Triple O 를 이용한 빠르고 쉬운 OpenStack® 설치

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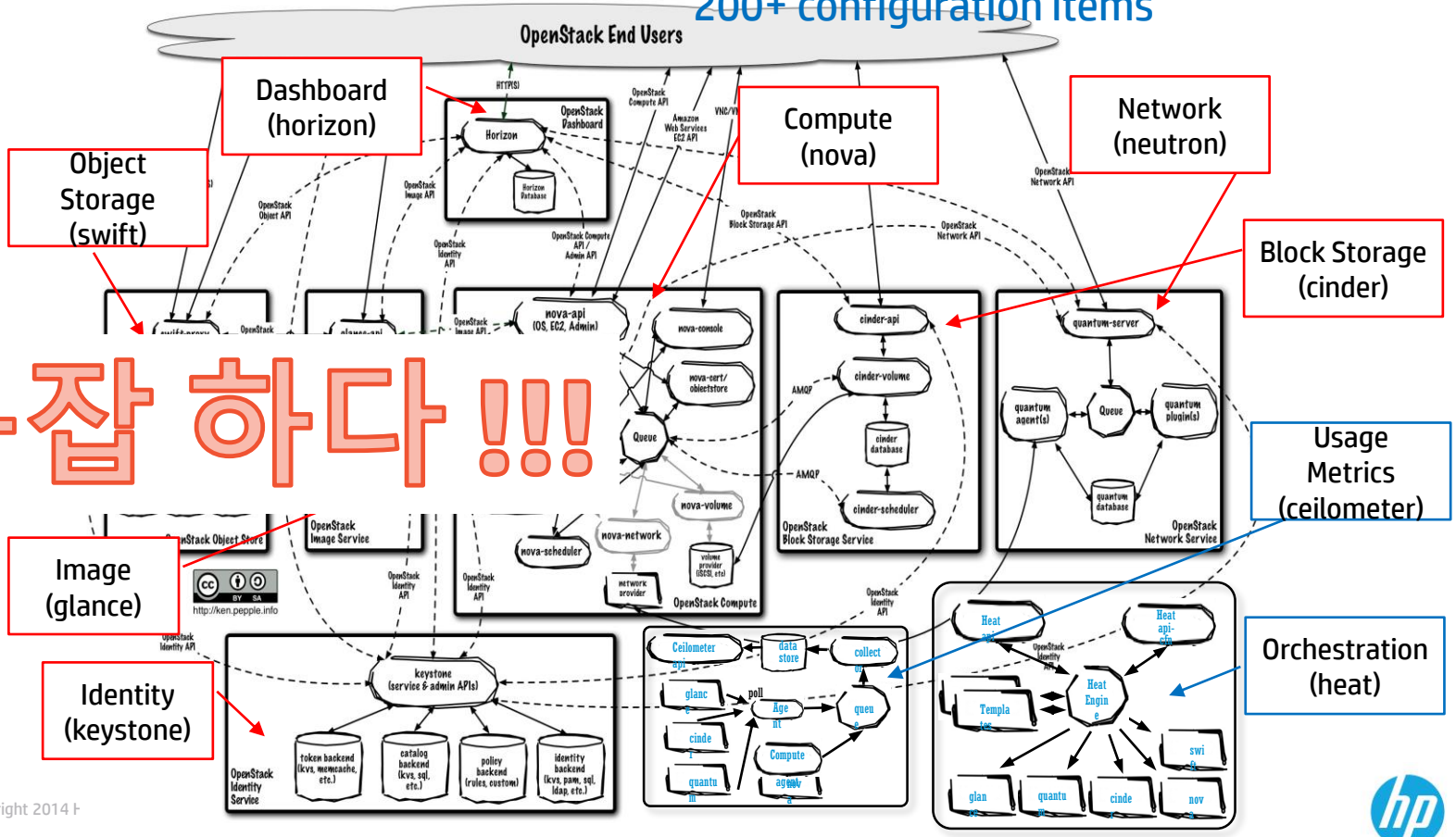
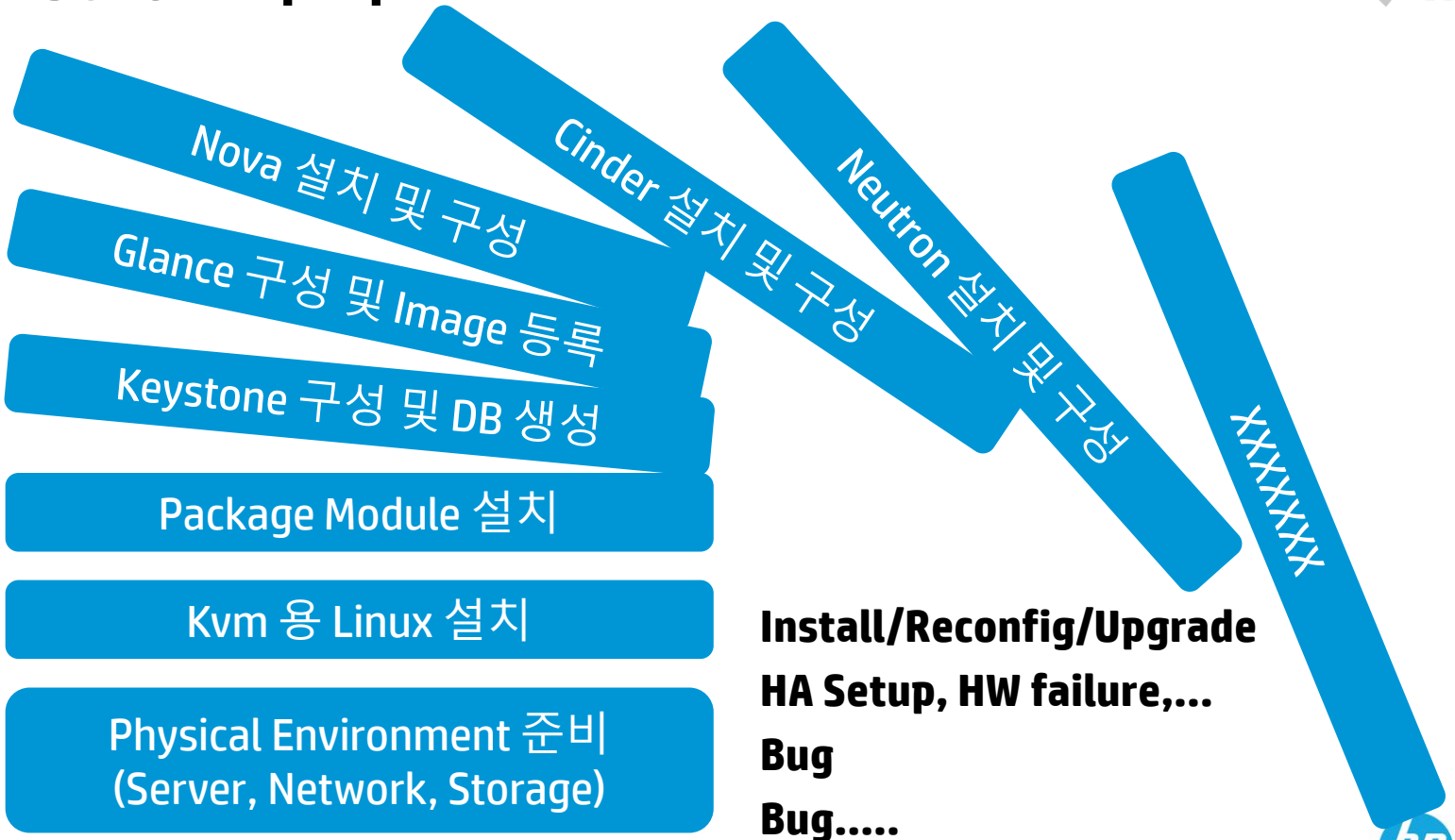
OpenStack® Programs

