



# Red Hat Linux Systems Administrator and RHCT

RH133

5 day

## Overview :

For users of Linux (or UNIX) who want to start building skills in systems administration on Red Hat Linux, to a level where they can attach and configure a workstation on an existing network. This 4 1/2-day course provides intensive hands-on training on Red Hat Linux 4.0, and includes the RHCT Certification Lab Exam (RH-202) on the last day. Those who are interested in taking the RH133 course, but who are not interested in RHCT certification or who feel they must defer the RHCT Exam to a later date may wish to consider Red Hat Linux System Administration (RH-131).

## Target Audience :

Linux or UNIX users, who understand the basics of Red Hat Linux, that desire further technical training to begin the process of becoming a system administrator.

## At the end of the course, delegates will be able to:

- Install Red Hat Linux interactively and with Kickstart
- Control common system hardware
- Create and maintain the Linux filesystem
- Configure an NFS client and autofs
- Understand system and service initialization
- Perform user and group administration
- Integrate a workstation with an existing network running common network services
- Configure a workstation as a client to NIS, DNS, and DHCP services
- Administer the Linux printing subsystem
- Automate tasks with at, cron, and anacron
- Maintain and interpret system logs
- Back up filesystems to tape and tar archive
- Install, update, query and remove software packages with RPM
- Upgrade the Linux kernel via RPM
- Configure the X Window System and the GNOME desktop environment
- Perform basic performance, memory, and process management
- Configure basic host security
- Perform basic troubleshooting

## Course Content :

### Unit 1: Hardware, Device Configuration, and Installation

- Hardware Compatibility and Resources
- CPU and Memory
- Filesystem Device Nodes and Device Node Table
- Block Device Support
- System and Hotswappable Bus Support
- Peripheral Device Ports
- Laptops
- Console and Graphics
- Disk Partitioning
- Block Devices and Filesystem Schemes
- Red Hat Installer Features
- Red Hat Linux Installation
- Partitioning Hard Drives
- Configuring Software RAID at Installation
- Configuring Flexible Filesystems with LVM
- Network Configuration and Firewall Setup
- Package Selection
- Validating the Installation
- Serial Console Installation
- Noprobe Mode
- Driver Disks
- Post-Install Configuration
- Hands-on Lab: Installing Red Hat Linux

### Unit 2: Linux Filesystem Management

- System Initialization: Device Recognition
- Managing Partitions
- Filesystem Basics and Attributes
- Filesystem Creation
- Ext3: Journaling for Ext2 Filesystems
- ReiserFS and JFS
- The Filesystem Hierarchy
- Mount options and configuration
- Connecting Network Resources
- Unmounting Filesystems
- The Auto-Mounter
- Virtual Memory Files
- Filesystem Maintenance
- Determining Filesystem Usage
- Adding a Drive
- Hands-on Lab: Using autofs and Adding Swap

### Unit 3: System Initialization and Services

- BIOS Initialization
- The Boot Sequence
- The Boot Loader
- Kernel Initialization
- init Initialization
- Run levels

- Daemon Processes
- The rc.sysinit Script
- System V run levels
- The rc.local Script
- Virtual Consoles
- System Shutdown and Reboot
- Controlling Services
- Hands-on Lab: Managing Startup

### Unit 4: User Administration

- User Policy Considerations
- The User Account Database
- Adding a New User Account
- Modifying/Deleting Accounts
- Password Aging Policies
- Authentication Configuration
- NIS Configuration
- Group Administration
- Switching Accounts
- File Ownership
- Linux File Permission
- s SUID / SGID Executables
- The Sticky Bit and Setgid Access Mode
- Default File Permissions
- User Private Groups
- Hands-on Lab: User and Group Administration

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For more information, or to book your course, please call Global Knowledge Denmark

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### Unit 5: Network Configuration

- Network Device Recognition
- Network Interfaces
- Address Resolution Protocol
- Bringing Network Interfaces Up and Down
- Interface Configuration Files
- Configuration Utilities
- Multiple NICs
- Binding Multiple IP Addresses
- DHCP/BOOTP
- Allowing User Control of Network Interfaces
- Basic IP Routes
- System Default Route
- IP Forwarding
- Global Network Parameters
- Name Resolution
- DNS Client Configuration
- DNS and Network Diagnostics and Troubleshooting
- Hands-on Lab: Static Network Settings

### Unit 6: System Administration Tools

- Using the Alternatives System
- The Print System User Interface
- LPRng/CUPS Configuration
- LPRng/CUPS Queue Management
- Task Automation With at and cron
- Controlling Access to Task Automation
- crontab format
- System crontab Files
- Using anacron
- Using tmpwatch
- Configuring, Maintaining and Monitoring System Logs
- Managing the whatis Database
- System Monitoring and Process Control
- Tape Backups
- Archiving with tar, dump/restore, and cpio
- Remote Backups
- Hands-on Lab: System Administration Tools

### Unit 7: RPM, Boot Loaders, and Kickstart

- Installing and Removing Software with RPM
- RPM Queries and Verification
- RPM Utilities and Features
- Red Hat Network in the Enterprise
- Red Hat Network Registration
- The up2date utility
- Remote Administration
- Boot Loader Components
- LILO and lilo.conf
- GRUB and grub.conf
- Starting the Boot Process
- Multiboot Systems
- Configuring a Red Hat Linux Network Installation Server
- Using Kickstart to Automate Installation
- The Kickstart Configuration File
- Hands-on Lab: RPM and Kickstart

### Unit 8: Kernel Services and Configuration

- Kernel Modules and Their Configuration
- Updating a Kernel RPM
- The /proc filesystem
- /proc/sys configuration with sysctl
- The Linux Quota System
- Software RAID Configuration and Recovery
- Flexible Filesystems with LVM
- Hands-on Lab: Kernel Services and Configuration

### Unit 9: The X Window System

- The X Protocol
- X Security
- xauth with ssh
- X Modularity
- X Extensibility
- Window Managers
- Display Managers
- XFree86 Startup
- X Server Configuration
- The X Font Server
- Hands-on Lab: The X Window System

### Unit 10: Troubleshooting

- Troubleshooting X
- Troubleshooting Services
- Troubleshooting Networking
- Troubleshooting Boot Problems
- Filesystem Corruption and Recovery
- Recovery Run-levels
- Boot Floppies
- Rescue Environment Utilities
- Rescue Environment Details
- Hands-on Lab: System Rescue

## Course Prerequisites :

Red Hat Linux Essentials (RH-033)

or equivalent experience with Red Hat Linux

## Testing and Certification :

## Follow on Courses :

Red Hat Linux Networking and Security Admin (RH-253).

## Further Information :

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For more information, or to book your course, please call Global Knowledge Denmark  
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