

Technology Primer: Software-Defined Networking (SDN)

Instructor Led Live Virtual Class | Duration: 0.5 Day | Course Number: TPR1012

This half day Technology Primer introduces the audience to the concept of Software-Defined Networking (SDN). SDN proposes to take the traditional implementation of the networking and dis-assemble it. SDN is a collection of technologies that split the data, control and management planes of the network. The course starts off with an introduction to the SDN Architecture. After that it deconstructs the SDN architecture and describes the architecture and function of each of the three key planes. The Forwarding Plane, the Control Plane and the Application Plane are described in relation to current packet routing technologies. We wrap up the course with a simple example of how SDN may be used in a telecom network and how it interworks with NFV to connect Network Services.

Intended Audience

This technology primer is designed for a wide range of audiences including operations, engineering, and performance personnel, as well as other personnel requiring a technical introduction to the application of Software-Defined Networking (SDN).

Learning Objectives

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

- Define and describe Software-Defined Networking
- Sketch the SDN architecture
- Illustrate the SDN Forwarding & Control planes
- Describe the SDN Controller and its interfaces
- Summarize applications of SDN in a service provider's network

Suggested Prerequisites

- A working knowledge of wireless networks
- [NWV_116] Welcome to SDN and NFV Introductions (eLearning)
- [NWV_117] Welcome to SDN and NFV Foundations (eLearning)

Course Outline

1. Introduction to SDN

- 1.1. Need for service agility
- 1.2. Enabling technologies
- 1.3. Role of NFV and SDN

2. SDN Architecture

- 1.4. Challenges in networking
- 1.5. SDN architecture and principles
- 1.6. SDN Controller and SDN Switches
- 1.7. Northbound and southbound interfaces

3. SDN Forwarding Plane

- 1.8. Legacy routers technology
- 1.9. Transition to SDN controller and switches
- 1.10. SDN traffic flow

4. SDN Controller and Interfaces

- 1.11. Open source SDN controllers
- 1.12. Flow and operations management
- 1.13. Example protocols e.g. OpenFlow, NETCONF, etc.

5. Applications of SDN

- 5.1. SDN and telecom networks
- 5.2. Service Function Chaining
- 5.3. SDN and OpenStack

6. Putting It All Together