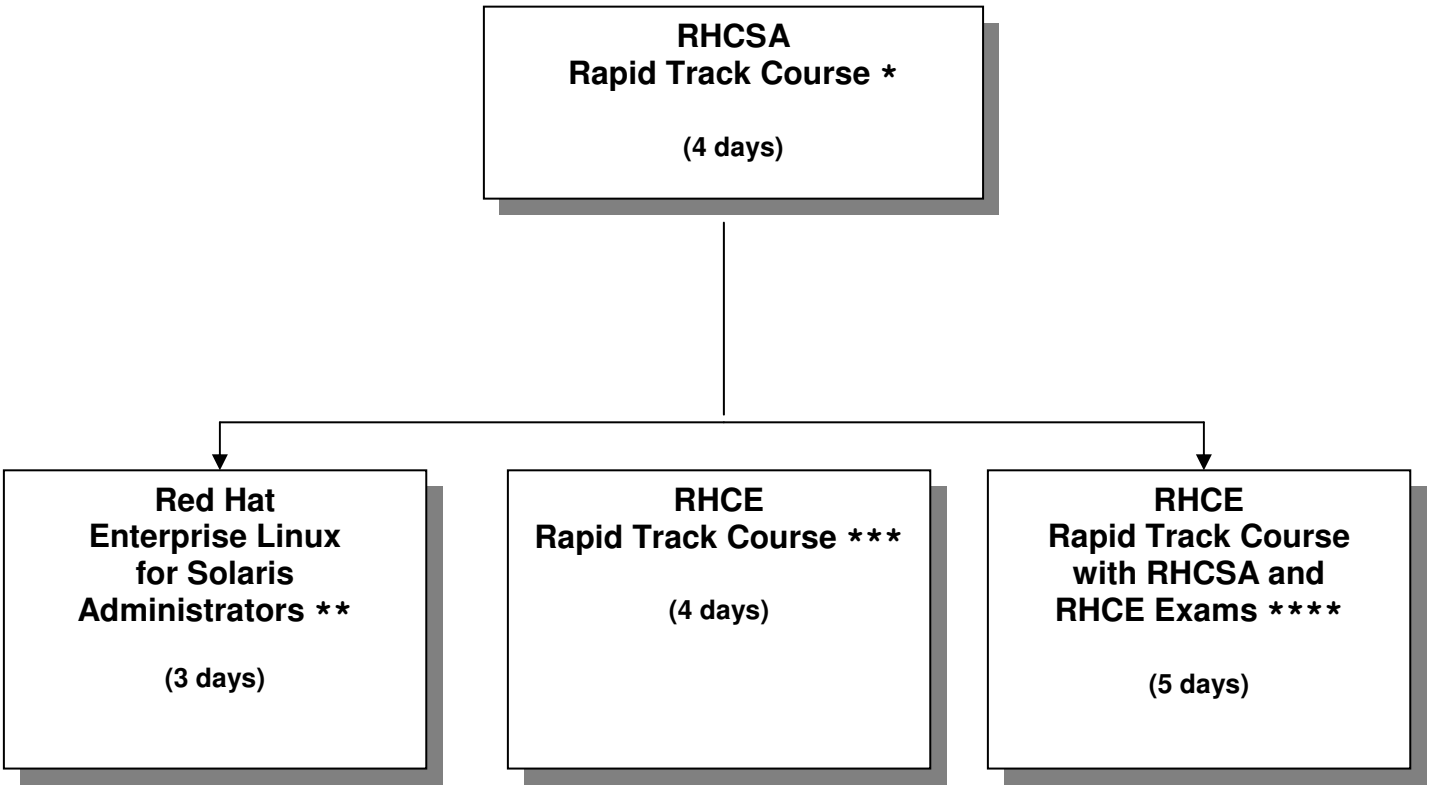
Red Hat Enterprise Linux (RHEL 6) Courses



- **equivalent to Red Hat courses: *(199) **(290) ***(299) ****(300)**
- **all participants use their own virtualized RHEL 6 system for hands-on and lab exercises**

For more information, contact:
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RHCSA Rapid Track Course

COURSE DESCRIPTION

This course presents the working environment of a **RHEL 6** system. It introduces commonly required operations that can be performed by entering commands interactively in a command terminal, along with functions available in the **K** Desktop Environment (**KDE**) and **Gnome**. This course will concentrate on **Red Hat Enterprise Linux** (**RHEL**), **version 6** (**all update levels**).

