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OpenStack is the most popular open source project. It is being adopted and productized by a large number of companies around the world as OpenStack skills are in high demand. The OpenStack Certification Training course provides an in-depth understanding of the OpenStack environment. The integral services such as Cinder, Neutron, Heat, Trove, Nova, Glance, Ceilometer and Horizon will be covered in detail. The course equips the delegates with the essential knowledge of all the steps required to operate an open source environment. The course is beneficial for system and cloud administrators who are responsible for implementing and executing a cloud computing environment in business setups. Our training program will be conducted by industry leading experts who have real-time experience in projects. By the completion of the course, the delegates will get a clear picture of Orchestration, Open Stack Object storage, OpenStack Compute, OpenStack Networking and OpenStack Monitoring.

Prerequisites

The delegates are expected to have:

- Basic understanding of Command Line Interface
- Experience working with virtualization and Linux administration

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Course Objectives

- Get insights into OpenStack
- Apply various techniques of implementation
- Implement suitable use-cases for OpenStack
- Work on an interactive project around implementing OpenStack
- Understand OpenStack architecture with both CLI and API functionalities
- Perform OpenStack operations
- Implement and use Nova, Neutron, Image and other OpenStack services

Introduction to Virtualization, Cloud and OpenStack

The module describes the virtualization concepts and how it is used on the cloud. Also, understand the relationship between the cloud and virtualization. It also explains the ecology and components of OpenStack.

- Understanding the virtualization concept
- Relation between Cloud and Virtualization

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Keystone and Glance (OpenStack authentication system and Image Service)

In this module, the delegates will be introduced to the authorization and authentication. The delegates will also learn how to install and implement keystone.

Keystone

- Introducing OpenStack identity management
- Identity concepts
- Keystone - User Interaction
- Role Mapping with keystone
- End points interaction via keystone

Glance

- Glance Overview
- Glance components
- OpenStack Glance architecture
- Glance formats
- Glance status flow
- Image and Instances

Nova and Cinder (OpenStack Compute and Block Storage Service)

The module describes how to implement the OpenStack compute service. The delegates will learn to implement and run Nova by utilising virtualization. Implementation of OpenStack block service will also be covered in detail.

Nova

- Introducing OpenStack compute services
- Nova Components
- Nova Packet Flow
- KVM based Architecture

Cinder

- Understanding Cinder (Block services)
- Cinder services
- Cinder Architecture
- How cinder works
- Manage volumes

Neutron (OpenStack Network Service)

The module explains the Neutron concepts in detail. Also, learn how to successfully implement Neutron.

- Introduction to OpenStack networking
- Neutron - Network Configuration

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- Network Services – LBaaS, FwaaS, VPNaaS

Swift (OpenStack Object Storage Service)

In this module, the delegates will learn about the implementation of Swift installation. Also, understand its integration with Glance to use as an image store.

- Introducing Object Storage
- Features and Benefits
- Object Storage Characteristics
- Swift Components
- Swift Architecture
- Cluster Architecture
- Ring Builder
- Swift Replications
- Cinder Snapshots and Backups

Horizon (OpenStack Dashboard service)

The module describes the installation and configuration of GUI for OpenStack.

- Introducing OpenStack Dashboard
- Horizon Design
- Horizon Internals
- Horizon – Key values

Heat and ceilometer (OpenStack Orchestration and Billing services)

In this module, the delegates will learn how to implement Heat orchestration, Alerting and Billing service.

Heat

- Introducing Heat
- Heat Architecture
- Heat template

Ceilometer

- Understanding Ceilometer
- Purpose of Telemetry Service
- Basic ceilometer architecture
- Data collection
- Data Retrieval
- Heat and Ceilometer

Trove (OpenStack Database as a service)

The module explains the installation of OpenStack database as a service module.

- Introducing Trove
- Trove components

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In this module, the delegates will learn how to install an OpenStack 3 Node Architecture.

- Real-time problem resolutions
- OpenStack environment Real-time operations
- Bug/Issue tracking
- Troubleshooting scenarios and resolutions

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