

Network in OpenStack!

2015-11-19

About me



IT Expert who is researching about cloud~!!

I am working with ASD Korea. My Role is deployment Cloudike and OpenStack that is OpenSource Cloud Platform.

- Name : NaleeJang(장현정)
- Company : ASD Korea Cloudike System Engineer
- HP Helion MVP(Most Valuable Professional)
- Published : "The Art of OpenStack"/2014.10.31/Gilbut
- Patent : "System and method for providing cloud market service for sale contents base on a software as a service"/2015.09.25
- Etc : Korea Opensource Alliance Director
- Blog : <http://naleejang.tistory.com>
- Facebook : <http://www.facebook.com/naleejang>
- Community : Leader of OpenStack Korea User Group (<http://www.facebook.com/groups/openstack.kr/>) (<http://www.openstack.or.kr/>)



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1. Introduction Community

1. Introduction Community



OpenStack Korea User Group

Year of Create

February, 2011 – by Jaesuk Ahn, First Leader

Manager Group

2nd Leader Nalee Jang, Vice Stephen Ahn, etc 6 part

Homepage

<http://openstack.or.kr>

Facebook

<https://www.facebook.com/groups/openstack.kr>

Member Count

Total : 4,408 (male: 4,346, female: 62)

Seminar

- **Held OpenStack Day in Korea every February**
- **Held OpenStack Birthday Party every July**
- **Held Technical Seminar once a month**

1. Introduction OpenStack Community

Manager Group

Leader



Vice Leader



Global



Marketing



Seminar



Study



Localization



Special



1. Introduction OpenStack Community

Hompage : <http://openstack.or.kr>



The screenshot shows a web browser window with the URL openstack.or.kr. The page title is "OpenStack 한국 커뮤니티". Below the title are social media icons for Facebook, GitHub, and RSS. A navigation menu includes "저.. 발표하고 싶습니다", "openstack-ko mailing list", "OpenStack 공식 페이지", and "Sponsor". The main content area features a large heading "상반기 스터디 마무리 발표회" (Summer Study Group Completion Presentation) and a paragraph: "7/28일 오후 7~9시에 네이버D2 Startup Factory에 모여 오픈스택 스터디에 대한 상반기 발표회 시간을 시간을 가지면서 상반기 스터디 활동을 마무리하는 자리가 있었습니다. 그것들에 대한 발표자료입니다." Below this is the text "오픈스택 네트워킹을 다시 살펴보자." (Let's look at OpenStack networking again). At the bottom, there is a red banner with the text "2015 2nd OpenStack Study" and a small logo for "openstack KOREA COMMUNITY GROUP".

1. Introduction OpenStack Community

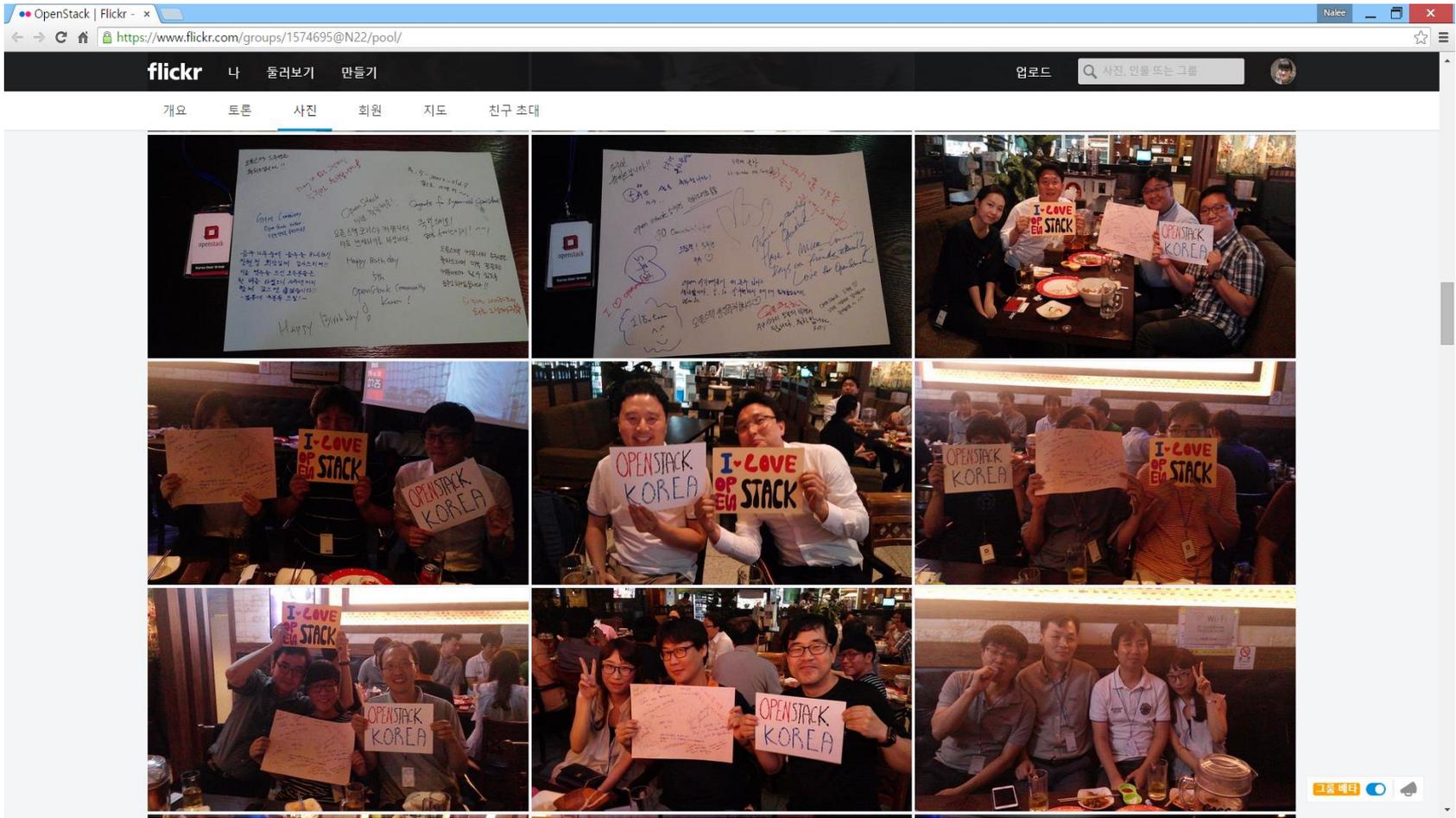
Facebook Group: <https://www.facebook.com/groups/openstack.kr/>



