

**25** YEARS OF  
ACADEMIC EXCELLENCE

LINUX



**LINUX**

LOVABLE INTELLECT NOT USING XP

**DRIVING INNOVATION, SHAPING THE FUTURE.**

## SECTION 1: INTRODUCTION OF LINUX

### What is Linux?

- Why Linux is better?
- Flavors of Linux
- Why RHEL?
- Linux in Cloud
- Linux Architecture
- user, shell and kernel



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## SECTION 2: INSTALLING RHEL WITH MINIMAL AND GUI

- File system hierarchy standards (FHS)
- Difference between root and normal user
- Downloading, Installing, Configuring VMware workstation or virtual Box on Windows
- Create a Red hat Virtual machine
- Installing RHEL

## SECTION 3: OPERATING RUNNING SYSTEMS

- Basic Commands
- Managing files and directories
- File Compressions
- Filter Commands
- Advanced Filters: sed, grep, find, piping
- Links
- Vi / Vim Editor

## SECTION 4: PROCESS MANAGEMENT

### What is a process?

- Process states
- Running processes with background and foreground
- Adjust process priority and kill process
- Process States and Zombies
- Monitoring the current system
- Automating System Tasks: at, batch, crontab

## SECTION 5: MANAGE USERS AND GROUPS

- Managing Users
- User properties and where are they stored on the system.
- Understanding /etc/passwd, /etc/group, /etc/shadow and /etc/shadow
- Change password and Password aging policies
- Managing Groups
- User account Initializations
- User configuration file
- Sudo configurations for users and groups



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## SECTION 6: FILE PERMISSIONS

### What is a permission?

- Types of permissions
- Access Levels
- What is a umask?
- Changing permissions with chmod
- What is chgrp?
- What is chown?
- Group collaborations with SUID, SGID and STICKY BIT

## SECTION 7: PACKAGE MANAGEMENT PART-1

### What is RPM

- Overview of RPM and YUM
- Installing, Erasing and Update a software with RPM
- RPM queries
- RPM verifications
- Major and Minor Patches
- Kernel Up gradation

## SECTION 8: PACKAGE MANAGEMENT PART-2

- Yum packet manager
- Managing Repositories
- Configuring Local Repositories
- Configuring Local Repository: Configuring the GPG Key
- Difference between RPM and YUM
- Sudo configurations for users and groups

## SECTION 9: THE KERNEL

### What is kernel

- Kernel overview
- Kernel module
- Configuring kernel parameters
- Kernel up gradation
- Update the kernel package Appropriately to ensure a bootable system



## SECTION 10: CONFIGURE LOCAL STORAGE (PARTITIONS)

- Storage names in Linux
- Managing new disks
- List, Create and Delete Partitions on MBR and GPT Disks
- Building a file system on a new disk
- Mount, Unmount and use VFAT, EXT4 and XFS File systems
- Mounting local drives and pen drives
- Making file system persistent
- Virtual memory (swap) with file and partition

## SECTION 11: FILE SYSTEM SECURITY

### What is ACL's?

- Create and Manage ACL's?
- Diagnose and Correct File permission Problems
- Encrypted File systems with LUCKS
- What is quota?
- What are user and group quotas?

## SECTION 12: EXTENDING FILE SYSTEMS (LVM)

### What is LVM?

- LVM Architecture overview
- LVM Components
- Extend existing Logical Volumes
- Extend volume group
- LVM Backups
- Managing LVM with GUI
- Troubleshooting LVM

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## SECTION 13: SYSTEM INITIALIZATION

- Boot sequence overview
- BIOS initialization
- Boot process steps
- Trouble shooting of grub boot loader
- Resetting root password
- Boot issues
- File system errors at boot
- MBR reset



## SECTION 14: DEPLOY, CONFIGURE AND MAINTAIN SYSTEMS

- Configuring networking and hostname resolution  
Statically and Dynamically
- Configuring network Utilities
- Managing Networking with script files
- Start and Stop Services and configure services to  
start automatically at Boot
- Troubleshooting Network Connections
- Client DNS Troubleshooting
- Managing Firewalls

## SECTION 16: DYNAMIC HOST CONFIGURATION PROTOCOL

- Overview of DHCP
- Installing dhcp
- Configuring DHCP server
- Configuring DHCP Client in  
heterogeneous platform
- Configure fixed ip address

## SECTION 17: NETWORK TIME PROTOCOL

### What is NTP?

- Introduction to CHRONY SUITE
- chrony Installation and Configuration
- Synchronize Time Using Other NTP Peers –  
Setup Local Time Server
- Synchronize Time Using Other NTP Peers –  
New Time Server

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## SECTION 18: NFS FILE SHARING

- Types of File shares?
- NFSV4 Features
- NFS Server and Client
- NFS Server Installation and Configuration
- Mounting NFS share with Auto mounter
- SELinux Settings
- Provide Network Shares Suitable for Group Collaboration



## SECTION 19: SMB FILE SHARING

- SAMBA Server Overview
- Difference between NFS & SMB?
- SAMBA Server and Client
- Network Shares to Specific clients
- SMB For Group Collaboration
- Mounting shares with fstab
- Access windows Users

## SECTION 20: FILE TRANSFER PROTOCOL

- What is vsftpd?
- FTP Server Overview
- Types of FTP
- Installation and Configuration
- FTP Security
- FTP client commands

## SECTION 21: DOMAIN NAME SYSTEM

### What is DNS?

- Understanding DNS Server
- Configuring caching only DNS Server
- Troubleshoot DNS Client Issues
- nslookup and dig commands

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## SECTION 23: PROXY SERVER WITH SQUID

- Overview of squid proxy
- How to share internet
- What is web cache
- Configuring SQUID services
- Configuring ACL's in SQUID
- Restricting web sites

## SECTION 24: RESUME PREPARATION

- Resume Overview
- Roles & Responsibilities
- Imp Concepts Overview



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