

Red Hat OPENSTACK

Consultant /

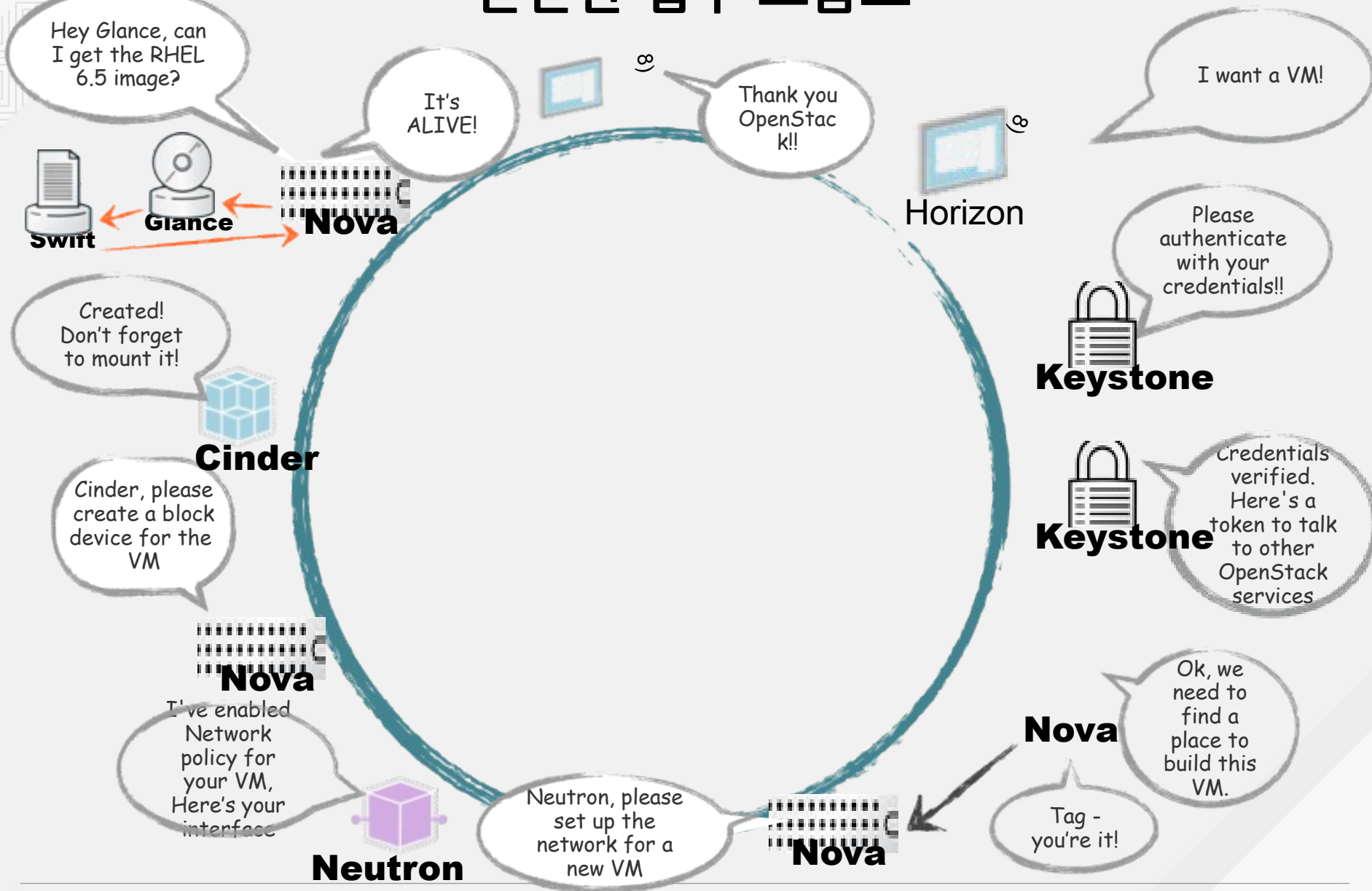
ByoungHee Lee

Agenda

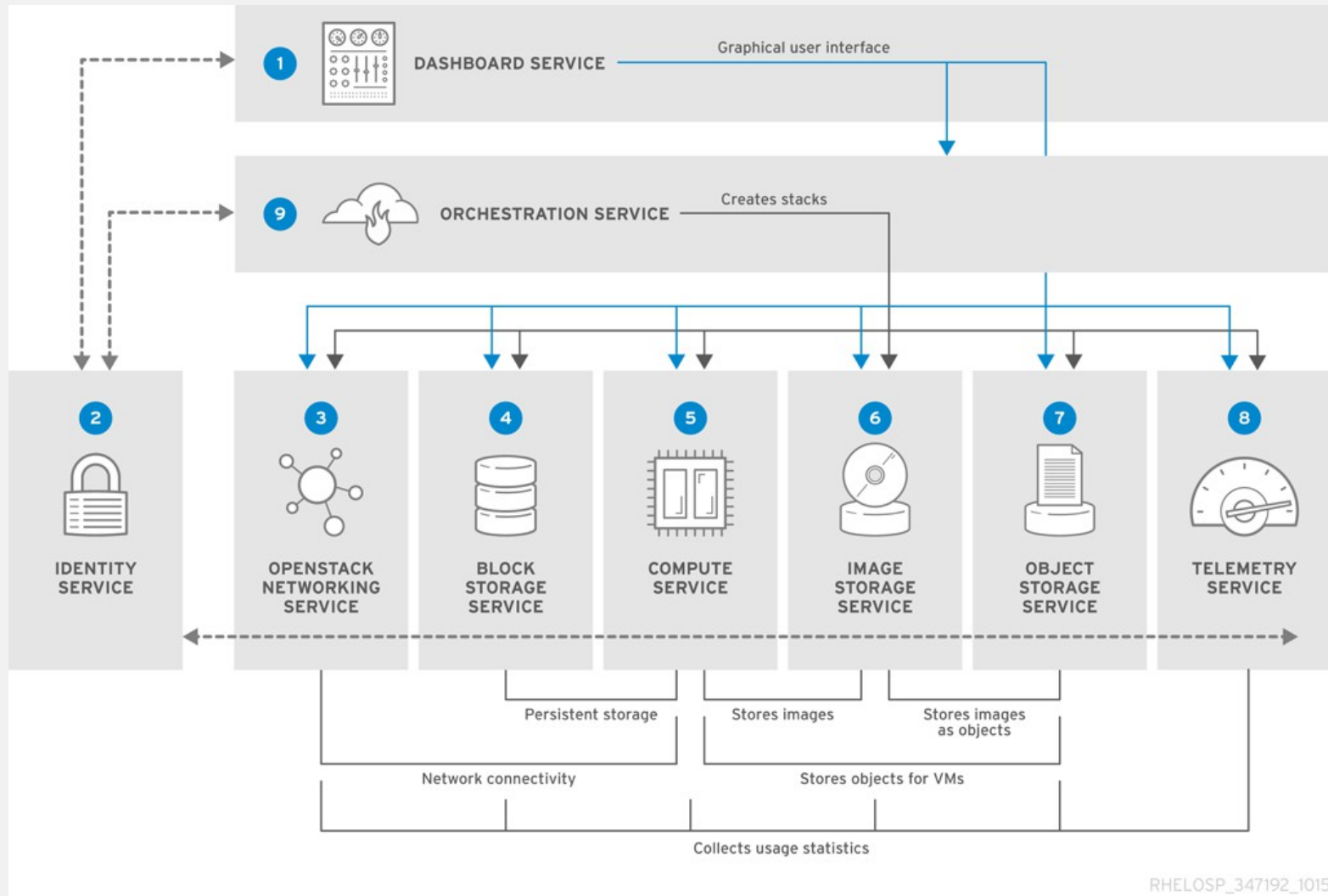
- Red Hat OpenStack Platform Architecture
- OSP Director

