

Essential data centre infrastructure

A 2 day training course



Description

This course provides a foundation in data centre infrastructure technologies. It begins with a tour of virtualisation and the impact of this on the network before moving on to the spine and leaf design, how it works and how to scale. Layer 2 technologies enabling this architecture are studied in terms of the impact on the data centre. The course then progresses onto how Layer 3 technologies such as BGP, EVPN and VXLAN are used in data centre networks. The course then studies interconnecting data centres finishing with a section on automation and orchestration of both underlay and overlay networks.



Key outcomes

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

- ✓ Explain the spine and leaf architecture.
- ✓ Recognise the impact of virtualisation, containers and orchestration on the network.
- ✓ Describe how the following technologies are used in data centres:

Multi port aggregation
Overlay networks
MBGP, VRFs, EVPN
VXLAN
COOP



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.



Details

Who will benefit?

Staff involved with Data centres.

Prerequisites

Network fundamentals.

Duration: 2 days

Customer rating: New course

Generic training



Generic training complements 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

Introduction

Data centres versus enterprise networks.
Servers, Blades, Racks,
Clusters,
Storage,
Virtual Machines, Hosts, guests,
containers, orchestration.
Virtual switches. Distributed switches.
Live migrations (e.g. vMotion).
IP addressing and VM traffic.

Data centre network architecture

Spine leaf design.
North south traffic, East West traffic,
Scaling: Ports, bandwidth.
N+1 redundancy,
ratio East West optimisation,
oversubscription.
2 tier versus 3 tier Leaf/Spine.
Pods.
Underlay, Overlay

L2 technologies

STP vs link aggregation vs multi link aggregation.
LACP, LLDP, CDP.
Scalability.
VLANs and VLAN pruning.
L2 design recommendations.
Disabling STP on edge ports.

L3 technologies

Underlay, Overlay,
VXLAN, VTEP, VXLAN overlay forwarding,
EVPN,
IS-IS,
COOP,
MP BGP,
VRFs,
EBGP, IBGP, AS numbers, route reflectors.
Anycast gateways.
MTU considerations—for data and control planes.
BUM traffic.

Data centre interconnects

Pods, fabrics, multi pods, multi fabric, multi site.
VXLAN with BGP/EVPN Data center interconnect.
Cloud integration,
Inter Site Networks.

Automation

Automation and orchestration,
Zero touch provisioning,
Devops, Netops, telemetry
automated configuration for underlay and overlay,
SDN.

What our customers say

"Absolutely brilliant, very knowledgeable and helpful trainer would recommend to teach anyone. Kept me interested 100% of the time which is very impressive as this does not happen often, if at all!"

O. B. Network Rail

"The best technical course I've been on!"

L. W. Fujitsu Telecoms Europe

"Very well thought out and structured course. Would recommend 100%. Lots of equipment, good quality."

A.R. Unipart

"Course content is interesting. Relevant to current systems and presented well."

S.S-T. Arqiva

