Course Title: Linux (LDV1 – From Beginner to Intermediate)

Duration: 40 hours

Module – 1 (Fundamentals)

- History and Overview of Unix and Linux
- What is a Linux Distribution?
- Concept of Package Manager
- Real Life Examples of Linux Usage
- The future of Linux

Module – 2 (Setup)

- Virtualbox Overview
- Installation and Configuration of Virtualbox
- Create a Linux (Ubuntu 14.04) Virtual Machine
- Basic Networking overview on Virtualbox
- Connect your Linux VM from host (Windows)

Module – 3 (Interface – Command line/BASH, X-Windows and Basic Utilities)

- Types of Linux Interface
- Concept of Shell (**Bash**) and X Windows (Software Layers)
- Windows Vs Linux
- Understanding the File system (Inode Structure)
- Introduction to Linux Commands (Generic, I/O, Network, System, Security)
- Printing files and sending emails
- Environment settings (.profile, .bash_profile)

Module – 4 (File system Explained)

- File system - Working with Files and Directories
- File system management - fdisk, gparted, swap, boot and root partition, lvm and RAID
- Meta Characters, listing, copying, editing, deleting, moving, head/tail, counting words
- Streams & Links
- Redirection and Pipes (grep, sort, more)
- Users, Groups, Permissions and Access Modes
- chmod to change Absolute Permissions, chown/chgrp for changing owners and groups

Module – 5 (Access Control, Networking and Security)

- Networking fundamentals and configuration
- Networking Tools and TCP Clients (ssh, ping, telnet, ftp, wget, scp, finger)
- Security - Firewall, Public/Private Keys, IPTables

Module – 6 (vi Editor – basic to intermediate)

- Vi Editor basics (operation modes, control commands)
- Delete, Change, Copy, Paste and other basic commands
- Advanced Commands
- Search and Replace texts
- Hands on with Offline Tasks for Practice

Module – 7 (Shell Scripting – Basic to Advanced)

- Shell – Prompts, Types, Scripts basic
- Shell Variables and Special variables
- Arrays and Operators (Arithmetic, Boolean, Relational, String, File)
- Decision – if..else..elif..fi..case..
- Loops (while, for, select, break, continue)
- Substitution, Quoting and Re-direction
- Pattern and Regular expression with awk and sed

Module – 8 (Administration)

- Process (Parent, Child, Zombie, Orphan) and Memory Management
- ps, top, lsof, vmstat and iostat
- Daemon Services explained
- Manage a Service (Start/Stop, Status - Active/Inactive, Enabled/Disabled)
- Masking and Unmasking of a Service
- SSH (Secure Shell) Explained (Password less login, IP/Port Access Modification)
- Automate Tasks (Cron)

Module – 9 (Summary and Conclusion)

- Next gen Linux Implementations (R-Pi, Beagle bone and Drones)
- Distribution of Materials
- Cloud Computing Introduction with AWS
- Certifications which can be done and References

Prerequisites:

1. Fundamental knowledge of Operating System.
2. Laptop (Intel i3/i5 Dual Core) with at least 4 GB RAM (8GB preferred).