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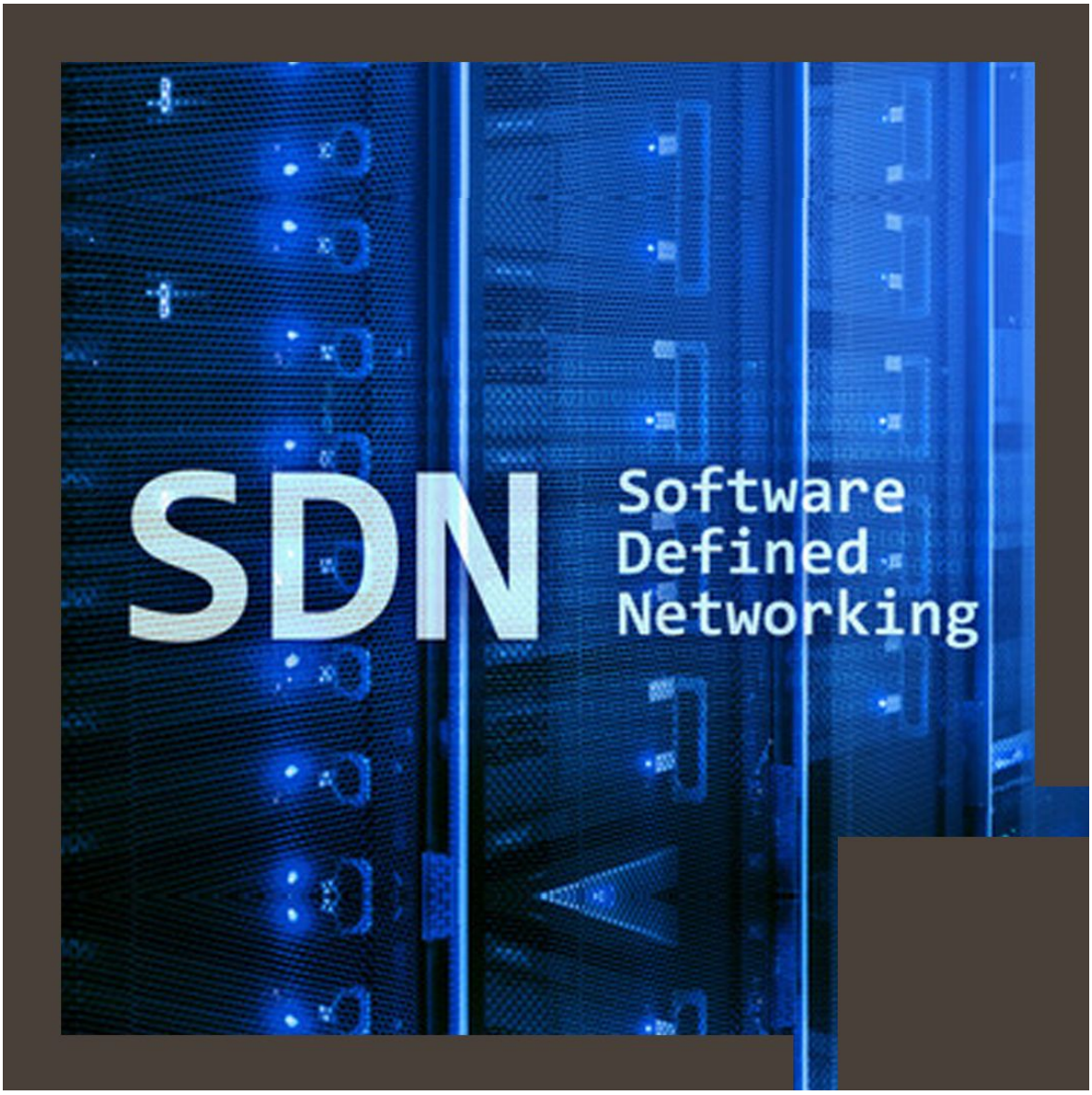
Learning Style: Virtual Classroom

