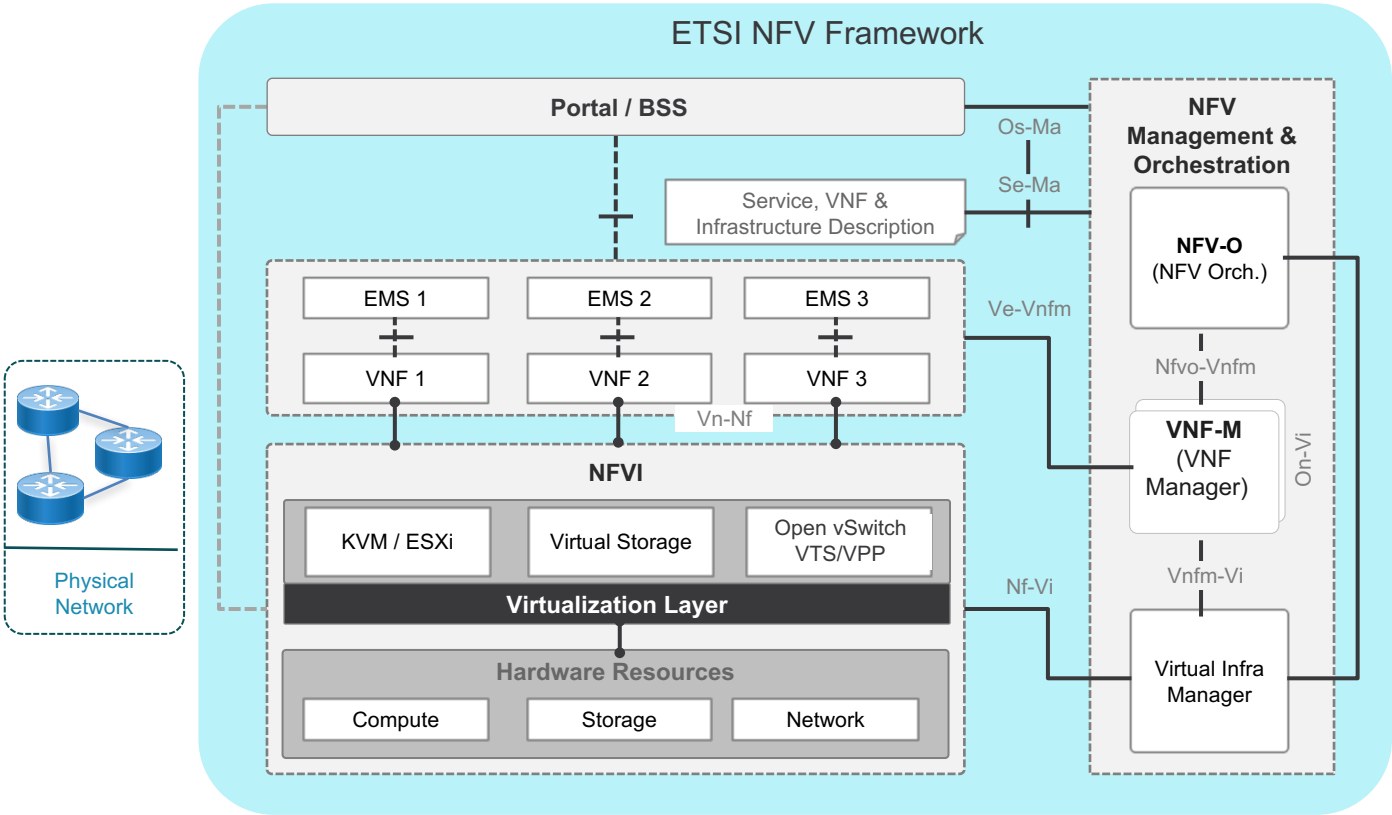
Cisco live!

