Systems & Network Training

Definitive network virtualization

A 2 day **Hands on** training course

Description

This course covers network virtualization. It has been designed to enable network engineers to recognise and handle the requirements of networking Virtual Machines. Both internal and external network virtualization is covered along with the technologies used to map overlay networks on to the physical infrastructure. Hands on sessions are used to reinforce the theory rather than teach specific manufacturer implementations.

Key outcomes

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

✔ Evaluate network virtualization implementations and technologies.

✔ Connect Virtual Machines with virtual switches.

✔ Explain how overlay networks operate.

✔ Describe the technologies in overlay networks.

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?
Engineers networking virtual machines.

Prerequisites
Introduction to virtualization.

Duration: 2 days

Customer rating: New course

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

Virtualization review
Hypervisors, VMs, containers, migration issues, Data Centre network design. TOR and spine switches. VM IP addressing and MAC addresses. Hands on: VM network configuration.

Network virtualization
What is network virtualization, internal virtual networks, external virtual networks. Wireless network virtualization: spectrum, infrastructure, air interface. Implementations: Open vSwitch, NSX, Cisco, others. Hands on: VM communication over the network.

Single host network virtualization
NICs, vNICs, resource allocation, vSwitches, tables, packet walks. vRouters. Hands on: vSwitch configuration, MAC and ARP tables.

Container networks
Single host, network modes: Bridge, host, container, none. Hands on: Docker networking.

Multi host network virtualization
Access control, path isolation, controllers, overlay networks. L2 extensions. NSX manager. OpenStack neutron. Packet walks. Distributed logical firewalls. Load balancing. Hands on: Creating, configuring and using a distributed vSwitch.

Mapping virtual to physical networks
VXLAN, VTEP, VXLAN encapsulation, controllers, multicasts and VXLAN. VRF lite, GRE, MPLS VPN, 802.1x. Hands on: VXLAN configuration.

Orchestration
vCenter, vagrant, OpenStack, Kubernetes, scheduling, service discovery, load balancing, plugins, CNI, Kubernetes architecture. Hands on: Kubernetes networking.

Summary
Performance, NFV, automation. Monitoring in virtual networks.

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

Step back
Introduction to virtualization → Definitive network virtualization

Step forward
Essential NFV

Essential SDN