Systems & Network Training

Total IP multicast for engineers

A 3 day **Hands on** training course

Save on expenses. This course is also available on your premises.

Description

This training course provides an advanced three day hands on study of IP multicast technology focusing on architectures, applications and protocols. All aspects of IP multicasting are covered including PC, server and switch implementations. Design, configuration, support and troubleshooting are all covered in the course. Hands on sessions are used to reinforce the theory rather than teach specific implementations.

Key outcomes

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

- ✔ Design and troubleshoot multicast networks.
- ✔ Explain how multicast networks work.
- ✔ Compare and contrast the different multicast routing protocols (DVMRP, PIM, MBGP and SSM).
- ✔ Configure PCs, servers, switches and routers for multicasting.
- ✔ Configure multicast routing protocols including: PIM Dense Mode. PIM Sparse Mode, MBGP, SSM

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?
Technical staff working with IP multicasts.

Prerequisites
TCP/IP Foundation.

Duration: 3 days

Customer rating: ★★★★★

Generic training	Small class sizes	Hands On training	Our courseware	Customise your course
Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols “on the wire”.	We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.	The majority of our courses use hands on sessions to reinforce the theory.	We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.	Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.
“*Friendly environment with expert teaching that teaches the why before the how.”* G.C. Fasthosts	*“Excellent course. The small class size was a great benefit...”* M.B. IBM	*“Not many courses have practice added to it. Normally just the theoretical stuff is covered.”* J.W. Vodafone	*“Comprehensive materials that made the course easy to follow and will be used as a reference point.”* V.B. Rockwell Collins	*“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

Introduction

What is multicasting? Why multicast? Why not multicast? Multicasting vs. multiple unicasts, Multicasting vs. broadcasts, multicasting applications, the use of unicast addressing for setting up multicast applications, multicast use within standard protocols such as OSPF. Lab: Example multicast applications.

Addressing

Layer two multicast addresses, Class D addresses, mapping layer 3 addresses onto layer 2 multicast addresses. Multicast addresses on NBMAs, scoping multicast traffic, Multicast address blocks, GLOP, IPv6 and multicasting, anycasting. Lab: Multicast addressing.

Multicast architectures

Where the different protocols are used, PC to router, router to router, how switches can get involved. Lab: Analysing multicast packets.

PC to router

Configuring Class D addresses, IGMP, packet formats, queries, reports, maintaining groups, enhancements to IGMP (v2 and v3), Leaving a group, querier elections, Lab: Analysing IGMP packets.

Switches and multicasting

Controlling multicast traffic with switches, VLANS, static bridge table entries, IGMP snooping, CGMP. Lab: Configuring switches for multicast environments.

Router to router

MOSPF, DVMRP, PIM Sparse Mode, PIM Dense Mode, MBGP. Lab: Simple router configuration for multicasting.

Theory behind multicast routing protocols

Distribution trees, source distribution trees, shared trees, core based trees. Reverse path forwarding, Multicast routing protocol types. PIM DM: Flooding, pruning, PIM designated routers, Lab: configuring PIM DM.

PIM Sparse mode

Rendevous points, discovering RPs, Lab: Configuring PIM SM, using different protocols for different groups. Lab: PIM SM with one RP, using multiple RPs, Auto RP.

MBGP

Multiprotocol routing, how does MBGP work? How MBGP carries multiple protocol information, MBGP and multicasts, MBGP and IPv6. Lab: Configuring MBGP for multicasts.

Internet multicasting

The internet, ISPs, the MBone, tunnelling, Inter domain multicasting, the role of MBGP, Inter domain problem, MSDP, MSDP operation SSM, PIM-SM and shared trees, SSM, PIM-SSM operation, SSM benefits. Lab: MSDP configuration. SSM configuration.