The screenshot shows the Facebook interface for the 'OpenStack Korea Group'. The page header includes the group name and navigation options like '가입함' (Join), '공유하기' (Share), and '알림' (Notifications). The main content area features a post by Nalee Jang, dated 17시간 · 수정됨, titled '[안내] OpenStack Summit in Tokyo 2015'. The post text reads: '안녕하세요~!! 오픈스택 도쿄 써밋이 약 2달정도 남았습니다.... 더 보기' and '좋아요 14개'. The right sidebar shows group statistics: '멤버 4,265명 (새 멤버 23명)' and a list of members. The bottom of the page shows a chat window with 84 messages.

1. Introduction OpenStack Community

5th OpenStack Celebration party photos~!! - 2015.08.05



1. Introduction OpenStack Community

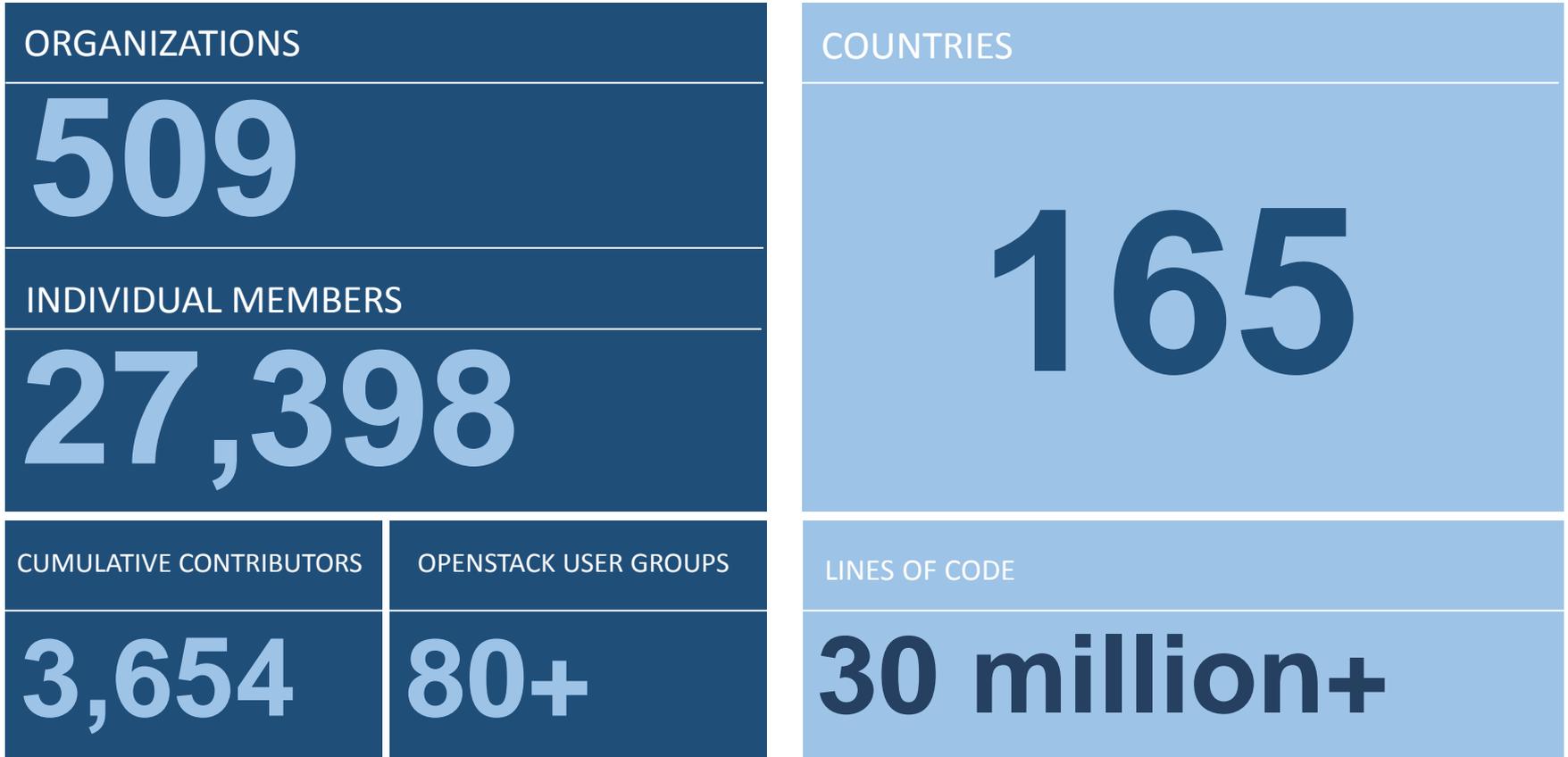
2nd OpenStack Day in Korea 2015 Conference photos~!!