RhOSP Architecture

간단한 업무 흐름도

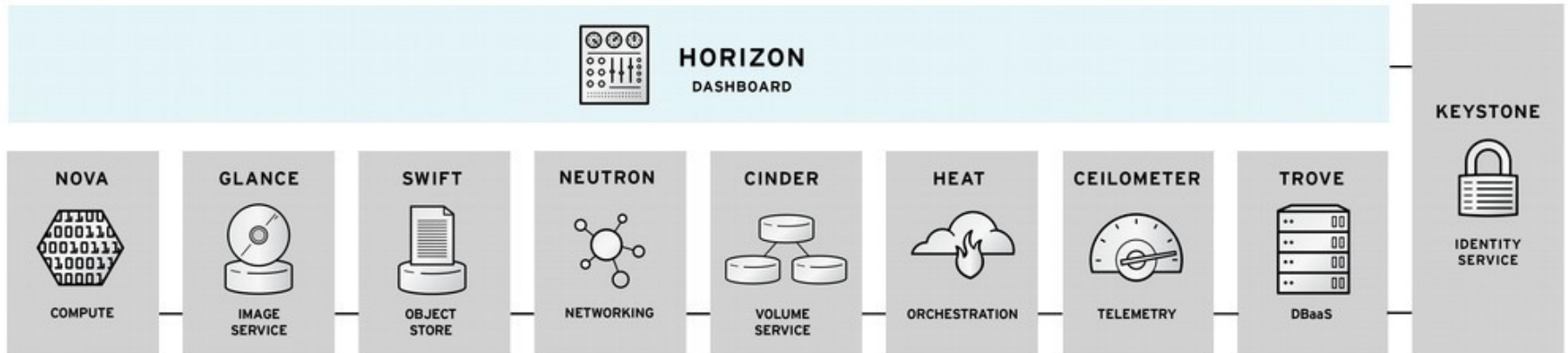


OpenStack 코어서비스 및 연관성



RHELOSP_347192_1015

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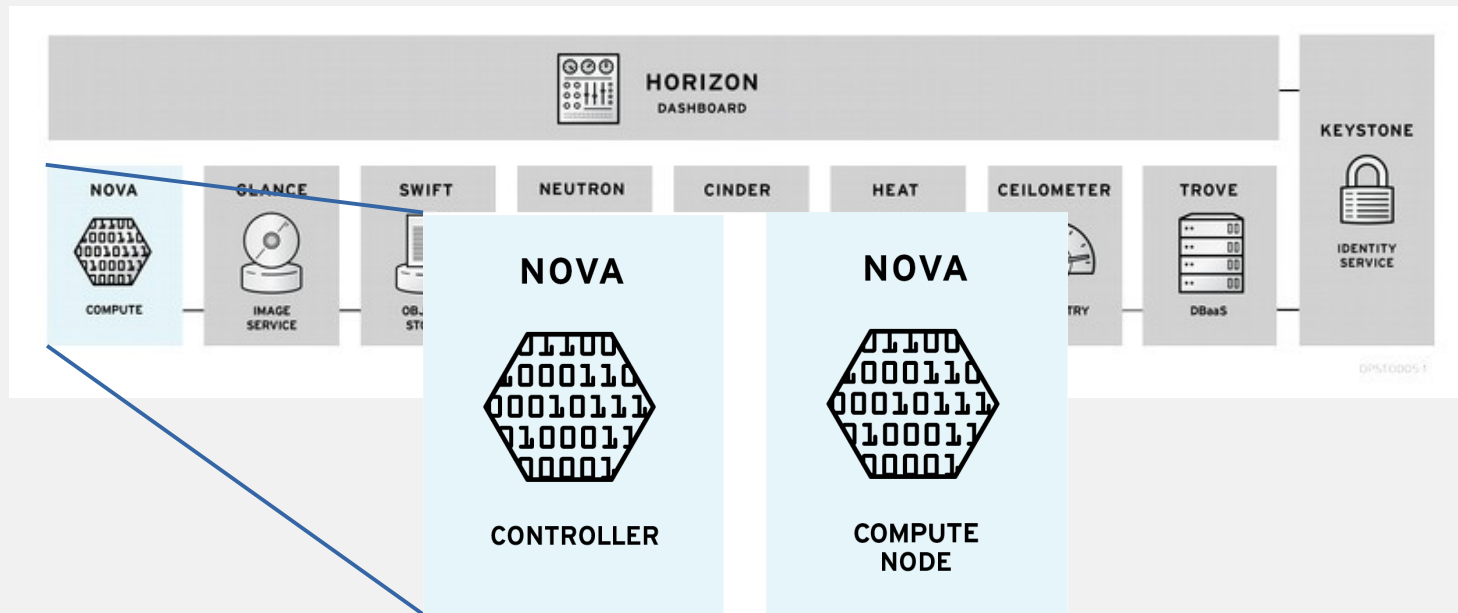


OPST0005-1

OpenStack Dashboard (HORIZON)

- Dashboard
- 엔드 유저들을 위한 심플한 셀프서비스 UI 제공
- 기본적인 클라우드 관리자 기능들
 - 사용자, 테넌트 및 용량제한 (quota) 정의
 - 인프라 관리 용도는 아님

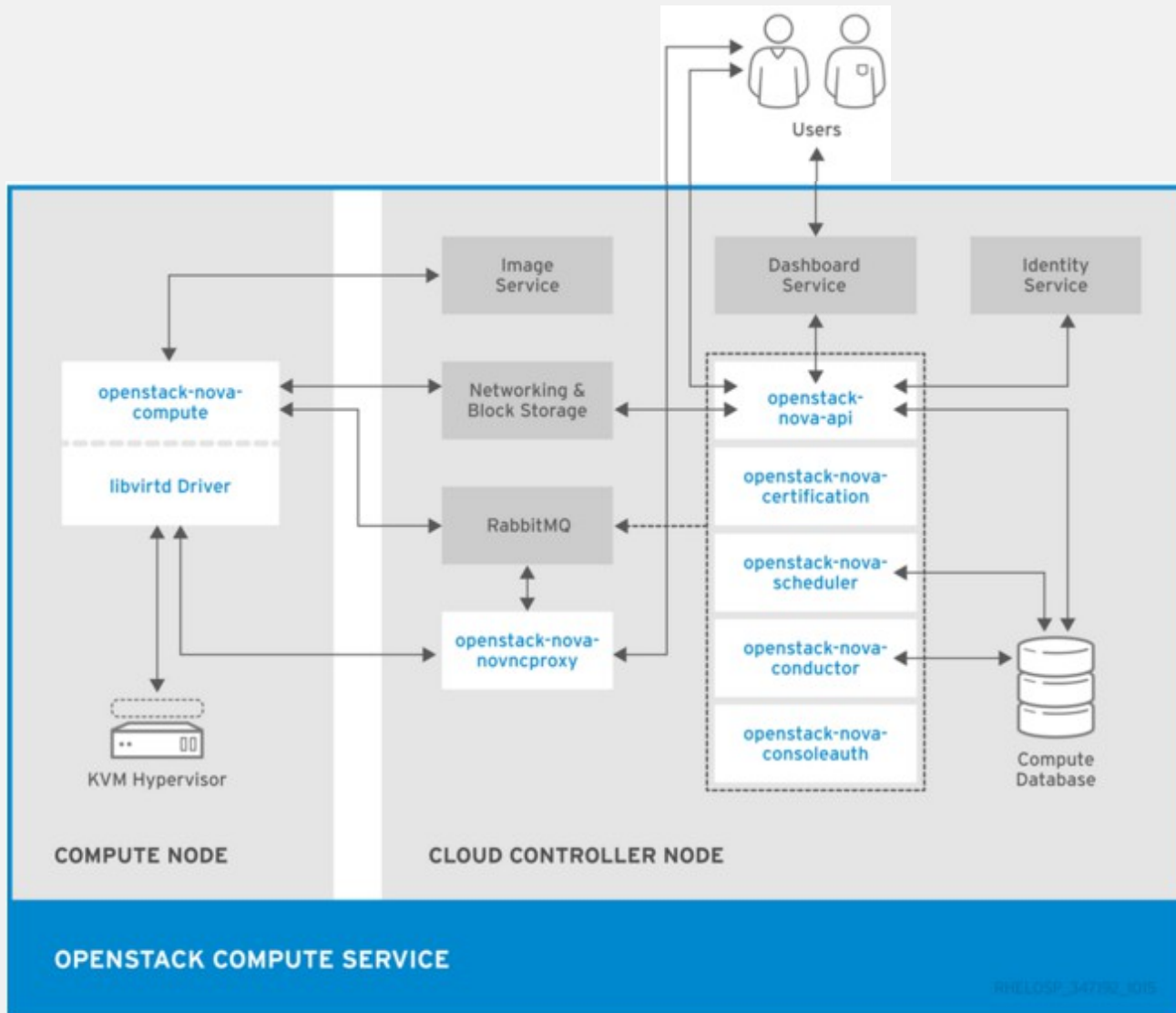
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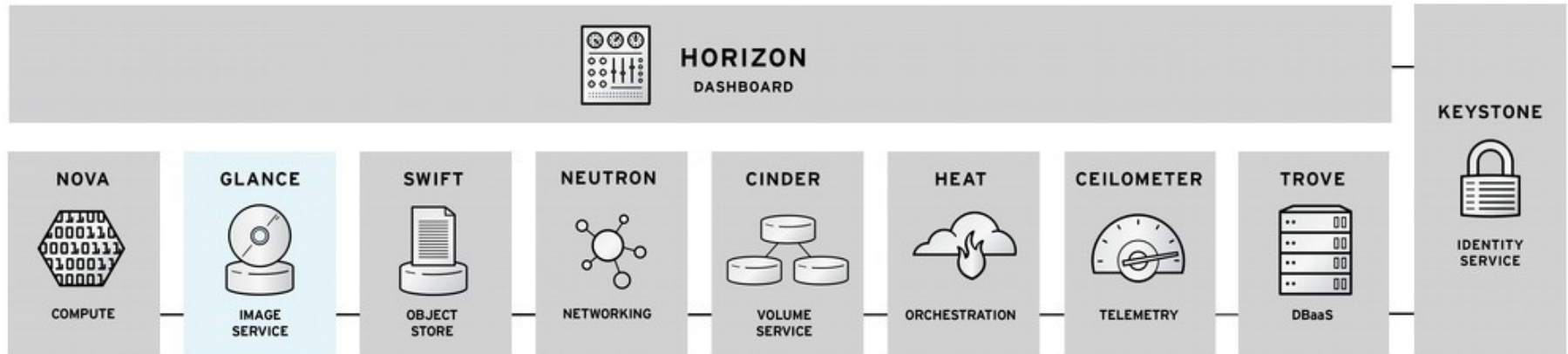
OpenStack Compute (NOVA)

- Core compute 서비스 구성
 - 컴퓨트 노드 (Compute Nodes) – 가상머신이 실행되는 하이퍼바이저들
 - KVM 및 vCenter 를 포함하는 다중 하이퍼바이저 지원
 - 스케줄링 , API 호출등을 처리하는 분산형 컨트롤러 (Distributed Controllers)
 - Native OpenStack API 및 Amazon EC2 호환 API