13 integrated, 2 supporting with 200+ configuration items

HP Helion



OpenStack® 구축



OpenStack® 구축 Sample

HP Helion

keystone role-create --name admin
keystone role-create --name Member

TENANT_ID=$(keystone tenant-list |grep cookbook|awk '{print $2}')
ADMIN_TENANT_ID=$(keystone tenant-list |grep admin |awk '{print $2}')
keystone user-create --name admin --tenant_id $TENANT_ID --pass *password* --email root@localhost --enabled true
USER_ID=$(keystone user-list |grep admin |awk '{print $2}')
ROLE_ID=$(keystone role-list |grep admin| awk '{print $2}')
keystone user-role-add --user $USER_ID --role $ROLE_ID --tenant_id $TENANT_ID
keystone user-role-add –user $USER_ID –role $ROLE_ID –tenant_id $ADMIN_TENANT_ID
keystone user-create --name demo --tenant_id $TENANT_ID --pass openstack --email demo@localhost --enabled true
DEMO_USER_ID=$(keystone user-list |grep demo |awk '{print $2}')
MEMBER_ROLE_ID=$(keystone role-list |grep Member|awk '{print $2}')
keystone user-role-add --user $DEMO_USER_ID --role $MEMBER_ROLE_ID --tenant_id $TENANT_ID

hp intel

OpenStack® on OpenStack®

… 그래서 복잡한 것을 피하는 방법을 찾았습니다.

