

## Course 521 – Linux System Administration

Duration: 5 days

### You Will Learn How To

- Use essential command line tools
- Manage software using package managers
- Install and layout the file system using well-known standards
- Manage users and their environments
- Manage processes effectively
- Manage disks and file systems (including quotas)

### Course Benefits

Linux is the open source operating system of choice for deployment throughout the enterprise. With its rapid expansion and multiple developer input, there is an increasing demand for skilled users who can exploit the features of this powerful platform to their organization's advantage.

In this course, you gain the essential knowledge and skills required to leverage the wide range of Linux graphical and command line tools. CentOS - a Linux distribution that is based on Red Hat Enterprise Linux (RHEL) and one of the leading distributions used in server environments, is used for this course.

### Who Should Attend

This Linux training course is designed for individuals who are interested in gaining in depth knowledge of how to administer a Linux server. Extensive experience (several years) using Intel x86 computers, including a strong knowledge of hardware components and their interaction with

basic operating system (OS) components are assumed.

### Course Content

#### Introduction to Linux

- Characteristics of the Linux Operating System
- Linux System Architecture
- Basic terminology

#### Accessing Your System

- Basic terminology
- Logging in
- The /etc/passwd file
- Changing Your Password
- Logging Out
- Shutting Down the System
- Rebooting the System

#### Using Documentation

- man
- apropos
- whatis
- info

#### Navigating the File System

- Absolute and Relative Path Names
- Displaying the Current Directory
- Changing Directories
- Listing Directory Contents
- Wildcards
- Creating Directories
- Removing Directories

### File Commands

- Copying Files
- Moving and Renaming Files
- Deleting Files
- Creating Symbolic Links
- Displaying Files with cat, less, head, and tail
- Creating Empty Files
- Compressing and Decompressing Files

### Locating Files in the File System

- The File System Hierarchy
- locate
- updatedb
- find
- whereis

### Regular Expressions

- What are Regular Expressions?
- Creating regular expressions
- Finding strings within files using grep

### Metacharacters and Redirection

- Metacharacters
- Entering multiple commands in a single line
- Entering string patterns in commands
- Redirecting output to a file
- Appending to an existing file
- Using a file as input to a command
- Using the output of one command as input to another

### Gnome Desktop Environment

- About Gnome
- Logging In
- Desktop
- Menu

- Keyboard Shortcuts
- Nautilus

### vi Text Editor

- vi Modes
- Invoking vi
- Insert Commands
- Positioning Commands
- Editing Commands
- Copying and Pasting
- Saving and Quitting
- Advanced Editing Options
- Find and Replace

### Shell and Environment Variables

- Variables
- Creating Shell Variables
- Displaying Shell Variables
- Promoting Shell Variables to Environment Variables
- Creating Environment Variables
- Displaying Environment Variables
- Deleting Variables

### Configuring Bash

- The PATH Environment Variable
- The which command
- Viewing previously entered commands
- Re-executing commands
- Creating Aliases
- Displaying Aliases
- Deleting Aliases
- Customizing the Prompt
- Other Shell Options

### Initialization Files

- The Shell Initialization Files
- Login Sequence

- Administration of Default User Initialization Files

### User Security

- Users and Groups
- Displaying User and Group Information
- Displaying Group Information
- Becoming the Superuser
- Becoming a Different User
- Changing File Ownership
- Changing a File's Group Ownership
- Learning Who is Logged In

### Managing Users

- Essential files for users and groups
- Adding, deleting, and modifying user accounts
- Managing groups
- Password aging
- The /etc/skel directory
- Locking an account
- Graphical user and group administration

### File Security

- Permissions
- Permission Categories
- Permission Types
- Changing Permissions

### File Systems

- File System Types
- Device Naming Scheme
- Mounting File Systems
- Monitoring Disk Space
- Checking File System Integrity

### Disk Quotas

- Disk Quotas

- Limits
- Steps to enable Quotas
- Viewing Quota Usage

### Archiving

- Backup Media
- Types of Backup
- Archiving and Extracting files using tar
- Deciding what to backup

### Process Control

- Job Control
- Keeping track of jobs
- Running a job in the foreground
- Running a job in the background
- Listing processes
- Monitoring processes
- Sending signals to processes
- Terminating processes
- Process priorities

### Scheduling Tasks

- Running tasks at a specified time -- at
- Scheduling recurring tasks -- cron
- Restricting access to task scheduling

### Booting Up

- The boot sequence
- The init process
- Runlevels
- Changing runlevels
- Changing the default runlevel

### Log Files

- Log files and the rsyslogd Daemon
- Configuring rsyslogd -- rsyslog.conf
- Log Utilities
- Log Rotation



- Graphical Tool

### Installation

- Hardware requirements
- Downloading CentOS
- Planning the disk layout
- The installation process

### Boot Managers

- Boot Loaders
- Master Boot Record
- LILO
- GRUB

### Installing Software

- RPMs
- Installing packages using RPM
- RPM options
- Removing packages using RPM
- YUM
- Graphical tools for software management

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