

OPEN STACK

Def

↳ Open stack is a cloud OS that controls large pools of compute, storage & networking resource throughout a data center

→ Open Stack Capability

1. SaaS - Browser or Thin Client access
2. PaaS - On top of IaaS eg. cloud foundry.
3. IaaS - Provision compute, Network, Storage.

- VM on demand → Provisioning

→ Snapshotting

- Network

- Storage for VMs

- Multi-Tenancy.

→ Open Stack Major Component

1. Service - Compute

Project - Nova

↳ Manages the life cycle of compute instances in an open stack.

- Responsibilities including -

- swapping

- scheduling

- decommissioning of VM.

2. Service - Networking

Project - Neutron.

↳ Enables Network Connecting as a service for other open stack services.

- Provides an API for users to define network and the attachment into them.

3. Service - Object storage Project - Swift.

- Stores and retrieves unstructured data objects via Restful HTTP APIs.
- It is highly fault tolerant.

4. Service - ^{Block} Object Storage Project - ~~Swift~~ Cinder

- ↳ Stores ~~and retrieves~~
- Provides block storage to running instances.
- It is pluggable driver architecture facilitates the creation & management of storage devices.

5. Service - Identity Project - Keystone

- Provides an authentication & authorization service for other services.
- Provides a catalog of endpoints for all OpenStack.

6. Service - Image service Project - Glance.

- stores & retrieves VM disk images.
- OpenStack Compute make use of all this.

7. Service - Telemetry Project - Ceilometer

- Monitors and meters the openstack cloud for billing & benchmarking purposes.

8. Service - Dashboard Project - Horizon

- Provides a web based self service portal to interact with underlying openstack.

→ Openstack Workflow :

1. User logs in to UI specifying VM params
- name, flavor, keys & hit create.
2. Horizon sends HTTP request to key stone
auth info is specified in HTTP headers.
3. Key stone sends temporary token back
to Horizon via HTTP.
4. Key stone sends temporary token to
horizon via HTTP.
5. Nova API sends HTTP request to validate
API token to key stone.