➔ OpenStack 으로 OpenStack 을 배포해 버리기로…

Triple O

- **OpenStack On OpenStack**

- **Triple O 는 OpenStack 이 가진 cloud 기능(nova, ironic, heat 등) 을 이용하여, OpenStack 을 install/upgrade 하려는 목적의 program**

Robert Collins, HP NZ

- **2013 Portland Summit 에서 발표**
- **HP Robert Collins 가 Project Leader**

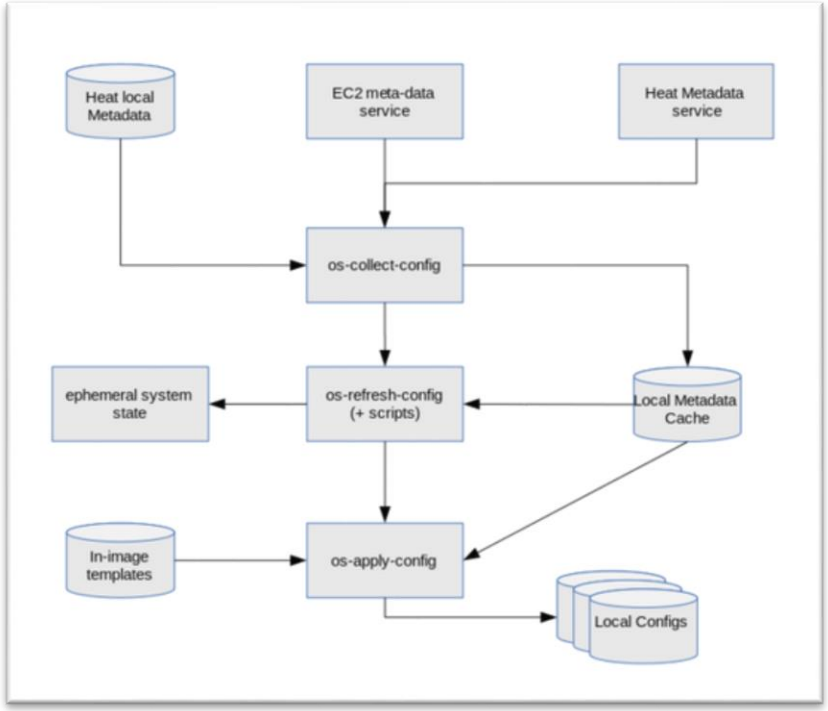
- **Production 배포 (deploy) 용으로 사용됨**
- **Incubator project 이나 production 으로 사용 가능 하고, HP Helion OpenStack 에서 구현됨**

- **Under Cloud /Over Cloud 라는 용어 사용 (기존 Deployer Cloud / Workload Cloud)**

Triple O

- **Triple O 내부의 small projects**

  - os-collect-config : collect and cache metadata, run hooks on changes
  - os-refresh-config : small templating layer for writing out config files
  - os-apply-config : react to heat metadata changes and send heat events
  - os-cloud-config : common code for tuskar and the seed initialization logic, the post heat completion initial configuration of a cloud
  - diskimage-builder : build golden disk images

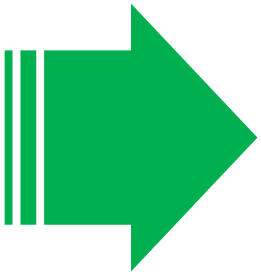


OpenStack Quick Review

HP Helion

… Glance 의 OS image 를 사용하여, Nova/Heat 을 통해 Compute nodes 에 가상 머신의 deploy

- Nova
- Neutron
- Heat
- Glance



가상 머신 **Deployment**

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The Concept of Triple O

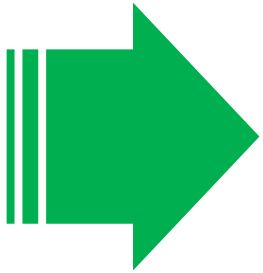
… OpenStack 의 component 를 그대로 재 사용하여, HW 로 OpenStack 을 Deploy 하기

Nova

Neutron

Heat

Glance



Bare Metal

OS image, network, disk, instrumentation

HW Node Deployment

Nova and Heat

HP Helion

… Heat 에서 Cloud Capsule 화를 진행하고 Nova 와 Ironic 을 이용하여 PXE,IPMI 를 통해 HW 를 배포 (캡슐화 한 Golden Image 사용)