Nova services



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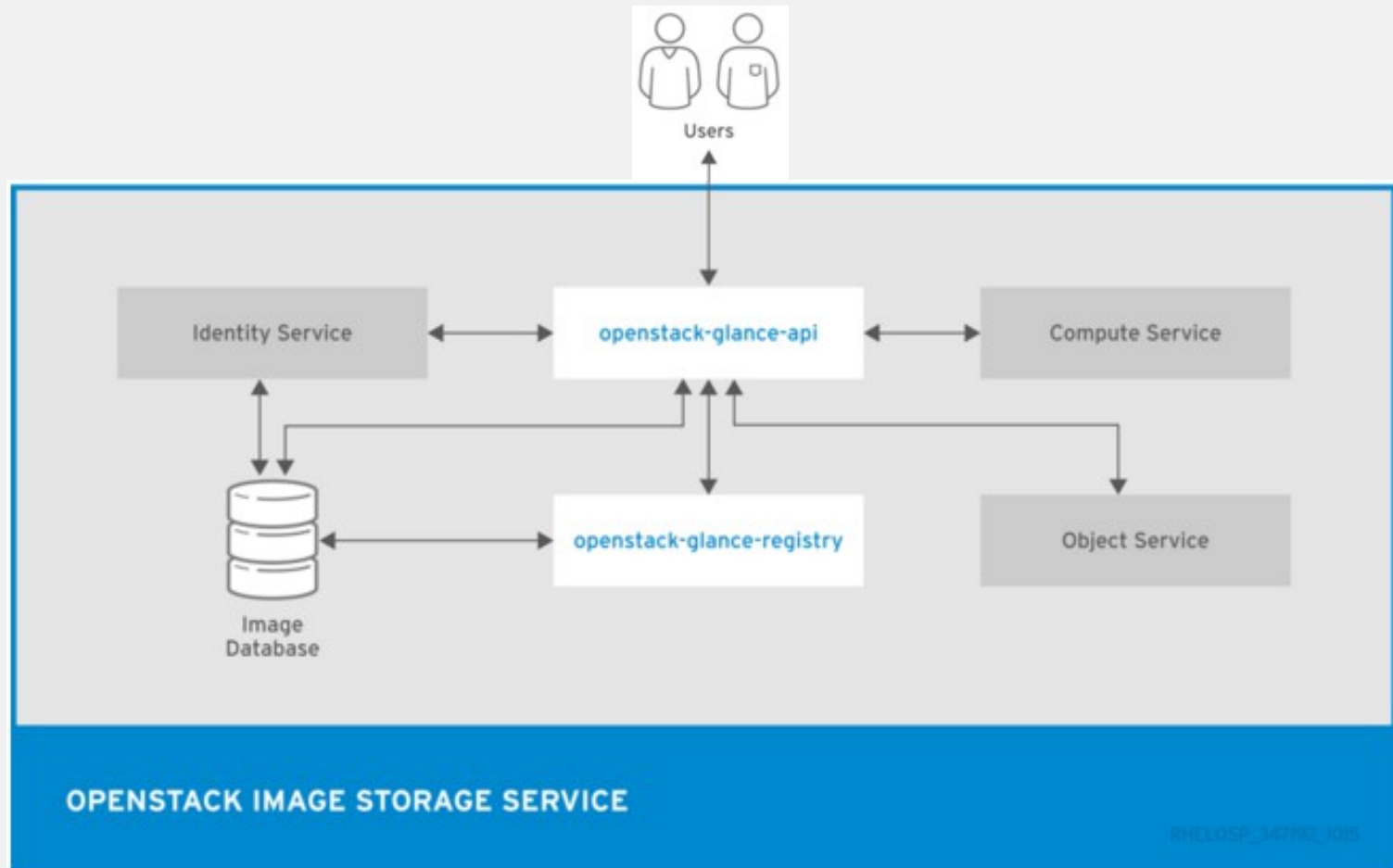


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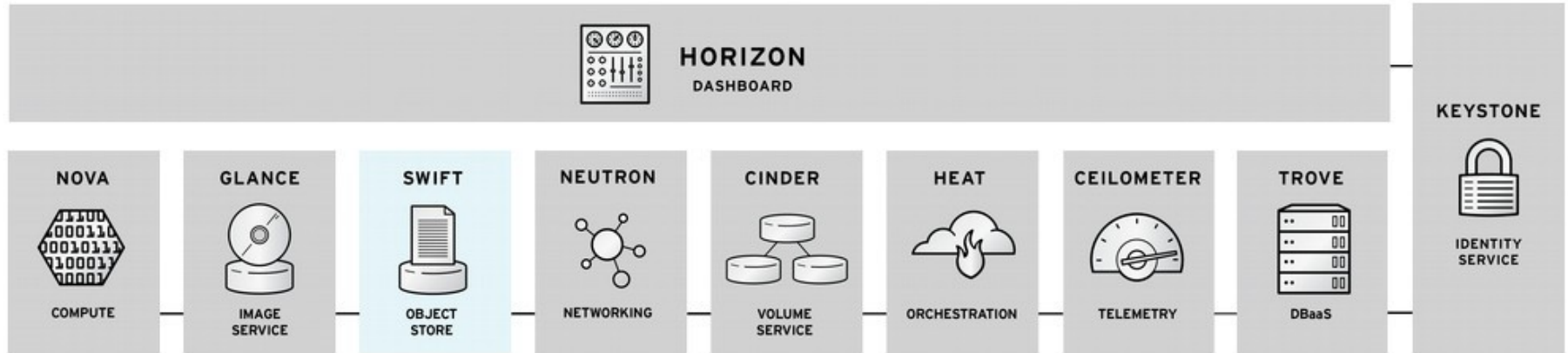
OpenStack Image Service (GLANCE)

- 이미지 서비스
- 디스크 이미지 관리 (가상머신 템플릿)
- Raw, QCOW, VMDK, VHD, ISO, OVF & AMI/AKI/ARI 포맷 지원
- Backend storage : Filesystem, Swift, Amazon S3

Glance services



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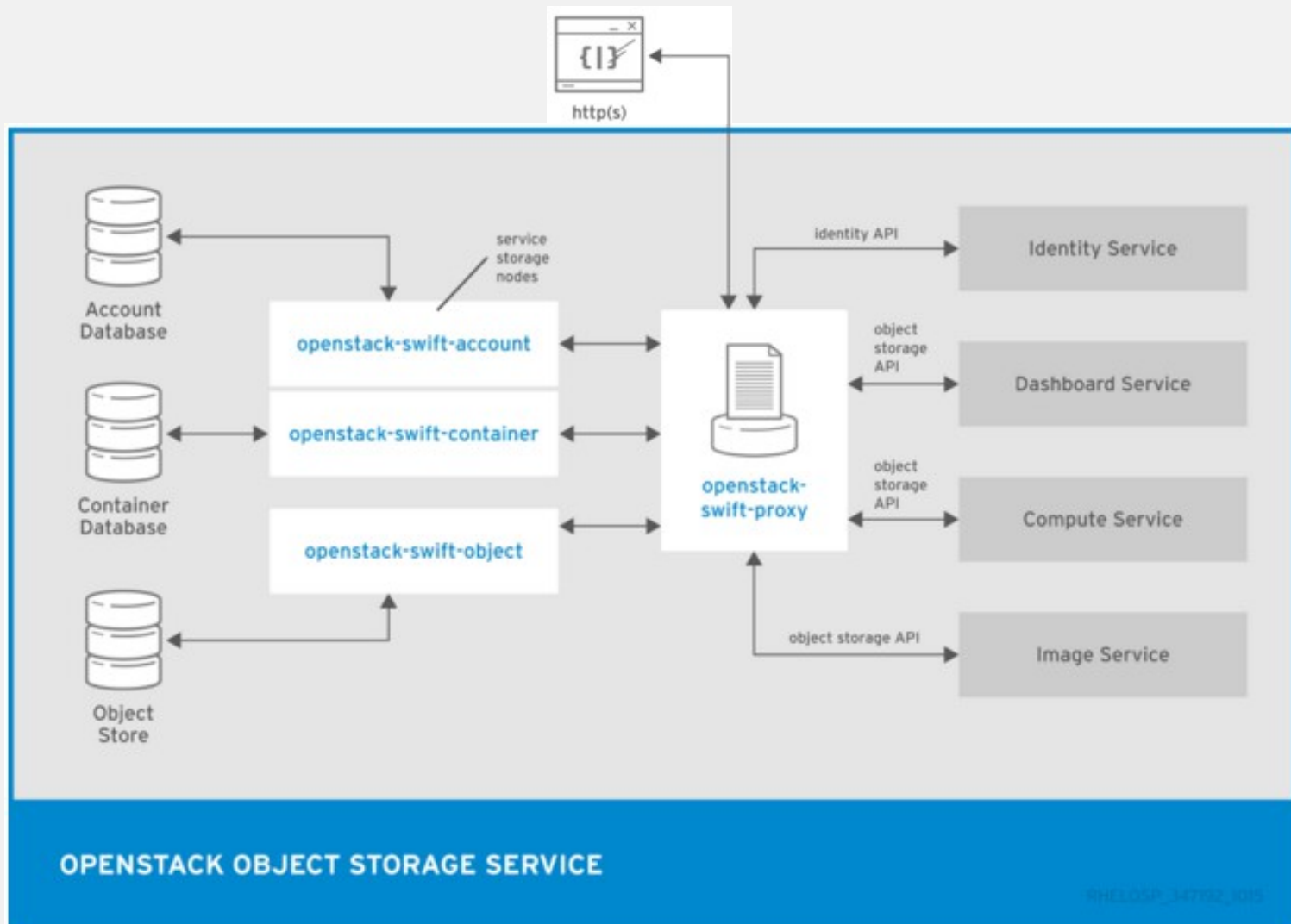


