

## **CAP454: LINUX AND SHELL SCRIPTING - LAB**

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

CO1 :: Examine the configuration process to create a properly functioning Linux environment

CO2 :: Analyze the need for security measures for a Linux environment.

CO3 :: Manage and configure 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