



## Linux Essentials for Developers Fast Track

- Lecture and Hands-on Labs

### Course Overview

This course is designed to empower developers to work more effectively in modern, cloud-native environments. It's not a sysadmin course, but one that teaches developers to use the Linux command line as a powerful tool to accelerate their workflow, troubleshoot issues independently, and understand the platform their code runs on.

### Who Should Attend

- Software Developer/Engineer
- Junior/Entry-Level Developer
- Frontend Developer
- QA Engineer/Tester
- Solutions Architect

### What You'll Learn

- Master the Command Line:\*\* Use advanced CLI tools to improve personal productivity and workflow efficiency.
- Automate with Scripts:\*\* Write foundational Bash scripts to automate repetitive tasks and simplify daily operations.
- Understand the Platform:\*\* Learn the essential networking and systems concepts needed for better application design and troubleshooting.
- Work in a Modern World:\*\* Use version control and containerization to build, test, and deploy applications.

### Outline

#### The Developer's Command Line

- Lecture + Lab: Shell Command
- Lecture + Lab: man
- Lecture + Lab: Dot Files
- Lecture + Lab: File Management Tasks
- Lecture + Lab: Finding Files

#### Essential Tools for Productivity

- Lecture + Lab: Using Vim to Edit Files
- Lecture + Lab: Using Tmux
- Lecture + Lab: Grep and Piping
- Lecture + Lab: I/O Redirection
- Lecture + Lab: Bash Shortcuts

## Permissions and Ownership

- Lecture: Basic File Permissions
- Lecture + Lab: Interacting with File Permissions
- Lecture + Lab: Modify File and Directory Permissions
- Lecture + Lab: Modify File and Directory Ownership

## Advanced CLI Tools for Data and Workflow

- Lecture + Lab: Set Special Permissions and Attributes
- Lecture + Lab: Watch
- Lecture + Lab: Advanced Text Processing with awk and sed

## Bash Scripting and Scheduling

- Lecture: Bash Scripting Intro
- Lecture + Lab: Bash Read CLI Vars
- Lecture: Bash Conditional Statements
- Lecture + Lab: Bash Conditionals (if/else)
- Lecture + Lab: Bash While Loops
- Lecture + Lab: Schedule Jobs

## Managing Processes and Services

- Lecture + Lab: Using HTOP
- Lecture: Understanding Systemd
- Lecture + Lab: Managing Services with Systemctl
- Lecture + Lab: Manage Jobs and Background Processes

## Networking from a Developer's Perspective

- Lecture: Essential IP2 Commands (ip -l ip -a, ip route, ss, netstat)
- Lecture + Lab: Managing IP Configuration

## Containerization with Docker

- Lecture + Lab: Running Python in a Container
- Lecture + Lab: Containerizing a Simple App with Docker

## Additional Labs: Troubleshooting Disk Memory and Logs

- Lecture + Lab: DF
- Lecture + Lab: DU
- Lecture + Lab: Free
- Lecture + Lab: Logs -f: Follow Flag
- Lecture + Lab: MTR
- Lecture + Lab: IPerf

## Prerequisites

- Basic Keyboard Proficiency: Ability to efficiently navigate and use a keyboard, including typing and copy-pasting.