

Course Description: The first day of this course provides a conceptual and practical transition for individuals to successfully add Linux management competencies to their portfolio. The remaining four days immerses students in the basics of a Red Hat Enterprise Linux environment and prepares them for future roles as cross-platform system administrators. This course is a prerequisite for all additional Red Hat Linux courses.

Who Should Attend: This course is for Windows professionals with no prior UNIX or Linux experience who want to build user-level skills before learning Linux System and Network Administration will benefit from this course.

Prerequisites: User-level experience with any computer system, including the use of mouse, menus, and any graphical user interface, is required.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Understand the Linux file system.
- Install software and configure the network.
- Configure authentication and install and configure various services using graphical tools.
- Perform common file maintenance tasks.
- Use and customize the GNOME interface.
- Open, edit, and save text documents using the vi editor.
- File access permissions.
- Customize X Window System.
- Effectively use, customize and script a Red Hat Enterprise Linux system for common command line processes.
- Use basic network utilities.

Course Outline:

Linux Ideas and History

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

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
Hands-on lab: Linux Usage Basics

Running Commands and Getting Help

Running Commands
Getting Help
The whatis Command
The --help Option
Reading Usage Summaries
The man and info Commands
Documentation
Hands-on lab: Getting Help with Commands

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
Hands-on lab: Browsing the Filesystem

Using the bash Shell

bash Introduction, Heritage, and Features
Command Line Shortcuts
History Tricks
Command Line Expansion
Command Editing Tricks
gnome-terminal
Hands-on lab: Exploring the Bash Shell

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
Hands-on lab: Standard I/O and Pipes

Text Processing Tools

Tools for Extracting Text
Tools for Analyzing Text
Tools for Manipulating Text
Special Characters for Matching Text
Hands-on lab: Text Processing Tools

Basic System Configuration

Configuring Date and Time
Configuring Printers
Configuring the Network
System Logs
Hands-on lab: Basic System Configuration

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
Hands-on lab: vi and vim

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
Hands-on lab: Configuring the Bash Shell

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
Hands-on lab: Finding and Processing Files

Unit 12 - Network Applications

Firefox and Other Web Browsers
Evolution and Other E-mail Clients
Email, 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
Hands-on lab: Network Clients

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
Hands-on lab: File Permissions

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
Hands-on lab: Switching Users and Setting Default Permissions

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
Hands-on lab: The Linux Filesystem

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
Hands-on lab: Process Controls

Essential System Administration Tools

Installation
Managing Services
Managing Packages
Securing the System
Hands-on lab: Installation, Managing Services, and Securing the System

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