Skillsoft
global knowledge™

LINUX SYSTEM ADMINISTRATION

Course Code: 100879

Learn how to install, configure, and maintain a Linux system in a networked environment.

This lab-intensive course explores core administrative tasks such as creating and managing users, creating and maintaining file systems, determining and implementing security measures, and performing software installation and package management.

Linux networking topics include installing and supporting SSH, NFS, Samba, and an Apache Web server. You'll learn common security issues and tools such as the PAM modules that will help you secure your operating system and network environment.

This course focuses on installing and configuring an Ubuntu Linux system, and topics taught apply to other open-source Linux server distributions. Labs include user and group maintenance, system backups and restoration, software management, administration tasks automation, file system creation and maintenance, managing remote access, working with cron, configuring file sharing and Web services, and working with system logging utilities like rsyslog.

What You'll Learn

Join an engaging hands-on learning environment, where you'll learn to:

- Install the Linux operating system and configure peripherals
- Perform and modify startup and shutdown processes
- Configure and maintain essential networking services
- Create and maintain system users and groups
- Understand and administer file permissions on directories and regular files
- Plan and create disk partitions and file systems
- Perform maintenance on file systems
- Identify and manage Linux processes
- Automate tasks with cron
- Perform backups and restoration of files
- Work with system log files
- Troubleshoot system problems
- Analyze and take measures to increase system performance
- Configure file sharing with NFS
- Configure Samba for file sharing with the Windows clients
- Setting up a basic Web server
- Understand the components for setting up a LAMP server

- Implement basic security measures

This course has a 50% hands-on labs to 50% lecture ratio with engaging instruction, demos, group discussions, labs, and project work.

Who Needs to Attend

Systems Administrators

Prerequisites

Before attending this course, you should have:

- Experience with common UNIX/Linux user-level commands, such as moving, copying and editing files
- Experience with the vi editor

LINUX SYSTEM ADMINISTRATION

Course Code: 100879

VIRTUAL CLASSROOM LIVE	$3,634 CAD	5 Day

Virtual Classroom Live Outline

System Administration Overview

- UNIX, Linux and Open Source
- Duties of the System Administrator
- Superusers and the Root Login
- Sharing Superuser Privileges with Others (su and sudo commands)
- TCP/IP Networking Fundamentals
- Online Help

Installation and Configuration

- Planning: Hardware and Software Considerations
- Site Planning
- Installation Methods and Types
- Installation Classes
- Partitions
- Logical Volume Manager - LVM
- File System Overview
- Swap Partition Considerations
- Other Partition Considerations
- The Linux Boot Loader: grub
- Software Package Selection
- Adding and Configuring Peripherals
- Printers
- Graphics Controllers
- Basic Networking Configuration
- Booting to Recovery Mode

Booting and Shutting Down Linux

- Boot Sequence
- The systemd Daemon
- The systemctl Command
- Targets vs. Run Levels
- Modifying a Target

- Service Unit Scripts
- Changing System States
- Booting into Rescue Mode
- Shutdown Commands

Managing Software and Devices

- Identifying Software Packages
- Using rpm to Manage Software
- Using yum to Manage Software
- Installing and Removing Software
- Identifying Devices
- Displaying Device and System Information (PCI and USB)
- Plug and Play Devices
- Device Configuration Tools

Managing Users and Groups

- Setting Policies
- User File Management
- The /etc/passwd file
- The /etc/shadow file
- The /etc/group file
- The /etc/gshadow file
- Adding Users
- Modifying User Accounts
- Deleting User Accounts
- Working with Groups
- Setting User Environments
- Login Configuration Files

The Linux File System

- Filesystem Types
- Conventional Directory Structure
- Mounting a File System
- The /etc/fstab File
- Special Files (Device Files)
- Inodes
- Hard File Links
- Soft File Links
- Creating New File Systems with mkfs
- The lost+found Directory
- Repairing File Systems with fsck
- The Journaling Attribute
- File and Disk Management Tools

Linux File Security

- File Permissions
- Directory Permissions

- Octal Representation
- Changing Permissions
- Setting Default Permissions
- Access Control Lists (ACLs)
- The getfacl and setfacl commands
- SUID Bit
- SGID Bit
- The Sticky Bit

Controlling Processes

- Characteristics of Processes
- Parent-Child Relationship
- Examining Running Processes
- Background Processes
- Controlling Processes
- Signaling Processes
- Killing Processes
- Automating Processes
- cron and crontab
- at and batch
- System Processes (Daemons)

Working with the Linux Kernel

- Linux Kernel Components
- Types of Kernels
- Kernel Configuration Options
- Recompiling the Kernel

Shell Scripting Overview

- Shell Script Fundamentals
- Bash Shell Syntax Overview
- Shell Script Examples

System Backups

- Backup Concepts and Strategies
- User Backups with the tar Command
- System Backup Options
- The xfsdump and xfsrestore Commands

Troubleshooting the System

- Common Problems and Symptoms
- Troubleshooting Steps
- Repairing General Boot Problems
- Repairing the GRUB 2 Boot Loader
- Hard Drive Problems
- Restoring Shared Libraries
- System Logs and rsyslogd

Basic Networking

- Networking Services Overview
- NetworkManager Introduction
- Network Configuration Files Locations and Formats
- Enabling and Restarting Network Services with systemtcl
- Configuring Basic Networking Manually
- Configuring Basic Networking with NetworkManager

LAMP Server Basics

- LAMP Overview
- Configuring the Apache Web Server
- Common Directives
- Apache Virtual Hosting
- Configuring an Open Source Database
- PHP Basics
- Perl CGI Scripting

Introduction to System Security

- Security Overview
- Maintaining System Security
- Server Access
- Physical Security
- Network Security
- Security Tools
- Port Probing with nmap
- Intrusion Detection and Prevention
- PAM Security Modules
- Scanning the System
- Maintaining File Integrity
- Using Firewalls
- Introduction to firewalld

The Samba File Sharing Facility

- Configure Samba for Linux to Linux/UNIX File Sharing
- Configure Samba for Linux to Windows File Sharing
- Use the smbclient Utility to Transfer Files
- Mount/Connect Samba Shares to Linux and Windows Clients

Networked File Systems (NFS)

- Using NFS to Access Remote File Systems
- Configuring the NFS Server
- Configuring the NFS Client
- Exporting File Systems from the NFS Server to the NFS Client

Aug 24 - 28, 2026 | 10:00 AM - 6:00 PM EST

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

Date created: 6/24/2026 1:34:50 AM