

**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.

**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.

## 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 Analysing 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 RHCSA Skills Courses  
The Linux Community