

Concise MPLS for engineers

A 3 day **Hands on** training course



Description

A hands on introduction to MPLS covering the basics of what MPLS is and how to configure it, through to more advanced concepts such as MPLS VPNs and traffic engineering with MPLS.



Key outcomes

By the end of the course delegates will be able to:

- ✓ Explain how MPLS works.
- ✓ Configure and troubleshoot MPLS.
- ✓ Explain the interaction between OSPF/IS-IS/BGP and MPLS.
- ✓ Describe, configure and troubleshoot MPLS TE.
- ✓ Describe, configure and troubleshoot MPLS VPNs.



Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.



Details

Who will benefit?

Anyone working with MPLS.

Prerequisites

Definitive IP routing for engineers.

Total BGP for engineers.

Duration: 3 days

Customer rating:



Generic training



Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

"Friendly environment with expert teaching that teaches the why before the how."

G.C. Fasthosts

Small class sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

"Excellent course. The small class size was a great benefit..."

M.B. IBM

Hands On training



The majority of our courses use hands on sessions to reinforce the theory.

"Not many courses have practice added to it. Normally just the theoretical stuff is covered."

J.W. Vodafone

Our courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

"Comprehensive materials that made the course easy to follow and will be used as a reference point."

V.B. Rockwell Collins

Customise your course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."

S.R. Qinetiq

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Course content

What is MPLS?

What does MPLS stand for? What is MPLS? Core MPLS, MPLS and the 7 layer model, MPLS is a protocol, MPLS is a standard, MPLS runs on routers, MPLS history, Why MPLS? For service providers, For enterprises.

MPLS Architecture

Label Switch Routers, Two types of LSR, PE and P router roles, FEC, swapping labels, MPLS packet format, Loops, TTL control. Hands on: Building the base network. Enabling MPLS. Simple testing and troubleshooting of MPLS.

Label distribution

Label review, label switch path, label distribution methods, piggybacking, Label distribution Protocols, LDP, LDP operation, LDP packets, discovery messages, session messages, advertisement messages, notification message, Label Information Base, routing tables, the LFIB, MPLS forwarding, penultimate hop popping, handling labels, LSP control modes, when to distribute labels, how long to keep labels, aggregation, label merging. Hands on: LDP traffic analysis.

MPLS TE and QoS

What is MPLS TE? Why TE? TE versus shortest path, how MPLS TE works, CR-LDP, OSPF-TE, IS-IS-TE, TE with BGP, RSVP-TE, MPLS Fast reroute, MPLS QoS. Hands on: Enabling MPLS-TE.

BFD

BFD, hello the BFD protocol.

MPLS VPN

What is a VPN? MPLS VPN types, MPLS VPN comparison, MPLS L3 VPN, VRFs, MBGP, MPLS VPN architecture, VRF RD, VRF RT, the label stack, L2 VPNs, VPWS, ATOM, VPLS. Hands on: MPLS L3 VPN setup, troubleshooting.

