

**Introduction to Linux for End Users**

**Course Number:** LNX-100  
**Duration:** 5 days

**Overview**

Accelebrate's Introduction to Linux for End Users course teaches attendees the fundamental tools and concepts of Linux.

NOTE: This class can be taught using the Linux distribution of your choice.

**Prerequisites**

No prior Linux familiarity is presumed.

**Materials**

All Linux training students receive comprehensive courseware.

**Software Needed on Each Student PC**

Attendees will not need to install any software on their computers for this class. The class will be conducted in a remote environment that Accelebrate will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will work well.

**Objectives**

* Understand basic file manipulation
* Learn basic and advanced file system features
* Use I/O redirection and pipes
* Work with text manipulation and regular expressions
* Manage jobs and processes
* Use vi, the standard Unix editor
* Automate tasks with shell scripts
* Manage Linux software
* Secure remote administration

**Outline**

* Introduction
* What is Linux?
  + Unix Origins and Design Principles
  + Unix Timeline
  + FSF and GNU
  + GPL - General Public License
  + The Linux Kernel and Versioning
  + Components of a Distribution
  + Slackware
  + SUSE Linux Products
  + Debian
  + Ubuntu
  + Red Hat Linux Products and CentOS
  + Oracle Linux
  + Mandriva
* Login and Exploration
  + Logging In
  + Running Programs
  + Interacting with Command Line
  + The X Window System
  + Starting X
  + Gathering Login Session Info
  + Gathering System Info
  + got root?
  + Switching User Contexts
  + sudo
  + Help from Commands and Documentation
  + Getting Help with man & info
* The Linux FileSystem
  + File System Support
  + Unix/Linux File System Features
  + File System Hierarchy Standard
  + Navigating the File System
  + Displaying Directory Contents
  + File System Structures
  + Determining Disk Usage With df and du
  + Determining Disk Usage With baobab
  + Disk Usage with Quotas
  + File Ownership
  + Default Group Ownership
  + File and Directory Permissions
  + File Creation Permissions with umask
  + Changing File Permissions
  + SUID and SGID on files
  + SGID and Sticky Bit on Directories
  + User Private Group Scheme
* Manipulating Files
  + Directory Manipulation
  + File Manipulation
  + Deleting and Creating Files
  + Physical UNIX File Structure
  + File System Links
  + File Extensions and Content
  + Displaying Files
  + Previewing Files
  + Displaying Binary Files
  + Searching the File System
  + Alternate Search Method
  + Producing File StatisticsSection
* Shell Basics
  + Role of Command Shell
  + Communication Channels
  + File Redirection
  + Piping Commands Together
  + Filename Matching
  + File Globbing and Wildcard Patterns
  + Brace Expansion
  + Shell and Environment Variables
  + Key Environment Variables
  + General Quoting Rules
  + Nesting Commands
  + Multiple and Multi-line Commands
* Archiving and Compression
  + Archives with tar
  + Archives with cpio
  + The gzip Compression Utility
  + The bzip2 Compression Utility
  + The XZ Compression Utility
  + The PKZIP Archiving/Compression format
* Text Processing
  + Searching Inside Files
  + The Streaming Editor
  + Text Processing with awk
  + Replacing Text Characters
  + Text Sorting
  + Duplicate Removal Utility
  + Extracting Columns of Text
  + Combining Files and Merging Text
  + Comparing File Changes
* Regular Expressions
  + Regular Expression Overview
  + Regular Expressions
  + RE Character Classes
  + RE Quantifiers
  + RE Parenthesis
* Text Editing
  + Text Editing
  + Pico/GNU Nano
  + Pico/Nano Interface
  + Pico/Nano Shortcuts
  + vi and Vim
  + Learning vi
  + Basic vi
  + Intermediate vi
* Command Shells
  + Shells
  + Identifying the Shell
  + Changing the Shell
  + Bourne sh: Configuration Files
  + Script Execution
  + Bourne sh: Prompts
  + bash: Bourne-Again Shell
  + bash: Configuration Files
  + bash: Command Line History
  + bash: Command Editing
  + bash: Command Completion
  + bash: "shortcuts"
  + bash: prompt
  + Setting Resource Limits via ulimit
* Introduction to Shell Scripting
  + Shell Script Strengths and
  + Weaknesses
  + Example Shell Script
  + Positional Parameters
  + Input & Output
  + Doing Math
  + Comparisons with test
  + Exit Status
  + Conditional Statements
  + Flow Control: case
  + The for Loop
  + The while and until Loops
* Process Management and Job Control
  + What is a Process?
  + Process Lifecycle
  + Process States
  + Viewing Processes
  + Signals
  + Tools to Send Signals
  + Job Control Overview
  + Job Control Commands
  + Persistent Shell Sessions with Screen
  + Using screen
  + Advanced Screen
* Process Administration
  + Automating Tasks
  + at/batch
  + cron
  + The crontab Command
  + Crontab Format
  + /etc/cron.\*/Directories
  + Anacron
  + Managing Processes
  + Tuning Process Scheduling
* Managing Software
  + Downloading with FTP
  + FTP
  + lftp
  + Command Line Internet - Non-interactive
  + Command Line Internet - Interactive
  + Managing Software Dependencies
  + Using the YUM command
  + YUM package groups
  + Configuring YUM
  + Popular YUM Repositories
  + Using the Zypper command
  + Zypper Services and Catalogs
  + The dselect & Apt Frontends to dpkg
  + Aptitude
  + Configuring Apt
* Messaging
  + System Messaging Commands
  + Controlling System Messaging
  + Internet Relay Chat
  + Instant Messenger Clients
  + Electronic Mail
  + Sending Email with sendmail
  + Sending and Receiving Email with mailx
  + Sending and Receiving Email with mutt
  + Sending Email with Pine
  + Evolution
* Printing
  + Linux Printer Sub-systems
  + Legacy Print Systems
  + Common UNIX Printing System
  + Defining a Printer
  + Standard Print Commands
  + Format Conversion Utilities
  + Ghostscript
  + enscript and mpage
* The Secure Shell (SSH)
  + Secure Shell
  + ssh and sshd Configuration
  + Accessing Remote Shells
  + Transferring Files
  + Alternative sftp Clients
  + SSH Key Management
  + ssh-agent
* Mounting FileSystems & Managing Removable Media
  + File Systems Concept Review
  + Mounting File Systems
  + NFS
  + SMB
  + File System Table (/etc/fstab)
  + AutoFS
  + Removable Media
* Conclusion