1. Introduction OpenStack Community

OpenStack Community is growing like below during 5 years.

5



1. Introduction OpenStack Community

OpenStack Worldwide Meetup Groups



1. Introduction OpenStack Community

Important Dates

5

July 19, 2015	OpenStack 5 th Anniversary
October 15, 2015	Liberty Release
October 27 – 30, 2015	OpenStack Summit Tokyo
April, 2016	Mitaka Release
April 25-29, 2016	OpenStack Summit Austin

2. About OpenStack Story

2. About OpenStack Story

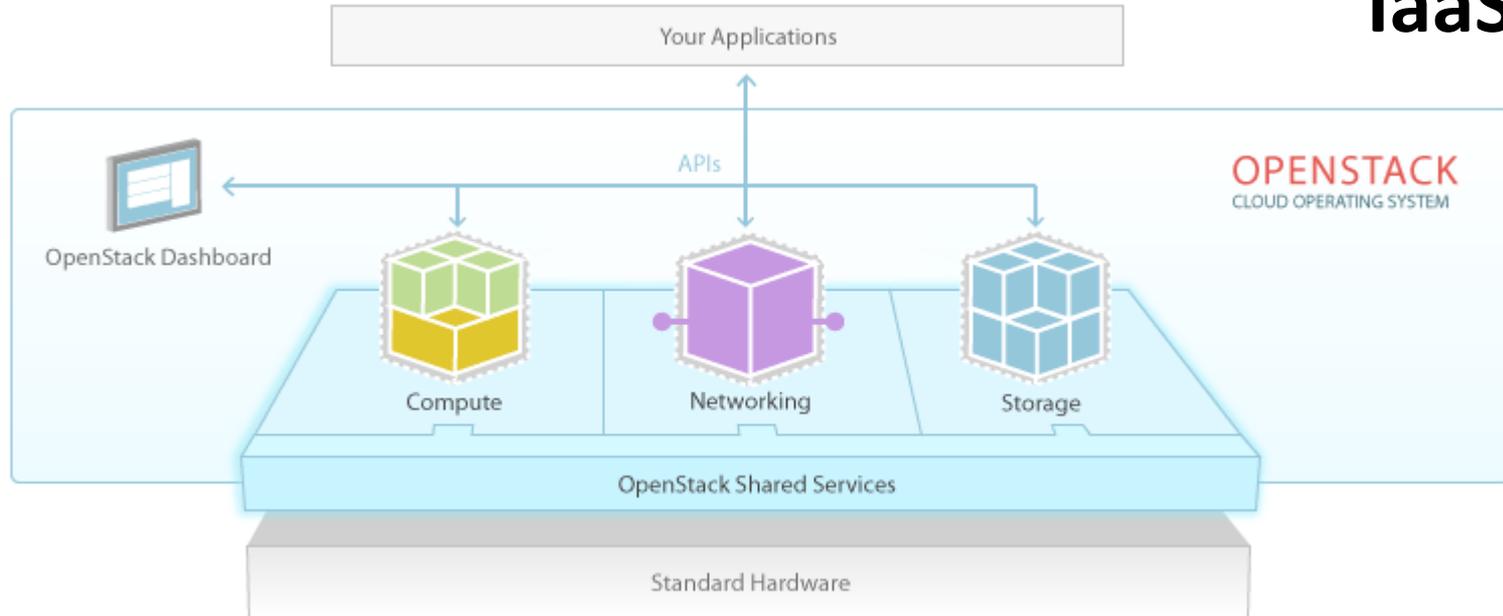
What is OpenStack?

