

RH033 Red Hat® Linux Essentials

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Course Outline

Introducing Red Hat Enterprise Linux

1. Linux Ideas and History

- What is Open Source?
- Linux Origins
- Red Hat Distributions
- The Fedora Project
- Linux Principles

2. Linux Usage Basics

- Logging into Red Hat Enterprise Linux
- Starting X from the Console
- Accessing the Command Line from X
- Changing Your Password
- The root User
- Elevating Your Privileges
- Editing Text Files

3. Running Commands and Getting Help

- Running Commands
- Getting Help
- The whatis Command
- The --help Option
- Reading Usage Summaries
- The man and info Commands
- Documentation

4. Browsing the Filesystem

- Linux File Hierarchy Concepts
- Current Working Directory
- File and Directory Names
- Absolute and Relative Pathnames
- Changing Directories
- Listing Directory Contents
- Copying and Moving Files and Directories
- Creating and Removing Files and Directories
- Using Nautilus
- Determining File Content
- Viewing Files

5. Using the bash Shell

- bash Introduction, Heritage, and Features
- Command Line Shortcuts
- History Tricks
- Command Line Expansion
- Command Editing Tricks
- gnome-terminal

6. Standard I/O and Pipes

- Standard Input and Output
- Redirecting Standard Input and Output
- Overwriting vs. Appending

- Redirecting Standard Error
- Redirecting Both Standard Output and Error
- Using Pipes to Connect Processes

7. Text Processing Tools

- Tools for Extracting Text
- Tools for Analyzing Text
- Tools for Manipulating Text
- Special Characters for Matching Text

Intermediate Tools

8. Basic System Configuration

- Configuring Date and Time
- Configuring Printers
- Configuring the Network
- System Logs

9. vi and vim

- Introducing vim
- vim basics
- Opening, Modifying, and Saving Files
- Using Command Mode
- Undoing Changes
- Visual Mode
- Splitting the Screen
- Configuring vi and vim
- Learning More

10. Configuring the bash Shell

- Using bash Variables
- Local and Environment Variables
- Configuration and Information Variables
- Variable Expansion
- Protecting Against Variable Expansion
- Aliases
- How bash Expands the Command Line
- Types of Shells
- bash Startup and Exit Scripts
- Using Variables in Shell Scripts

11. Finding and Processing Files

- The slocate and find Commands
- Basic find Examples
- find and Logical Operators
- find and Permissions
- find and Numeric Criteria
- find and Access Times
- Executing Commands with find
- The Gnome Search Tool

12. Network Applications

- Firefox and other Web Browsers
- Evolution and other E-mail Clients
- E-mail, Encryption, and Digital Signatures
- The Gaim Messaging System
- Encrypted Communications with ssh and scp
- telnet and the "r" services
- FTP Clients
- Connecting to Windows Disk Shares

- File Transfer with Nautilus
- Network Diagnostic Tools

Essential Topics in Red Hat Enterprise Linux Administration

13. Managing Users, Groups, and Permissions

- The Linux Security Model
- Users and Groups
- Permission Types
- Examining Permissions
- Changing Permissions Using Symbolic and Numeric Methods
- Changing Permissions Using Nautilus

14. Advanced Topics in Users, Groups, and Permissions

- User and Group ID Numbers
- The `/etc/passwd`, `/etc/shadow`, and `/etc/group` files
- System Users and Groups
- Changing Your Identity
- User Information Commands
- Default Permissions
- Special Permissions

15. The Linux Filesystem In-Depth

- Partitions and Filesystems
- Inodes and Directories
- `cp`, `mv`, `rm`, and inodes
- Symbolic (or Soft) Links and Hard Links
- The Seven Fundamental Filetypes
- Checking Free Space
- Mounting CDs, DVDs, USB Media, and Floppy Disks
- Why Archive Files?
- Creating, Inspecting, and Extracting Files from File Archives
- Why Use File Compression?
- Compression Utilities
- Compressing Archives

16. Investigating and Managing Processes

- What is a Process?
- Process States
- Viewing Processes
- Sending Signals to Processes
- Terminating Processes
- Altering Process Scheduling Priority
- Interactive Process Management Tools
- Running a Process in the Background
- Suspending a Process
- Listing Background and Suspended Jobs
- Compound Commands
- Scheduling a Process To Execute Later
- Scheduling Periodic Processes
- Crontab File Format

17. Essential System Administration Tools

- Installation
- Managing Services
- Managing Packages
- Securing the System

18. What Now?

- Some Areas to Explore

- Development
- Red Hat Development Classes
- System Administrator Duties
- RHCE/RHCT Skills Courses
- RHCA and RHCSS Skills Courses
- The Linux Community