

# Linux Administration

Linux Administration is an information technology topic that includes system architecture, Linux installation, commands, devices and file systems, shells and scripting, user interfaces, administrative tasks, system services, networking fundamentals, and security.

This course is comprised of 2 parts, 10 sections and 43 lessons covering IT security. Each lesson includes a combination of Wikipedia readings, YouTube videos, and hands-on learning activities. The course also assists learners in preparing for CompTIA Linux+ Certification.

## 1. Introduction to Unix & Linux

History of Unix & Linux

Basic Concepts of Operating Systems, Kernel, shell and file system structure

Basic Concepts of Linux

Basic Commands of Linux

Advanced Linux Commands

### Installation of Linux

Interactive Installation

Kick start Installation

Network based Installation

### Startup and Shutdown scripts

Boot Sequence

Kernel Initialization

INIT Process

### Software Package Administration

Installing and deleting software packages

Querying and updating software packages

### Dynamic Host Configuration Protocol (DHCP)

Configuring Linux as DHCP server

Configuring various clients for dhcp server (Windows & Linux)

## **NFS**

Configuring NFS server

Mounting NFS exports on NFS clients

Network Information Service (NIS)

Basics of NIS

Configuring NIS master server, slave server and client

Creating NIS users

## **DNS with Bind**

Basis of Internet

Basic of DNS and BIND

Configuring DNS primary server, and secondary servers

Configuring DNS for multiple domains and sub domains

Configuring various clients (Windows & Linux)

## **Web Server (Apache)**

Basics of web service

Introduction to Apache

Configuring Apache for main site

Configuring Apache for multiple sites using IP-based, port-based and name-based virtual hosting

## **FTP server (vsftpd daemon)**

Basics of File Transfer protocol

Configuring proftpd for anonymous ftp service

## **Mail Server (SMTP, POP3, IMAP)**

Basics of Mail servers

Configuring SMTP services

Configuring POP3/IMAP service on Linux

Integrating Antivirus and Antispam.

### **Proxy Server (Squid)**

Basics of proxy services

Configuring proxy services

Creating ACL's for controlling access to internet

Samba service

Basics of file sharing in Windows

Configuring samba to act as member server for Windows Network

Configuring samba service for file sharing with windows systems

### **RAID (Redundant Array of Inexpensive Disks)**

Implementing RAID on Linux

Pre installation / Post Installation

RAID levels (0, 1, and 5) configuration using RAID tools.

Disk Partitioning and Mounting File System

Using fdisk, disk druid utilities for disk partitioning

Using mkfs, dd commands to create file systems

Mounting various file systems

Auto mounting of file system

Logical Volume Manager (LVM)

## **Quotas**

Enabling Quotas on partitions

Creating Quotas for users

Auditing quotas

## **Introduction to Graphical Environment**

Use and customize the GNOME interface

Perform command tasks using the GNOME GUI

Launch applications from command line and GNOME interface

Customize X Window System

## **User and group administration**

Creating and deleting users from the system

Modifying users profile

Creating and deleting groups

Important system files related to user administration

## **Advanced file permissions (ACL)**

Assigning advanced files permissions i.e. SUID, SGID and Sticky bit

Creating, modifying and deleting ACL's

## **Backup and recovery**

Introduction to various types of backup media

Backup and restoring data using dump / restore commands

Backup and restoring using tar and cpio commands

Automation of Jobs

## **Securing your Linux Server**

Implementing local security

Implementing network security

Implementing data security

Basic elements of Fire Wall using IP Tables

## **Web Based Administration**

Installing Webmin on Linux

Administrating the Linux machine remotely

Using Webmin as a Tool for configuring various services on Linux

## **Troubleshooting your system**

Recovering the super user password

Recovering the boot loader (GRUB)

Troubleshooting Xserver problems

Troubleshooting network related problems.