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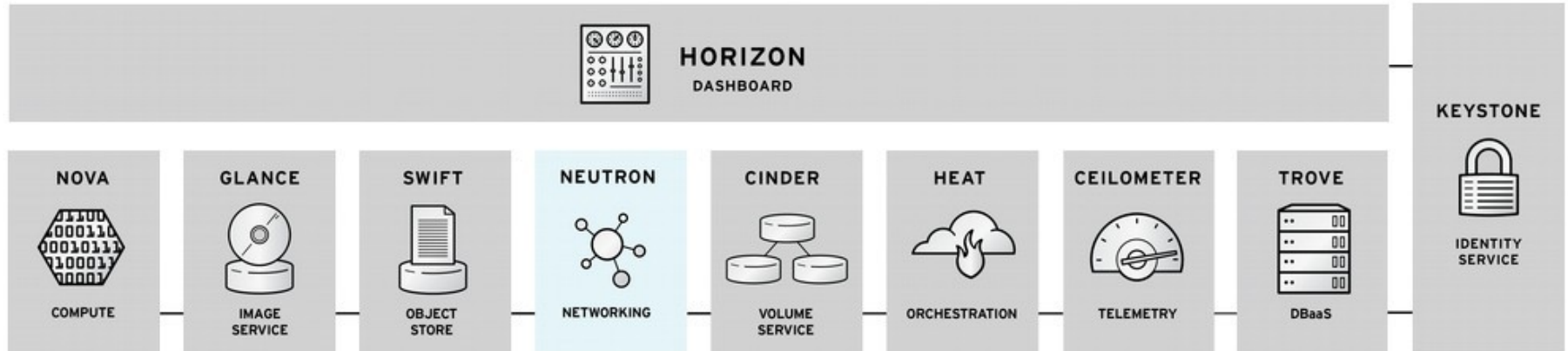
OpenStack Object Storage (SWIFT)

- 오브젝트 스토리지 서비스
- Amazon's S3 서비스를 모델
- 임의의 데이터를 저장 및 가져오기 위한 서비스 제공
- Native API 및 S3 호환 API

Swift services



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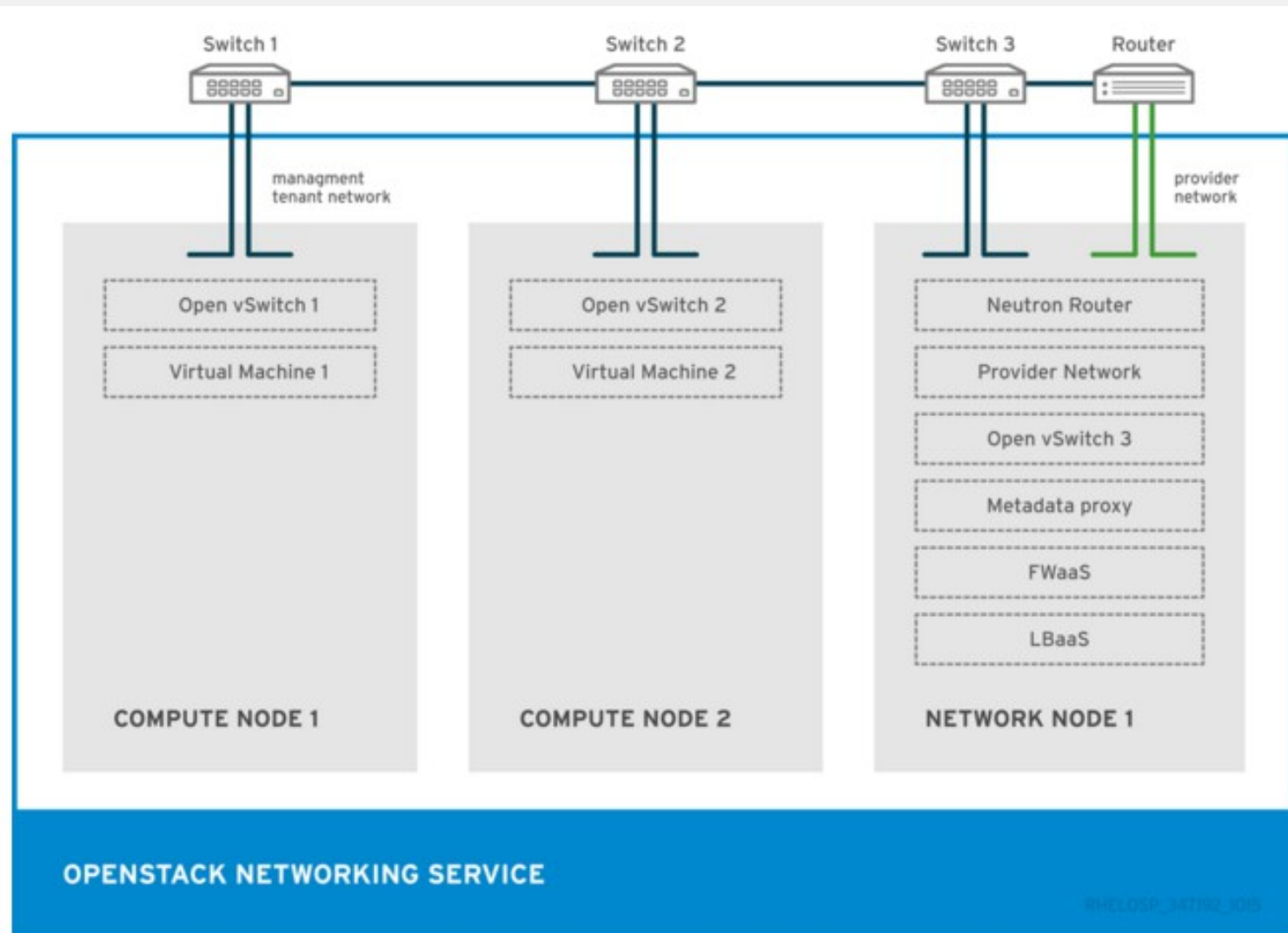


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OpenStack Networking (Neutron)

- 네트워크 서비스
- Software Defined Network (SDN) 을 위한 프레임워크 제공
- 플러그인 아키텍처
 - 하드웨어 및 소프트웨어 기반 네트워크 솔루션의 통합을 가능
- VRRP L3 HA 또는 DVR(Distributed Virtual Router, Tech Preview)

Neutron services



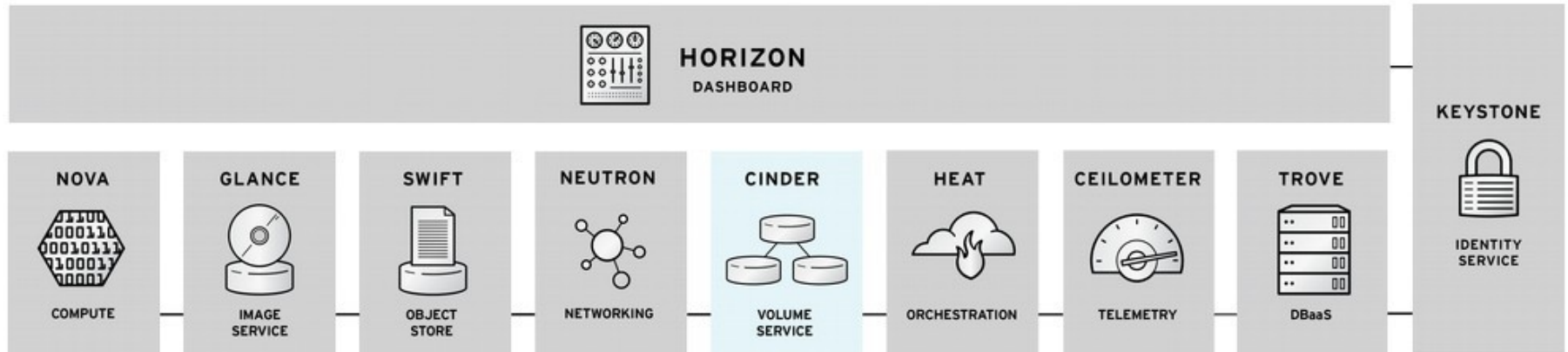
Neutron support

Feature	RHEL OSP 5	RHEL OSP 6
ML2 plugin	Supported	Supported
Open vSwitch driver	Supported	Supported
Linux bridge driver	Supported	Supported
L2 Population	Supported	Supported
OVS ARP Responder	Supported	Supported
LBaaS	Supported	Supported
SR-IOV	Not Supported	Supported
IPv6 networking	Not Supported	Supported
L3 HA (VRRP)	Not Supported	Supported
Distributed Virtual Routing (DVR)	Not Supported	Technology Preview
<u>OpenDaylight</u> driver	Technology Preview	Technology Preview
FWaaS	Technology Preview	Technology Preview
VPNaaS	Technology Preview	Technology Preview