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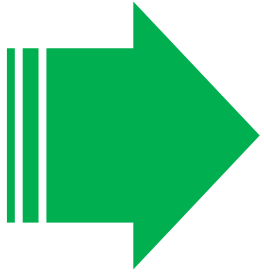
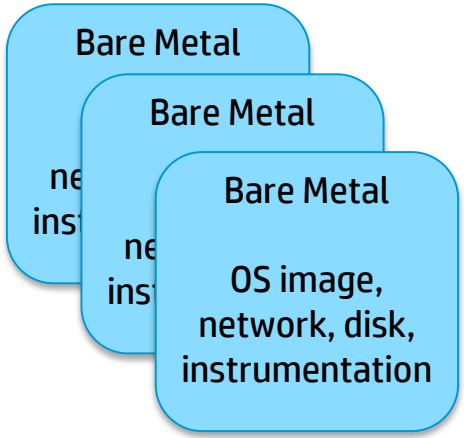
Nova

Neutron

Heat

Glance





HW Node Deployment

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Tuskar

… Triple O 를 위한 deploy management service
… Operation 을 위한 UI,CLI 및 API 제공

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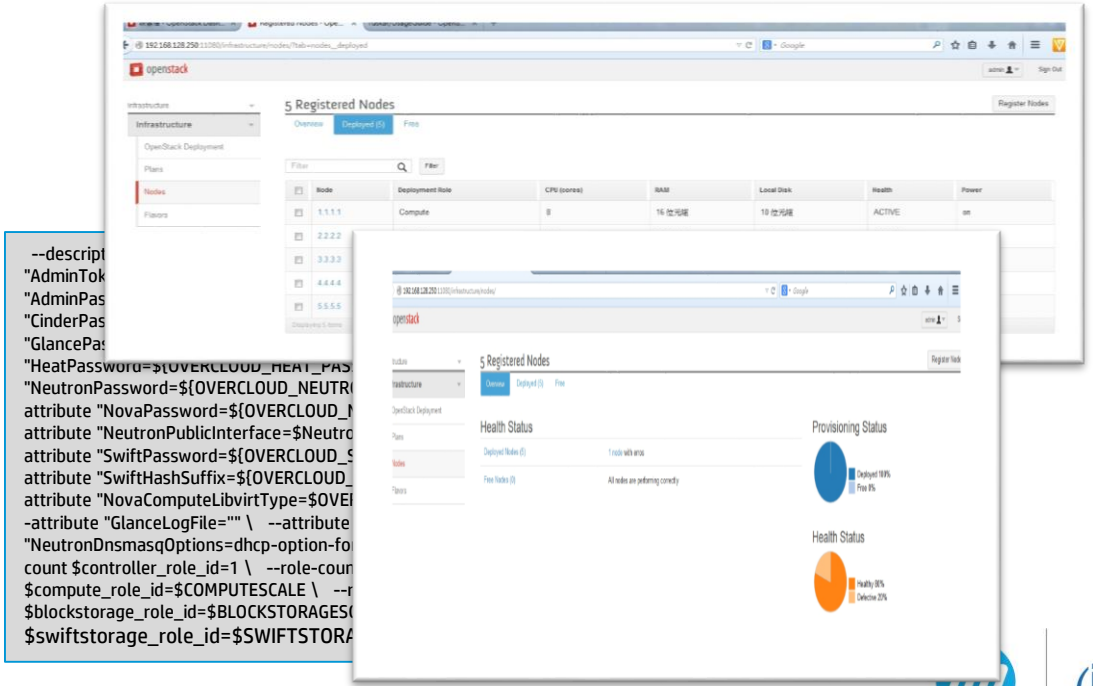
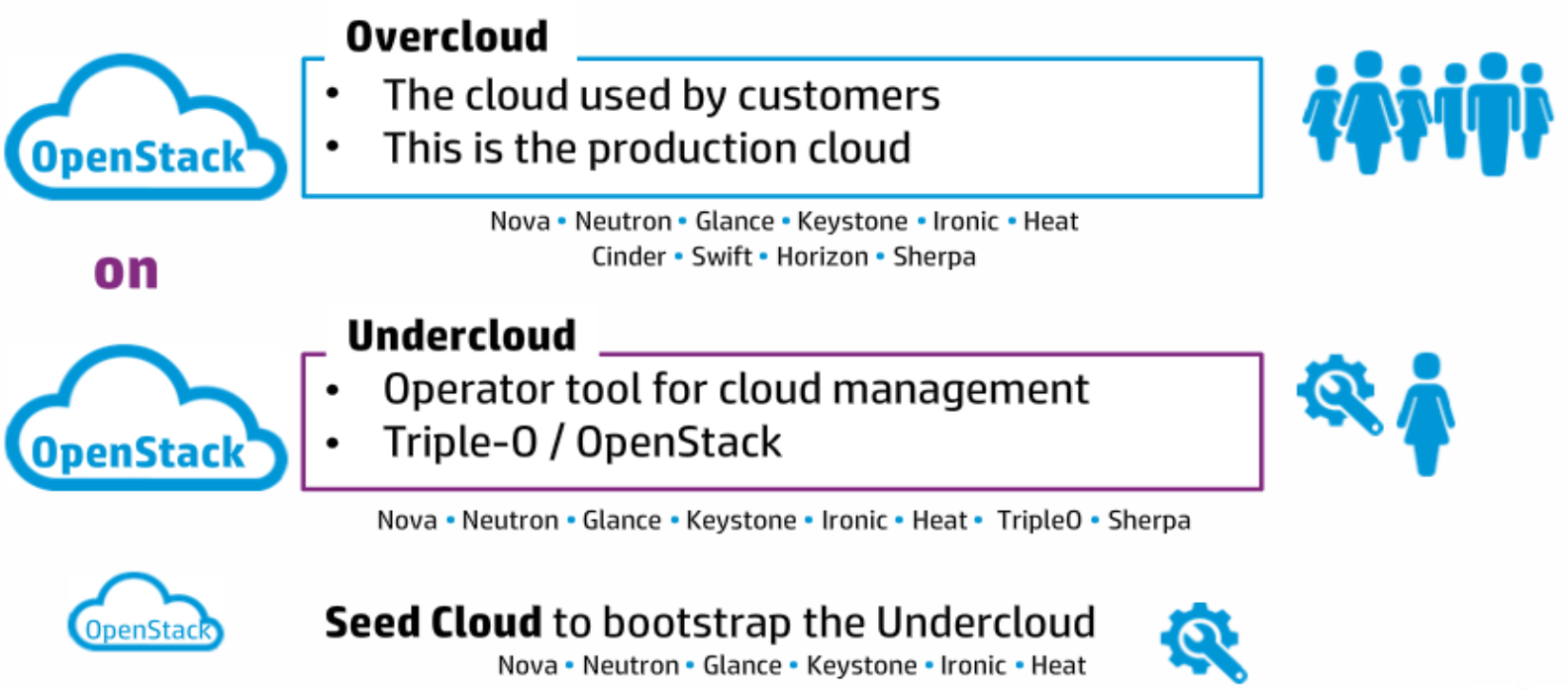
- Nova
- Baremetal
- ironic
- Heat