2. About OpenStack Story

Apache 2.0 License

June. 2010

IaaS



IaaS : Infrastructure as a Service



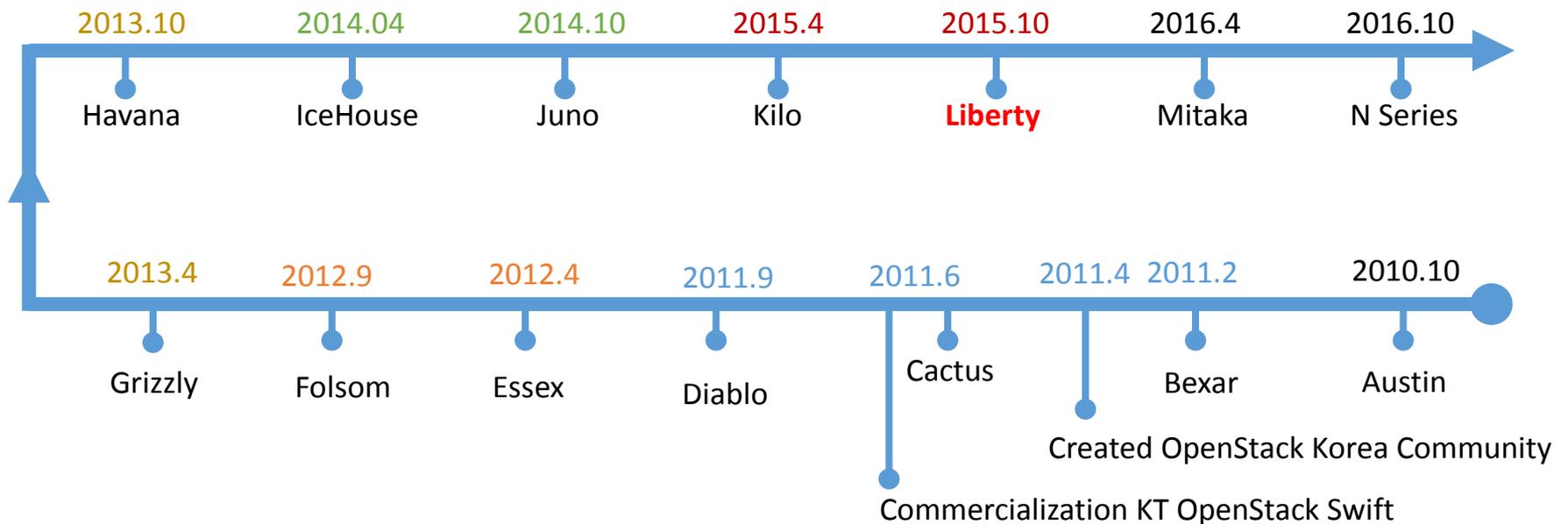
and



2. About OpenStack Story

About OpenStack Release History

2. About OpenStack Story



2. About OpenStack Story

What is OpenStack Component?

2. About OpenStack Story

2nd

Select the **Core Services** you want to use.

- SWIFT**
Object Storage
- KEYSTONE**
Identity
- NOVA**
Compute
- NEUTRON**
Networking
- CINDER**
Block Storage
- GLANCE**
Image Service