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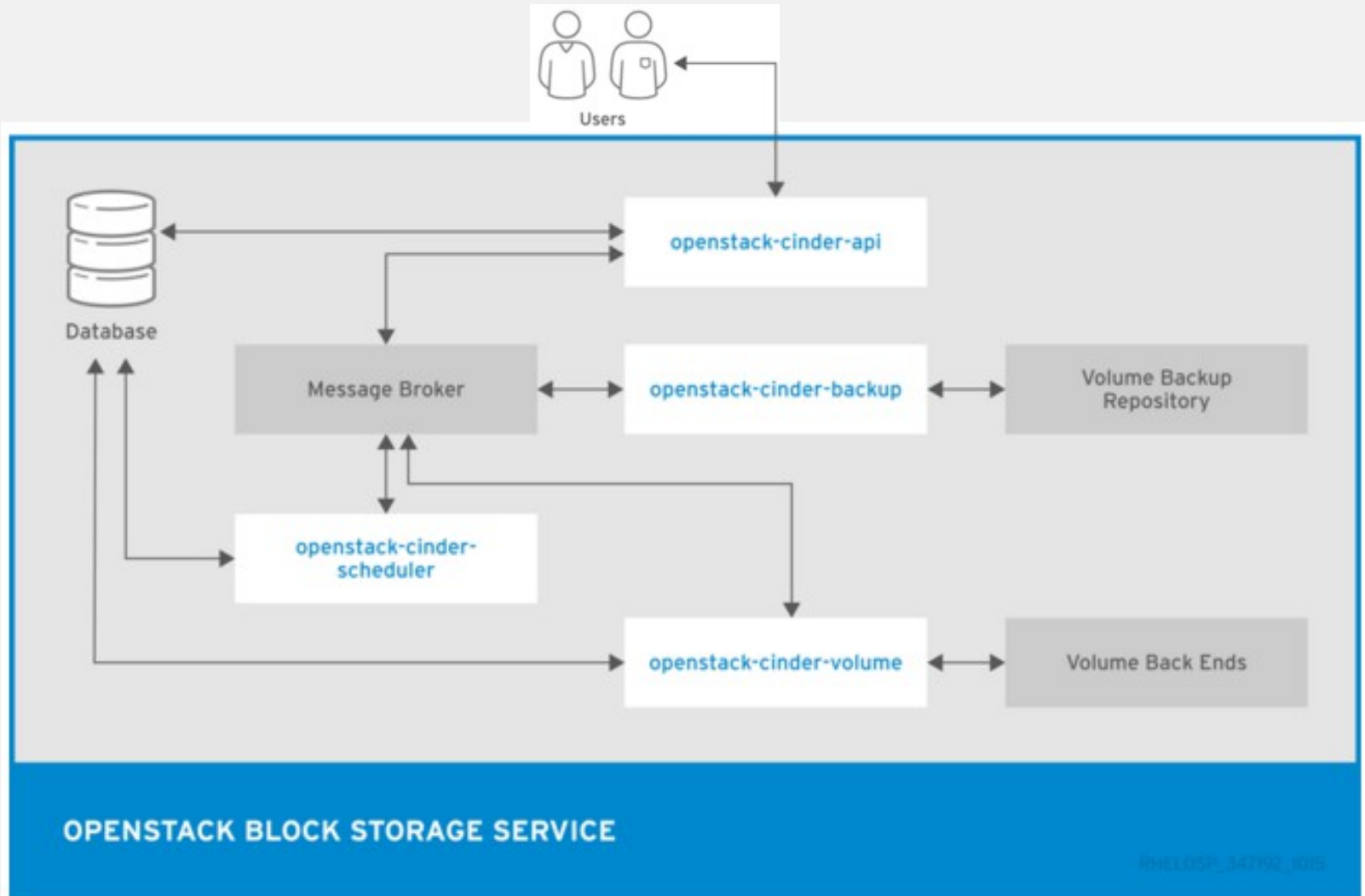
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OpenStack Block Storage (CINDER)

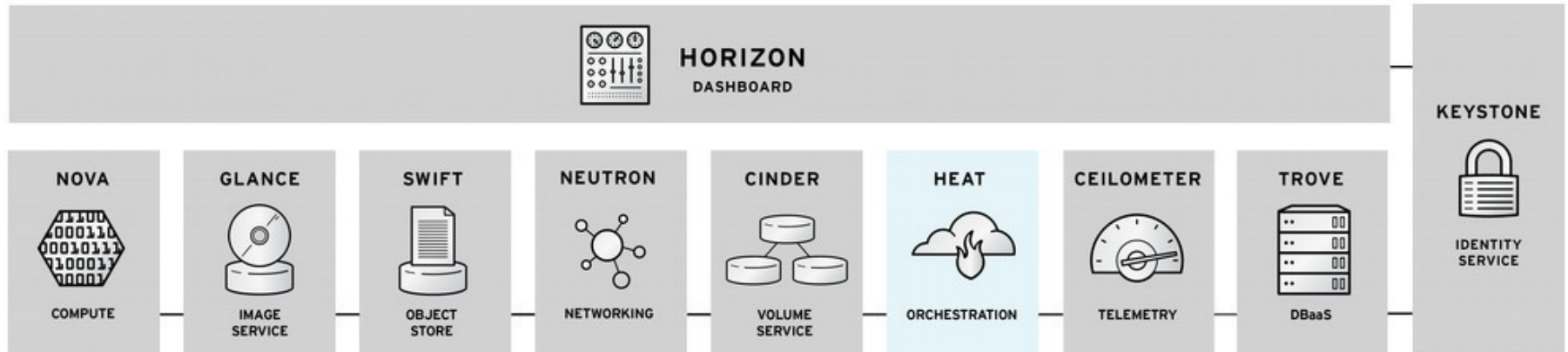
- 블록 스토리지 (블룸) 서비스
- 가상머신의 블록스토리지 제공 (영구적인 디스크)
- Amazon EBS 서비스와 유사
- 벤더 확장을 제공하는 플러그인 아키텍처

eg. NetApp driver for Cinder, Ceph, Gluster

Cinder services



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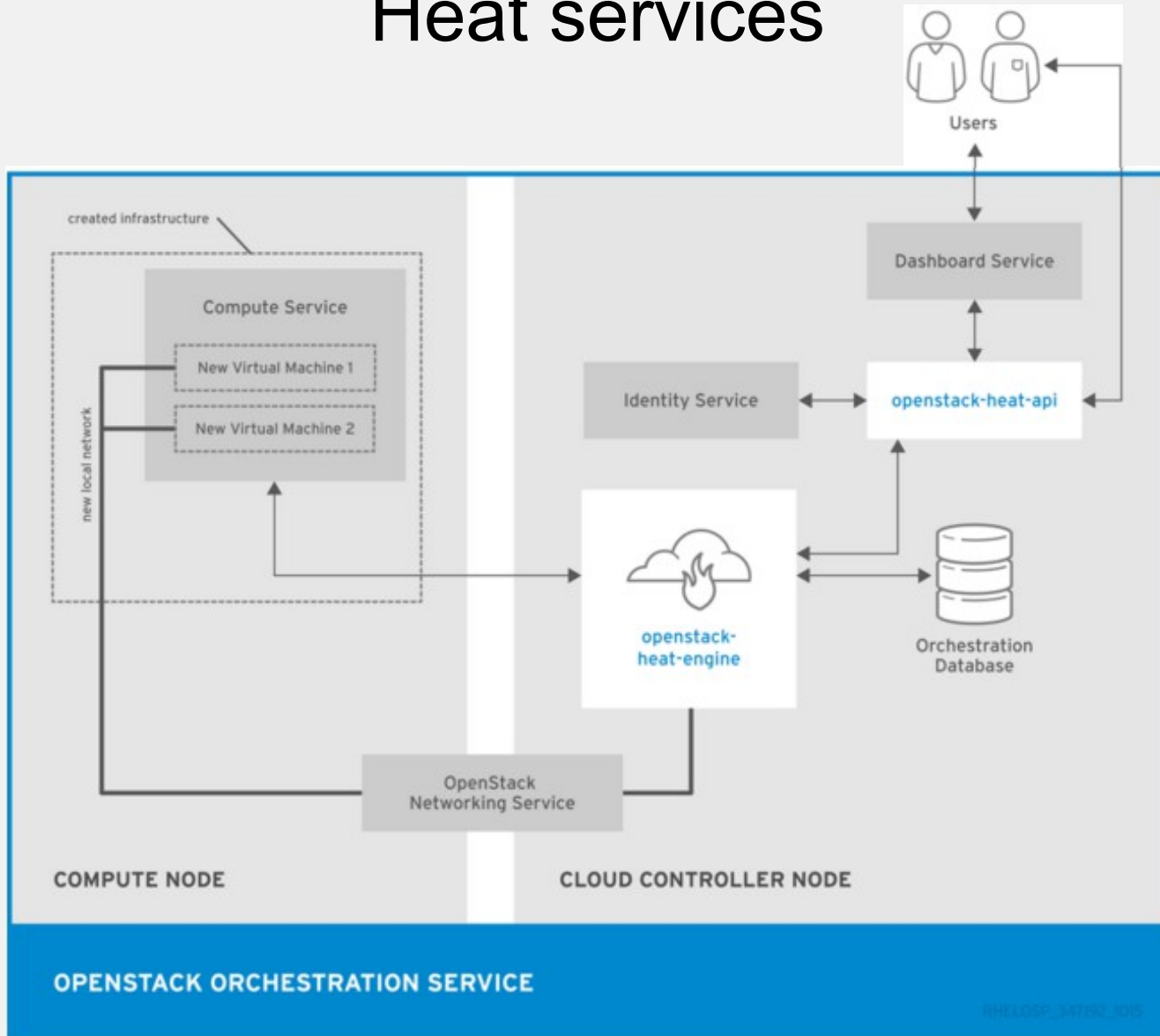


