

[OS-KVMI]: OpenStack Multi Node – KVM Integration

Length : 3 days
Delivery Method : Instructor-led (Classroom)

Course Overview

OpenStack is a free and open-source software platform for cloud computing, mostly deployed as an infrastructure-as-a-service (IaaS). In this training you will understand OpenStack components followed by install and configure the software. Each student will be able to deploy a private cloud on Ubuntu server using OpenStack in distributed mode with 3 Ubuntu server (server –A: controller node, Server –B: Network node, Server-C: KVM node).

Target Audience

Targeted for Cloud engineers, Centre of excellence team, window server administrators, Unix/Linux administrator, Storage admins, network administrators, Virtualization administrators.

At Course Completion

Participant should be able to deploy a private cloud in distributed mode and also provide ability to showcase for Proof of concept of OpenStack. They will have the ability to run cloud at scale.

Pre-Requisites

Basic Linux commands like working with files and directories is desired.

Course Outline

Module 1: OpenStack Ecosystem Overview

Lessons

- OpenStack Releases
- OpenStack Project Overview Part-1
- OpenStack project Overview-Part-2
- Role of OpenStack-Projects

Module 2: Prepare Your Setup for OpenStack Deployment

Lessons

- System Requirements
- OpenStack Multi Node Architecture
- Create VM and install Ubuntu server
- Create OVF of Ubuntu Server
- Deploy OVF

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Module 3: Prepare Your OS for OpenStack Nodes

Lessons

- Prepare Controller Node
- Prepare Network Node
- Prepare Compute Node

Module 4: Prepare Your Network OpenStack Nodes

Lessons

- Prepare networking on Controller Node
- Prepare Networking on Network Node
- Prepare Networking Compute Node
- Verify your node communication
- NTP and Sysctl.conf
- Where are we in the lab

Module 5: MySQL

Lessons

- RabbitMQ Server Overview
- Role of RabbitMQ server in OpenStack
- Install and Configure RabbitMQ server
- Where are we in the lab

Module 6: Rabbit MQServer

Lessons

- RabbitMQ Server Overview
- Role of RabbitMQ server in OpenStack
- Install and Configure RabbitMQ server
- Where are we in the lab

Module 7: Keystone

Lessons

- Keystone - An Overview
- Role of Keystone in OpenStack
- Keystone - Terms and terminologies
- Install and Configure Keystone
- Create Projects, Users, Service, Endpoints Roles
- Where are we in the lab

Module 8: Horizon

Lessons

- Horizon an overview
- Install and configure Horizon dashboard
- Where are we in the lab

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Module 9: Glance

Lessons

- Glance and its Role in OpenStack
- Create Glance service user and endpoint
- Install and Configure Glance
- Glance CLI, verify operation and Manage Images (add, update, remove)
- Where are we in the lab

Module 10: Nova - Controller Node

Lessons

- Nova and its Role in OpenStack
- Nova Components
- Create Nova service, user and endpoint
- Install and Configure Nova on Controller
- Where are we in the lab

Module 11: Nova – Compute Node

Lessons

- Nova and its Role in OpenStack
- Nova Components
- Create Nova service, user and endpoint
- Install and Configure Nova on Controller
- Where are we in the lab

Module 12: Open vSwitch

Lessons

- Open vSwitch - An Overview
- Open vSwitch Components
- Role of Open vSwitch in OpenStack
- Install and configure Open vSwitch on Neutron Node
- Install and configure Open vSwitch on Compute Node
- Where are we in the lab

Module 13: Neutron - Controller Node

Lessons

- Neutron and its Role in OpenStack
- Create Neutron user, service and endpoints
- Install and configure Neutron server
- Where are we in the lab

Module 14: Neutron - Network Node

Lessons

- Overview of neutron agents and their roles
- Configure neutron DHCP, L3 and metadata agent
- Configure Open vSwitch agent
- Where are we in the lab

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Module 15: Neutron - OVS agent on Compute Node

Lessons

- Install and configure Open vSwitch agent
- Open vSwitch peering and Tunneling
- Where are we in the lab

Module 16: Computer – Operations Part-01

Lessons

- OpenStack Dashboard overview
- Create a tenant and user
- Manage compute quotas
- Manage flavors

Module 17: Operations

Lessons

- Verify operation of network service
- Manage project security group rules
- Manage network quotas
- Create project networks
- Create project routers
- Create external networks

Module 18: Compute Operations Part-02

Lessons

- Manage Nova user keypairs
- Launch a new instance
- Configure Open vSwitch agent
- Assign security group to Instance
- Assign, Attach and detach a floating IP address to Instance
- Access an Instance using a keypair
- Manage instance snapshots
- Launch instance using snapshot

Module 19: Cinder - Controller node

Lessons

- Cinder and its role in OpenStack
- Cinder Components
- Create cinder service, user and endpoint
- Install and Configure cinder
- Create volume group for block storage
- Set up storage pools
- Manage volumes quotas
- Create a new Block Storage Volume and mount it to a Nova Instance

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