OST-204 Openstack deployment and advanced administration

Course Description: The Openstack Advanced Administration and deployment (OST-204) training builds on the basic Openstack system administration skills gained on the OST-104 course and enhance the delegates' knowledge with more in-depth information and hands-on exercises in the areas of realizing complex Openstack deployments, using Ceph at Openstack storage systems and implementing Openstack high-availability (HA) solutions Besides in-depth theoretical coverage students also do hands-on exercises in their own Openstack lab system.

Structure: 50% theory 50% hands on lab exercises

Target audience: Openstack devops professionals, system administrators and developers who want to understand the structure and operation of Openstack more deeply and want to be able to realize complex Openstack deployments, to add high availability (HA) features to Openstack and to build up and administer CEPH based Openstack storage systems

Prerequisites: OST-104 Openstack Admin. and COA exam.prep. training or equivalent basic Openstack administration knowledge

Duration: 4 days

Detailed Course Outline:

Module 1: Deployment

- Automated installation
- Packstack
- Manual installation
- Preparation
- Fundamental Services setup
- Openstack service setup (overview)
- Glance service – Controller node
- Neutron service– Controller node
- Neutron service – Network node
- Nova service – Controller node
- Horizon service
- Cinder service – Controller node
- Heat service – Controller node
- Lab 1

Module 2: Introduction to HA

- OpenStack Architecture
- Lab environment overview
- Openstack HA
- Active/passive HA
- Active/active HA
- Glance HA (active-active)
- Nova HA (active-active)
- Cinder HA (active-passive)
- Heat HA (active-active)
- Ceilometer HA (active-active)
- Neutron - L3 HA
- L3 HA details

- Neutron - Distributed Virtual Routing
- DVR overview
- Monitoring OpenStack – call paths
- Deployment scenarios for LS/ES/Kibana
- Logstash configuration example
- Lab2

Module 3: MySQL/Galera replication

- Mysql replication
- Galera replication
- Galera replication examples
- Galera notes
- State transfers
- Galera node states
- Galera quorum
- Detecting node failures
- Configuration example
- Galera + HaProxy
- Galera + HAproxy example
- Galera - Best practices
- Lab 3

Module 4: RabbitMQ clustering

- RabbitMQ introduction
- AMQP terminology
- AMQP terminology (cont.)
- Message tracing in RabbitMQ
- OpenStack and RabbitMQ
- RabbitMQ cluster
- RabbitMQ cluster setup overview
- Lab 4

Module 5: OpenStack storage with Ceph

- Ceph introduction
- Ceph node types
- Ceph architecture
- Cluster maps
- Object placement
- Ceph background procedures
- Ceph installation
- Ceph installation
- Customizing the CRUSH map
- Add cache tiering
- Cache tiering
- Openstack support
- Ceph – Glance config example
- Ceph – Cinder config example
- Ceph – Nova config example
- Best practices
- Lab 5