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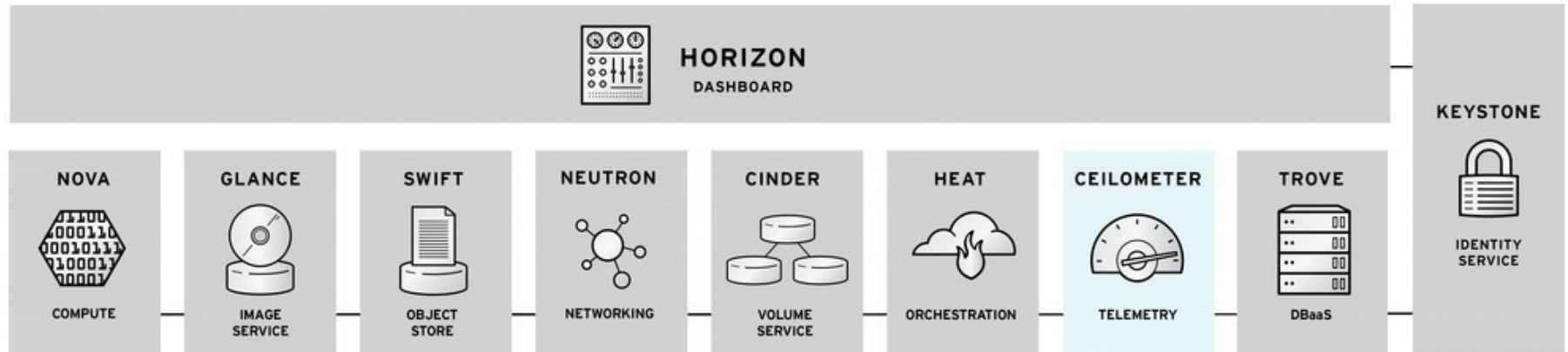
OpenStack Orchestration (HEAT)

- 템플릿 기반의 배치 Orchestrator
- Automates deployment of 컴퓨트 , 스토리지 및 네트워크 자원의 자동 배치
- 오픈스택용 AWS CloudFormation 구현
- 복합적인 클라우드 어플리케이션을 오픈스택에 배치

Heat services



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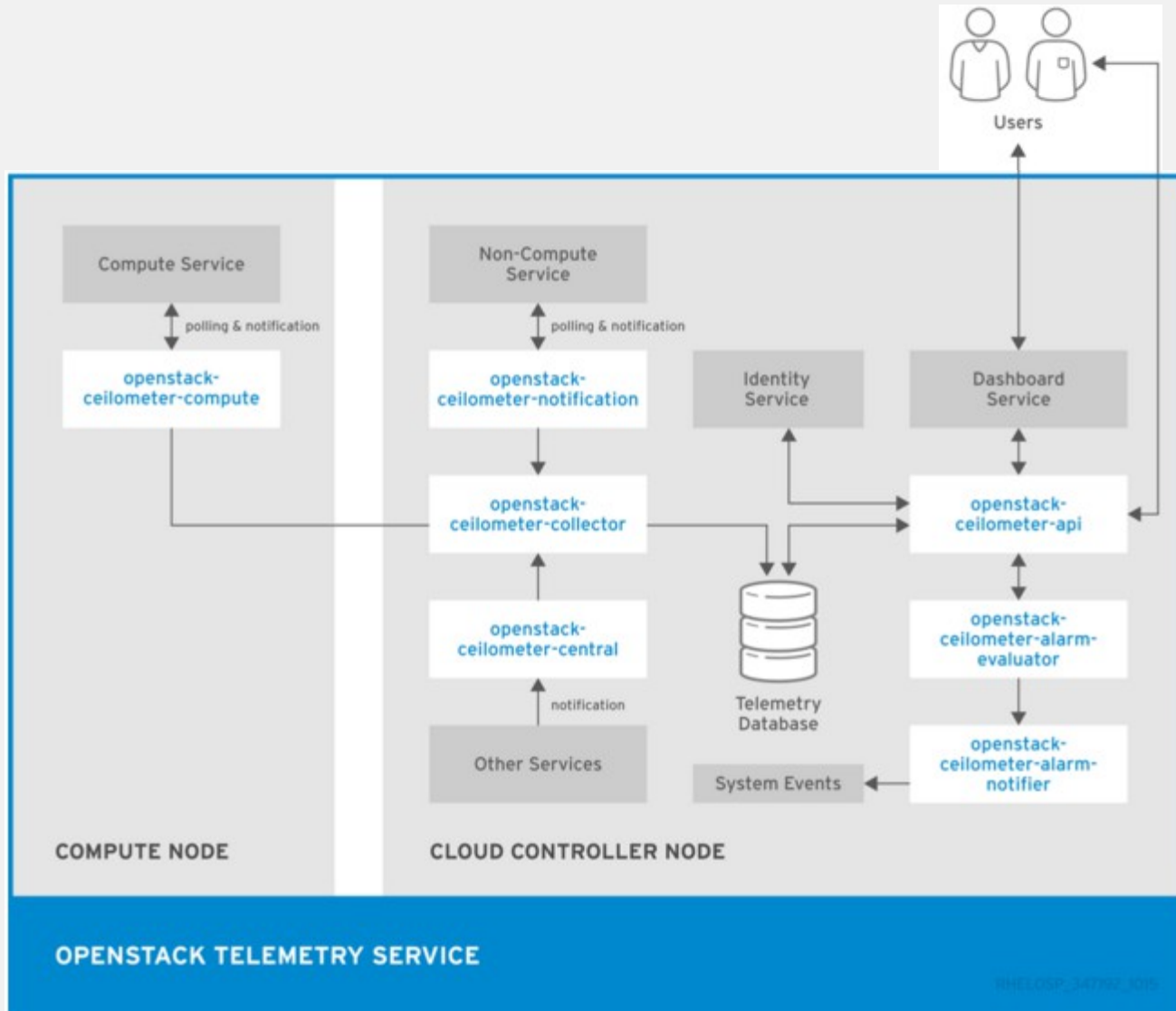


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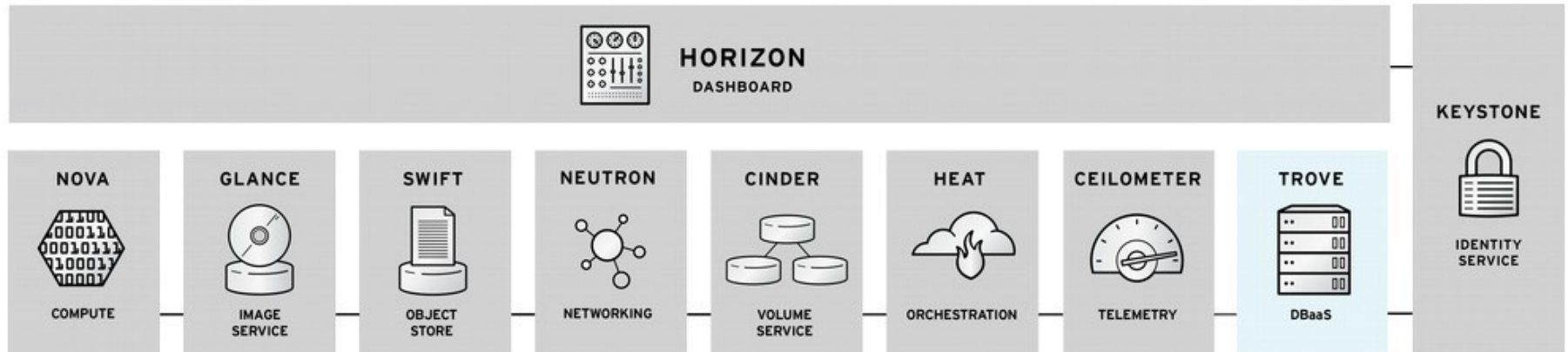
OpenStack Telemetry (CEILOMETER)

- 모든 오픈스택 인프라에 대한 사용량 정보를 모니터링, 수집, 저장
- 주된 목표는 확장가능한 프레임워크로 미터링 및 모니터링
- OSS 및 BSS 시스템을 위한 사용량 정보에 대한 API 접근을 제공
- 실시간 모니터링 정보 제공 용도가 아님

