



Timmins Training Consulting
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Linux Administration Certification – 5 days

Introduction:

The Linux Administration Certificate Training is a comprehensive program designed to equip individuals with the skills and knowledge needed to effectively manage and administer Linux-based systems. Through hands-on exercises and in-depth instruction, participants will learn essential concepts, command-line tools, and best practices for system configuration, troubleshooting, and security.

Who should attend the certification:

- IT professionals interested in expanding their knowledge and skills in Linux administration.
- System administrators responsible for managing Linux-based systems.
- Network administrators seeking to enhance their understanding of Linux networking.
- DevOps engineers looking to improve their proficiency in Linux deployment and automation.
- Software developers aiming to develop applications for Linux platforms.
- IT consultants and freelancers wanting to offer Linux administration services.
- Students or individuals aspiring to pursue a career in Linux system administration.

Why do we need to learn Linux?

- Linux is ubiquitous, powering a wide range of devices and systems.
- It dominates the internet, supercomputers, and stock exchanges.
- Used in embedded systems, mobile phones, and servers.
- Open-source software like Apache, MariaDB, and Python are incubated on Linux.
- Learning Linux enhances understanding of operating systems and software.
- Linux offers improved job prospects in IT industry.
- Essential for system programming and administration.
- Gateway to Linux programming and administration world.
- Linux is widely used by organizations and banks.
- Linux automation with bash scripting streamlines tasks.
- Enhances technical skills and job market appeal.

Certification Structure

Timmins Linux Administration certification program includes the following three courses that cover different aspects of Linux knowledge and skills. :

Linux Essentials: This course provides a foundation in Linux fundamentals. It covers topics such as Linux history, basic command-line operations, file management, user and group administration, permissions, and an introduction to networking. Linux Essentials is often considered an entry-level course and certification, suitable for beginners or those new to Linux.

Linux Bash Scripting: This course focuses on shell scripting using the Bash shell, which is the default shell for most Linux distributions. It covers scripting concepts, control structures, variables, functions, input/output operations, and error handling. Bash scripting enables automation and simplifies repetitive tasks, making it a valuable skill for Linux administrators and power users.

Linux Administration: This course delves into advanced Linux system administration topics. It covers system installation and configuration, package management, disk and file system management, network configuration and troubleshooting, user and group administration, security, and system monitoring. Linux Administration courses often target individuals aiming to become Linux system administrators or seeking to enhance their existing administration skills.

Course Flow:

Course 1	Linux Essentials	Duration: 1 day
Course 2	Linux Bash Scripting	Duration: 2 days
Course 3	Linux Administration	Duration: 2 days

Detailed course content as follows on the next pages.

Linux Essentials

Duration: 8 Hours

Description:

The Linux Essentials course is designed to enhance participants' mastery of Linux command-line navigation, encompassing a comprehensive array of commands and options. It emphasizes providing learners with a deep understanding of Linux file and process abstractions, enabling them to effectively manage file permissions, employ vital Linux filters for data manipulation, and excel in file archiving and network transfers.

Course Objective:

Participants will become to be good in

- The basics of the Linux commands & options
- The Linux file & process abstractions
- Understand the basics of Linux file permission
- Understand Linux essential filters
- Understand how to archive files and transfer through network

Prerequisite:

General Operating System Knowledge (optional)

Course Outline

Linux Architecture

Work with files and directories

Use the vi editor to create and modify files

Use commands within the default shell

View and modify file and directory permissions

Manage processes & process manipulation commands

Linux Filters

Archive files and perform remote file transfer

Linux BASH Scripting

Duration: 16.0 Hours

Description

This course includes gaining the ability to customize the Linux environment using shell scripting, making decisions using if statements and tests, controlling input and output, redirecting standard output/error, manipulating text and strings, creating functions, generating reports from log/CSV files, and connecting external applications using Here documents.

Prerequisite:

Linux Essentials Knowledge

Learning Outcome:

- Understand to customize linux environment using shell script.
- Make decisions by using if statements and performing several different kinds of tests validations.
- Control all types of input and output.
- Redirect standard output and standard error.
- Perform text and string manipulation.
- Creating functions and makes loadable script
- Reporting on log files, CSV files, and other format of data.
- Using Here document users can connect external applications.

Course Outline

About shell & execution steps

Variable & types - How to automate runtime inputs

Shell operators

Redirect shell command results to external file

Conditional statements - Test and Validate each system operations interactively

Looping statements - perform set of system operation repeatedly

File Handling - Extend script to storage

Function Call with arguments - To make loadable script

Regular Expression

Search and Substitute operation from pipe results and input files

Sed script – line and pattern processing

awk script - search and format data for processing

Here document & trap commands

Use Cases

1. Create Customized daemon scripts - To perform run level scripts
2. Automate user management activities
3. Write customized configuration scripts more.

Linux Administration

Duration: 16.0 Hours

Description

Linux Administration course covers a wide range of learning outcomes, including obtaining Linux OS software, configuring GRUB2 bootloader, services, and systemd target units. Participants will also learn about configuring yum repositories, utilizing yum utility, setting up cron jobs, loading/unloading kernel modules, network service management, using network utility, understanding NFS, working with OpenSSH server and client, ssh-keygen command, packet-filtering firewalls, and Linux monitoring tools

Prerequisite:

Linux Essentials & OS Knowledge

Learning Outcomes

After Completing this course participants able to:

- Obtain the Linux operating system software
- Configure GRUB2 bootloader
- Configure services and systemd target units
- Describe and configure yum repositories
- Use the yum utility
- Configure cron jobs
- Dynamically load and unload kernel modules
- Start the network service
- Use the network utility
- Describe NFS
- Use OpenSSH server and client
- Use the ssh-keygen command
- Describe packet-filtering firewalls
- Use Linux monitoring tools

Course Outline

Linux boot process & configure bootloaders

Linux systemd unit files & service

Package Management (install,update,remove,query)

- yum,rpm utilites

Configure cron jobs & write customized scripts

Linux Kernel modules and module information

Network management configuration and nmcli commands

File Sharing using NFS

Open SSH Server and ssh-keygen

Linux security administration

Linux monitoring tools and generates customized logs