Linux System Fundamentals Training

Duration: **5 Day**

BILGINÇ IT Academy
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Overview

Many organizations are increasingly integrating Linux systems into their existing IT infrastructure. This may be to provide developers with their preferred platform, introduce alternative network server solutions, or enhance overall security architecture.

Linux and Unix systems are also widely used within virtualized environments such as VMware, Xen, KVM, or VPC. These technologies enable multiple operating systems to run on a single workstation or server.

This course is designed to give participants a strong foundation in Linux and Unix environments. It combines both user-level and administrative tasks, allowing learners to understand how Linux systems operate while gaining practical experience with command-line tools and system management tasks.

The training introduces key Linux concepts including filesystem navigation, Bash shell usage, process management, and basic system administration.

Prerequisites

No prior Linux knowledge is required. However, participants should ideally have:

- Basic understanding of modern operating systems
- Familiarity with command-line interfaces
- General IT or computing experience

Who Should Attend

This course is suitable for:

- IT professionals new to Linux or Unix systems
- Windows or macOS users who want to learn Linux
- System administrators and network engineers
- Software developers working in Linux environments

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What You Will Learn

By the end of this training, you will have gained knowledge and skills in the following areas:

- Work effectively with the Linux Bash shell
- Navigate the Linux filesystem and manage files and directories
- Understand the client-server architecture of the X Window System
- Edit files using vi, vim, or graphical editors
- Process data using filter tools
- Use redirection and piping techniques
- Perform basic administrative tasks such as process and filesystem management
- Create simple Bash scripts

Outline

Introduction to Linux

- Why Linux is widely used
- Hardware, software, and operating system concepts
- The Unix ecosystem and Linux's role within it
- Principles of open source software

Linux Session Basics

- Logging into a Linux system
- Understanding normal users vs superuser accounts
- Shell environments and command interpreters
- Command line syntax and usage

Working with Files and Directories

- Linux filesystem structure
- Directory navigation
- File creation, copying, and deletion

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Editing Text

- Using the Nano text editor
- Introduction to vi and vim
- Command mode vs insert mode

Bash Shell Basics

- Bash as a command interpreter
- Using wildcards for filename generation
- Command substitution and quoting
- Command history features

Bash Environment

- Shell variables
- Aliases and functions
- Environment configuration files

Privileged Access

- Using the su command
- Running commands with sudo
- Identity and user information tools

Data Streams

- Standard input, output, and error streams
- Redirecting command output
- Managing command errors

Process Management

- Understanding Linux processes
- Using ps and top
- Signals and the kill command

Job Control

- Running tasks in the background

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File Management Tools

- Searching files using find
- Defining search criteria

Backup and Compression

- Archiving files with tar
- Remote file transfer techniques

Pipes and Filters

- Sending output between commands
- Multi-stage pipes
- Using filter tools

Filesystem Permissions

- Linux permission model
- chmod, chown, and chgrp commands

Working in a Network Environment

- Secure remote login using SSH