Interconnecting in IP Networks

IPC_120d | On-Demand | Transport | Express
Course Duration: 1.5 hours

As the communications industry transitions to wireless and wireline converged networks to support voice, video, data and mobile services over IP networks, a solid understanding of IPv4 and IPv6 networking along with their use for inter-networking is a must for all telecom professionals. As the services and applications of wireless networks continue to expand, the backbone must evolve to support them. Multi-Protocol Label Switching (MPLS) is designed to make the backbone fast, scalable and manageable, and capable of carrying heavy traffic, supporting QoS. This course presents a technical overview including a discussion on the architecture of MPLS, the components of the MPLS network and the supporting protocols required for MPLS.

Intended Audience

This course is intended for anyone seeking a basic level overview of the MPLS and IP interconnecting architectures.

Objectives

After completing this course, the student will be able to:

- Describe the motivation behind MPLS
- State the role of MPLS in the convergence of networks
- List key applications of MPLS
- Sketch the architecture of MPLS
- Describe the important components and operations of MPLS
- Describe how MPLS is used to set up layer 3 and layer 2 VPNs

Course Prerequisites

No Prerequisites

Outline

1. Why MPLS?
1.1 Advantages of MPLS
1.2 New applications

2. MPLS Networks
2.1 MPLS domain
2.2 Label edge router
2.3 Label switch router

3. MPLS Terminology
3.1 Label Switched Paths (LSP)
3.2 Forward Equivalence Class (FEC)
3.3 Structure of a label

4. Packet Forwarding Along LSPs
4.1 Label Forwarding Information Base (LFIB)
4.2 Packet forwarding along LSPs
4.3 Label stacking

5. MPLS and Virtual Private Networks
5.1 VPNs support in MPLS
5.2 Layer 3 and Layer 2 VPNs establishment in MPLS
5.3 Label stacking and VPNs
5.4 MPLS based L2 VPN solutions