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: sec 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