

OST-104 Openstack private cloud workshop

Course Description:

This course covers the fundamentals of the Openstack open source IAAS (InfrastructureAs A Service) cloud solution, used for creating private clouds. After a short cloud and Openstack primer, it presents the architecture of Openstack and introduces its base components in details such as the Horizon GUI dashboard and the Openstack CLI, the Keystone identity system, the Nova compute service, the Neutron network service and software defined networking, the Glance image service, the Cinder block storage service, the Ceilometer metering solution, the Heat orchestration services and the Swift object store.

Structure: 50% theory 50% hands on lab exercises.

Target audience: Developers, Sys.Admins and Dev.Ops wanting to obtain an initial knowledge about the Openstack open source cloud system.

Prerequisites: Basic Linux sys.admin, networking as well as virtualization knowledge.

Duration: 4 days

Detailed Course Outline

1. Introduction

- Overview

- Core Projects

- Nova
- Neutron
- Glance, Cinder
- Ceilometer
- Heat
- Swift

- OpenStack Architecture

- Virtual Machine Provisioning Walk-Through

Lab1

- Understanding the classroom environment
- Perform initial health check
- Test instance creation

2. Controller Node

- Overview Horizon and OpenStack

- Keystone Architecture

- User Management
- Keystone CLI overview

- OpenStack Messaging and Queues

- Message Queue Configuration

- Image Management (Glance)

- Glance CLI overview
- Creation of custom images

- OpenStack Storage (Cinder)

- Cinder CLI overview

- Managing volumes

Lab2

- Create and manage users, roles, tenants, quotas Create and manage images
- Create and manage volumes
- Check messaging

3. Compute Node

- Linux virtualization basics

- Hypervisors, KVM, Linux bridges

- VM Placement

- VM provisioning in-depth •Instance management

- Nova CLI overview
- Boot/Terminate instance
- Attach volume to instance

Lab3

- Configure flat networking
- Create and manage vm instances
- Configure VM metadata

4. Network node

- Networking in OpenStack

- OpenStack Networking Concepts

- Nova-network vs. Neutron
- Neutron architecture and plugins
- OpenVSwitch concepts
- Neutron agents

- Network management

- Neutron CLI overview
- Manage networks
- Manage subnets
- Manage routers
- Manage ports
- Manage floating IPs

Lab4

- Create routers, networks, subnets
- Associate floating IPs
- Troubleshoot Neutron networking

5. Ceilometer

- Ceilometer background and usecases
- Ceilometer architecture

- Ceilometer meters and pipelines
- Ceilometer deployment

Lab5

- Working with ceilometer

6. Heat

- Heat Overview

- Architecture

- AWS CloudFormation template format
- Heat services
- heat-api • heat-cfn-api • heat-engine

- Configuring Heat

- Configuring images for use with Heat
- Creating a stack

Lab6

- Creating a stack

7. Openstack Object Store (Swift)

- Swift Overview

- Swift Architecture

- Accounts, containers, objects, rings
- Nodes types : auth, proxy, storage
- Partitions, zones, replication

- Using Swift

- Accounts
- Creating and managing objects
- Object server management
- Container server management
- Account server management
- Proxy server management
- Ring management
- Large objects

Weitere Informationen finden auf [:http://www.pcit.de/openstack](http://www.pcit.de/openstack)

Für Fragen stehen wir Ihnen jederzeit gerne unter der Telefonnummer

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zur Verfügung

Ihr PCIT Team