Technology: Linux Foundation

Difficulty: Intermediate

Course Duration: 2 Days

Software Defined Networking with OpenDaylight (LFS465)



About this course:

SDN (Software Defined Networking) has the ability to steers away and mirrors a networking infrastructure from the real physical apparatus. It creates an abstract situation for the operator. This gives the opportunity to network administrators to establish a smooth networking connection between different vendors, hardware, operating systems, and even different versions. This is a Two-day course with intermediate level of difficulty. This course has been created to provide the Developers and advanced Network Engineers an opportunity to model in Open Source Software Defined Networking. In this course, there will be first sound discussion on the context of SDN features, and afterwards, the method to create code through modeling in OpenDaylight. Towards the end of the course, the method of coding an application right from the beginning will be taught.

OpenDaylight is an open networking site that enables SDN and creates a firm infrastructure for NFV (Network Functions Virtualization) for all network sizes.

Learning Objectives:

The course has the following learning objectives:

- Gaining a firm comprehension of SDN, and the protocols, tools and methods used
- Gaining comprehension of OpenDaylight SDN controller with its APIs and how it gets arranged into SDN
- Coding applications on-top of the OpenDaylight APIs
- Gaining comprehension of the tools to simulate and debug network topologies

Audience:

This course is suitable for developers and network engineers

Requirements:

This course has been created to provide the Developers and advanced Network Engineers an opportunity to model in Open Source Software Defined Networking. Therefore, it is important for the students to have a firm comprehension of concepts such as typical scalability and system administration problems that arise often in enterprise workforce environment. It is also mandatory to note that the students have an excellent grasp of Linux command line usage, shell scripting and text file editing.

Course Outline:

Introduction

- Objectives and Goals
- Audience

- The Linux Foundation
- Linux Foundation Training Offerings
- Course Platform: Ubuntu 16.04
- Course Procedures
- Course Registration
- Labs

Software Defined Networking

- Linux Networking and SDN
- Networking Primer
- Data and Control Plane in SDN
- Networking components in SDN
- Knowledge Check

Open vSwitch **

- Introduction
- Open vSwitch Components
- Open vSwitch installation
- Using Open vSwitch
- Knowledge Check
- Labs **

Simulation and Observation

- Objectives
- Mininet
- Mininet Command Line
- Mininet Python API
- Wireshark
- Knowledge Check
- Labs

SDN – History and Evolution

- Early Networking
- Datacenters and Network Operation
- Evolution of Network Programmability
- Knowledge Check

Network Programmability

- TELNET/CLI
- SNMP
- NETCONF
- YANG
- Knowledge Check

OpenFlow

- Introduction
- OpenFlow Basics and Versions
- OpenFlow Protocol
- Knowledge Check
- Labs

Network Virtualization and Multi-tenancy

- Virtualization in the Datacenter and in the Network
- Multi-Tenancy
- OF-Config
- Knowledge Check

Introduction to OpenDaylight

- The OpenDaylight Project
- Components of OpenDaylight
- Project resources
- Knowledge Check
- Labs

YANG

- YANG
- yangtools
- YANG to Java mapping
- YANG in OpenDaylight
- Knowledge Check
- Labs

Apache Karaf – the OSGi container

- OSGi
- Apache Karaf Project
- OpenDaylight and Karaf
- Using Karaf
- Karaf settings for OpenDaylight
- Knowledge Check
- Labs

OpenDaylight Controller and MD-SAL

- How the controller evolved
- MD-SAL
- Brokers and RPC-Calls
- The Datastore
- Clustering MD-SAL
- Plugin Development Workflow
- Development environment setup
- Knowledge Check

- Labs

Eclipse Setup and Importing OpenDaylight

- Eclipse
- Knowledge Check
- Labs

Observing and Logging OpenDaylight

- Observing
- Logging
- Debugging
- Knowledge Check

Writing an Application using OpenDaylight

- Labs

Closing and Evaluation Survey

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