Fundamentals of Linux (LFS300)

Modality: Virtual Classroom

Duration: 4 Days

About this course:

The Linux Fundamentals course by QuickStart provides foundational knowledge about the workflow, concepts, and tools used in Linux and Unix. The importance of Linux cannot be overstated when it comes to network architecture and professional development, which is why this course is essential for individuals who want a better grasp over Linux, an operating system most people do not have experience in. The course will help beginners get comfortable with Unix systems and learn critical workflows about managing directories and files, using the vi editor, complying with the excellent security mechanisms built into Linux, and understand how data is processed and flows across Linux pipelines. The course also covers shell programs, how they are designed, how they are written, and how system engineers can increase efficiency by running concurrent processes.

The average annual income of a Linux Systems Engineer is **$102,367**.

Course Objectives:

Completing the Linux Fundamentals course will give students knowledge in:

- Linus file manipulation
- Useful filesystem features
- I/O pipes and redirection
- Regular expressions and text manipulations
- Managing processes and jobs
- Vi, the Unix editor
- Task automation through shell scrips
- Software application management
- Remote administration

Audience:

- This course is aimed at students and professionals who want to build a solid foundation in Linux and Unix, as well as professionals who want to hone their skills. The information taught in this course is applicable to Fedore Core, SUDE Linux Professional, Red Had Enterprise Linux, and SUSE Linus Enterprise Server.

Prerequisites:

- This is a basic level course which only requires proficiency in using computers. No previous knowledge of Unix or Linux systems is necessary.

Course Outline:

?

Introduction

- Linux Foundation
- Linux Foundation Training
- Linux Foundation Certifications
- Linux Foundation Digital Badges
- Laboratory Exercises, Solutions and Resources
- Things Change in Linux and Open Source Projects
- Distribution Details
- Labs

Preliminaries

- The Command Line
- Linux Distributions and Desktops
- Keeping Current
- Filesystem Layout
- Editors
- sudo
- Labs

Linux Philosophy and Concepts

- Linux History
- Linux Philosophy
- Linux Community
- Linux Vocabulary
- Linux Distributions
- Labs

Linux Installation

- Planning the Installation Process
- Source Media
- Doing the Install
- Labs

Graphical Interface

- Graphical Layers
- Session Management
- Exploring the Filesystem
- Customizing the Graphical Desktop
- Labs

System Configuration from the Graphical Interface

- System Settings
- Display Settings
- Network Manager
- NTP (Network Time Protocol)
- Graphical Software Package Management
- Labs

Finding Linux Documentation

- Documentation Sources
- The UNIX Manual
- GNU Info
- Command Help
- Other Documentation Sources
- Labs

Common Applications

- Internet Applications
- Office Applications
- Multimedia Applications
- Graphics Editors
- Labs

Text Editors

- Available Text Editors
- Creating a File Without an Editor
- nano
- gedit
- Visual Studio Code
- vi
- emacs
- Labs

Boot Process

- Bootloader
- Linux Kernel and initramfs
- init and Services
- Console
- X Window System and Desktop Manager
- Labs

Command-line Operations

- Command Line Operations and Options
- Basic Operations
- Command Prompt
- Wildcards
- Searching for Files
- Package Management
- Labs

User Environment

- Accounts
- Environment Variables
- Key Shortcuts
- Command History
- Command Aliases
- File Ownership and Permissions
- Labs

Text Operations

- cat
- echo
- sed
- awk
- Miscellaneous Text Utilities
- Sorting, Cutting, Pasting, Joining, Splitting
- Regular Expressions and grep
- Labs

File Operations

- Filesystems
- Partitions and Mount Points
- Network File System (NFS)
- Working with Files
- Comparing Files
- File Types
- Compressing Data
- Labs

Bash Shell Scripting

- Scripts
- Features
- Functions
- Command Substitutions and Arithmetic
- If Conditions and Tests
- Looping Structures

- Case Structure
- Debugging
- Creating Temporary Files and Directories
- Labs

Processes

- Introduction to Processes
- Process Attributes
- ps
- top
- Load Averages
- Process Control
- Starting Processes in the Future
- Labs

Printing

- CUPS and Printer Configuration
- Printing Operations
- PostScript and PDF
- Labs

Networking

- Addressing
- Networking Interfaces and Configuration
- Networking Utilities and Tools
- Labs

Local Security Principles

- Local Security
- When to Use Root
- sudo
- Passwords
- Bypassing User Authentication
- Labs