



Linux Fundamentals and Basic Administration

Course 887 – 40 Hours

Overview

Unix & Linux systems popularity are growing rapidly during the last years mainly because of some major advantages like the ability to support multi-tasking, multi users, advanced security features, high performance while processing large or medium amounts of data and more.

It's well known that Unix & Linux systems are being used as a preferred platform for internet servers, Clusters, ERP systems like SAP, ORACLE and more.

On Completion, Delegates will be able to

Use Unix & Linux Operating systems commands and features, starting from some basic subjects like the file system and all the way to advanced features like process management. Some basic administration topics will be given by the end of the course. The learning experience will combined with many "Hands On" labs

Who Should Attend

This course is designed for students with little or no Unix/Linux knowledge or experience, who want to make a start with Linux or Unix.

Prerequisites

User-level experience with any computer system, including: use of mouse, use of menus and use of any graphical user interface.

Course Contents

Introduction to Linux (briefly):

- Linux concept & history
- Linux Kernel architecture
- Common Linux distributions overview

Linux Session

- The GUI & TUI Interface
- client-server methods
- login
- Linux command Structure
- The Manual Pages



The File System

- Common Linux distributions File System structure
- Manipulating directories and files using the Bash Shell
- Manipulating files using "wildcards"
- Mounting external file systems

Text Editors

- Vi
- Nano/Pico

Organizing Files

- Handling Permissions
- The Inode table
- Hard & soft links

Command Input and Output

- I/O redirections
- Noclobber

Pipes and Filters

- Using pipe and tee
- head/tail
- Cut
- sort/uniq
- grep
- tr

Power Tools

- The diff command
- Using Find
- Regular Expressions
- Basic implementations of Sed & Awk (optional)

The Bash Shell Environment

- Quoting
- Aliases
- History
- Custom & system variables
- Environment files & startup files

Processes management

- Monitoring Processes Using top, ps, job
- Sending Signals
- Scheduling processes
- Handling Processes priority



Introduction to Shell Scripts (briefly)

- Simple scripts
- Positional parameters & arguments
- Command exit status
- Selection & conditions (if , elif, case)
- Looping commands (for , while)
- Handling arithmetic expressions
- Interactive input
- Debugging in the Shell

Basic Network Utilities

- Using SSH
- Common mail clients
- Scp
- Rsync

Basic Network Configuration & monitoring

- Ifconfig
- ping
- traceroute
- route
- hosts
- arp
- ipforward
- configuration files

General Administration Topics (optional, only if time is available):

- Linux startup flow
- Run levels & inittab
- controlling services (service, checkconfig, ntsysv, upstart)
- Installing external software (RPM. *.tgz...)

Linux & MS Windows integration -Client Side :

- Installing MS-Windows Programs on Linux
- Mounting Windows Filesystems
- Accessing Windows Servers & Network (samba tools)

Linux installation (only if time is available)

- HW requirements
- pre installation
- partitions
- packages

Final Exercise & General Overview (Only if time is available)