January 29 – February 2, 2018 · Barcelona

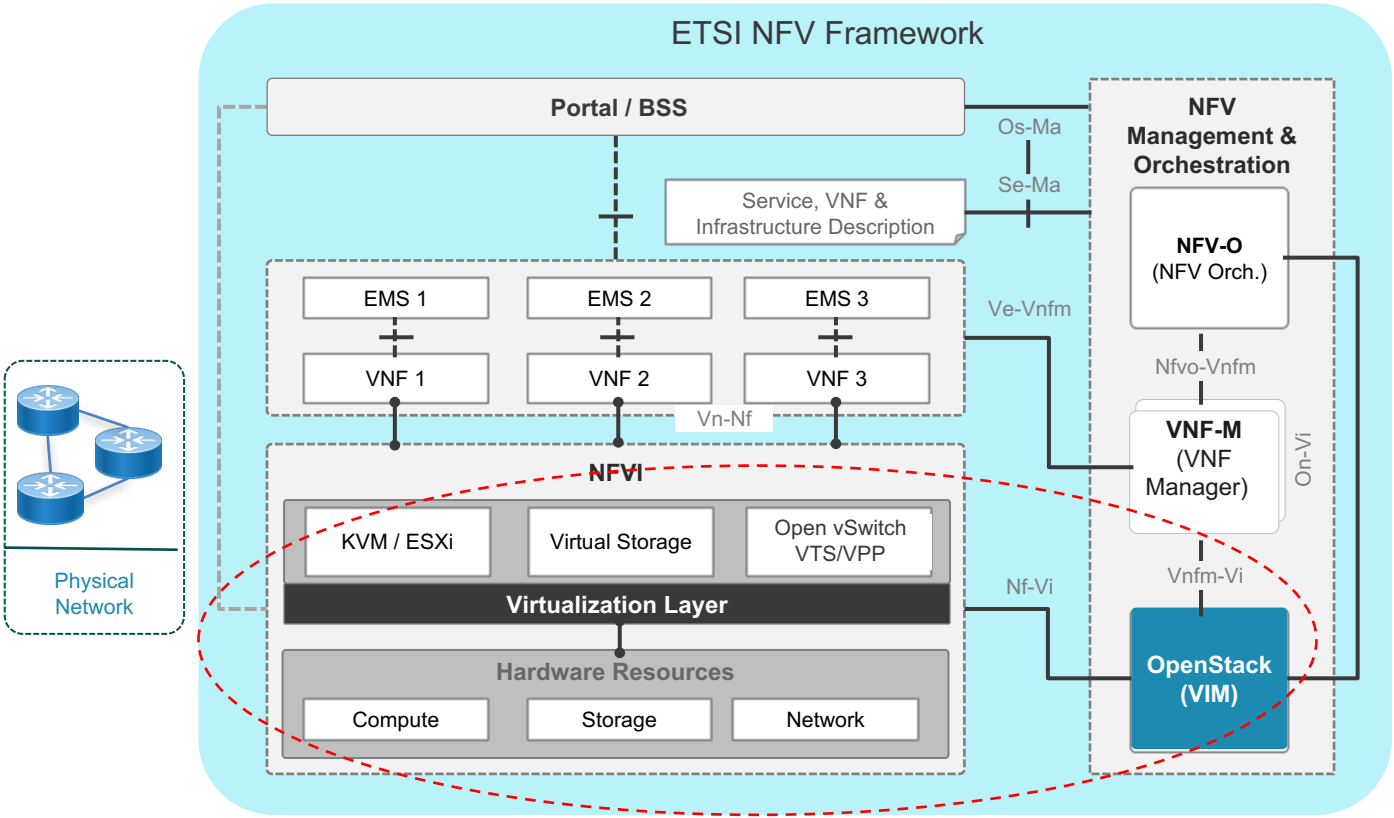
Agenda

- ETSI NFV Framework
- OpenStack
  - Introduction
  - Architecture
  - Concepts
  - Installation