Triple O Use Case

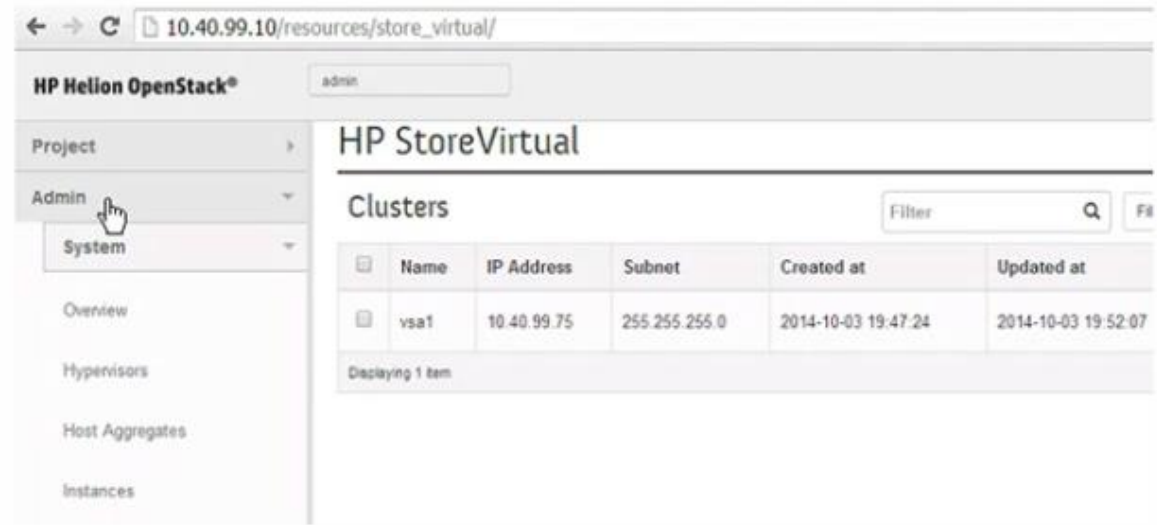
Triple O 를 이용한 HP Helion OpenStack Operational Design