- Introduction to OpenStack
- Linux Security Fundamentals
- Automation is essential to running Linux in the enterprise effectively. Automation lets you minimize costs by reducing manual operations, helps ensure compliance across the data center, standardizes your software infrastructure and accelerates deployments for your bare-metal and cloud infrastructures.



## **VMWARE**

**DURATION- 30 HOURS**

**FEE-3500 AED**

**PAPERCODE:**

### **What is VMWARE?**

VMware is the globally-leading provider of the virtualization and cloud infrastructure solutions in the IT industry

### **Why Get VMware Certified?**

VMware Certifications are a badge of honor, designed to validate your expertise and get you where you need to be – proficient today and future-proofed for tomorrow.

### **What is VMware and why it is used?**

VMware Workstation is a virtual machine software that is used for x86 and x86-64 computers to run multiple operating systems over a single physical host computer. Each virtual machine can run a single instance of any operating system (Microsoft, Linux, etc.) simultaneously.

### **Benefits of VMware Certification**

- Recognition of your technical knowledge and skills
- Greater opportunities for career advancement
- Official transcripts
- VMware Digital Badge\*
- Use of the certification logo
- Access to the exclusive portal & logo merchandise store
- Invitation to beta exams and classes
- Discounts from VMware Press
- Discounted admission to VMware events

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## Certification and badges

### 1. Data Center Virtualization

VMware Data Center Virtualization certifications are designed to gauge your level of skill designing, installing, and managing VMware vSphere environments in a real world environment.

### 2. Network Virtualization

VMware network virtualization certifications are designed to gauge your level of skill designing, implementing and managing a VMware NSX environment.

### 3. Cloud Management and Automation

The VMware Cloud Management and Automation certifications are designed to gauge your level of skill learning, configuring and optimizing VMware vRealize for your cloud solution.

### 4. Desktop and Mobility

VMware Desktop and Mobility certifications are designed to gauge your level of skill designing, installing and managing a VMware Horizon with view environment deployed on a VMware vSphere implementation.

### 5. Digital Business Transformation

Earning this certification validates your understanding of virtualization concepts and how they drive an enterprise's digital agenda. It proves that you are familiar with the VMware products and technologies that support VMware Cloud Foundation and Cross-Cloud Architecture solutions including vSphere, vSAN, NSX, and the vRealize Suite.

### 6. Digital Workspace

VMware Digital Workspace certification is designed to gauge your skill configuring deploying, managing, maintaining, optimizing, and troubleshooting VMware workspace One and related solutions.

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## **The certification levels**

### **1. VCA (VMware Certified Associate)**

#### **For Administrators, Architects & Executives**

This entry level certification is ideal for new IT professionals as well as executives making decisions about VMware solutions.

### **2. VCP (VMware Certified Professional)**

#### **For Administrators & Engineers**

This level is designed for IT professionals who install, configure, manage, and optimize VMware solutions.

### **3. VCAP (VMware Certified Advanced Professional)**

#### **For Administrators, Architects & Engineers**

The advanced levels are for those who design and build VMware Solutions (VCAP Design) and manage and optimize VMware solutions (VCAP Deployment).

### **4. VCDX (VMware Certified Design Expert)**

#### **For Architects**

The highest level of certification, VCDX recognizes IT professionals who design, build, and manage VMware solutions and systems.



## Contents in detail

### 1 Introduction to Virtualization Technologies

- VMware workstation
- VMware player
- Virtual box

### 2. Introduction to VMware Virtualization

- Introduce Virtualization
- Introduce Virtual machines
- Introduce vSphere components

### 3. VMware ESX and ESXi (ESX/ESXi 4.1)

- Introduce the architecture of ESX and ESXi
- Manually configure ESX/ESXi

### 4. VMware vCenter Server

- Install and configure vCenter Server components
- Manage vCenter Server inventory objects

### 5. Networking

- Create, configure, and manage vNetwork standard switches
- Create, configure, and manage network connections
- Create, configure, and manage port groups

