**Understanding OpenStack Cloud Solution – Series I**

**Module 2 – Understanding OpenStack Cloud Solution**

1. **Cloud computing is a \_\_\_\_\_\_\_ system and it is necessarily unidirectional in nature.**
2. **Stateless**
3. **Stateful**
4. **Reliable**
5. **Efficient**

The correct answer is option a - Stateless.

Explanation for correct answer:

* Cloud computing is a stateless system, as is the Internet in general.

Explanation for Wrong answer:

* The option a, b and d are not related to Cloud computing.

1. **Which of the following is not the Core components of any IaaS?**
   1. **Compute**
   2. **Network**
   3. **Storage**
   4. **Deploy**

The correct answer is option d - Deploy.

Explanation for correct answer:

The 3 Core components of any IaaS are:

* Compute - which entails running and managing virtual machines with the help of the Hypervisor
* Network - which takes care of essential networking services like DHCP, DNS, and Virtual Routers etc.
* Storage - which takes care of providing storage as a service. For instance, creating volumes and disks to attach to virtual machine Instances.

Explanation for Wrong answer:

* For Option a, b, and c – This is incorrect as the 3 Core components of any IaaS are Compute, Network and Storage.

1. **The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an open source cloud computing platform that supports all types of cloud environments.**
   1. **OpenStack Project**
   2. **OpenStock Project**
   3. **OpenSource Project**
   4. **OpenShield Project**

The correct answer is option a - OpenStack Project

Explanation for correct answer:

* The OpenStack project is an open source cloud computing platform that supports all types of cloud environments. The project aims for simple implementation, massive scalability, and a rich set of features. Cloud computing experts from around the world contribute to the project.

Explanation for Wrong answer:

* The option b, c and d are not related to OpenStack.

1. **On which year, Oracle announced to join OpenStack as a Sponsor and planned to bring OpenStack to Oracle Solaris, Oracle Linux, and many of its products.**
   1. **2012**
   2. **2013**
   3. **2014**
   4. **2015**

The correct answer is option b - 2013

Explanation for correct answer:

* In 2013, Oracle announced it had joined OpenStack as a Sponsor and planned to bring OpenStack to Oracle Solaris, Oracle Linux, and many of its products.

Explanation for Wrong answer:

* The option a, c and d are incorrect.

1. **OpenStack is a cloud \_\_\_\_\_ framework, which helps us build the cloud infrastructure with all those cloud features.** 
   1. **IaaS**
   2. **SaaS**
   3. **PaaS**
   4. **CaaS**

The correct answer is option a - IaaS

Explanation for correct answer:

* OpenStack is a cloud IaaS framework, which helps us build the cloud infrastructure with all those cloud features.

Explanation for Wrong answer:

* The option a, c and d are not related to OpenStack.

**Module 3 – OpenStack POC SetUp Database with RabbbitMQ Installation and Configuration**

1. **Is this statement true:**

**We need all nodes in OpenStack to be in time synced?**

The correct answer is True

Explanation for correct answer:

* Yes, this statement is true. All nodes in OpenStack should be synced. We use ntpd demon to sync the time between these nodes.

Explanation for Wrong answer:

* No, this statement is true. All nodes in OpenStack should be synced. We use ntpd demon to sync the time between these nodes.

1. **What messaging services are supported by OpenStack**
2. **IBM MQ and TIBCO ESB**
3. **Qpid and TIBCO ESB**
4. **RabbitMQ and QPid**
5. **TIBCO ESB and RabbitMQ**

The correct answer is option c - RabbitMQ and QPid

Explanation for correct answer:

* OpenStack uses this messaging queue to coordinate operations and status information among the services, so this message queue service typically runs on controller node and OpenStack supports several messaging queue services like RabbitMQ and QPid. Here we are using RabbitMQ Service.

Explanation for Wrong answer:

* Option a– This option is incorrect as IBM MQ and TIBCO ESB are not related to OpenStack.
* Option b– This option is incorrect as TIBCO ESB is not related to OpenStack.
* Option d – This option is incorrect as TIBCO ESB is not related to OpenStack.

1. **Which of the following script is used to secure the database service** 
   1. **by running the mysql\_secure\_installation script**
   2. **by running the sql\_secure\_installation script**
   3. **by running the oracle\_secure\_installation script**
   4. **by running the mdb\_secure\_installation script**

The correct answer is option a–by running the mysql\_secure\_installation script

Explanation for correct answer:

* We can Secure the database service by running the mysql\_secure\_installation script and choose suitable password for database root account

Explanation for Wrong answer:

* Option b– This option is incorrect, not related to OpenStack
* Option c – This option is incorrect, not related to OpenStack
* Option d – This option is incorrect, not related to OpenStack.