ETSI NFV Framework



ETSI NFV Framework



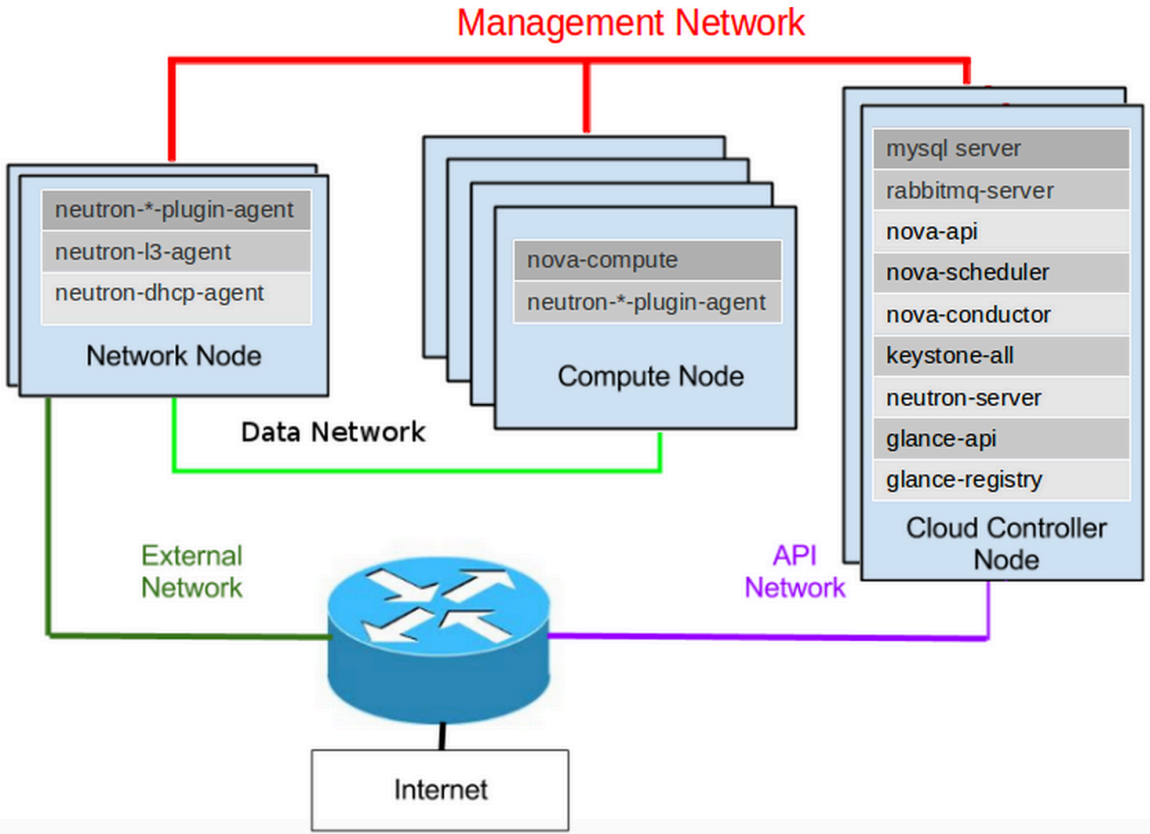
OpenStack Introduction

- Cloud management platform for providing Infrastructure-as-a-Service (IaaS)
- Goal - “open source cloud computing platform for public and private clouds aimed at scalability without complexity”
- “Open Cloud” that counters Amazon Web Services and VMware vCloud
- Not a single “product” but a set of related projects
- Support for wide range of underlying hardware and hypervisors
- Governed by OpenStack Foundation

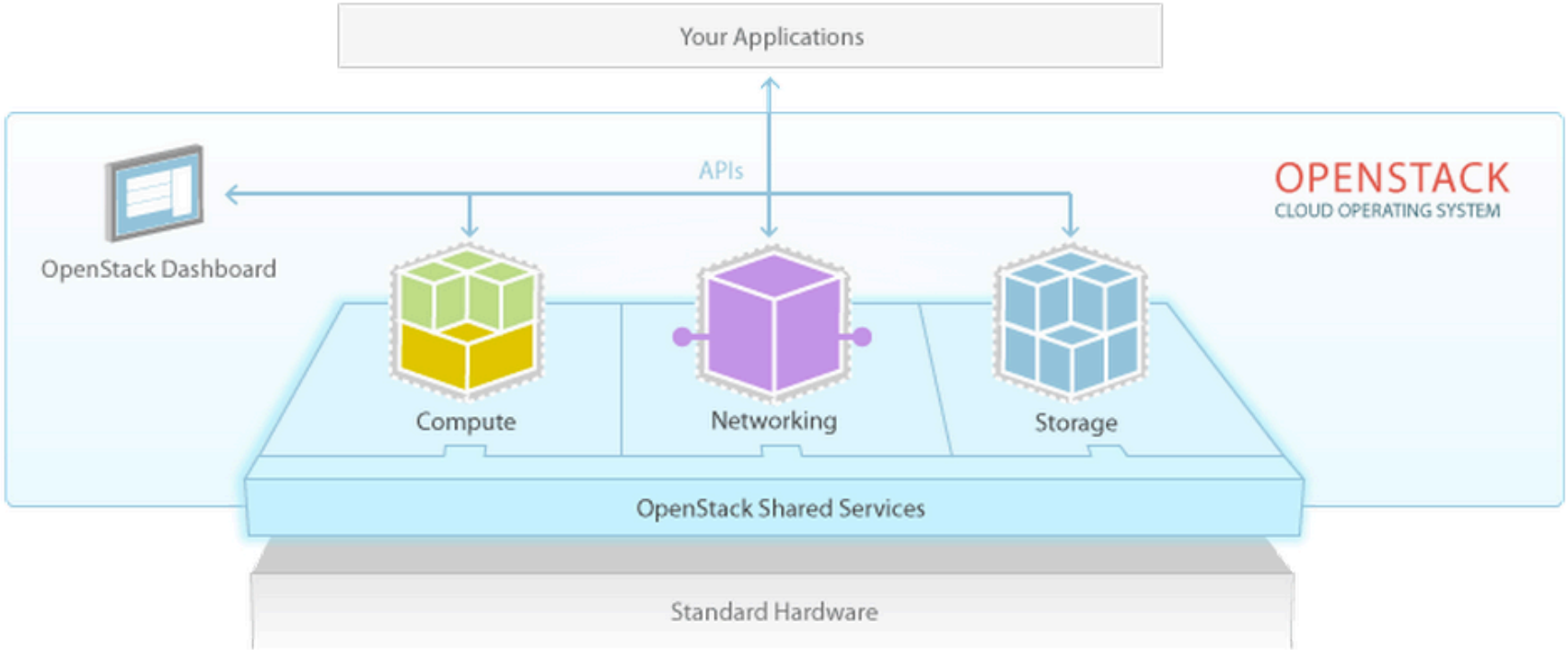
OpenStack Introduction (contd.)

