

**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