

Linux[®]: A Comprehensive Hands-On Introduction - 4 Days

Course 143 Overview

- You Will Learn How To**
- Manage, control and automate Linux GNU open source tools
 - Create, edit and search Linux files and directories
 - Limit access within the file system by controlling permissions and ownership
 - Combine GNU filter commands in pipelines to process and format text data
 - Exploit Bash shell features to enhance the command line interface
 - Perform multiple tasks in shell scripts
- Course Benefits** The Linux open source operating system offers a wide range of graphical and command line tools that can be used to implement a high-performance, stable and inexpensive server. Throughout this course, you gain the essential knowledge and hands-on skills to leverage Linux for your organizational advantage. You learn to create, edit and search Linux files, control permissions and ownership, process and format text data, and use shell scripts to perform multiple tasks.
- Who Should Attend** Those interested in gaining the fundamental knowledge necessary to work with Linux. Basic computer knowledge is assumed.
- Hands-On Training** Throughout this course, you gain hands-on experience with the Linux operating system and GNU tools using Red Hat Enterprise Linux. Exercises include:
- Building, linking and removing Linux files and directories
 - Setting and testing file permissions
 - Customizing start-up scripts for enhanced Bash interactivity
 - Running shell scripts for automation
 - Processing, formatting and searching for text in files

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Course 143 Outline

Introducing Linux

- The UNIX heritage
- Linux inception
- Linux kernel and GNU tools
- Open source licensing
- Distributions

Accessing the System

The GNOME desktop

- Customizing panels, launchers and applets
- Examining graphical applications
- Personalizing the terminal window

Starting at the command line

- Switching to console logins
- Performing a SSH login
- Structuring commands

Managing Files and Directories

Naming files and directories

- Contrasting full and relative pathnames
- Unraveling the file system hierarchy
- Handling files with cp and mv

Organizing files under directories

- Making and navigating directories
- Listing attributes with ls
- Browsing with GNOME Nautilus

Working with Linux files

- Accelerating command line usage with Bash wildcards
- Scrolling through files with GNU less
- Comparing files with diff

Controlling Access to Linux Resources

Defining access rights to files

- Identifying multiple users and groups
- Interpreting file and directory modes
- Adjusting access permissions: chmod

Collaborating via group membership

- Joining secondary groups
- Inheriting and changing group ownership

Adopting multiple roles

- Knowing who you are to the system
- Switching identity
- Changing passwords
- Raising privilege with su, sudo and setuid

Searching the system

- Locating files with find

- Finding pathnames with slocate

- Changing the date and time

Manipulating streams

- Matching lines with GNU grep
- Selecting lines and fields using head, tail, gawk and cut
- Saving command output into files
- Connecting commands using pipes

Editing files and streams

- Automating stream edits with sed
- Creating and modifying files: vim, gedit

Leveraging Bash Shell Features

Customizing Bash behaviour

- Setting options: noclobber, ignoreeof
- Assigning to built-in shell variables
- Aliasing commands

Initializing context

- Exporting variables to the environment
- Extending login and start-up scripts

Enhancing interactivity

- Retrieving and reusing previous commands
- Exploiting file name completion shortcuts

Automating Tasks with Shell Scripts

Invoking shell scripts

- Taking bash input from a file
- Calling scripts as commands
- Running scripts using source
- Passing positional parameters

Testing and controlling execution

- Checking exit status with if
- Verifying file attributes with conditionals

Executing Jobs and Processes

Monitoring processes with ps and top

- Launching multiple jobs
- Signaling with kill

Archiving and retrieving data

- Mounting storage devices
- Measuring free space
- Compressing with bzip and gzip
- Creating tar archives

System administration basics

- Installing Linux software
- Adding user accounts
- Adjusting network connections