1. **Which of the following command is used to install MariaDB service with MariaDB servers and Python libraries for mySQL**
   1. **# yum mariadb mariadb-server python2-PyMySQL-y**
   2. **# yum install mariadb-service mariadb-server python2-PyMySQL-y**
   3. **# yum install mariadb python2-PyMySQL-y**
   4. **# yum install mariadb mariadb-server python2-PyMySQL-y**

The correct answer is option d – # yum install mariadb mariadb-server python2-PyMySQL-y

Explanation for correct answer:

* to install MariaDB service with MariaDB servers and Python libraries for mySQL by typing # yum install mariadb mariadb-server python2-PyMySQL-y.

Explanation for Wrong answer:

* Option a -Install is missing in the command.
* Option b – service is not required in the command
* Option c – mariadb-server is missing in the command.

1. **Is this statement true:**

**OpenStack compute is the heart of OpenStack and all the operations are carried out from the OpenStack compute node itself.**

The correct answer is False

Explanation for correct answer:

* Yes, this statement is False as OpenStack controller is the heart of OpenStack and all the operations are carried out from the OpenStack controller node itself and the Compute node is only used to spawn multiple VM’s.

Explanation for Wrong answer:

* No, this statement is False as OpenStack controller is the heart of OpenStack and all the operations are carried out from the OpenStack controller node itself and the Compute node is only used to spawn multiple VM’s.

**Module 4 – OpenStack Keystone service**

1. **Keystone is basically used for** 
   1. **Authentication and authorization purposes**
   2. **Network management purposes**
   3. **User block management purposes**
   4. **Storage management purposes**

The correct answer is option a –Authentication and authorization purposes

Explanation for correct answer:

* Keystone is an OpenStack project that provides Identity, Token, Catalog and Policy searches for use specifically by projects in the OpenStack family. Keystone is basically used for authentication and authorization purposes.

Explanation for Wrong answer:

* Option b– This option is incorrect, not related to OpenStack Keystone Service.
* Option c – This option is incorrect, not related to OpenStack Keystone Service.
* Option d – This option is incorrect, not related to OpenStack Keystone Service.

1. **\_\_\_\_\_\_\_ is a digital representation of a person, system, or service that uses OpenStack cloud services.**
   1. **User**
   2. **Service**
   3. **Role**
   4. **Token**

The correct answer is option a - User.

Explanation for correct answer:

* User is a digital representation of a person, system, or service that uses OpenStack cloud services.

Explanation for Wrong answer:

* Option b – Service, an OpenStack service such as Compute (Nova) or the Neutron network service or Glance image service, this service provides one or more endpoints through which the user can access resources and perform operations.
* Option c – Role, it is a personality with a defined set of user rights and privileges to perform a specific set of operations. The Role is the access privileges or rights a specific user caries.
* Option d – Token is the identifying credential associated with the user or tenant. Once the user is authenticated using Keystone, it will return with a unique token number. This token is an alphanumeric key.

1. **Is this statement true:**

**The Keystone API will communicate with 6 backends internally**

The correct answer is true.

Explanation for correct answer:

* Yes, this statement is true. All the OpenStack Services will communicate with the Keystone API for authentication and authorization purposes. The Keystone API will communicate with 6 backends internally. They are Policy backend, Token backend, Catalog backend, Identity backend, Assignments backend and Credentials backend.

Explanation for Wrong answer:

* No, this statement is true. All the OpenStack Services will communicate with the Keystone API for authentication and authorization purposes. The Keystone API will communicate with 6 backends internally. They are Policy backend, Token backend, Catalog backend, Identity backend, Assignments backend and Credentials backend.

1. **Which of the following is not the task of Keystone service?**
   1. **add service**
   2. **add users**
   3. **add rules**
   4. **add roles**

The correct answer is option c - add rules

Explanation for correct answer:

* Add rules is not the task of Keystone service. The task performed by Keystone service are add service, add users, add roles, grant roles to users, add endpoint templates, and map endpoint templates to different zones.

Explanation for Wrong answer:

* The option a, b and d are wrong, because the task performed by Keystone service are add service, add users, add roles, grant roles to users, add endpoint templates, and map endpoint templates to different zones.

**Module 5 – OpenStack Glance Service**

1. **-------- is information about the image, like what type of image, who is the owner, what is the size of image.**
   1. **Imagedata**
   2. **Metadata**
   3. **Infodata**
   4. **packdata**

The correct answer is option b - metadata

Explanation for correct answer:

* Metadata is information about the image, like what type of image, who is the owner, what is the size of image. All that kind of information is stored in the Glance registry.

Explanation for Wrong answer:

* Option a is not related with OpenStack Glance Service
* Option c is not related with OpenStack Glance Service
* Option d is not related with OpenStack Glance Service

1. **Is this statement true:**

**Image service can be called through two ways, one is through Nova compute service and another, the user can directly call through command line or horizon dashboard.**

The correct answer is True

Explanation for correct answer:

* Yes, this statement is true. Image service can be called through two ways, one is through Nova compute service and another, the user can directly call through command line or horizon dashboard. So, whenever we call the Glance service, or the image call, then this call will come to the API server first. So, API server acts as a gateway for all the incoming and outgoing image calls.

