Training Objectives – Linux Basics

Course duration – 40 hours

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Section – 1 **Duration – 16 hours**

- **Linux Fundamentals**

  - History of Unix and Linux
  - Unix and Linux Flavors
  - Layered architecture
    - Kernel
    - Shell
    - Add-on
    - Distributions
  - Linux environment
    - CLI
    - GUI
    - Mile-stones and run control scripts
  - System directories
    - Explanation on each directory
  - File types
    - Explanation on each type
  - Understanding command syntax
    - Basic commands – command definition, explanation and examples hands-on
    - How to get help - man, info, help commands
  - File and directory management – mkdir, cd, rmdir, cp, mv, rm etc.
  - Hard-link vs soft-link – definition, exmplanation and expels hands-on
  - Gathering system information – various internal and external commands
  - Linux utilities – tr, find, awk, sed, cut, grep, egrep, fgrep
  - Pipes and Filters
  - Pattern matching
  - Linux editors – vim, gedit, nano
  - File compression and backup/restore utilities

Section – 2 **Duration – 18 hours**

Basic System administration

- **Installation of Linux**
  - Understanding virtual environments
  - Downloading Linux distributions
  - Planning installation
  - Installing Linux [CentOS/RHEL/Fedora/Ubuntu]

- **Linux Package managers**
  - RHEL/Fedora/Rocky/CentOS
  - Ubuntu/Debian
  - FreeBSD

- **Linux Filesystem**
  - Understanding bootblock, superblock, inodeblock, datablock
  - Understanding filesystem architecture
  - Disk partitioning utilities
  - Formatting utilities
  - Mounting and unmounting
  - Mounting permanently
  - Monitoring file system

- **Linux Process management**
  - Process definition
  - Checking process statistics – ps, top and their switches
  - Process life-cycle and parent child relationship
  - Understanding fore-ground and back-ground process
  - Bringing process from background to foreground
  - sending process from foreground to background
  - Understanding process priority
  - Prioritising and reprioritising process
  - Introduction to IPC
  - Introduction to RPC

- **Linux Network management**
  - Understanding network devices
  - Basic networking commands in Linux
  - Advanced networking commands in Linux
  - Network monitoring tools

- **Linux User and Group management**
  - Understanding templates
  - Adding and deleting group
  - Adding user, modifying user account, delete user
  - Listing users
  - Understanding local and global profiles
  - Customizing user's development environment

- **Linux Security, Permissions and Access control**
  - Changing file and directory permissions
  - Changing user and group ownership
  - Creating power-user using sudo access, /etc/sudoers and visudo command
  - Understanding ACL – exclusive access to user and group

Section 3 **Duration - 6 hours**

Recap

Quick assessment

Hands-on Project