

Linux Administration

Linux skills are essential in today's IT landscape, powering everything from servers and cloud platforms to cybersecurity and DevOps. Our Linux course delivers hands-on training in system administration, shell scripting, networking, security, and more. Conducted live with full student interaction, the program is taught by seasoned professionals and backed by world-class labs. Build practical expertise, boost your career, and step confidently into the world of open-source IT with us!

Course Outline

- Module 1 – Understanding Linux Concepts.**
- Module 2 – Download, Install and Configure.**
- Module 3 – System Access and File System.**
- Module 4 – Linux Fundamentals.**
- Module 5 – Linux System Administration**
- Module 6 – Shell Scripting**
- Module 7 – Networking, Servers and System Updates**
- Module 8 – Disk Management and Run Levels**
- Module 9 – All About Resume**
- Module 10 – All About Interview**

Course Curriculum

Module 1 – Understanding Linux Concepts

- What is operating system?
 - What is Linux?
 - History of Linux
 - Everyday use of Linux
 - Linux flavors or Distributions
 - Unix vs. Linux
 - Quiz, Homework and Handouts
- ### Module 2 – Download, Install and Configure
- What is Oracle Virtual Box?
 - Downloading and Installing Oracle Virtual Box/VMWare Station
 - Creating virtual machine
 - Different way to install Linux
 - Downloading and Installing Linux (CentOS)
 - Redhat Linux installation (Optional)
 - Linux Desktop (GUI)
 - Virtual Machine Management
 - Linux vs. Windows
 - Who Uses Linux?
 - Quiz, Homework and Handouts

Module 3 – System Access and File System

- Accessing Linux system
- Download and install Putty
- New Network Commands (ifconfig and ip)
- Connect Linux VM via Putty
- Important Things to Remember in Linux
- Introduction to File System
- File system structure description
- File system navigation commands
- File System Paths
- Directory listing overview
- Creating Files and Directories
- Linux File Types
- Finding Files and Directories (find, locate)
- Difference between find and locate command
- Changing Password
- Wildcard (*, \$, ^)
- Soft and Hard Links (ln)
- How to open image file through GUI
- Quiz, Homework and Handouts

Module 4 – Linux Fundamentals

- Commands Syntax
- File Permissions (chmod)
- File Ownership (chown, chgrp)
- Getting Help (man, whatis etc.)
- TAB completion and up arrow keys
- Adding text to file
- Standard output to a file (tee command)
- Pipes (|)
- File Maintenance Commands
- File Display Commands
- Filters / Text Processing Commands (cut, sort, grep, awk, uniq, wc)
- Compare Files (diff, cmp)
- Compress and un-compress files/directories (tar, gzip, gunzip)
- Truncate file size (truncate)
- Combining and Splitting Files (cat and split)
- Linux vs. Windows Commands
- Quiz, Homework and Handouts

Module 5 – Linux System Administration

- Linux File Editors (vi text editor)
- “sed” command
- User account management
- Switch users and Sudo access
- Monitor users
- Talking to users (users, wall, write)
- Linux Directory Service - Account Authentication
- System utility commands (date, uptime, hostname, which, cal, bc etc.)
- Processes and schedules (systemctl, ps, top, kill, crontab and at)
- System Monitoring Commands (top, df, dmesg, iostat 1, netstat, free etc.)
- OS Maintenance Commands (shutdown, reboot, halt, init etc.)
- System logs monitor (/var/log)
- Changing System Hostname (hostnamectl)
- Finding System Information (uname, cat /etc/redhat-release, cat /etc/*rel*, dmidecode)

- System Architecture (arch)
- Terminal control keys
- Terminal Commands (clear, exit, script)
- Recover root Password (single user mode)
- SOS Report
- Environment variables
- Quiz, Homework and Handouts

Module 6 – Shell Scripting

- Linux Kernel
- What is a Shell?
- Types of Shells
- Shell scripting
- Basic Shell scripts
- If-then scripts
- For loop scripts
- Do-while scripts
- Case statement scripts
- Aliases
- Command history

Module 7 – Networking, Servers and System Updates

- Enabling internet in Linux VM
- Network Components
- Network files and commands (ping, ifconfig, netstat, tcpdump, networking config files)
- NIC Information (ethtool)
- NIC or port bonding
- Download files with URLs (wget)
- curl and ping commands
- File transfer commands (ftp, scp etc.)
- System updates and repositories (rpm and yum)
- System Upgrade/Patch Management
- Create Local Repository from CD/DVD
- Advance Package Management
- Rollback Patches and Updates
- SSH and Telnet
- DNS
- Hostname and IP Lookup (nslookup and dig)
- NTP
- chronyd
- Sendmail
- Apache Web Server (http)

- Central Logger (rsyslogd)
- Securing Linux Machine (OS Hardening)
- OpenLDAP Installation
- Tracing Network Traffic (traceroute)
- Quiz, Homework and Handouts

Module 8 – Disk Management and Run Levels

- System run levels
- Linux Boot Process
- Message of the Day
- Customize Message of the Day
- Storage
- Disk partition (df, fdisk, etc.)
- Add Disk and Create Standard Partition
- Logical Volume Management (LVM)
- LVM Configuration during Installation
- Add Disk and Create LVM Partition
- Extend disk using LVM
- Adding swap space
- RAID
- File System Check (fsck and xfs_repair)
- System Backup (dd Command)
- Network File System (NFS)
- Difference Between CentOS/Redhat 5, 6 and 7
- Quiz, Homework and Handouts

Module 9 – All About Resume

- Resume workshop

- Cover Letter
- Linux job description or duties
- Exposure to other technologies
- Homework and Handouts

Module 10 – All About Interview

- What is IT?
- IT Components
- Facts about IT
- Linux around us
- Linux Operating System Jobs
- IT Management Jobs
- Post resume and what to expect
- Interview workshop
- Redhat certifications
- Join Linux community
- 200+ interview questions
- Homework and handouts
- Course Recap
- Commands We Have Learned
- Don't give up
- Congratulations
- Recap – Handouts

Additional Resources

- VMWare Workstation Player (Optional)
- Create VMWare VM
- Install Oracle Virtualbox on MAC
- Install Oracle Guest Addition (Tools)
- Troubleshooting Putty Connection
- Changing Default File Permissions (umask)
- Filesystem Color Definition
- Additional Resources – Handout