

OpenStack IaaS Overview

Wireless, Wireline and Cable service providers are on the cusp of a multitude of network and business transformation choices. A good conceptual understanding of the new networking and Wireless, Wireline and Cable service provider business paradigms is essential for professionals in the communication industry. This course provides a high level view of the architecture and operations of OpenStack. The key services families of Keystone, Glance, Nova, Neutron, Cinder, Swift, Ceilometer, and Heat are explored including their architecture, services, and their communication with other services.

Intended Audience

The course is intended for all that are interested in understanding what OpenStack is and how it will transform the Wireless, Wireline and Cable service provider networks over the next few years.

Objectives

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

- Identify the main service families of OpenStack
- List the key resources that are virtualized with OpenStack
- Explain how OpenStack communicates internally with the RabbitMQ and externally with APIs

Prerequisites

- None

Required Equipment

- None

Course Outline

1. OpenStack IaaS Architecture

- 1.1 OpenStack IaaS
- 1.2 OpenStack release timeline

2. OpenStack Communication

- 2.1 OpenStack APIs
- 2.2 RabbitMQ

3. OpenStack Basic Services

- 3.1 Keystone and authentication
- 3.2 Glance and image store

4. Compute Resources and Nova

- 4.1 Nova architecture
- 4.2 Nova scheduling

5. Network Resources and Neutron

- 5.1 Neutron architecture
- 5.2 Neutron services

6. Storage Resources, Cinder and Swift

- 6.1 Types of storage
- 6.2 Cinder vs. Swift
- 6.3 Storage and Glance

7. Ceilometer and Monitoring

- 7.1 Telemetry meter types
- 7.2 Using Ceilometer

8. Orchestration and Heat

- 8.1 What is Orchestration?
- 8.2 Heat and Automation
- 8.3 Heat templates

9. End of Course Assessment