- Open Source
  - Anyone can download and use it, propose new features, submit enhancements (code)
- Used by corporations, service providers, SMBs, researchers, and global data centers looking to deploy large-scale cloud deployments for private or public clouds
- Installation is a complex task
  - Various installers available from Red Hat, Canonical, Mirantis, Cisco, etc.

OpenStack Architecture



OpenStack Overview



OpenStack History

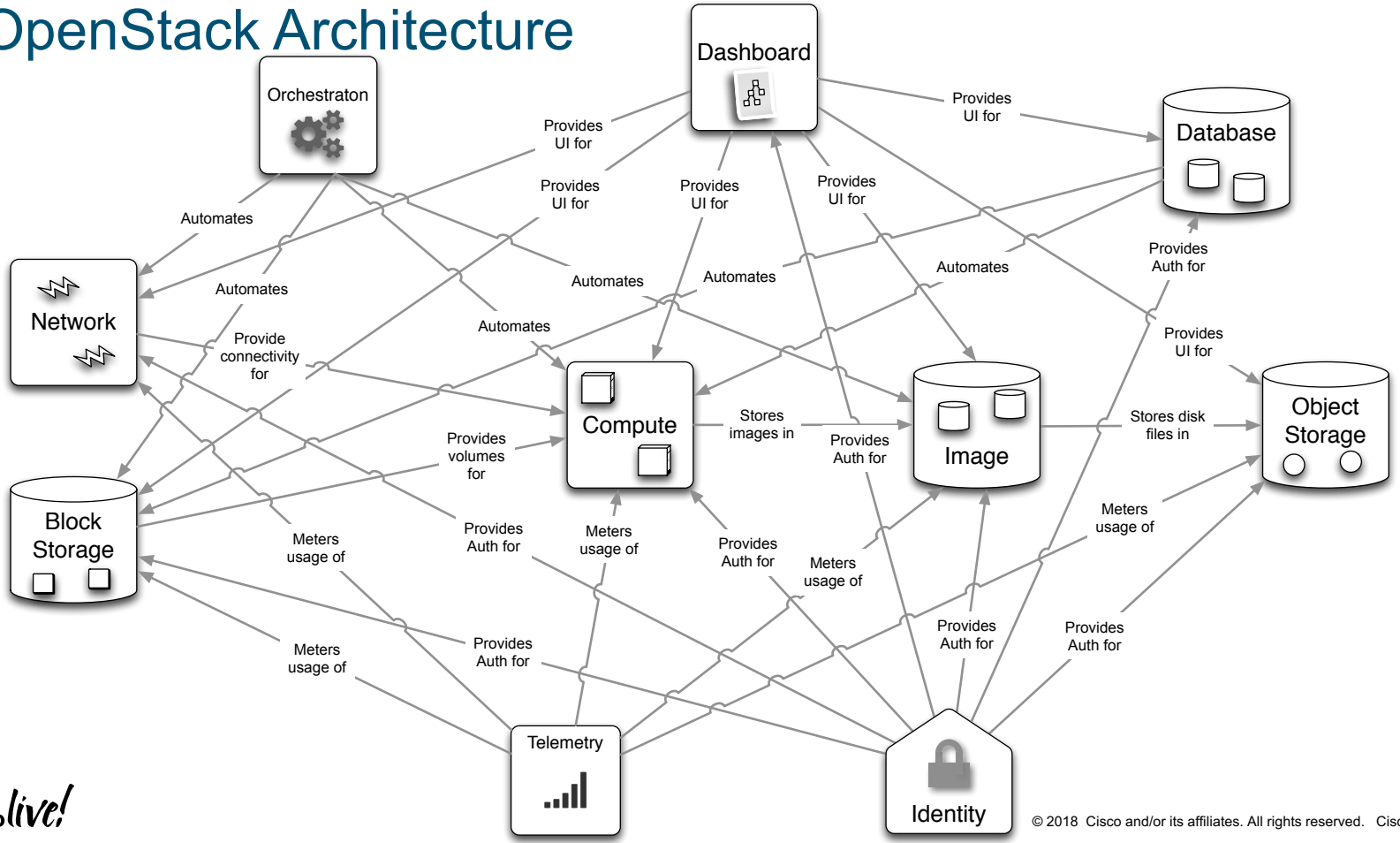
- Begun in 2010 by NASA & Rackspace to collaborate on their internal object storage (Swift) and compute (Nova) projects.
- Released approx. every six months
  - first release in Spring
  - second release in Fall
- Support releases available every 2 or 3 months
- Releases are named after places where Design Summits are held