### 6. Storage

- Configure ESX/ESXi with iSCSI, NFS.
- Create and manage vSphere data stores

### 7. Virtual Machines

- Deploy virtual machines using the Create New Virtual Machine wizard, templates, cloning, and VMware vCenter Converter

- Modify and manage virtual machines
- Perform Storage vMotion migrations

#### **8. Access Control**

- Control user access through roles and permissions

#### **9. Resource Monitoring**

- Control virtual machine access to CPU, memory, and I/O resources
- Introduce VMkernel methods for optimizing CPU and memory usage
- Monitor resource usage using vCenter Server performance graphs and alarms

#### **10. Data Protection**

- Back up and recover virtual machines using VMware Data Recovery

#### **11. Scalability**

- Manage multiple vCenter Server inventories using VMware vCenter Linked Mode
- Manage ESX/ESXi configuration compliance using Host Profiles
- Create, configure, and manage vNetwork distributed switches, network connections, and port groups
- Perform VMware vMotion migrations
- Configure and manage a VMware Distributed Resource Scheduler cluster

#### **12. High Availability**

- Configure and manage a VMware High Availability cluster
- Configure fault-tolerant virtual machines using VMware Fault Tolerance

#### **13. Patch Management**

- Manage patching and patch compliance using vCenter Update Manager

# Linux LAMP

## Introduction

Lamp stands for Linux, Apache, MySQL & PHP. Lamp training can equip individuals to run dynamic websites and servers. Due to its flexibility, customization Lamp training is effective tool in order to develop & create commercial web applications.

## Linux

Linux is the operating system that's now used on the majority of web servers. Even if your organization uses Microsoft Windows at the Desktop, you may find Linux behind the scenes.

## Linux Course Syllabus

1. Introduction to Red Hat Linux
2. Getting Started
3. Login in Linux (GUI & Console)
4. Directory Structure of Linux
5. Listing Files & Directories (ls)
6. Creating, Moving & Deleting Files and Directories
7. Searching for Files (locate & find)
8. Shells (Working effectively in the Command Line)
9. File System Basics & File Management
10. Pipes, Streams & Redirects
11. Processes Management
12. Finally, the vi Editor

## Apache

Apache is the most used Web Server worldwide; it's available for free (Open Source) and bristling with facilities. On the course, we download, install and test apache. We configure Apache, including virtual host support, access security, MIME type handling, and add modules to support extra facilities. We also cover error handling and log file analysis.

## Apache Course syllabus

## **Apache Overview**

1. What is "Apache" and what does it do?
2. Other web servers.
3. Versions of Apache.

## **Apache httpd - Sourcing, Installation, Testing**

1. Downloading Apache.
2. Selecting a user account under which to run Apache.
3. Initial mandatory configuration.
4. Testing your installation.
5. Running apache as a daemon

## **Further httpd Configuration**

1. Available Modules and turning them on and off.
2. Associating file extensions with modules

## **Apache httpd - virtual hosts**

1. Virtual Hosts
2. Setting up so the browser can see multiple hosts
3. Configuring virtual hosts

## **Apache httpd - log files and log tools**

1. Configuring the access and error logs.
2. making logs available to the web site owner.
3. Tools to analyze log files.

## **MySQL**

MySQL is one of the most popular open source database management system recognized for its speed and reliability. It is commonly used with web pages. More than 11 million Websites are built around MySQL.

Current MySQL customers such as eBay, Google, Twitter, Yahoo, Facebook, and YouTube, SlashDot, Live Journal are perfect examples of how MySQL is used to organize and store multiple databases that can be quickly accessed by millions of people at once.

## **PHP**

PHP is a powerful cross platform server side script language. It is a full featured programming language capable of managing huge database driven online environments. Using PHP, you can query databases, create images, read & write files, talk to remote servers - the possibilities are endless.

PHP is an HTML-embedded scripting language. Much of its syntax is borrowed from C, Java and Perl with a couple of unique PHP-specific features thrown in. The goal of the language is to allow web developers to write dynamically generated pages quickly

