



# Mirror Technologies

*Reflecting Ideas..*

## Linux Server Administration and Networking

Course Duration: 3 months

Intended Audience:

This course is ideal for Beginners / Systems Administrators / Engineers / IT Professionals to gain hands on experience and improve their technical capabilities in Linux OS and other open source technologies.

Course Objectives:

After completing this comprehensive Linux course, participants should be able to

- Become up to date Linux administrators
- Setup and configure their own Linux server
- Configure & manage major services such as web, mail, proxy, DNS and DHCP
- Secure the server and applications
- Backing up important data
- Troubleshoot services and network related problems
- Experience in scripting and programming languages in Linux which is essential for day-to-day administration of Linux servers.

## I. Course Contents:

### 1. Overview of a Linux Operating System

- History
- Friction between UNIX and LINUX
- LINUX distributions
- Other platforms of LINUX
- LINUX and Industries

### 2. Overview of the Directory Tree

- File system and directory structure
- Comparison between Linux and Windows
- Performing file system management tasks.

### 3. Installation

- Installing a Linux Server
- Hardware detection and installing necessary drivers
- Linux installation, disk partitioning, dual booting
- Add/remove applications
- Compiling with source codes and rpms

### 4. Text editors

- Basic text editors
- Advanced text editors

## 5. Account administration

- User & group management
- Assigning and revoking privileges
- Disk management & quotas

## 6. Scripting with programming languages

- Bash/Shell scripting
- Scripting for automated system processes

## 7. Linux networking

- Assigning IP addresses with Variable Length Subnet Masking (VLSM)
- Assigning IP's using DHCP
- Network troubleshooting with ping, trace route & tcpdump
- Routing in Linux

## 8. Server configurations

- Introduction to DHCP
- Setting up a DHCP server
- Setting up a DNS Server
- Introduction to DNS
- Installing & configuring BIND
- Adding/updating/deleting DNS records, reverse DNS
- Securing DNS

## 9. Web services

- Introduction to web servers
- Setting up a Web Server
- Installing & configuring Apache
- Hosting a web site and multiple websites with virtual domains (IP based, name based)
- Setting up secure HTTP (HTTPS) and creating digital certificates for the web server
- Authenticating web users

## 10. Proxy services

- Introduction to proxy servers
- Setting up a Proxy Server
- Installing & configuring Squid
- Authenticating users
- How to block unwanted sites

## 11. File sharing

- Introduction to Network File System
- Setting up a NFS Server
- Configuring NFS
- Maximum Disk Space utilization over the network
- Backup using NFS

## 12. Samba configuration

- Introduction to Samba
- Setting up and configuring Samba
- Samba domain configuration

### 13. MySQL

- Installing & configuring MySQL
- Database administration using MySQL
- Developing and Hosting dynamic web sites

### 14. Mail Authentication

- Mail authentication protocols
- Setting up encryption and decryption of content
- Digital signatures

### 15. Installing & configuring IPTables (Linux Firewall)

### 16. Linux Security

### 17. Building secure servers using Linux

### 18. Minimize threats and vulnerabilities by removing unnecessary applications/packages

II. Industry based training.

III. Production environment scenarios.

IV. Labs, Tests & Assessments.

V. Mock Interviews, Seminars & Assignments.

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