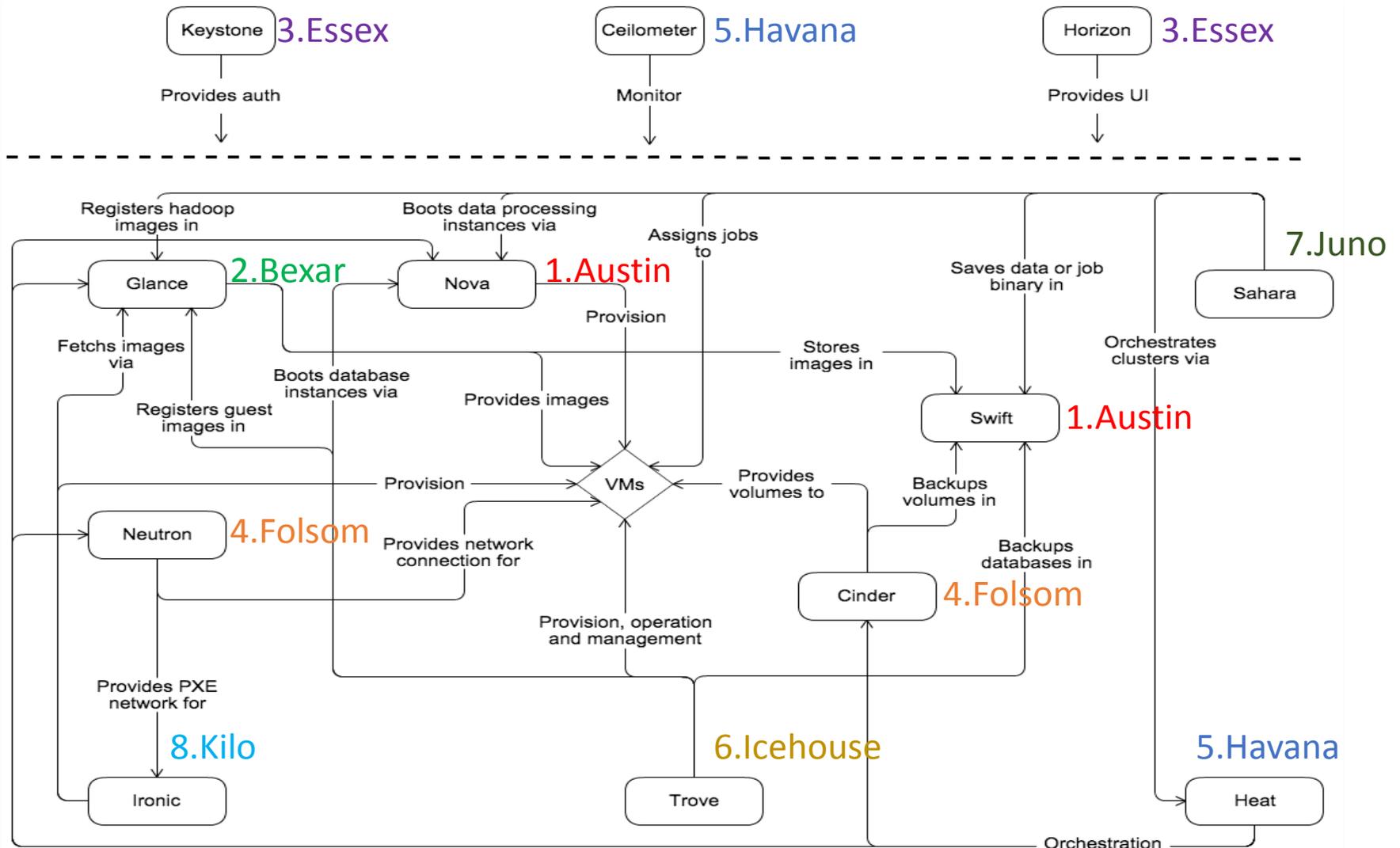
3rd

Add on any **Optional Services** to enhance things.