Series	Status	Initial Release Date	EOL Date
Rocky	Future	proposed	TBD
Queens	Under Development	scheduled	TBD
Pike	Phase I – Latest release	2017-08-30	2018-09-03
Ocata	Phase II – Maintained release	2017-02-22	2018-02-26
Newton	Phase II – Maintained release	2016-10-06	2017-10-11
Mitaka	EOL	2016-04-07	2017-04-10
Liberty	EOL	2015-10-15	2016-11-17
Kilo	EOL	2015-04-30	2016-05-02
Juno	EOL	2014-10-16	2015-12-07
Icehouse	EOL	2014-04-17	2015-07-02
Havana	EOL	2013-10-17	2014-09-30
Grizzly	EOL	2013-04-04	2014-03-29
Folsom	EOL	2012-09-27	2013-11-19
Essex	EOL	2012-04-05	2013-05-06
Diablo	EOL	2011-09-22	2013-05-06
Cactus	Deprecated	2011-04-15	
Bexar	Deprecated	2011-02-03	
Austin	Deprecated	2010-10-21	

OpenStack Components

- Compute (Nova) *since Austin*
- Object Storage (Swift) *since Austin*
- Image Service (Glance) *since Bexar*
- Identity Service (Keystone) *since Essex*
- Dashboard (Horizon) *since Essex*
- Block Storage (Cinder) *since Folsom*
- Network Service (Neutron) *since Folsom*
- Telemetry (Ceilometer) *since Havana*
- Orchestration (Heat) *since Havana*
- Database Services (Trove) *since IceHouse*
- Data Processing (Sahara) *since Juno*
- Bare Metal (Ironic)
- Queue Service (Zaqar)
- Shared File System (Manila)
- DNS Service (Designate)
- Key Management (Barbican)
- Containers (Magnum)
- …
- Many more!

OpenStack Architecture



OpenStack – General Concepts

- All services provide RESTful APIs
- Services maintain State information in the database only (i.e., they are “stateless”)
  - makes it easy to maintain consistency and recover in case of a crash
  - also makes it possible to implement High Availability
- Communication between services is via queues (RabbitMQ) or by invoking each others APIs
- Most of the code is written in Python

OpenStack - Installation

- Multiple installation methods.
- Production grade:
  - Cisco VIM – http://www.cisco.com/c/en/us/solutions/service-provider/network-functions-virtualization-nfv-infrastructure/index.html
  - TripleO (OpenStack on OpenStack) – https://wiki.openstack.org/wiki/TripleO
  - Others: RHOSP, Mirantis, etc.
- Non-production grade:
  - Devstack (not really an installation!) – https://docs.openstack.org/devstack/latest/
  - Packstack – https://www.rdoproject.org/install/packstack/
  - Kolla – https://docs.openstack.org/kolla/latest/
  - Manual installation (not an easy task for non-linux admins) – https://docs.openstack.org/install-guide/

Cisco Spark

Questions?

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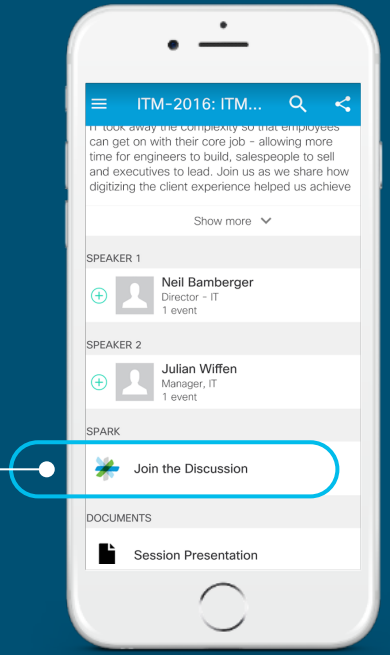

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