Ceilometer services



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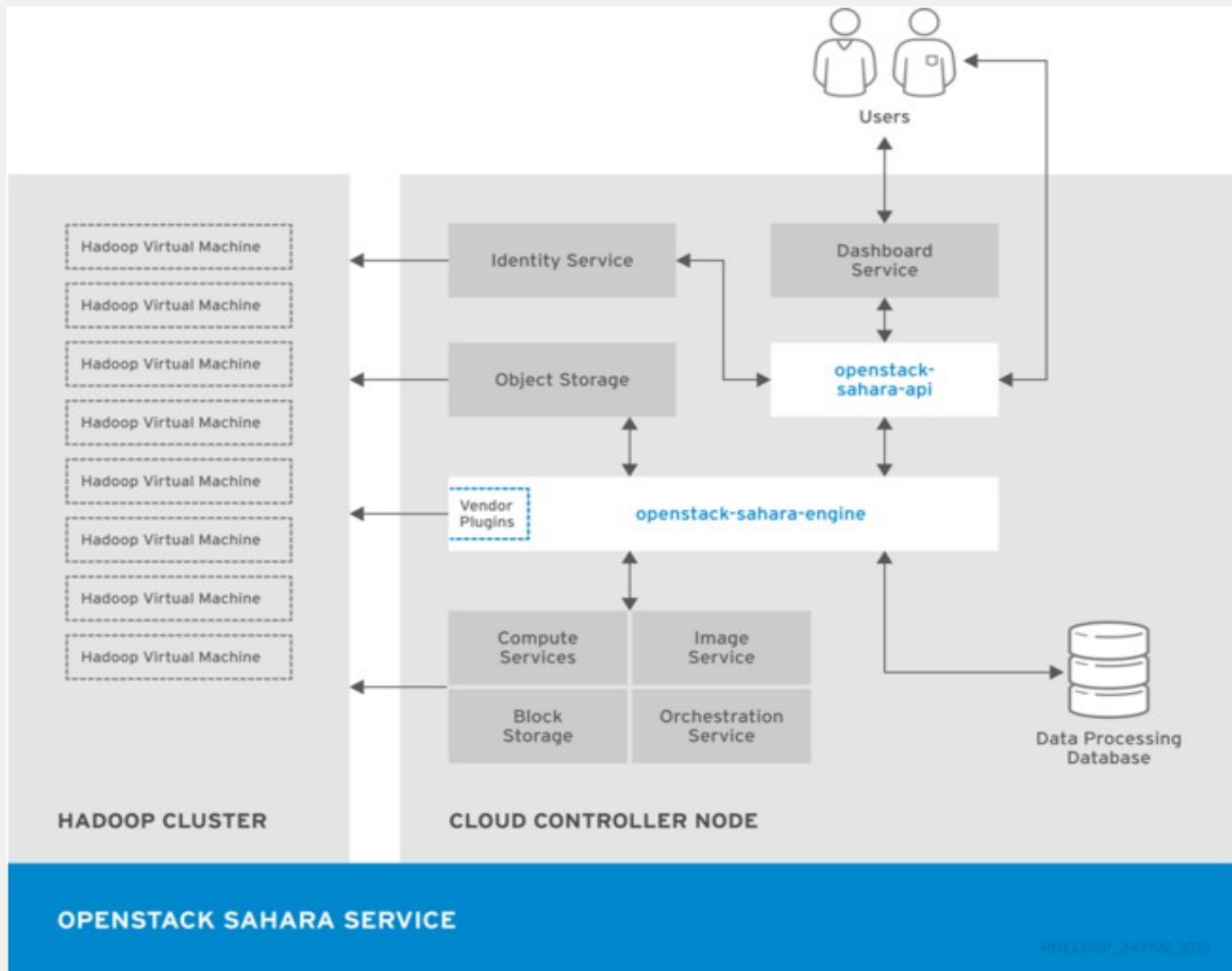


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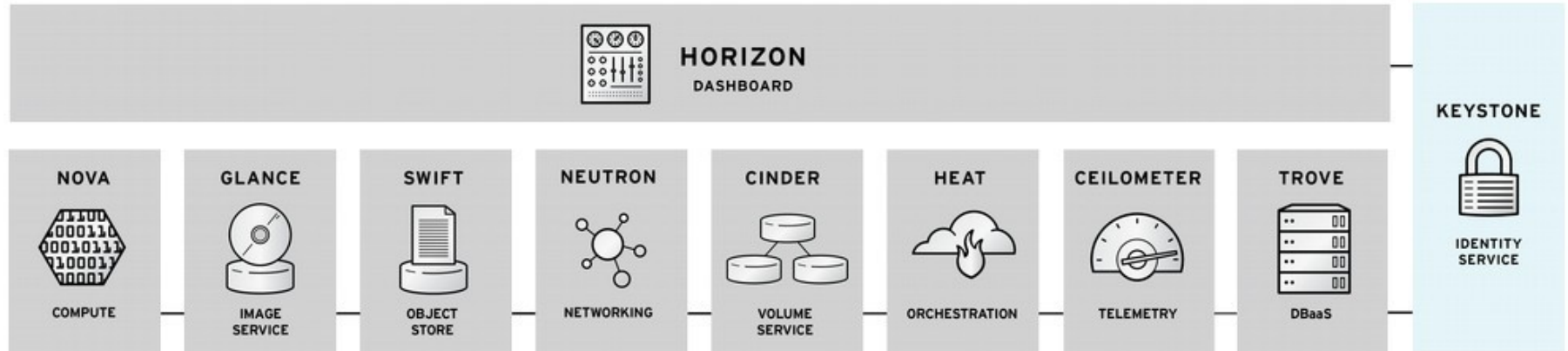
OpenStack Database-as-a-Service (TROVE, Tech Preview)

- 확장되고 신뢰성있는 Cloud Database as a Service 프로비저닝 기능 제공
- 관계형 및 비관계형 데이터베이스 엔진 지원 (mysql, percona, mongo, cassandra, couchbase, redis)
- 필요에 따라 다중 데이터베이스 인스턴스를 배치 및 관리
- API 는 인스턴스를 배치 및 관리하는데 JSON 및 XML 지원

Sahara services



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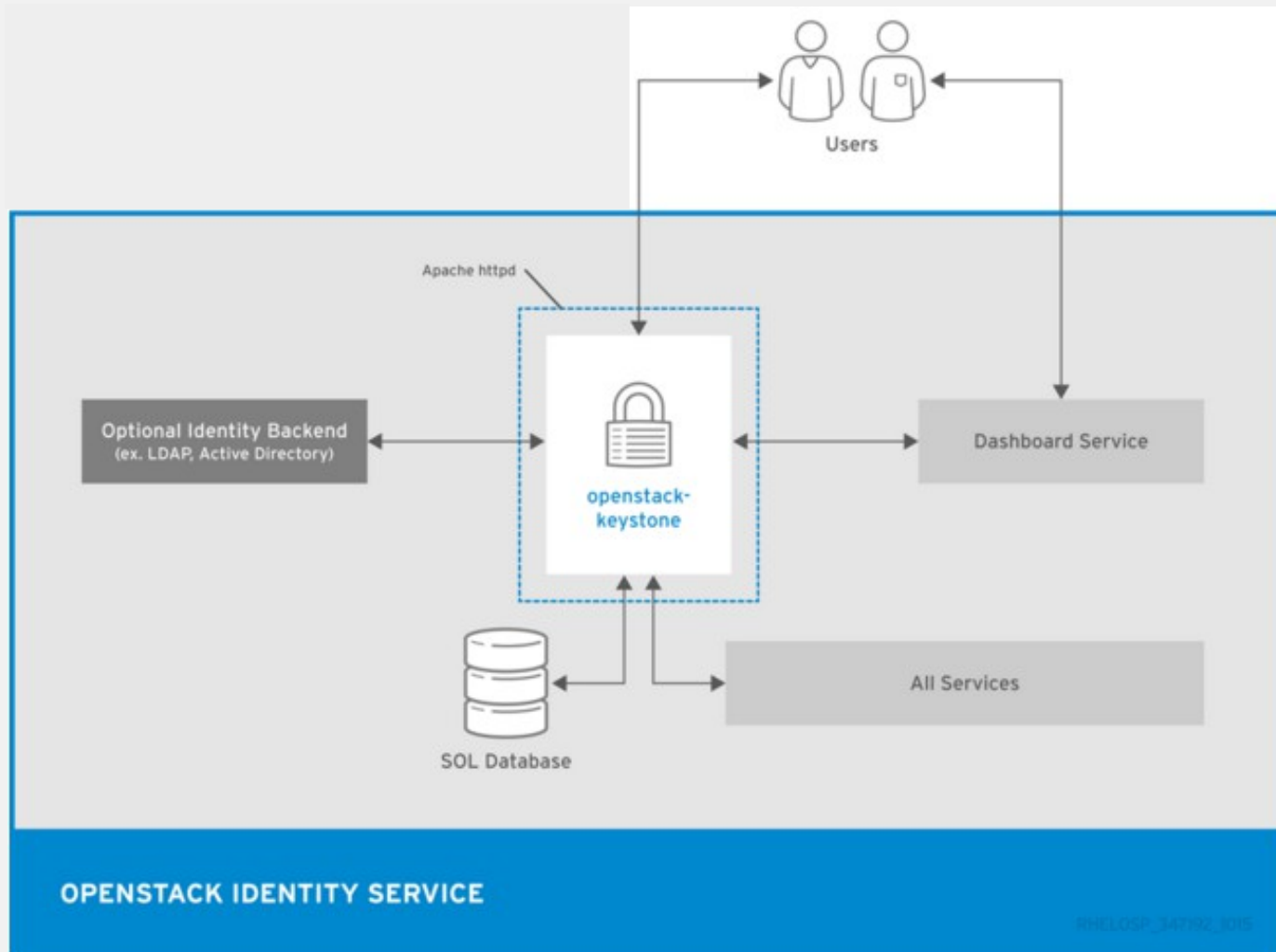


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OpenStack Identity (KEYSTONE)

- Identity 인증 서비스
- 공통 인증 프레임워크
- users, tenants 및 roles 관리
- Pluggable backends (SQL, PAM, LDAP, etc)

