Training: The Linux Foundation
LFS307 Linux System Administration

THE LINUX FOUNDATION AUTHORIZED TRAINING PARTNER

TRANING TERMS

2026-11-17 | 4 days | Virtual Classroom
2026-11-23 | 4 days | Virtual Classroom

TRAINING GOALS:

Linux system administration is one of the most in-demand skills in IT. Whether you're looking for expert prep for the Linux Foundation Certified System Administration (LFCS) certification, need training to help start a new Linux IT career, transition to Linux from another platform, or you're just brushing up on your sysadmin skills, this instructor-led course will teach you what you need to know.

What You'll Learn

- In this course you will learn how to administer, configure and upgrade Linux systems running one of the three major Linux distribution families: Debian/Ubuntu and Red Hat/CentOS/Fedora, how to master the tools and concepts you'll need to efficiently build and manage an enterprise Linux infrastructure, how to work with Git and perform essential collaborative tasks, how to use state-of-the-art system administration techniques in real-life scenarios via practical labs, and more.
- This course gives you the skills and information you need to pass the LFCS exam and work as a professional Linux system administrator.

Who Is It For

This course is designed for individuals who desire to gain the necessary skills and abilities to work as a professional Linux system administrator. Students should have basic knowledge of Linux and its most common utilities and text editors.

CONSPECT:

- Introduction
  - Linux Foundation
  - Linux Foundation Training
  - Linux Foundation Certifications
  - Linux Foundation Digital Badges
  - Laboratory Exercises, Solutions and Resources

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
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- Things Change in Linux and Open Source Projects
- E-Learning Course: LF207
- Distribution Details
- Labs

- Linux Filesystem Tree Layout
  - One Big Filesystem
  - Data Distinctions
  - FHS Linux Standard Directory Tree
  - root (/) directory
  - /bin
  - /boot
  - /dev
  - /etc
  - /home
  - /lib and /lib64
  - /media
  - /mnt
  - /opt
  - /proc
  - /sys
  - /root
  - /sbin
  - /srv
  - /tmp
  - /usr
  - /var
  - /run
  - Labs
- User Environment
  - Environment Variables
  - Key Shortcuts
  - Command History
  - Command Aliases
  - Labs
- User Account Management
  - User Accounts

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- Shell Startup Files
- Management of User Accounts
- Locked Accounts
- Passwords
- /etc/shadow
- Password Management
- Password Aging
- The root Account
- SSH
- Labs

- Group Management
  - Groups
  - Group Membership
  - Group Management
  - User Private Groups
  - Labs
- File Permissions and Ownership
  - File Permissions and Ownership
  - File Access Rights
  - chmod, chown and chgrp
  - umask
  - Filesystem ACLs
  - Labs
- Package Management Systems
  - Why Use Packages?
  - Software Packaging Concepts
  - Package Types
  - Available Package Management Systems
  - Packaging Tool Levels and Varieties
  - Package Sources
  - Creating Software Packages
  - Revision Control Systems
  - Available Source Control Systems
  - The Linux Kernel and git
  - Labs
- dpkg

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- DPKG (Debian Package)
- Package File Names and Source
- DPKG Queries
- Installing/Upgrading/Uninstalling
- Labs

- APT
  - APT
  - APT Utilities
  - Queries
  - Installing/Removing/Upgrading Packages
  - Cleaning Up
  - Labs
- RPM
  - RPM (Red Hat Package Manager
  - Package File Names
  - RPM Database and Helper Programs
  - Queries
  - Verifying Packages
  - Installing and Removing Packages
  - Updating, Upgrading and Freshening RPM Packages
  - Upgrading the Linux Kernel
  - rpm2archive and rpm2cpio
  - Labs
- dnf and yum
  - dnf
  - yum
  - Queries
  - Installing/Removing/Upgrading Packages
  - Additional dnf Commands
  - Labs
- zypper
  - zypper
  - Queries
  - Installing/Removing/Upgrading Packages
  - Additional zypper Commands
  - Labs

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- Introduction to GIT
  - Revision Control
  - Know Where the Code is Coming From: DCO and CLA
  - Available Revision Control Systems
  - Graphical Interfaces
  - Documentation
  - Labs
- Using Git: an Example
  - Basic Commands
  - A Simple Example
  - Signing Off on Commits
  - master vs main
  - Labs
- Processes
  - Programs and Processes
  - Process Limits
  - Creating Processes
  - Process Control
  - Starting Processes in the Future
  - Process States
  - Execution Modes
  - Daemons
  - niceness
  - Labs
- Process Monitoring
  - Process Monitoring
  - Troubleshooting
  - ps
  - pstree
  - top
  - Labs
- Memory Monitoring, Usage and Configuring Swap
  - Memory Monitoring and Tuning
  - /proc/sys/vm
  - vmstat
  - Swap

