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OpenStack

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What is OpenStack?

- Set of software tools for building and managing cloud computing platforms for public and private clouds.
- Provides Infrastructure as a Service (IaaS)
- Managed by OpenStack Foundation
 - Non-profit organization



Components of Openstack

■ HORIZON

- Openstack Dashboard
- Gives web based user interface

■ KEYSTONE

- Openstack Identity
- Provides authorization to user



Components of Openstack

■ NOVA

- Compute Controller
- Most Essential part of IaaS Cloud

■ CINDER

- Block Storage
- Requires a specific locations on a disk drive



Components of Openstack

■ GLANCE

- Provides Image Service
- Images can be stored anywhere from host filesystems to object-storage systems

■ SWIFT

- Object Storage
- Openstack decides where to store the files, gives unique identifier to developer



Components of Openstack

- NEUTRON
 - Network Connectivity
 - Ensures connectivity b/w openstack deployed components

- CEILOMETER
 - Measure the usage of Users
 - Helpful in billing



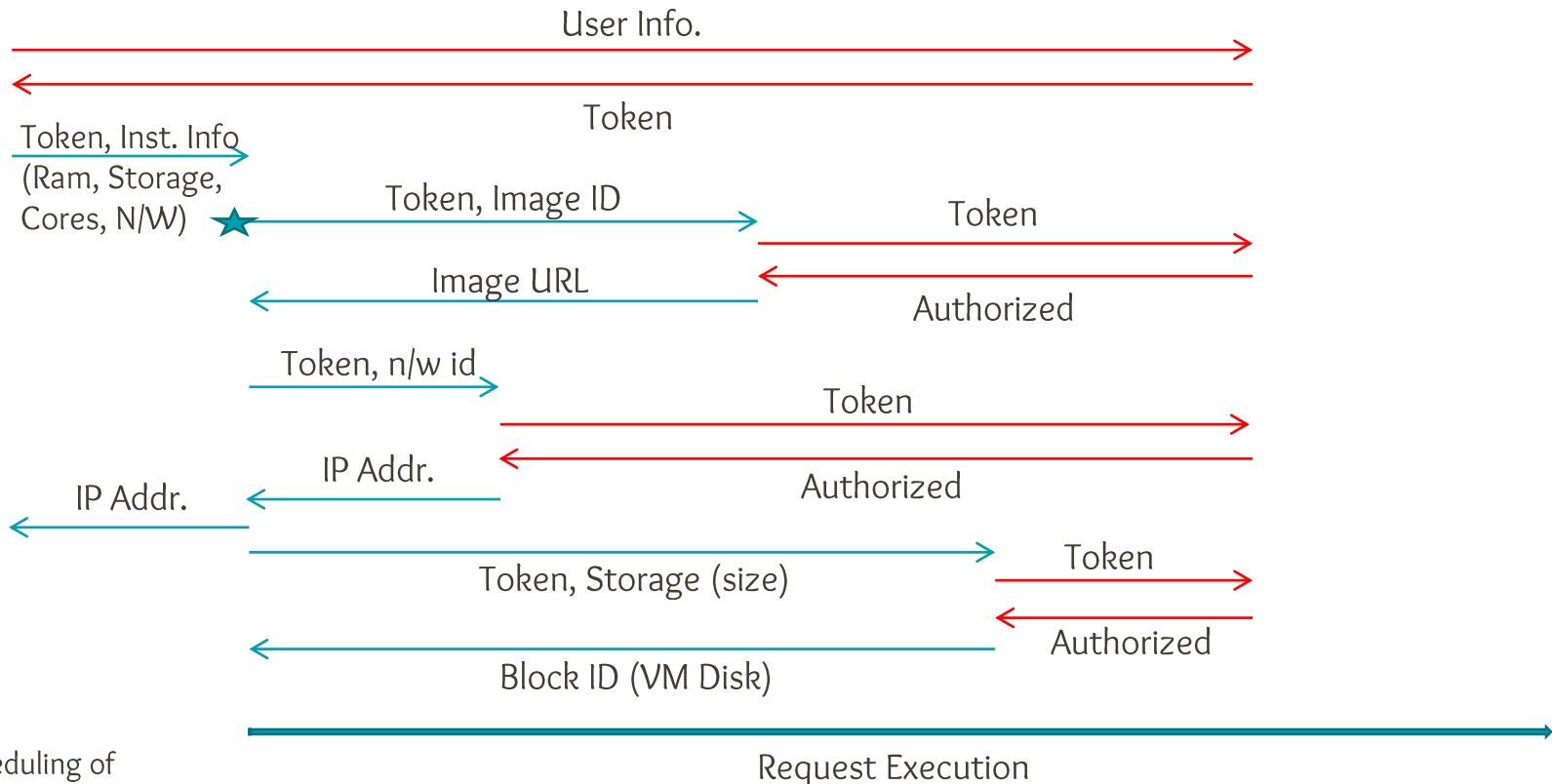
Components of Openstack

- HEAT
 - Orchestration for describing a cloud application
 - Used for multiple composite cloud application

- Other components
 - Ironic, Sahara, Trove, Designate, Barbican, Zaqr, Manila



Instance Provisioning Interaction b/w components





Nova: "User Request" to "Host" Scheduling

NOVA API

NOVA DB

SCHEDULER

COMPUTE

CONDUCTOR

Inst. Info, Entry in DB →

Request Scheduler to map request ID and host ID →

★ ← Map (Update DB)

Request to Launch Inst. →

Request to get HostID
and Instance ID →

← Interacts with DB to get Host ID, Instance ID
Host ID and Instance ID returned

← Host ID, Inst. ID

★ Filtering and Weighing to get appropriate host



DEMO

trystack.org



Thank you!

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