

Overview

This hands-on practical course provides participants with a practical introduction to the core components for installing and administrating Linux systems. This includes UNIX/Linux command line & administrative functions, using scripts, user management and process control. The learning is facilitated with many practical exercises and activities.

You will be able to

- Understand the architecture of a UNIX/Linux file system
- Install and verify a Linux system
- Use the command line to manage and monitor services
- Create and manage user accounts
- Combine command line tools into simple scripts
- Work with graphical windows environments
- Understand the basics of networking & TCP/IP
- Manage Linux security

Pre requisite knowledge

Basic technical knowledge of computer systems

Outline

Introduction to Linux/Unix

- Linux Features
- Multi-User Operation
- Differences between Linux and Unix
- Linux distributions including Mobile & Mac OS
- Comparison with other OS (Windows, etc.)

Installing a Linux System

- Selecting a distribution
- Checking hardware requirements
- Performing installation
- Hard disk partitioning
- Logical Volume Management (LVM)
- Defining sources
- Configuring & using the boot loader
- Understanding the boot process
- Grub bootloader operation and issues
- Installation options & verifying installations
- Updates, upgrades & installing additional software

Linux Administration

- UNIX Command Line Basics
- Logging In To Your Account
- Command Structure
- The Linux Manuals and the *man* Utility
- Create, List, Copy, and Move
- I/O, Redirection, and Pipes
- Command Line Editing
- Command shell – Bash
- Modifying your environment
- Shell Variables
- Choosing the Right Path
- Searching
- Using X-Windows & window managers
- GUI environments: GNOME & KDE

- Managing and configuring external devices
- Remote management (SSH, rdesktop, VNC, etc.)
- Security settings, SELinux and firewalls

Filesystem Essentials

- The Linux Filesystem
- File Attributes & descriptors
- Changing File Attributes and File Ownership
- Text Editing Tools & editing with VI
- Regular Expressions
- Encrypted filesystems
- Configuring Samba
- Network filesystems (nfs)
- Software and hardware RAID

User Management

- Creating users
- Deleting users
- User rights
- User security & password ageing

Process Control & Service Management

- Linux start up procedure
- Kernel & Init processes
- Automatically starting programs at start up
- Run levels
- Creating Foreground and Background processes
- Killing Processes
- Service management on different distributions
- Monitoring the system, CPU, Memory & Disk-SAR
- Logging and error management
- Setting up a web server

Shell Scripting & Programming Environments

- Shell Initialization Files
- Utility Shell Scripts & general scripting
- Introduction to perl
- Compilers & linkers, libraries & headers
- Versioning, building and "make"
- Statically and dynamically linked software
- Introduction to client/server socket programming

Networking Basics

- Network communications
- Key network applications: ftp, ssh, web
- Graphical desktop sharing
- Linux networking commands
- Basic IP configuration
- Introduction to user network security

DURATION 5 days

CLASS SIZE 12