# Apache and Secure Web Server Administration

**Duration: 3days (8hrs/day)**

**Prerequisite:** Basic Linux Command Line Knowledge

**Course Objective:** To equip learners with the practical skills and knowledge to independently install, configure, manage, secure, and optimize Apache web servers for diverse web hosting tasks.

**Lab Requirement:** Koenig DC (CentOS)

## Module 1 - Installation

Web Servers and its Components

Apache Web Server and Architecture

Apache Core and its Modules

Concurrency in Apache

**Lab**: Installation of Apache

Starting, Stopping, and Restarting Apache

**Lab**: Apache Tar Ball Based Installation

**Lab**: Apache Installation from Debian Packages

**Lab**: Apache on Windows

Which Version of Apache to Use

Starting Apache at Boot

Apache Configuration File

**Lab**: Uninstalling Apache

Upgrading Using config.nice

Finding Apache's Files

## Module 2 - Adding Common Modules

Generic Third-Party Module

**Lab**: Installing mod_dav module on unix system

**Lab**: Installing mod_perl on a Unix System

**Lab**: Installing mod_php on a Unix System

**Lab**: Installing mod_ssl

Finding Modules Using Modules.Apache.Org

Apache mod_security module

**Lab**: Installing mod_security


## Module 3 - Logging

Getting More Details in Your Log Entries

**Lab**: Configuring Access Logs

Getting More Detailed Errors

**Lab**: Configuring Error Logs

Logging POST Contents

**Lab**: POST Request

Logging a Proxies Client's IP Address

Logging Client MAC Addresses

Logging Cookies

**Lab**: Not Logging Image Requests from Local Pages

**Lab**: Rotating log files at a particular time

**Lab**: Rotating Logs on the First of the Month

Logging Host names Instead of IP Addresses


## Module 4 - Virtual Hosts

Setting Up Name-Based Virtual Hosts

**Lab**: Name-Based Virtual Hosts

**Lab**: Designating One Name-Based Virtual Host as the Default

**Lab**: Setting Up Address-Based Virtual Hosts

**Lab**: Creating a Default Address-Based Virtual Host

**Lab**: Mass Virtual Hosting with mod_vhost_alias

Mass Virtual Hosting Using Rewrite Rules

**Lab**: Logging for Each Virtual Host

Splitting Up a Log File

**Lab**: Port-Based Virtual Hosts

**Lab**: Displaying the Same Content on Several Addresses

Defining virtual hosts in a database

## Module 5 - Aliases, Redirecting, and Rewriting

**Lab**: Mapping a URL to a Directory

Creating a New URL for Existing Content

Redirecting to Another Location

**Lab**: Use the Redirect Directive

**Lab**: Use the RedirectMatch Directive


## Module 6 - Security

Using System Account Information for Web Authentication

Setting Up Single-Use Passwords

Expiring Passwords

Managing .htpasswd Files

**Lab**: Set Up Basic HTTP Authentication in Apache

Making Password Files for Digest Authentication

Relaxing Security in a Subdirectory


## Module 7 - SSL

SSL and its Components

Apache mod_ssl modules

**Lab**: Installing SSL using mod_ssl module

**Lab**: Generating Self-Signed SSL Certificates

Generating a Trusted CA

Authenticating with Client Certificates


## Module 8 - Dynamic Content

Dynamic Content in Apache

CGI Scripts

Enabling CGI Scripts in Non-Script Aliased Directories

**Lab**: Using CGI Scripts

**Lab**: Enable CGI Scripts in Apache Configurations

Testing that CGI is Set up Correctly

Invoking a CGI Program for Certain Content Types

**Module 9 - Error Handling**

Error Handling in Apache

**Lab**: Handling a Missing Host Field

**Lab**: Customized Error Messages

Providing Error Documents in Multiple Languages

**Lab**: Redirecting Invalid URLs to Some Other Page

**Module 10 - Proxies**

Proxing in Apache

**Lab**: Creating a Proxy Server in Apache

**Lab**: Securing Your Proxy Server

**Lab**: Preventing Your Proxy Server from Being Used as an Open Mail Relay

**Module 11 - Performance**

Determining How Much Memory You Need

**Lab**: Bench marking Apache with ab

**Lab**: Tuning Keep Alive Settings

**Lab**: Getting a Snapshot of Your Site's Activity

**Lab**: Avoiding DNS Lookups

Optimizing Symbolic Links