

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 organisational 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
- Customising 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

- Customising panels, launchers and applets
- Examining graphical applications
- Personalising 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
- Unravelling the file system hierarchy
- Handling files with **cp** and **mv**

Organising 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**

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

Customising Bash behaviour

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

Initialising 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
- Signalling 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
- Changing the date and time