

# CAP454: LINUX AND SHELL SCRIPTING - LAB

L:0 T:0 P:2 Credits:1

**Course Outcomes:** Through this course students should be able to

CO1 :: understand the booting, disk partitioning and installation process of Linux.

CO2 :: understand how to connect with the network by configuring DHCP connection and DNS.

CO3 :: use the file system utilities, shell scripting and shell programming.

CO4 :: analyze the configuration of different Linux servers like samba, ftp, apache and nfs.

## List of Practicals / Experiments:

### Installation guidelines of RED HAT LINUX

- Installing Red Hat Linux
- Booting from CD/image
- Graphical Installation Launch
- Setting disk partition levels

### Getting started with LINUX

- Swap Space
- Setting Boot Loader, First Boot
- Root user
- Working with desktop
- X windows
- Runlevels

### Getting connected with network

- Network Configuration Tool
- DHCP connection
- DNS

### Finding your way on the command line

- Performing Basic File System Management Tasks
- Working with Files and Directories
- Piping and Redirection
- Finding File
- Working with an Editor
- Vi Modes
- Using man to Get Help
- Using cat command
- Mounting Devices
- Links

### Managing software using RPM

- Understanding RPM
- Compress your files

- Querying Software

### **Managing files and file system**

- File Systems Overview
- Anatomy of file system
- File search utilities
- File and directories permissions

### **Working with users, groups and permissions**

- Managing Users and Groups
- Commands for User Management
- Managing Passwords
- Modifying and Deleting User Accounts
- Behind the Commands: Configuration Files
- Creating Groups
- Using Graphical Tools for User and Group Management
- Managing Permissions
- Understanding the Role of Ownership
- Basic Permissions: Read, Write, and Execute
- Setting Default Permissions with umask

### **Introducing and working with shell**

- Getting Started
- Elements of a Good Shell Script
- Executing the Script
- Working with Variables and Input
- Understanding Variables
- Common shell commands
- Shell Scripting programming constructs

### **Managing and configuring apache server**

- Installing and configuring Apache web server
- Understanding the Apache Configuration Files
- Working with Virtual Hosts
- Setting up first web page
- Setting firewalls with iptables

### **Managing and configuring file servers**

- FTP protocol
- Installing and configuring vsftpd
- Using FTP client to test anonymous read access
- Testing FTP server
- Installing and configuring Samba server
- Installing SAMBA server
- SAMBA configuration with SWAT and starting SWAT service
- Adding SAMBA user
- Creating and configuring SAMBA share

**Working and configuring NFS**

- Installing and configuring NFS
- Configuring NFS server and client
- Using auto mount services
- Examining NFS security

**Text Books:**

1. BEGINNING REDHAT LINUX 9 by SANDIP BHATTACHARYA, WILEY

**References:**

1. A PRACTICAL GUIDE TO LINUX COMMANDS, EDITORS AND SHELL PROGRAMMING , by MARK G. SOBELL, PEARSON