Definitive IP routing for engineers

Course overview

Description
A detailed hands on examination of the main IP routing protocols found on today’s networks. The course uses Cisco routers for the hands on sessions but the practical work focuses on reinforcing the theory rather than concentrating on product specifics.

Who will benefit?
Network Administrators
Support personnel

Prerequisites
TCP/IP Foundation.

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

- Build redundancy into routed networks.
- Plan IP addressing, subnetting, VLSMs and route summarisations.
- Evaluate and choose appropriate routing protocols for particular scenarios.
- Use more than one routing protocol within an AS.
- Configure and plan networks using RIP and IGRP
  EIGRP and OSPF

Duration: 5 days

Contents

Basics of routing
What are routers? Reasons for routing, network protocols, routing protocols, routing tables.

PCs, Systems and Routing
Default gateways, ICMP router discovery, RIP, Dead router detection, HSRP, VRRP.

Static routes
Why use static routes? Configuring static routes, default routes.

Subnetting
Quick review of IP addressing. The need for subnetting, subnet masks, Calculating network numbers.

Routing protocol overview
Interior vs exterior routing protocols, Distance vector, Link state, Path vector and hybrid routing protocols, Routing protocol metrics, convergence. RIP and its problems.

EIGRP
How EIGRP works, DUAL, Scaling EIGRP with route summarisation.

Route aggregation
Using VLSMs to provide more efficient address allocation, automatic route summarisation on class boundaries, route summarisation on the bit boundaries.

OSPF
Link state protocols, operation. Router types, LSA types, area 0, transit areas, stub areas, TSSAs, NSSAs, design guidelines, Type E1 and E2.

Redistribution
Multiple routing protocols, routing distance, metrics, redistribution.

IS-IS
Link state protocol review, Type 1 and Type 2, integrated IS-IS.

BGP
CIDR, Loop free routing, Policy routing.

Generic training
Generic training complements product specific courses covering the complete picture of all relevant devices including the protocols “on the wire”.

“...because it covers the WHY, not just the how.”
W.G. – BBC

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.

“Well presented & lots of it.”
P.A. Livingston

Customise your course
Is there more than one of you? 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

Our clients
You can be reassured that when you receive training from us, you are in good company. Clients range from service providers and large multinationals down to one man businesses.

“Material covered is relevant to ISP operation, more so than many vendor courses.”
A.F. LINX

What our customers say
“Big thanks to SNT. I found this course to be well planned and delivered by your professional staff.”
S.H. Deutsche Bank AG

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