Explanation for Wrong answer:

* No, this statement is true. Image service can be called through two ways, one is through Nova compute service and another, the user can directly call through command line or horizon dashboard. So, whenever we call the Glance service, or the image call, then this call will come to the API server first. So, API server acts as a gateway for all the incoming and outgoing image calls.

1. **Which of the following service is not provided by the Glance project** 
   1. **discovering**
   2. **registering**
   3. **retrieving virtual machine images**
   4. **authentication and authorization**

The correct answer is option d - authentication and authorization

Explanation for correct answer:

* + **authentication and authorization is provided by OpenStack Keystone service**.

Explanation for Wrong answer:

* Option a - The Glance project provides services for discovering, registering and retrieving virtual machine images.
* Option b - The Glance project provides services for discovering, registering and retrieving virtual machine images.
* Option c - The Glance project provides services for discovering, registering and retrieving virtual machine images.

1. **Is this statement true:**

**The Nova-compute passes image-uri to the hypervisor driver.**

The correct answer is True

Explanation for correct answer:

* Yes, this statement is true. The Nova-compute passes image-uri to the hypervisor driver. So, Nova also support multiple hypervisors. So whichever hypervisor calls this image information, then Nova-compute passes that image-uri to that hypervisor. And then hypervisor driver fetches image directly from glance back-end store using image-uri.

Explanation for Wrong answer:

* No, this statement is true. The Nova-compute passes image-uri to the hypervisor driver. So, Nova also support multiple hypervisors. So whichever hypervisor calls this image information, then Nova-compute passes that image-uri to that hypervisor. And then hypervisor driver fetches image directly from glance back-end store using image-uri.

1. To update the configuration files, glance.conf file we will use the ------ command
   1. openstack-config command
   2. glance-config command
   3. openstack-glance-config command
   4. glance- openstack-config command

The correct answer is option a – openstack-config command

Explanation for correct answer:

* To update the configuration files, glance.conf file we will use the openstack-config command.

Explanation for Wrong answer:

* Option b, c and d are incorrect, because to update the configuration files, glance.conf file we will use the openstack-config command.
* .

**Module 6 – OpenStack Nova Service**

1. **\_\_\_\_\_\_\_ is a RESTful API web service which is used to interact with Nova**
2. **Nova API**
3. **Nova schedulerAPI**
4. **Nova messageAPI**
5. **Nova computeAPI**

The correct answer is option a – Nova API

Explanation for correct answer:

* Nova API is a RESTful API web service which is used to interact with Nova.

Explanation for Wrong answer:

* Option b, c and d are incorrect, because Nova API is a RESTful API web service which is used to interact with Nova.

1. **Is this statement true:**

**nova database stores current state of all objects in compute cluster.**

The correct answer is true

Explanation for correct answer:

* Yes, this statement is true. As each of these services require a separate database so, we also have a database for Nova, which stores the current state of all objects in compute cluster.

Explanation for Wrong answer:

* No, this statement is true. As each of these services require a separate database so, we also have a database for Nova, which stores the current state of all objects in compute cluster.

1. **Which of the following is a daemon which determines on which compute host the request should run?**
   1. **Nova API**
   2. **Nova scheduler**
   3. **Nova database**
   4. **Message Queue**

The correct answer is option b – Nova scheduler

Explanation for correct answer:

* Nova scheduler is a daemon which determines on which compute host the request should run.

.

Explanation for Wrong answer:

* Option a – Nova API is the public facing interface.
* Option b - Nova database stores current state of all objects in compute cluster.
* Option d – Message queue acts as a broker to handle interactions between services, currently based on RabbitMQ.

1. **Is this statement true:**

**Nova database can be any relational database.**

The correct answer is true

Explanation for correct answer:

* Yes, this statement is true. Nova database can be any relational database. Nova API talks to DB via SQLAlchemy, this is a Python ORM - Object Relational Mapper is the one which will communicate with our database. Most of the deployments are done with mysql or postgresql.

Explanation for Wrong answer:

* No, this statement is true. Nova database can be any relational database. Nova API talks to DB via SQLAlchemy, this is a Python ORM - Object Relational Mapper is the one which will communicate with our database. Most of the deployments are done with mysql or postgresql.

1. \_\_\_\_\_\_\_\_ is a worker daemon which primarily creates and terminate VMs via hypervisor API.
   1. **Nova API**
   2. **Nova compute node**
   3. **Nova database**
   4. **Message Queue**

The correct answer is option b – Nova compute node

Explanation for correct answer:

* Nova compute node is a worker daemon which primarily creates and terminate VMs via hypervisor API.

.

Explanation for Wrong answer:

* Option a – Nova API is the public facing interface.
* Option b - Nova database stores current state of all objects in compute cluster.
* Option d – Message queue acts as a broker to handle interactions between services, currently based on RabbitMQ.