Under Cloud - Managing HP Helion OpenStack

Managing the Overcloud

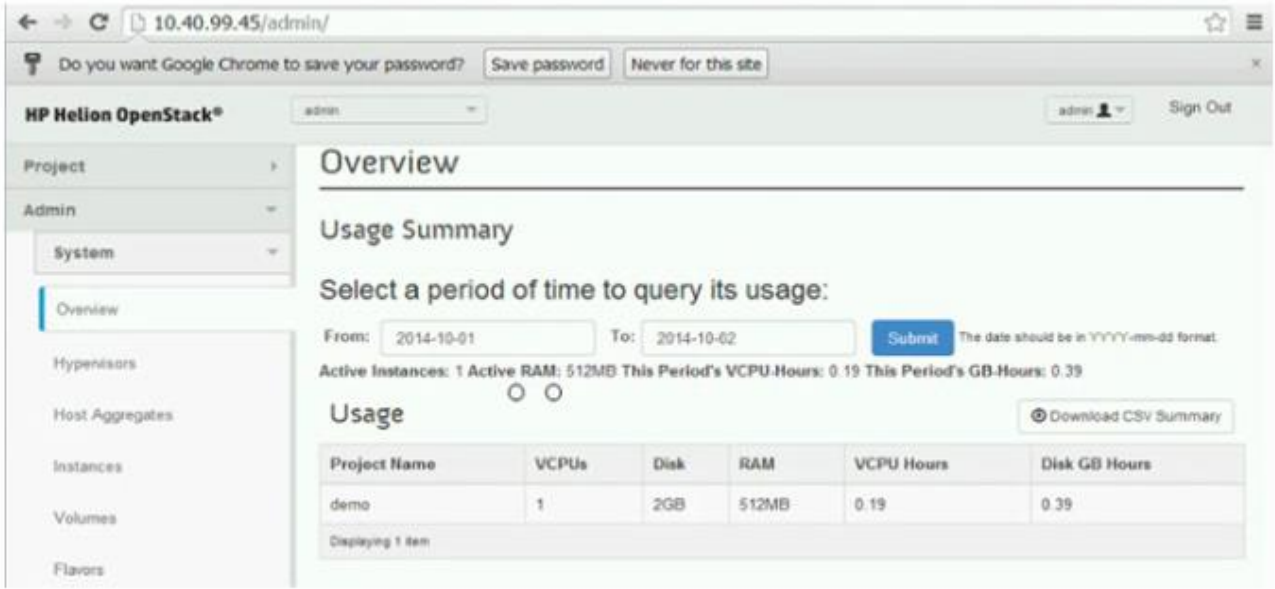
- Horizon runs on Undercloud
- Scaling out Switf nodes
- Scaling out compute nodes
- Configuring StoreVirtual VSA
- Adding Cinder storage nodes
- Backing up and restoring the cloud
- Updating the cloud software
- Restarting the cloud after power loss



Over Cloud - Operating HP Helion OpenStack

Operating the cloud

- Creating tenants and users
- OpenStack user operations
- Adding storage types
- Configuring block storage



HP Helion OpenStack

Deploy step by step

HP Helion OpenStack Deploy (Triple O)

step by step

1. Infra 사전 준비

HW,N/W,Linux (Ubuntu)

