

# OpenStack for NFV and SDN

A 3 day training course



## Description

OpenStack is predominately a cloud management technology. This course looks at how OpenStack can be used in a NFV and SDN environment.



## Key outcomes

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

- ✓ Describe the architecture of NFV.
- ✓ Explain the relationship between NFV and SDN.
- ✓ Implement NFV VIM using OpenStack.
- ✓ Explain how OpenStack as VNFM and orchestrator works.



## 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?

Anyone wishing to implement NFV using OpenStack.

### Prerequisites

Introduction to Virtualization.

**Duration:** 3 days

**Customer rating:** New Course

### 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

# OpenStack for NFV and SDN

## Course content

### What is NFV?

What is NFV? What are network Functions? NFV benefits, NFV market drivers. ETSI NFV framework. ETSI documents, Architecture overview, compute domain, hypervisor domain, infrastructure network domain.

### What is OpenStack?

Virtual machines, clouds, management. OpenStack architecture, OpenStack modules. Why OpenStack for NFV? Hands on: OpenStack installation.

### OpenStack Virtualization and NFV

Server, storage and network virtualization and NFV. Where OpenStack fits in the ETSI framework. Virtual machines, containers and docker. Data centres, clouds, SaaS, IaaS, PaaS. Hands on: OpenStack IaaS, OpenStack Nova.

### The virtualization layer

VM centric model, containers versus hypervisors, FD.io. Hands on: OpenStack as the VIM.

### OpenStack Neutron

VXLAN, Networks, subnets, ports. Security groups. Routers. Service and component hierarchy. Hands on: Implementing a virtual network with OpenStack Neutron.

### Virtualization of Network Functions

Network virtualization versus Network Function virtualization.

### NFV MANO

Management and Orchestration. Where OpenStack fits. MANO descriptors, Open orchestration. OpenStack Tacker, Open MANO, OpenBaton, other orchestrators.

### OpenStack Tacker

Installation, getting started, configuration. SFC and OpenStack. Hands on: Deploying a VNF.

### OPNFV

What is OPNFV, Where OpenStack fits into OPNFV.

### SDN

What is SDN? Control and data planes. SDN controllers. Classic SDN versus real SDN. Hybrid SDN, network automation, SDN with overlays. Northbound, southbound, SDN protocols, OpenFlow, OpenDaylight, ONOS, SDN with NFV. SDN and OpenStack.

### Summary

Deploying NFV, performance, testing. Futures.

