



## Linux System Admin Certification Training Course Curriculum

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### Module 1 – Understanding Linux Concepts

- What is Linux?
- Everyday use of Linux
- Unix vs. Linux
- Quiz
- Homework and Handouts

### Module 2 – Download, Install and Configure

- What is Oracle Virtual Box?
- Downloading and Installing Oracle Virtual Box Creating virtual machine
- Linux Distributions
- 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
- 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

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