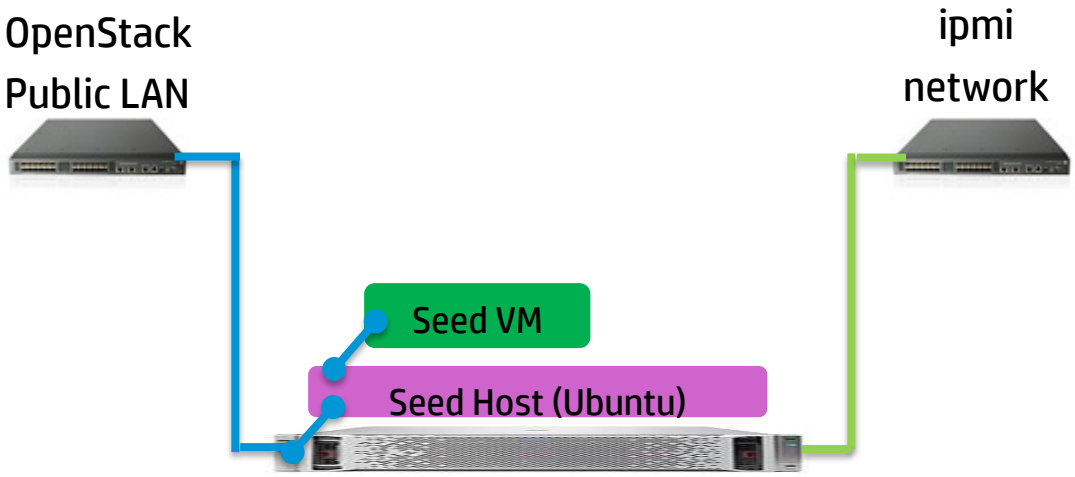
OpenStack
Public LAN

ipmi
network

HP Helion OpenStack Deploy (Triple O)

step by step

1. **Infra 사전 준비**
   - HW, N/W, Linux (Ubuntu)
2. **Unpacking the Package**
   - script 수행(public key 생성,qemu,libvirt 등 KVM 모듈 설치)
   - baremetal.csv 파일 준비 (max addr, ilouser, ilopasswd, iloaddr, #cpu, #mem, diskspace)
   - Seed VM 생성

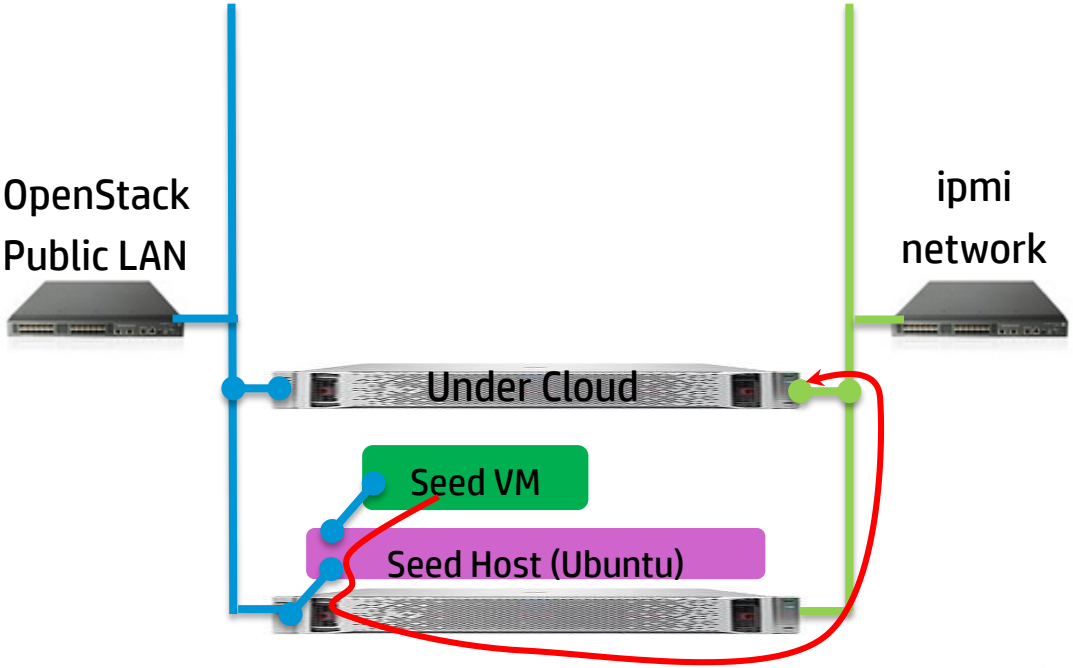


HP Helion OpenStack Deploy (Triple O)

step by step

3. Under Cloud 배포

- baremetal.csv 파일 준비
- Under Cloud 배포 (Bare Metal Cloud)
- Under Cloud 에서 OpenStack Portal 과 같은 UI 제공



HP Helion OpenStack Deploy (Triple O)

