

SDN/NFV Module 1: Foundation in Software Defined Networking & Network Function Virtualization

The future of network facilities & infrastructure



Overview

This course gives the participant an introduction to Virtualization & Software Defined Networking and its application in the Telco environment. Virtualization is arguably one of the most significant enablers in the modern computing & networking environments, allowing for rapid deployment of new services and easier backup and recovery strategies. It highlights the main features of virtualization and compares & contrasts "Software Defined Networking" vs "Network Functions Virtualization". The participant will understand how these technologies are applied in the Telco network.

You will learn

- What is virtualization
- The key concepts of SDN and NFV
- How are SDN and NFV applied in a telecoms context
- The key standards for SDN and NFV
- The role of Open Source
- The operation of the OpenFlow standard
- How to plan migration to SDN/NFV
- How does virtualization relate to cloud computing

Who can benefit

This program is designed to provide those working in the communications environment with an overview of issues and key aspects of virtualization & SDN/NFV. In particular it is useful for those who are the decision makers within the organization.

Pre requisite knowledge

None

Outline

Introduction to SDN & NFV

- What is virtualization
- Overview of SDN concept
- Traditional switching and routing
- Separating the control & traffic forwarding functions
- What is virtual networking?
- Introduction to NFV
- What are the benefits?
- Key virtual environments & platforms
- Virtual data centres
- Virtualization & cloud computing
- Cloud models

Virtual Environments

- Key virtual environments
- Open source environments
- The hypervisor
- What is a "virtual machine" (VM)
- Telco & virtualization
- Migration strategies
- Virtual Networking

Software defined networking (SDN)

- SDN architecture and key components
- Orchestration & automation
- Open SDN implementation
- Northbound & Southbound interfaces/APIs
- The OpenFlow standard
- SDN and network device virtualization
- SDN applications

Network Function Virtualization (NFV)

- NFV system building blocks
- NFV and LTE EPC core network
- SDN & NFV: compare & contrast
- Using SDN & NFV together
- Applications of SDN & NFV to Telco environment

Cloud Computing

- Cloud versus virtualization
- Cloud modes
 - Infrastructure as a Service (IaaS)
 - Software as a Service (SaaS)
 - Platform as a Service (PaaS)
 - Network as a Service (NaaS)
- Private and public Cloud
- Managing cloud services

Hands on exercises including:

- Navigating the hypervisor
- Creating & managing a virtual machine
- Virtualizing network devices & functions
- Managing traffic flows using SDN

DURATION 2 days

MAXIMUM CLASS SIZE 14