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

COURSE OBJECTIVES

Each participant will be able to use **RHEL 6 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. Basic administrative features to setup a functioning **RHEL6** system will also be shown.

COURSE TOPICS

Command Line Process Management

- Logging Into an **RHEL 6** System
- **Bash** Shell Syntax Rules
- Documentation via **man** and **info**
- Command Line Editing

Administer Remote Systems

- **RHEL 6** System Overview
- Graphical User Environments (**KDE, GNOME**)
- Using **GUI**s remotely
- Customizing the Graphical Environments

Get Help in a Graphical Environment

- **RHEL 6** on-line documentation
- Displaying local documentation in **KDE** / **GNOME**
- Using **GUI**s remotely

RHCSA Rapid Track Course

COURSE TOPICS

Installation and Managing Software

- Installation types and methods
- Installing the **RHEL 6** operating system
- Maintaining the system via patches
- Managing system software (**rpm**)
- Installing the **RHEL 6** operating system via **kickstart**
- Package management via **yum** (repositories)

Control the Boot Process

- Components involved in the **RHEL 6** boot
- **Grub** loader stages and configuration
- Default bootstrap
- Boot to single-user mode
- **Linux** startup methods, tools, and procedures
- Understanding **run levels** and **Upstart init**
- Adding procedures to the startup mechanisms
- Shutdown methods and control

Managing User Accounts

- **UID** and **GID** concepts
- Creation of a user account
- Security through **password aging**
- Controlling access by groups
- Connecting to an **LDAP** server

Managing Simple Partitions and File Systems

- Commands to manipulate disks/filesystems
  - partitioning disk surfaces with **fdisk**
  - creating **ext2**/**ext3**/**ext4** file systems (**mkfs**)
  - manipulating file system structures
  - verifying file system structures (**fsck)**
  - making file systems available to software (**mount**)
  - configuring swap space(s)
- Encrypted File Systems

RHCSA Rapid Track Course

COURSE TOPICS

Logical Volume Management
- Commands to manipulate physical volumes
- Commands to manipulate volume groups
- Commands to manipulate logical volumes

Using File System Access Control Lists (ACLs)
- Defining Access Control Lists (**ACL**s)
  - files
  - directory (defaults)

Network Configuration and Troubleshooting
- **TCP/IP** address selection
- Host names and related files
- Configuring network devices
- Network testing with **ping**
- Network utilities: **telnet, rlogin, rcp, rsh, ssh**

Deploy and Secure File System Services
- Network File System (**NFS**)
- Automounter (**autofs**)
- Basic firewall setup (**iptables**)

Manage System Resources
- Schedule repeating tasks with **crontab**
- Controlling **rsyslog**

Tune and Maintain the Kernel
- Kernel (boot time) options
- Updating kernel modules

RHCSA Rapid Track Course

COURSE TOPICS

Managing SELinux
- **SELinux** basics
- Control via booleans
- Understanding file contexts

Managing Virtual Machines
- **KVM** concepts and requirements
- Creating and controlling virtual machines

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 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 for Solaris Administrators

COURSE DESCRIPTION

This course presents selected parts of a **RHEL6** 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
  - **ACL**s - 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 **ext2**/**ext3**/**ext4** 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)

- **DNS (client)**
- **FTP**
- **Web (Apache)**

Red Hat Enterprise Linux for Solaris Administrators

COURSE TOPICS

RHEL 6 Performance Management Capabilities

Monitoring tools provided with **RHEL6 (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
- **RHEL6 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** system administrators working on production level configurations, and have used and demonstrated competencies in **Linux** fundamentals and entry-level administrative functions.

RHCE Rapid Track Course

COURSE DESCRIPTION

This course will teach the commands and methods needed to setup and manage advanced networking, security, and performance management on a **RHEL 6** system. The course will also use a problem solving approach in the lab exercises to teach system administrators advanced topics, for long-term mangement 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 6 (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 6** 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

Advanced RHEL 6 Networking Features

- automated network attributes setup
- network address types
- network information files
- controlling **telnet** services
- controlling trusted host services
- **TCP** Wrappers
- **syslog** (and remote logging)
- **logwatch**

