Training: The Linux Foundation
LFD201 Introduction to Open Source Development, Git, and Linux

TRAINING GOALS:

Open source software has become the dominant model for how the world's technology infrastructure operates, from the smallest microprocessor to the largest supercomputers. Use of Open Source Software leads to better and faster development. Widespread collaboration puts more eyeballs on your code and has transformed the way people and corporations think and how things get done today.

In the first part of this course, we will survey how open source software works, including advantages of using it, methods of working in OSS communities, governance models and licensing choices.

In the second part of this course, we consider Linux systems and cover a wide set of topics, including installation, desktop environments, text editors, important commands and utilities, command shells and scripts, file systems and compiling software.

In the third part, we give a thorough introduction to Git, the source control system that arose out of the Linux kernel community, that enables widely distributed development to operate efficiently.

In just a few years, Git has risen to become the dominant system on the planet for collaborative development, with literally millions of projects using it.

This course will take between 50 and 60 hours to complete and contains 43 hands-on lab exercises that will allow you to practice your skills, as well as a similar number of knowledge check quizzes, and more than 20 videos showing you how to accomplish important tasks.

In this course you will:

- Obtain a strong foundation for working comfortably and productively in open source development communities
- Learn to work comfortably and productively in a Linux environment
- Master important Linux methods and requisite tools
- Learn to use Git to create new repositories or clone existing ones
- Learn to use Git to commit new changes, review revision histories, and examine differences with older versions
- Learn to use Git to work with different branches, merge repositories, and work with a distributed development team.

CONSPECT:

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- Course Introduction
- Open Source Software (OSS)
- Why Use Open Source Software?
- Examples of Successful OSS Projects
- How to Work in OSS Projects
- Continuous Integration
- OSS Licensing and Legal Issues
- Leadership vs Control and Why Projects Fail
- Respecting and Encouraging Diversity in OSS
- GitHub and Other Hosting Providers
- Linux and the Operating System
- Graphical Environments and Interfaces
- Getting Help
- Text Editors
- Shells, bash, and the Command Line
- Filesystem Layout, Partitions, Paths and Links
- System Initialization
- Memory
- Networking
- Command Details
- System Administration
- Users and Groups
- Linux Filesystems
- Essential Command Line Tools
- Bash Scripting
- Files and Filesystems
- Compiling, Linking, and Libraries
- Java Installation and Environment
- Building RPM and Debian Packages
- Introduction to Git
- Git Installation
- Git and Revision Control Systems
- Using Git: An Example
- Git Concepts and Architecture
- Managing Files and the Index
- Commits

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- Branches
- Diffs
- Merges
- Managing Local and Remote Repositories
- Using Patches
- Advanced Git Interfaces: Gerrit

REQUIREMENTS:

- Experience as a developer on any operating system
- Experience in working at the command line is not necessary, but would be helpful
- A Linux system is necessary, either a physical or a virtual machine, and any modern distribution will work. Please note that installation instructions are provided in the course material, if needed.

Difficulty level

CERTIFICATE:

The participants will obtain certificates signed by The Linux Foundation.

TRAINER:

Certified The Linux Foundation Trainer.

ADDITIONAL INFORMATION:

60 hours of self-course material.

Video Content.

12 Months of Access to Online Course.

Discussion Forums.

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