

# Technology Primer: Orchestration

Instructor Led Live Virtual Class | Duration: 0.5 Day | Course Number: TPR1017

Orchestration is a requirement to achieve virtualized network automation. The drive towards an automated and virtualized network requires a paradigm shift in the way services are deployed. On demand services can be accomplished by the use of end-to-end orchestration which involves service orchestration, resource orchestration, and network orchestration. In addition, service fulfillment, service assurance, and service billing play a key role in making the automation a system wide end-to-end orchestration. We will present some use cases and scenarios of applying orchestration in a network that has Network Functions Virtualization (NFV), Software Defined Networking (SDN), and OpenStack technologies.

### Intended Audience

This course is designed for professionals in the industry who need to develop a high-level understanding of Orchestration.

### Learning Objectives

After completing this course, the student will be able to:

- Sketch the end-to-end orchestration framework
- Differentiate among the main components of end-to-end orchestration
- Answer the questions of what is orchestration and why orchestration
- Differentiate between the components for resource, service and network orchestration
- Walk-through orchestration use cases
- List the different benefits of orchestration
- Explain how service fulfillment, service assurance and service billing fit in with end-to-end orchestration.
- Sketch end-to-end orchestration in a network with Network Functions Virtualization (NFV), (SDN), and OpenStack technologies

### Suggested Prerequisites

- [NWV\_117] Welcome to SDN and NFV Foundations (eLearning)
- [TPR1010] Technology Primer: Cloud and Virtualization (Instructor Led)
- [TPR1011] Technology Primer: NFV (Instructor Led)

### Course Outline

#### 1. Introduction to Orchestration

- 1.1. What and why automation and orchestration?
- 1.2. Role of orchestration in the cloud

#### 2. Orchestration framework

- 2.1. NFV MANO model
- 2.2. Types of Orchestration
- 2.3. Orchestrators in the cloud infrastructure

#### 3. Definition of Network Service and VNF

- 3.1. Definition of Network Service
- 3.2. Definition of VNF
- 3.3. VNF package components

#### 4. Service and VNF Onboarding

- 4.1. VNF life cycle events
- 4.2. Onboarding and Service orchestration
- 4.3. Creating a VNF catalog

#### 5. Instantiation and Service Assurance

- 5.1. VNF instantiation process
- 5.2. Resource orchestration needs
- 5.3. Network orchestration needs
- 5.4. Role of the SDN controller
- 5.5. Service assurance through orchestration

#### Putting it-all-together

- Summary: Benefits of Orchestration
- Summary: Orchestration process