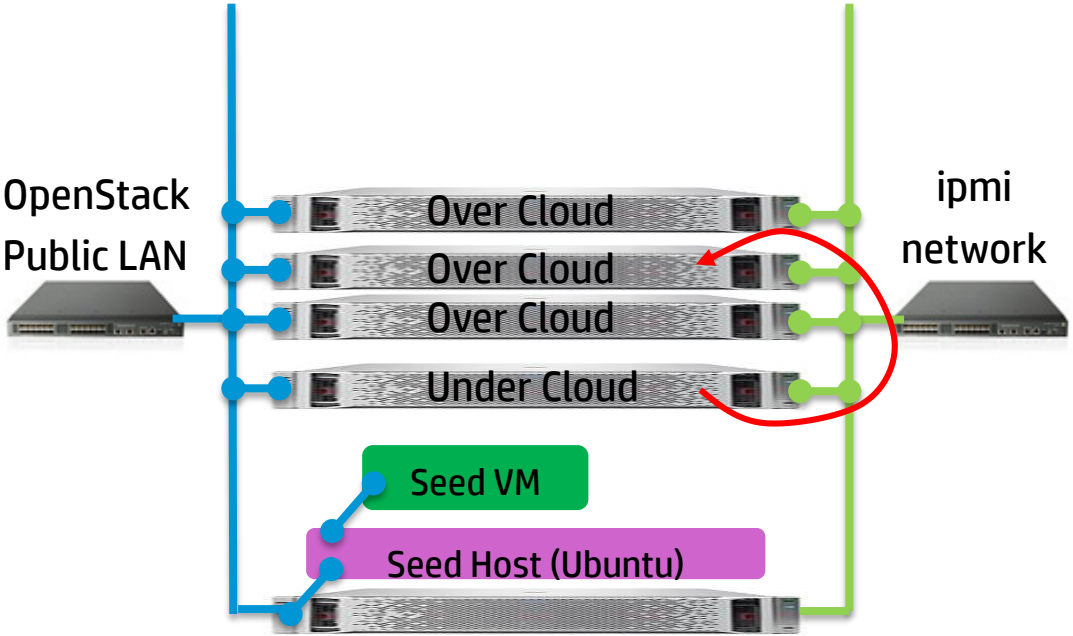
step by step

3. Under Cloud 배포

- baremetal.csv 파일 준비
- Under Cloud 배포

4. Over Cloud 배포

- Under Cloud 에서, Bare Metal 정보를 통해서 Cloud 의 배포
- Heat 을 이용하여, stack 들을 사용하여 구성
- HA 구성까지 해당 stack 을 이용하여 한번에 구성
- Glance 이미지 저장을 위해 Swift 사용

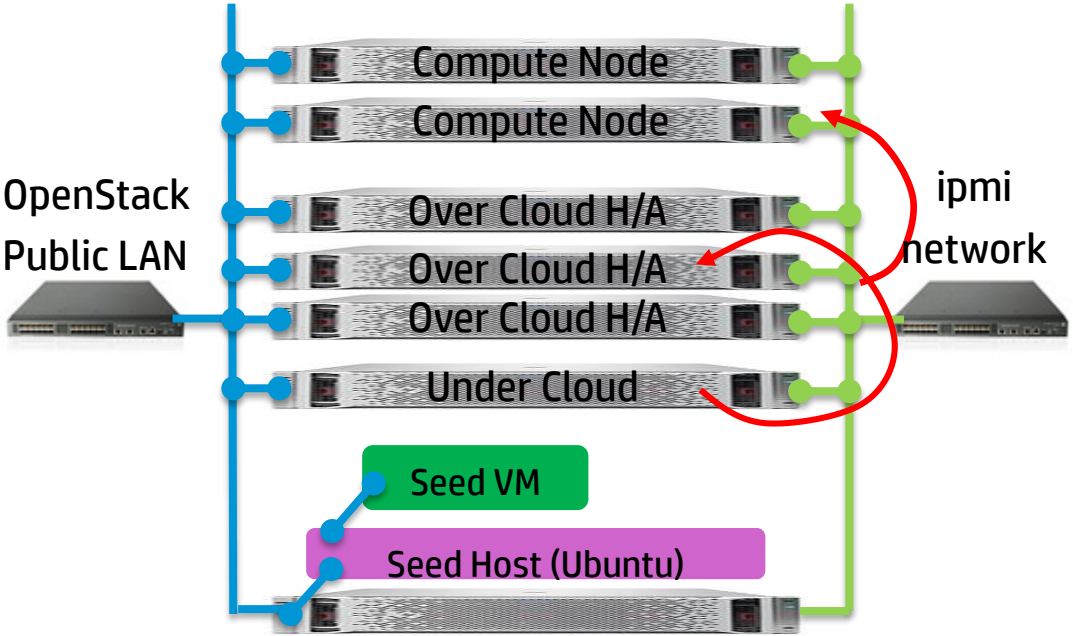


HP Helion OpenStack Deploy (Triple O)

step by step

5. Node 배포

- 추가 Node 배포
- Over Cloud 에서 사용하는 Swift Node, Ceph 등은 별도 구성 가능



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감사합니다