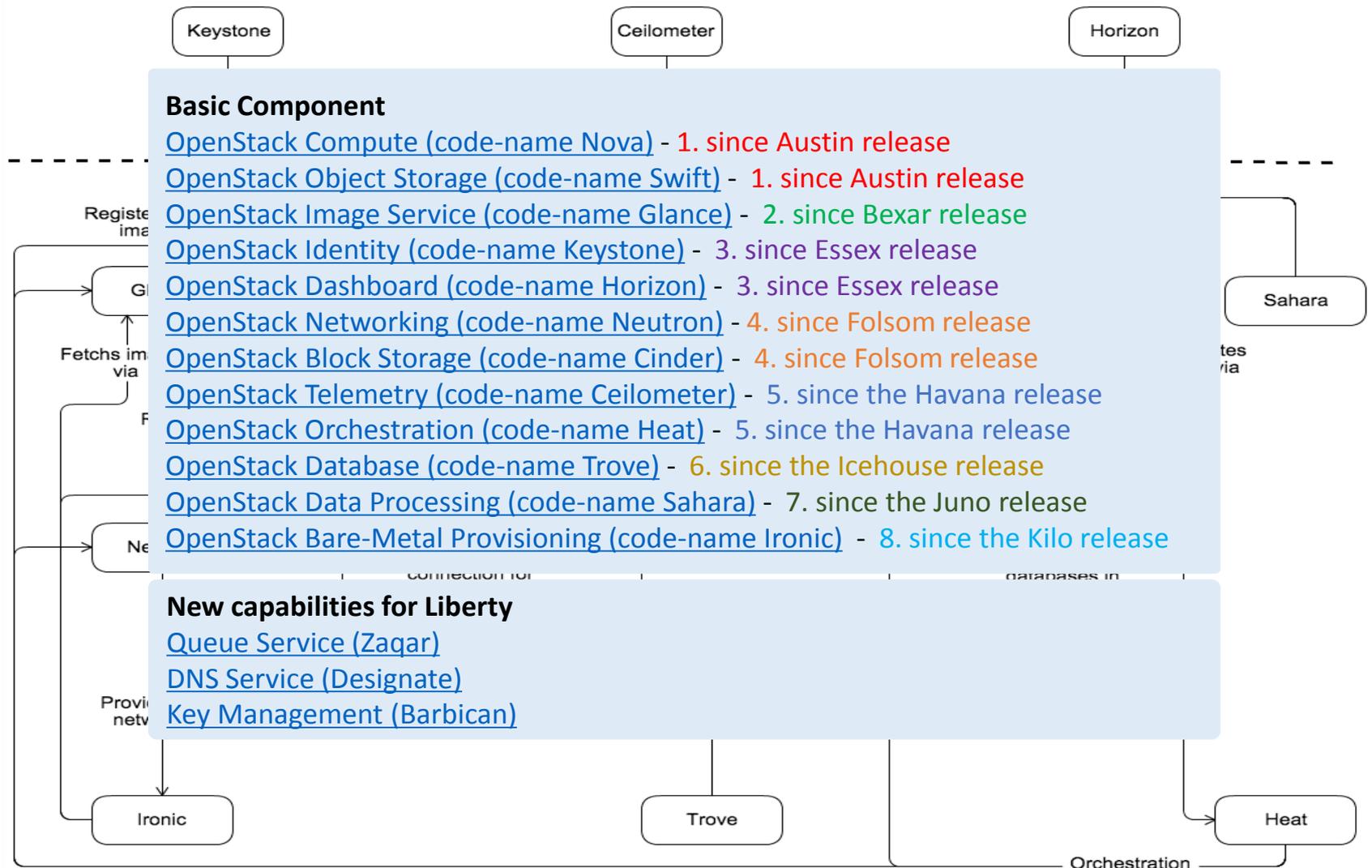
- HORIZON**
Dashboard
- CEILOMETER**
Telemetry
- HEAT**
Orchestration
- TROVE**
Database
- SAHARA**
Elastic Map Reduce
- IRONIC**
Bare-Metal Provisioning
- ZAQAR**
Messaging Service
- DESIGNATE**
DNS Service
- BARBICAN**
Key Management

