

Competitor prices: CLP £1,895.00 (ex. VAT) for five days  
Others range £ 1900 - £ 600  
Cheapest approx £ 595 (ex.vat) for 4 days



## M P L S

### Overview

KCC FLEX training allows the ultimate control in your training schedule. Training can be split into weekdays or weekends and time can be taken between training to suit your requirements and/or review the material. Classes are limited to a maximum of five students and students are graded into classes to ensure equal ability groups = minimum delays. Students have dedicated equipment and do not need to share PC, routers and switches. Training is conducted in modern office environments or training rooms with air conditioning and refreshments/lunches are provided.

The Instructors are of 'CCIE® level' with over 10 years experience in the real world, not only to teach to achieve certification, but also to teach to improve practical and 'on-the-job' abilities.

In this training you will implement MPLS, configure MPLS, complex VPNs and traffic engineering, modify scenarios, diagnose and practice configuration changes AND PASS THAT 642-611 Cisco exam.

**Pre-Requisites** - a valid CCNA® certification, good network/OSI knowledge, BGP & QoS knowledge and/or previous CCNP® FLEX training and a keen interest in Cisco networking.

**Target Audience** - System Engineers, Network Engineers, Engineers and anyone with a keen interest in Cisco networking and the desire to improve their skills or work toward the Cisco CCIP®, Certifications and above

## Objectives

- Describe MPLS frame-mode and cell-mode architectures and identify how they support applications that are used to address the drawbacks in traditional IP routing
- Describe the Label Distribution Protocol (LDP) process by explaining label allocation, label distribution, label retention, label convergence and Penultimate Hop Popping (PHP) in both frame and cell modes
- Identify the Cisco IOS command syntax required to successfully configure, monitor, and troubleshoot MPLS operations on frame, switched WAN, and LC-ATM interfaces, given a diagram of a typical MPLS network solution
- Identify the IOS command syntax required to successfully configure, monitor, and troubleshoot VPN operations, given a diagram of a typical simple MPLS VPN solution
- Identify the IOS command syntax required to successfully configure VPN operations and describe how these models are used to implement managed services and Internet access, given a diagram of a typical simple, hub-and-spoke, overlapping and central services MPLS VPN solution
- Describe the MPLS peer-to-peer architecture and explain the routing and packet forwarding model in this architecture
- PASS the 642-611 Cisco exam

## MORE DETAILED CONTENT

### MPLS Concepts

Introducing Basic MPLS Concepts

Introducing MPLS Labels and Label Stack

Identifying MPLS Applications

### Label Assignment and Distribution

Introducing Typical Label Distribution in Frame-Mode MPLS

Introducing Convergence in Frame-mode MPLS

Introducing Typical Label Distribution over LC-ATM Interfaces and VC Merge

Introducing MPLS Label Allocation, Distribution, and Retention Modes

Discovering LDP Neighbors

## **Frame-Mode and Cell-Mode MPLS Implementation on Cisco IOS Platforms**

Introducing CEF Switching

Configuring Frame-Mode MPLS on Cisco IOS Platforms

Monitoring Frame-Mode MPLS on Cisco IOS Platforms

Troubleshooting Frame-Mode MPLS on Cisco IOS Platforms

Configuring LC-ATM MPLS

Configuring LC-ATM MPLS over ATM Virtual Path

Monitoring LC-ATM MPLS on Cisco IOS Platforms

## **MPLS Virtual Private Networks Technology**

Introducing Virtual Private Networks

Introducing Overlay and Peer-to-Peer VPNs

Categorizing VPNs

Introducing MPLS VPN Architecture

Introducing MPLS VPN Routing Model

Forwarding MPLS VPN Packets

## **MPLS VPN Implementation**

Using MPLS VPN Mechanisms of Cisco IOS platforms

Configuring VRF Tables

Configuring an MP-BGP Session Between PE Routers

Configuring Small-Scale Routing Protocols Between PE and CE routers

Monitoring MPLS VPN Operations

Configuring OSPF as the Routing Protocol Between PE and CE Routers

Configuring BGP as the Routing Protocol between PE and CE Routers

Troubleshooting MPLS VPNs

## **Complex MPLS VPNs**

Using Advanced VRF Import and Export Features

Introducing Overlapping VPNs

Introducing Central Services VPNs

Introducing Managed CE Routers Service

Introducing MPLS Managed Services

Internet Access from an MPLS VPN

Introducing VPN Internet Access Topologies

Introducing VPN Internet Access Implementation Methods

Separating Internet Access from VPN Services

Implementing Internet Access as a Separate VPN

## **MPLS TE Overview**

Introducing the TE Concept

Understanding MPLS TE Components

Configuring MPLS TE on Cisco IOS Platforms

Monitoring Basic MPLS TE on Cisco IOS Platforms

## **EXAMPLE EXAM QUESTIONS & TECHNIQUES**

**PASS THAT 642-611 Cisco Exam !**