



Introduction to Linux

Overview

This course explores the various tools and techniques commonly used by Linux programmers, system administrators, and end-users to achieve their day-to-day work in a Linux environment. It is designed for computer users who have limited or no previous exposure to Linux, whether they are working in an individual or enterprise environment.

Upon completion of this course you should have a good working knowledge of Linux, both a graphical and command line perspective, allowing you to easily navigate through any major Linux distribution. Using the acquired skill set, you will be able to continue your progress as either a user, a system administrator, or a developer.

Audience

This course is designed for people who have little or no prior experience with Linux or Unix. System administrators, developers, architects, decision makers, or new Linux users can all benefit from the content covered in this course, especially if they are looking to work with more involved topics, such as Linux system administration, network management, and enterprise system architecture.

Prerequisites

No prior experience with Linux is assumed in this course. We minimally expect students to have prior exposure to a computer running an operating system such as Apple or Windows. Experience using the basic features of a typical PC system, such as handling a mouse and a keyboard, is also assumed.

Course Outline

Welcome & Introduction

Chapter 01: The Linux Foundation

- Section 1: The Linux Foundation
- Section 2: The Linux Foundation Training
- Section 3: Course Linux Requirements

Chapter 02. Linux Philosophy and Concepts

- Section 1: Linux History
- Section 2: Linux Philosophy
- Section 3: Linux Community
- Section 4: Linux Terminology
- Section 5: Linux Distributions

Chapter 03. Linux Basics and System Startup

- Section 1: The Boot Process
- Section 2: Kernel, init, and Services
- Section 3: Linux Filesystem Basics
- Section 4: Linux Distribution Installation

Chapter 04. Graphical Interface

- Section 1: Graphical Desktop
- Section 2: Session Management
- Section 3: Basic Operations

Chapter 05. System Configuration from the Graphical Interface

- Section 1: System, Display, Date, and Time Settings
- Section 2: Network Manager
- Section 3: Installing and Updating Software

Chapter 06. Common Applications

- Section 1: Internet Applications
- Section 2: Productivity and Development Applications
- Section 3: Multimedia Applications
- Section 4: Graphics Editors and Utilities

Chapter 07. Command Line Operations

- Section 1: Command Line Mode Options
- Section 2: Basic Operations
- Section 3: Working with Files
- Section 4: Searching for Files
- Section 5: Installing Software

Chapter 08. Finding Linux Documentation

- Section 1: Documentation Sources
- Section 2: The man Pages
- Section 3: GNU Information
- Section 4: The --help Option and Help Command
- Section 5: Other Documentation Sources

Chapter 09. Processes

- Section 1: Introduction to Processes and Process Attributes
- Section 2: Process Metrics and Process Control
- Section 3: Listing Processes: ps and top
- Section 4: Starting Processes in the Future

Chapter 10. File Operations

- Section 1: Filesystems
- Section 2: Filesystem Architecture
- Section 3: Comparing Files and File Types
- Section 4: Backing Up and Compressing Data

Chapter 11. Text Editors

- Section 1: Basic Editors: nano and gedit
- Section 2: More Advanced Editors: vi and emacs

Chapter 12. User Environment

- Section 1: Accounts, Users, and Groups
- Section 2: Environment Variables
- Section 3: Recalling Previous Commands
- Section 4: File Permissions

Chapter 13. Manipulating Text

- Section 1: cat and echo
- Section 2: Working with Large and Compressed Files
- Section 3: sed and awk
- Section 4: File Manipulation Utilities
- Section 5: grep and strings
- Section 6: Miscellaneous Text Utilities

Chapter 14. Network Operations

- Section 1: Network Addresses and DNS
- Section 2: Networking Configuration and Tools
- Section 3: Browsers
- Section 4: Transferring Files

Chapter 15. Bash Shell Scripting I

- Section 1: Features and Capabilities
- Section 2: Syntax
- Section 3: Constructs

Chapter 16. Bash Shell Scripting II

Section 1: String Manipulation

Section 2: The Case Statement

Section 3: Looping Constructs

Section 4: Script Debugging

Section 5: Some Additional Useful Techniques

Chapter 17. Printing

Section 1: Configuration

Section 2: Printing Operations

Section 3: Manipulating Postscript and PDF Files

Chapter 18. Local Security Principles

Section 1: Understanding Linux Security

Section 2: When Are root Privileges Required?

Section 3: sudo, Process Isolation, Limiting Hardware Access, and Keeping Systems Current

Section 4: Working with Passwords

Section 5: Securing the Boot Process and Hardware Resources

Final Exam