Keystone service



OSP Director

Red Hat OpenStack Platform director

Project's Mission

LIFECYCLE



PLANNING

Network topology
Service parameters
Resource capacity

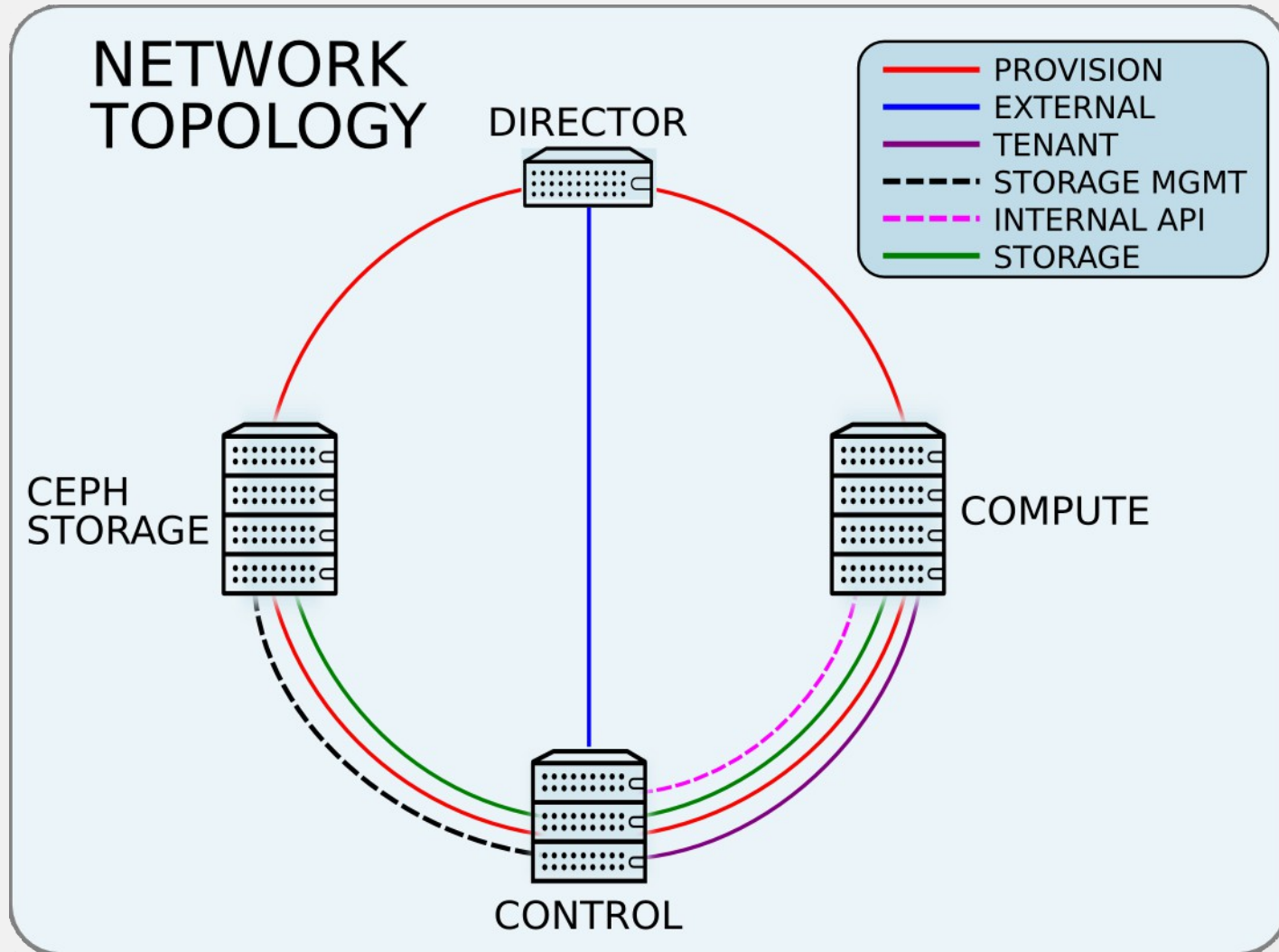
DEPLOYMENT

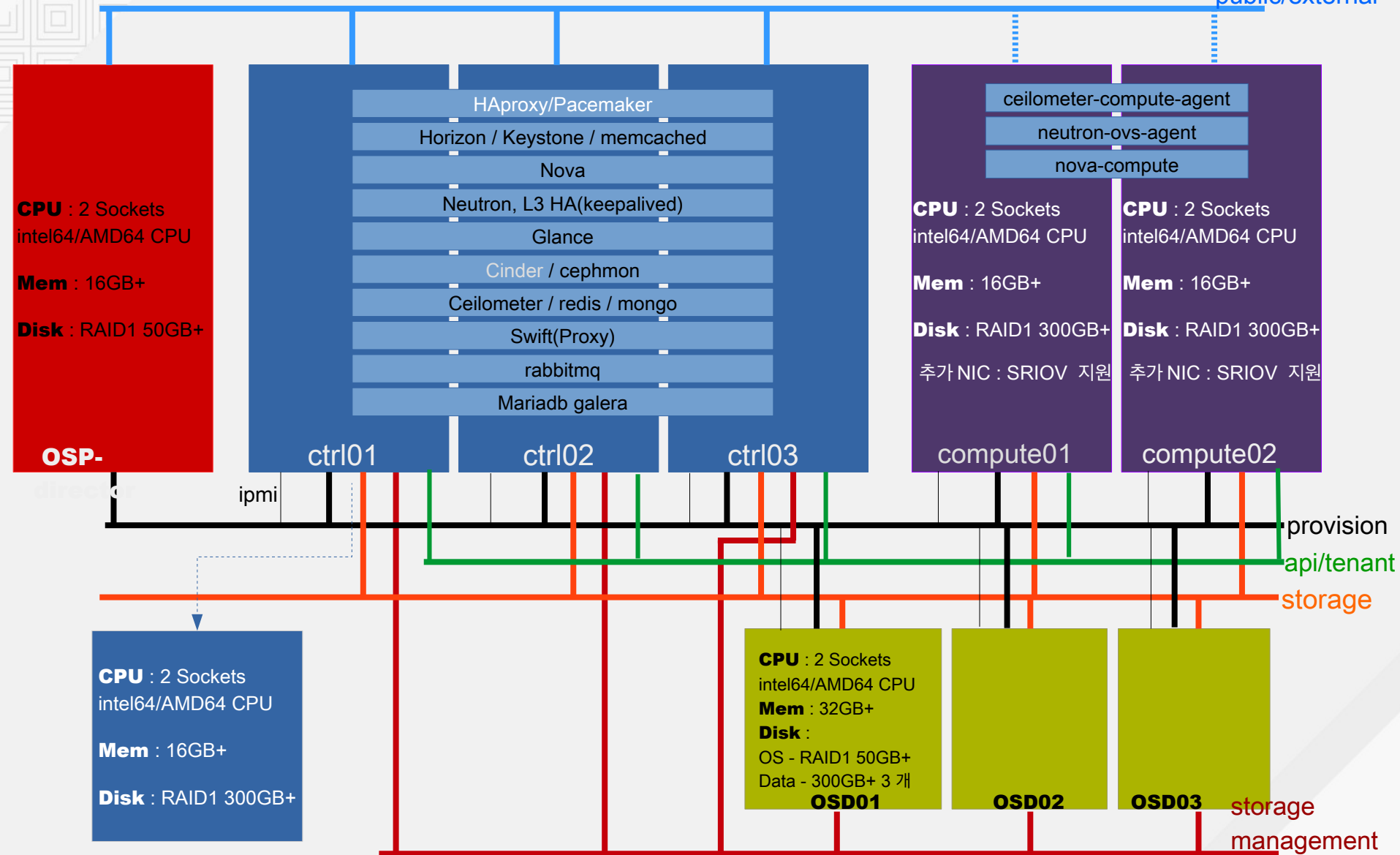
Deployment orchestration
Service configuration
Sanity checks

OPERATIONS

Updates and upgrades
Scaling up and down
Change management

RHOSP Network Configuration



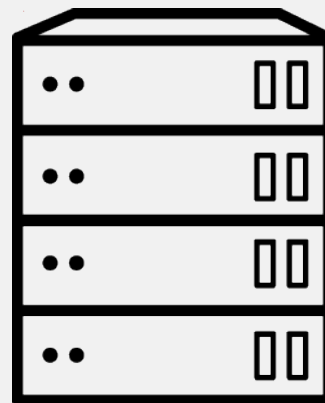


Deployment Flow

New hardware, racked and wired



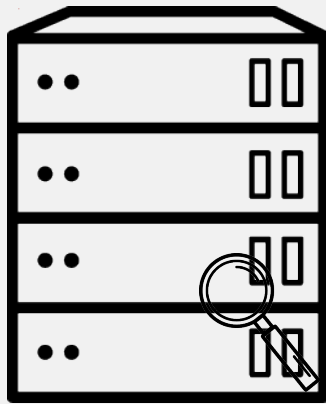
Install undercloud(OSP director)



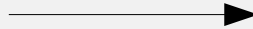
director

Deployment Flow

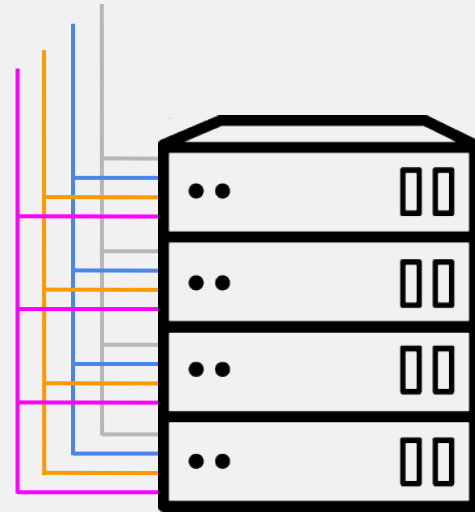
Register & introspect hardware
for more detailed specification



director



Defined networking



director

Deployment Flow

Deployed RHEL OpenStack Platform



