

RH131 Red Hat Linux System Administration

Course Summary

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.

Goal:

An operator who can perform system administration tasks to a level where he/she can install, configure, and attach a new Red Hat Linux workstation to an existing network.

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.

Prerequisites:

[RH033 Red Hat Linux Essentials](#) or equivalent experience with Red Hat Linux..

Duration:

4 days

RH133 Course Content

The following is an outline of the skills and knowledge represented in the training elements (four days) and in the RHCT Certification Lab Exam (one-half day) of the RH133 Red Hat Linux System Administration course.

UNIT 1 - Installation

- Hardware Overview
- CPU and Memory
- Preparing to Install
- Multiboot systems
- The RHEL Installer
- Installer Features
- RHEL Installation Overview
- Partitioning Hard Drives
- Sample Partition Structure
- Configuring File Systems

- Software RAID
- LVM: Logical Volume Manager
- Network Configuration
- Firewall Setup
- Security Enhanced Linux
- SELinux Installation Options and Control
- Package Selection
- Validating the Installation
- noprobe Mode and Driver Disks
- Post-Install Configuration
- **Hands-on Lab:** Installation

UNIT 2 - System Initialization and Services

- Boot Sequence Overview
- BIOS Initialization
- Boot Loader Components
- GRUB and grub.conf
- Kernel Initialization
- init Initialization
- Run levels
- /etc/rc.d/rc.sysinit
- /etc/rc.d/rc
- Daemon Processes
- System V run levels
- /etc/rc.d/rc.local
- Virtual Consoles
- Controlling Services
- System Shutdown
- System Reboot
- **Hands-on Lab:** Managing Startup

UNIT 3 - Kernel Services and Configuration

- Objectives
- Agenda
- Kernel Modules
- Kernel Module Configuration
- The /proc filesystem
- /proc/sys configuration with sysctl
- General Hardware Resources
- System Bus Support
- Hotswappable Bus Support
- System Monitoring and Process Control
- **Hands-on Lab:** Configuring kernel parameters

UNIT 4 - Filesystem Management

- System Initialization: Device Recognition
- Disk Partitioning
- Managing Partitions
- Managing Data: Filesystem Creation
- Journaling for ext2 filesystems: ext3
- Mount Options and Configuration
- The Auto-Mounter
- ext2/ext3 Filesystem Attributes
- Virtual Memory Files
- Filesystem Maintenance
- Adding a Drive
- **Hands-on Lab:** Filesystem Management

UNIT 5 - Network Configuration

- Device Recognition
- Network Interfaces
- mii-tool
- ifconfig
- ifup/ifdown
- Interface Configuration Files
- Configuration Utilities
- Binding Multiple IP Addresses
- DHCP/BOOTP
- Global Network Parameters
- Default Route
- Static Routes
- Name Resolution
- DNS Client Configuration
- DNS Utilities
- Network Diagnostics
- **Hands-on Lab:** Static Network Settings

UNIT 6 - RPM and Kickstart

- The RPM Way
- RPM Package Manager
- Installing and Removing Software
- Updating a Kernel RPM
- RPM Queries
- RPM Verification
- Other RPM Utilities and Features
- Automatic Dependency
- Resolution

- Red Hat Network (RHN)
- RHN in the Enterprise
- RHN Registration
- The up2date utility
- Remote Administration
- Network Installation Server
- Using Kickstart to Automate Installation
- **Hands-on Lab:** RPM and Kickstart

UNIT 7 - User Administration

- User Policy Considerations
- The User Account Database - /etc/passwd
- Adding a New User Account
- User Private Groups
- Group Administration
- Modifying/Deleting Accounts
- Password Aging Policies
- Login Shell Scripts
- Non Login Shell Scripts
- Switching Accounts
- sudo
- Network Users
- Authentication Configuration
- NIS Client Configuration
- LDAP Client Configuration
- File Ownership
- Linux File Permissions
- SUID / SGID Executables
- The Sticky Bit
- The Setgid Access Mode
- Default File Permissions
- Access Control Lists (ACLs)
- SELinux
- Controlling SELinux
- SELinux Contexts
- Troubleshooting SELinux
- **Hands-on Lab:** User and Group Administration

UNIT 8 - Printing and Administration Tools

- CUPS: Common Unix Printing System
- Controlling Access to cron
- System crontab Files
- System Logging
- syslog Configuration

- Tape Drives
- Using tar/star
- Using dump/restore
- Using cpio
- Remote Backups
- Other Backup Software
- **Hands-on Lab:** Printing and Admin Tools

UNIT 9 - The X Window System

- XOrg: The X11 Server
- XOrg Server Design
- XOrg Server Configuration
- XOrg Modularity
- Server and Client Relationship
- Configuration Utilities
- Remote X Sessions
- **Hands-on Lab:** The X Window System

UNIT 10 - Advanced Filesystem Management

- Software RAID Configuration
- Software RAID Recovery
- Converting LVM1 to LVM2
- Creating Logical Volumes
- Resizing Logical Volumes
- The Linux Quota System
- **Hands-on Lab:** Logical Volumes, RAID and Quotas

UNIT 11 - Troubleshooting

- Basic Guidelines
- Troubleshooting X
- Troubleshooting Networking
- Order of the Boot Process
- Filesystem Corruption
- Filesystem Recovery
- Recovery Run-levels
- Rescue Environment
- **Hands-on Lab:** System Rescue and Troubleshooting