

Data/IP Networks

MPLS, IP QoS, Traffic Engineering

COURSE AIM:

This course will allow Your Management, Sales and Technical teams to gain a solid understanding of MPLS, IP QoS and Traffic Engineering, providing attendees with an understanding of what the technologies are, what they do and how they impact the IT and Telecommunications markets, making day to day business that much easier to understand.

BUSINESS OBJECTIVES:

Company Specific. Please detail your top 2 or 3 desired outcomes

COURSE DESCRIPTION:

MPLS, GMPLS and traffic engineering are basic technologies for the provider networks of the future. Multimedia capability and flexible network structuring (in order to form VPN's) are some of the major requirements. IETF extensions within the IP protocol family are needed.

MPLS should use the intrinsic dynamics of a router network while simultaneously enabling flexible structuring of the network regardless of the routing algorithm. Techniques such as DiffServ, per hop behavior (PHB) and queuing mechanisms are introducing QoS into an IP network. The concept of traffic engineering provides solutions for more efficient utilization of an MPLS/IP network.

Based on generalized MPLS, direct access by a router to multiplexers and cross-connects using classic transport techniques (SDH/DWDM) is described in order to independently provide new transmission capacities when required. This course takes a detailed look at the functioning of and relationships between the new Internet technologies.

CONTENT:

- Introduction
 - Transport and switching techniques
 - Requirements
 - MPLS motivation
 - MPLS architecture
 - Label switch router
 - Label switched path
 - Label, label stack
 - VPN with MPLS
- How does a label switched path arise?
 - Label distribution
 - Constraint based routing
 - RSVP
 - DiffServ, PHB
 - Queuing mechanisms
 - Observations on QoS
 - Traffic engineering
 - Concepts
 - OSPF extensions
 - Path computation, monitoring, protection
 - GMPLS (formerly MP S)
- (What are the next steps for MPLS?)

DURATION:

3 Days