...AND MANY MORE

2. About OpenStack Story

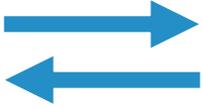


2. About OpenStack Story



2. About OpenStack Story

Network Service

NEUTRON 

2. About OpenStack Story

Starting from **Folsom**

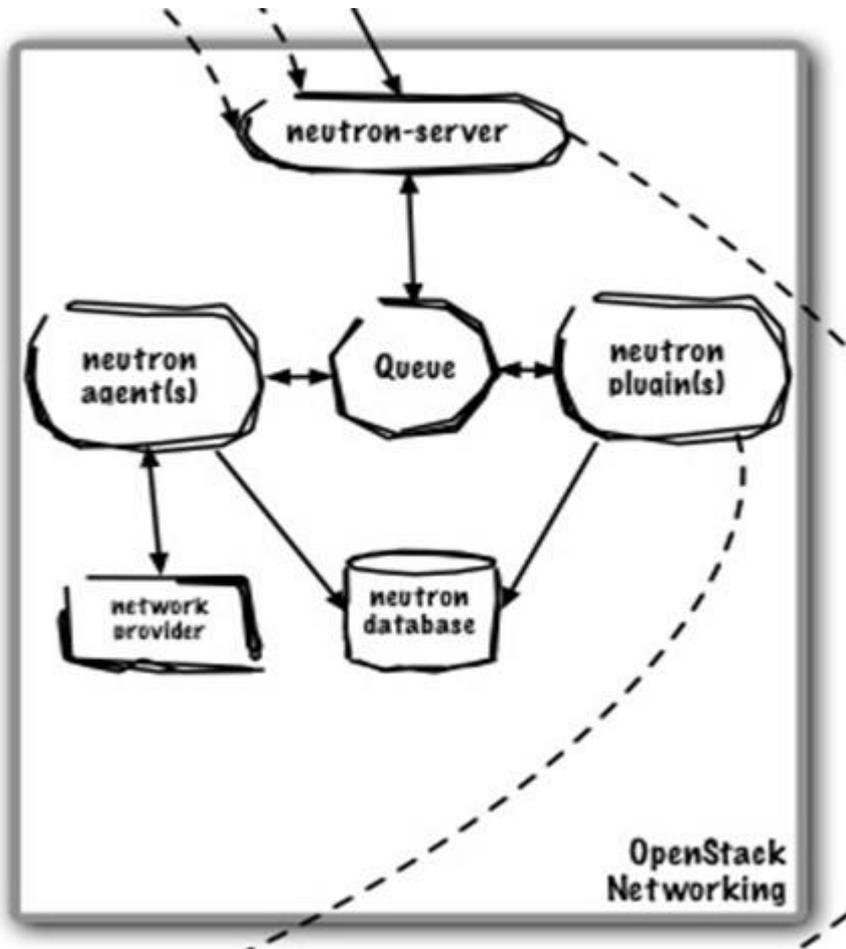
Quantum

Changing Name to Havana

NEUTRON

2. About OpenStack Story

Neutron Component



Neutron Server

Configuration and control agent, plugin, provider and meta data

Neutron Agents

Management database meta data and send and process command to providers

Neutron Plugins

Support various plugin that can work with SDN controllers

Neutron Provider

Allocate network and support various 3-party process

Neutron Database

Management meta data

2. About OpenStack Story

Neutron Plugins

Plugin Name	Plugin URL
Open vSwitch	http://www.openvswitch.org/
Cisco UCS/Nexus	http://wiki.openstack.org/cisco-neutron
Cisco Nexus1000v	http://wiki.openstack.org/cisco-n1kv-neutron
Linux Bridge	http://wiki.openstack.org/Quantum-Linux-Bridge-Plugin
Modular Layer 2	http://wiki.openstack.org/Neutron/ML2
Nicira Network Virtualization(NVP)	http://www.nicira.com/
Ryu OpenFlow Controller	http://www.osrg.net/ryu/using_with_openstack.html
NEC OpenFlow	https://wiki.openstack.org/wiki/Neutron/NEC_OpenFlow_Plugin
Big Switch Controller Plugin	http://www.bigswitch.com/
MidoNet	http://www.midonet.org/
Brocade Neutron Plugin	https://github.com/brocade/brocade
PLUMgrid	https://wiki.openstack.org/wiki/PLUMgrid-Neutron
Mellanox Neutron Plugin	https://wiki.openstack.org/wiki/Mellanox-Neutron
Embrane Neutron Plugin	https://wiki.openstack.org/wiki/Neutron/EmbraneNeutronPlugin

