

## 133- Red Hat Linux System Administration and RHCT

**Please Note:** Technical content subject to change without notice. Significant changes in course content will generally be available in posted outlines at least two months prior to being implemented in scheduled courses, to allow enrolled students adequate prep time. Reload this page regularly to insure up-to-date information.

### 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