

# Advanced MPLS Tutorial for Cisco Network Engineers

This Advanced MPLS Tutorial for Cisco Network Engineers training covers how to optimize traffic through particularly large or complex networks by configuring Multiprotocol Label Switching on network routers. Once a network gets complex enough — it needs a better way to direct traffic. One way is multiprotocol label switching. This can help with network efficiency so that only certain kinds of traffic use certain areas and low-urgency traffic can take longer, slower routes.

[CBT Nuggets course material](#) →

## WEEK 1

### MPLS Overview

158 min.

Intro	1
Introduction to MPLS	10
Explore MPLS Labels	13
Label Stacks and IP Forwarding	8
MPLS VPNs	13
Traffic Engineering	5
MPLS QoS	3
Review and Quiz	3

### Label Distribution Protocol (LDP)

Overview	1
Intro	1
LDP Overview	5
LDP Neighborship	7
Session Protection	5
Graceful Restart and NSR	5
IGP Synchronization and Autoconfiguration	7
Implement LDP	12
Review and Quiz	4

### Discover MPLS Layer 2 VPNs

Overview	1
Intro	1
Introduction to L2 VPN	9
L2 VPN Types	7
VPLS Overview	7
Implement VPLS	10

EoMPLS Overview	7
Implement EoMPLS	11

## WEEK 2

**153 min.**

Review and Quiz	3
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### Discover MPLS Layer 3 VPNs

Overview	1
Intro	1
Introduction to L3 VPN	12
Virtual Routers and Forwarders	6
Routing in the Network Core	11
Controlling Route Distribution	12
Central Services VPNs	10
CE-PE Routing	4
Review and Quiz	2

### Implement MPLS Layer 3 VPN

Overview	1
Intro	1
Optimize the Network Core	10
Configure the VRFs	11
Configure MP-BGP in the Network Core	9
Configure a CE-PE Protocol	13
Verify and Examine Traffic Flow	6
Review and Quiz	4

### Discover MPLS Traffic Engineering

Overview	1
Intro	1
Why Traffic Engineering	8
Introduction to Traffic Engineering	10
Traffic Engineering Processes	8
RSVP in Traffic Engineering	5

## WEEK 3

**156 min.**

CSPF and Path Selection	8
Traffic Engineering Attributes	10
Traffic Steering	7
Review and Quiz	3

### Implement MPLS Traffic Engineering

Overview	1
Intro	1
Configure TE in the Network Core	5
Configure RSVP in the Network Core	8
Configure the Core IGP for TE	8
Configure TE Tunnels	20
Configure Traffic Steering	8
Review and Quiz	4

### Discover Segment Routing

Overview	1
Intro	1
Introduction to Segment Routing	11
The SR Control Plane	9

Segment Types	10
Topology Independent Loop Free Alternative	16
Review and Quiz	3

### **Segment Routing Traffic Engineering**

Overview	1
Intro	1
Introduction to SR-TE	8
PCE, PCC, and PCEP	9

## **WEEK 4**

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**93 min.**

Configure MPLS TE	10
Configure Segment Routing	6
Configure BGP and PCEP	12
Configure TE Policies and Tunnels	14
Review and Quiz	2

### **Implement Segment Routing**

Overview	1
Intro	1
Configure IS-IS to Support SR	8
Configure Prefix-SIDs	7
Configure SR Label Preference	5
Remove LDP	7
Configure OSPF to Support SR	14
Review and Quiz	4