RHCE Rapid Track Course

COURSE TOPICS

Domain Name System (DNS) Server / Client Setup

- reasons for **DNS**
- **DNS** layout and overview
- **FQDN** (fully qualified domain (host) name)
- **DNS** server types
- name resolution
- primary name server setup
- secondary and caching-only name server setup
- testing a primary name server
- resolver host setup
- controlling **named (**via **rndc)**

RHEL 6 Server Setups

SAMBA

- **SAMBA** overview
- basic **SAMBA** server installation
- accessing **SAMBA** server shared files
- **SAMBA** shared printer setup and access

sendmail

- mail components
- **sendmail** daemon
- changing sendmail configuration files
- replacing **sendmail** with **postfix**

web server

- **Apache** Web Server packages
- configuration files
- logging files
- executable scripts

ftp

- **ftp** servers overview
- **gssftp**
- **vsftpd**

RHCE Rapid Track Course

COURSE TOPICS

RHEL 6 Server Setups

NFS

NFS server setup
NFS client
automounter

RHEL 6 Security

Unix types
Administrator responsibilities
Basic security considerations
Types of security and attacks
Reacting to a security problem

special file attributes (**SUID, SGID, STICKY**)
Access Control Lists (**ACLs**)
Default Access Control Lists (**ACLs**)
PAM (Pluggable Authentication Modules)

IPTABLES (Netfilter firewall)

Data encryption in **RHEL6 (files** and **filesystems)**
SSH
Using **SSH** tunnels for secure graphical connections

GRUB level security (boot files)

RHCE Rapid Track Course

COURSE TOPICS

Administrator Level BASH Shell Scripting

rules for writing shell scripts
shell built-in constructs
conditional and looping expressions
processing command line arguments and options
error and **control**/**C** handling

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.

RHCE Rapid Track Course with RHCSA and RHCE Exams

COURSE DESCRIPTION

This course will teach the commands and methods needed to setup and manage advanced networking, security, and performance management on a **RHEL 6** system. The course will also use a problem solving approach in the lab exercises to teach system administrators advanced topics, for long-term mangement of the system.

This course is the **equivalent** to **Red Hat** course **300**, is used for preparation for the **RHCSA and RHCE** certification examinations.

Systems: **Red Hat Enterprise Linux Version 6 (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 6** 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

Advanced RHEL 6 Networking Features

- automated network attributes setup
- network address types
- network information files
- controlling **telnet** services
- controlling trusted host services
- **TCP** Wrappers
- **syslog** (and remote logging)
- **logwatch**

RHCE Rapid Track Course with RHCSA and RHCE Exams

COURSE TOPICS

Domain Name System (DNS) Server / Client Setup

reasons for **DNS**
DNS layout and overview
FQDN (fully qualified domain (host) name)
DNS server types
name resolution
primary name server setup
secondary and caching-only name server setup
testing a primary name server
resolver host setup
controlling **named (**via **rndc)**

RHEL 6 Server Setups

SAMBA

SAMBA overview
basic **SAMBA** server installation
accessing **SAMBA** server shared files
SAMBA shared printer setup and access

sendmail

mail components
sendmail daemon
changing sendmail configuration files
replacing **sendmail** with **postfix**

web server

Apache Web Server packages
configuration files
logging files
executable scripts

ftp

ftp servers overview
vsftpd

RHCE Rapid Track Course with RHCSA and RHCE Exams

COURSE TOPICS

RHEL 6 Server Setups

NFS

NFS server setup
NFS client
automounter

Logical Volume Management

Setup and configuration

RHEL 6 Security

Unix types
Administrator responsibilities
Basic security considerations
Types of security and attacks
Reacting to a security problem

special file attributes (**SUID, SGID, STICKY**)
Access Control Lists (**ACLs**)
Default Access Control Lists (**ACLs**)
PAM (Pluggable Authentication Modules)

IPTABLES (Netfilter firewall)

Data encryption in **RHEL6 (files** and **filesystems)**
SSH
Using **SSH** tunnels for secure graphical connections

Boot Management

GRUB level security (boot files)

RHCE Rapid Track Course with RHCSA and RHCE Exams

COURSE TOPICS

Administrator Level BASH Shell Scripting

rules for writing shell scripts
shell built-in constructs
conditional and looping expressions
processing command line arguments and options
error and **control/C** handling

COURSE DURATION

This course normally requires **five** (5) days, approximately 60% lecture, and 40% lab time.

COURSE PREREQUISITES

This course is a concentrated preparation for the RHCSA and 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.