Fundamentals of Linux

Course Duration: 5 Days

Course Overview

Fundamentals of Linux provides a comprehensive introduction to the Linux operating system, command-line skills, system navigation, basic administration, and essential open-source concepts. This course equips learners with the foundational knowledge required to operate Linux systems effectively in enterprise, cloud, and DevOps environments. It is ideal for beginners, IT professionals transitioning into Linux, and those preparing for Linux-focused certification pathways.

Prerequisites

This course requires completion of one of the following:

- Basic computer literacy
- No prior Linux experience required

Course Objectives

- Understand Linux architecture, distributions, and open-source principles
- Navigate the Linux file system and manage files from the command line
- Use essential Linux commands, utilities, and text editors
- Manage users, groups, and permissions
- Work with processes, system logs, and basic system configuration
- Perform basic networking tasks
- Manage software installation and package repositories
- Use shell scripting fundamentals for automation
- Operate confidently in a Linux-based environment

APPLIED TECHNOLOGY ACADEMY

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Course Outline

Module 1: Introduction to Linux & Open Source

- Overview of Linux and its distributions
- Open-source concepts and licensing
- Linux server vs. desktop environments

Module 2: Linux System Navigation

- File system structure
- Absolute vs. relative paths
- Linux documentation and help utilities

Module 3: Working with Files & Directories

- Creating, copying, moving, and deleting files
- File viewing tools (cat, less, head, tail)
- File compression and archiving

Module 4: Command Line Essentials

- Shell basics and command syntax
- Pipes, redirection, and command chaining
- Using wildcards and regular expressions

Module 5: Text Editing with vi/vim

- Navigating and editing files in vi/vim
- Insert, command, and visual modes
- Saving, quitting, and advanced editing

Module 6: User & Group Management

- Creating and managing users and groups
- Understanding /etc/passwd and /etc/shadow
- File ownership and permissions

Module 7: Permissions & Security Basics

- chmod, chown, and chgrp

- Understanding rwx permissions
- Introduction to sudo and privilege escalation

Module 8: Process & System Monitoring

- Viewing and managing processes (ps, top, kill)
- System logs and log file management
- Monitoring resource usage

Module 9: Software Management

- Package managers (apt, yum, dnf, etc.)
- Installing, updating, and removing software
- Repository management basics

Module 10: Networking Fundamentals

- Network configuration and troubleshooting
- Common networking tools (ping, netstat, ip, ss)
- Configuring hostname and DNS

Module 11: Storage & File Systems

- Mounting and unmounting file systems
- Disk and partition basics
- Understanding file system types

Module 12: Shell Scripting Basics

- Scripting fundamentals
- Variables, loops, and conditionals
- Creating and executing shell scripts