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- Out of Memory Killer (OOM)
- Labs

- I/O Monitoring and Tuning
  - I/O Monitoring
  - iostat
  - iotop
  - Labs
- Virtualization Overview
  - Introduction to Virtualization
  - Hosts and Guests
  - Emulation
  - Hypervisors
  - libvirt
  - QEMU
  - KVM
  - Labs
- Containers Overview
  - Containers
  - Application Virtualization
  - Containers vs Virtual Machines
  - Docker
  - Docker Commands
  - Podman
  - Labs
- Linux Filesystems and the VFS
  - Filesystem Basics
  - Filesystem Concepts
  - Virtual Filesystem (VFS)
  - Available Filesystems
  - Journalling Filesystems
  - Special Filesystems
  - Labs
- Disk Partitioning
  - Common Disk Types
  - Disk Geometry
  - Partitioning

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    - Partition Tables
    - Naming Disk Devices
    - blkid and lsblk
    - Sizing up partitions
    - Backing Up and Restoring Partition Tables
    - Partition table editors
    - fdisk
    - Labs
- Filesystem Features: Attributes, Creating, Checking, Usage, Mounting
    - Extended Attributes
    - Creating and formatting filesystems
    - Troubleshooting Filesystems
    - Checking and Repairing Filesystems
    - Filesystem Usage
    - Disk Usage
    - Mounting filesystems
    - NFS
    - Mounting at Boot and /etc/fstab
    - automount
    - Network Block Devices
    - Labs
- The Ext4 Filesystems
    - ext4 Features
    - ext4 Layout and Superblock and Block Groups
    - dumpe2fs
    - tune2fs
    - Labs
- Logical Volume Management (LVM)
    - Logical Volume Management (LVM)
    - Volumes and Volume Groups
    - Working with Logical Volumes
    - Resizing Logical Volumes
    - LVM Snapshots **
    - Labs
- Kernel Services and Configuration
    - Kernel Overview

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- Kernel Boot Parameters
- Kernel Command Line
- Boot Process Failures
- sysctl
- Labs

- Kernel Modules
  - Kernel Modules
  - Module Utilities
  - modinfo
  - Module Configuration
  - Labs
- Devices and udev
  - udev and Device Management
  - Device Nodes
  - Rules
  - Labs
- Network Addresses
  - IP Addresses
  - IPv4 Address Types
  - IPv6 Address Types
  - IP Address Classes
  - Netmasks
  - Hostnames
  - NTP
  - Labs
- Network Devices and Configuration
  - Network Devices
  - ip
  - ifconfig
  - Predictable Network Interface Device Names
  - Network Configuration Files
  - Network Manager
  - Routing
  - Virtual Network Interfaces
  - DNS and Name Resolution
  - Network Troubleshooting

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- Network Diagnostics
- Labs

- LDAP
  - LDAP Authentication
  - Labs
- Firewalls
  - Firewalls
  - Interfaces
  - firewalld
  - Zones
  - Source Management
  - Service and Port Management
  - Port Redirection
  - Labs
- System Init: systemd, SystemV and Upstart
  - The init Process
  - Startup Alternatives
  - systemd
  - systemctl
  - Labs
- Backup and Recovery Methods
  - Backup Basics
  - Backup vs Archive
  - Backup Methods and Strategies
  - tar
  - Compression: gzip, bzip2 and xz and Backups
  - dd
  - rsync
  - Backup Programs **
  - Labs
- Linux Security Modules
  - Linux Security Modules
  - SELinux
  - AppArmor
  - Labs
- System Rescue

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- Rescue Media and Troubleshooting
- Using Rescue/Recovery Media
- System Rescue and Recovery
- Emergency Boot Media
- Using Rescue Media
- Emergency Mode
- Single User Mode
- Labs

REQUIREMENTS:

This course is designed to provide students with the necessary skills and abilities to work as a professional Linux system administrator. Students should have basic knowledge of Linux and its most common utilities and text editors.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by The Linux Foundation.

This course gives you the skills and information you need to pass the LFCS exam and work as a professional Linux system administrator.

TRAINER:

Certified The Linux Foundation Trainer.

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