

Course Name: ATM/MPLS Concepts

Course Overview:

ATM/MPLS Concepts will introduce the student to the basics of ATM and the relevancy to MPLS networks and provide a basic guidance of the implementation of the technologies in the network. The course will cover Label Switching basics as well as the key concepts of MPLS networks.

Course Length: 2 days

Who should attend?

- Field Service Technicians
- Field Engineers
- Managers/ Field Supervisors
- Design Engineers
- Managers or Supervisors
- Data Engineers
- IT Personnel

You will learn:

- What Label Switching is
- Why you should use label switching
- Label Switching Basics
- MPLS Basics and Key Concepts
- ATM as it relates to MPLS
- MPLS QoS and DiffServ concepts
- Traffic Engineering

Prerequisites: A strong IP background and an understanding of basic IP concepts as well as a fundamental understanding of ATM technology.

Customizable Course: Yes

Course Content:

Introduction to Label Switching

- What is Label Switching
- Why Use Label Switching
- Implementation of Label Switching
- Need for QoS based networks

Label Switching Basics

- The Functional Equivalence Class
- Label Allocation Methods



- Label Space and Label Assignments
- Edge Routers and Label Switching Domain
- Label Swapping

Switching and Forwarding

- Layers 2 and Layer 3 Switching
- Layer 4 Switching
- Layer 3 to Layer 2 Mapping
- IP Switching
- Tag Switching
- MPLS and LDP

MPLS Key Concepts

- MPLS Attributes
- Label Assignment Rules
- Types of MPLS Nodes
- MPLS Header
- The Label Stack
- Aggregation
- Label Merging
- Hop-by-hop and Explicit Routing
- Advertising and Using Labels

Label Distribution Operations

- Methods of Label Distribution
- Introduction to LDP
- RSVP and Label Distribution
- BGP and Label Distribution

MPLS and ATM Networks

- ATM as relevant to MPLS
- Scaling ATM/IP Overlay Networks
- ATM Virtual Circuits
- ATM VPI and VCI
- Types of Merging
- Encapsulation and TTL Operations

Traffic Engineering

- What is Traffic Engineering
- Traffic Oriented or Resource Oriented Performance
- Minimizing Congestion
- Tailoring Services based on QoS Needs and Classes of Traffic
- Traffic Engineering and Shaping

MPLS and DiffServ



- DiffServ Concepts
- MPLS and DiffServ Routers
- Traffic Classification and Conditioning
- Metering Operations
- DS Codepoints

Constraint Based Routing

- Basic Concepts
- Explicit Routing
- Pre-emption
- The CR Messages and TLVs