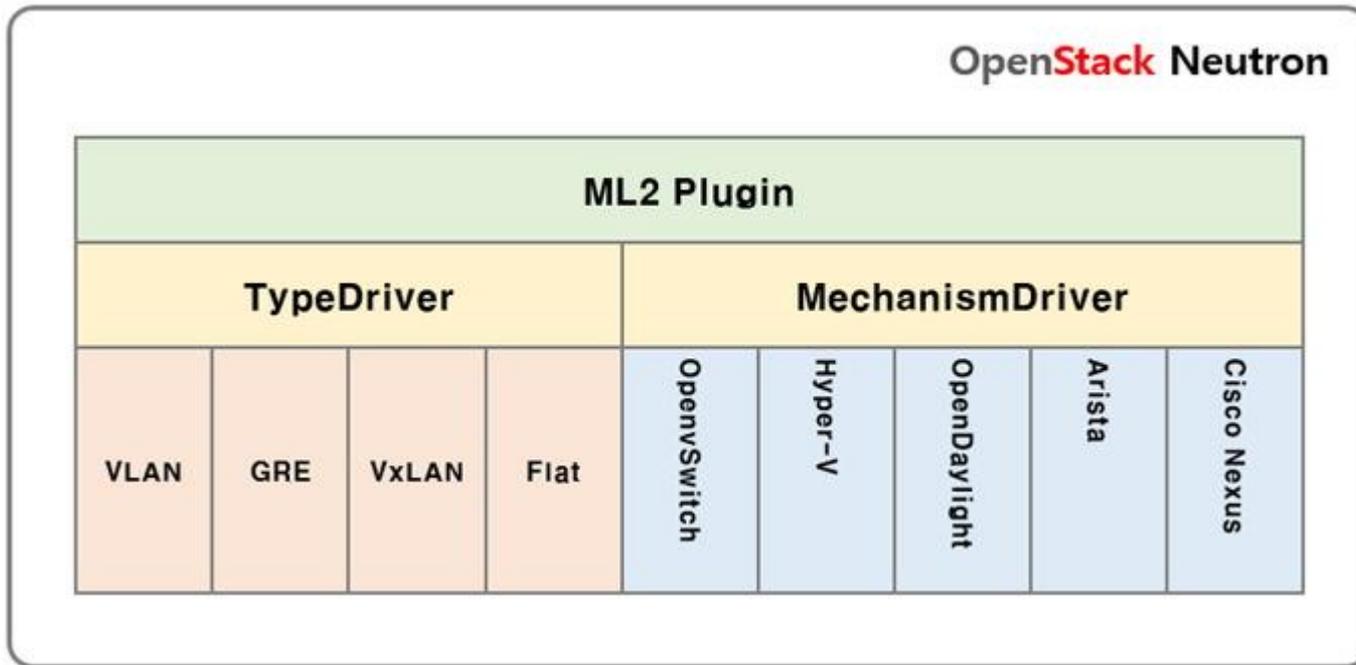
2. About OpenStack Story

Support Neutron Plugins per Hypervisor



2. About OpenStack Story

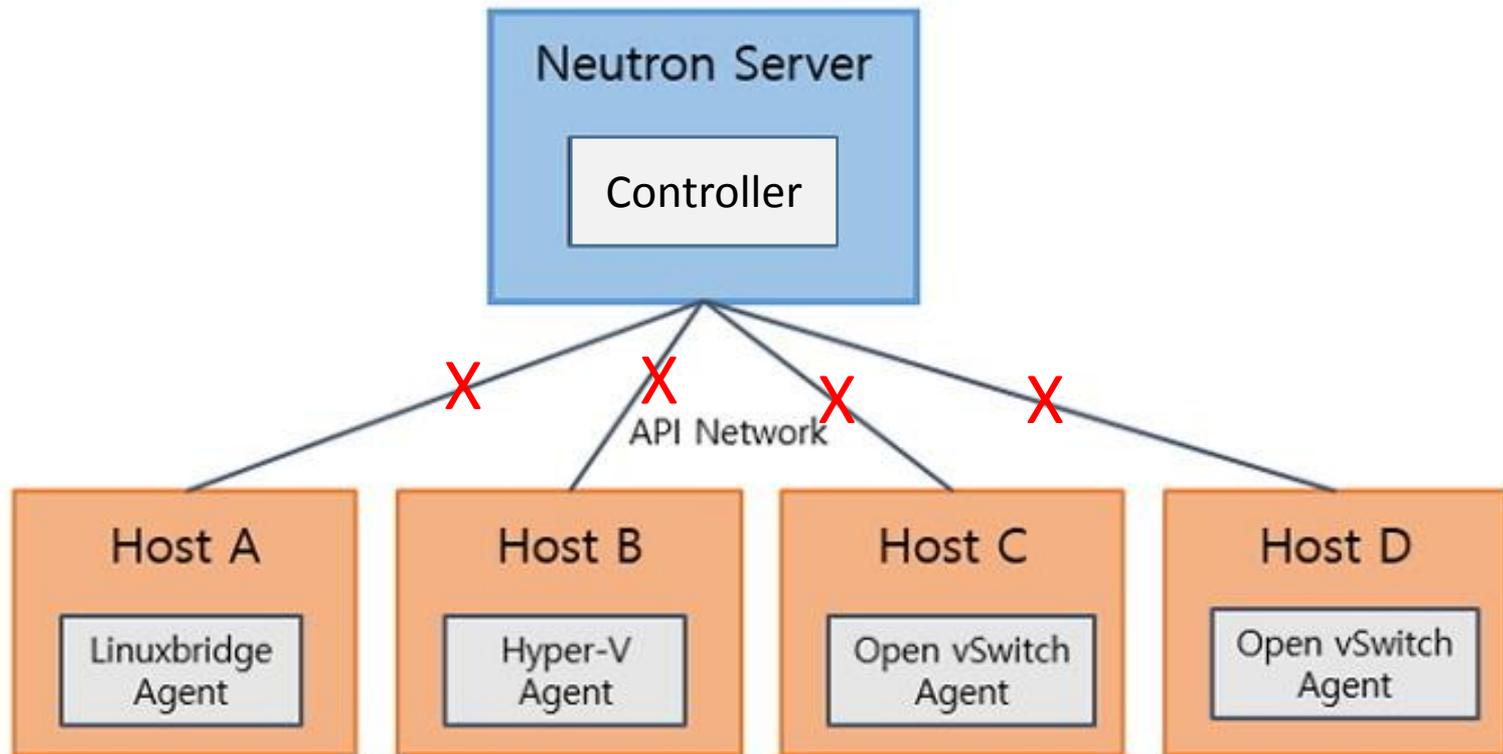
ML2(Modular Layer 2) Plugin



Starting from Havana

2. About OpenStack Story

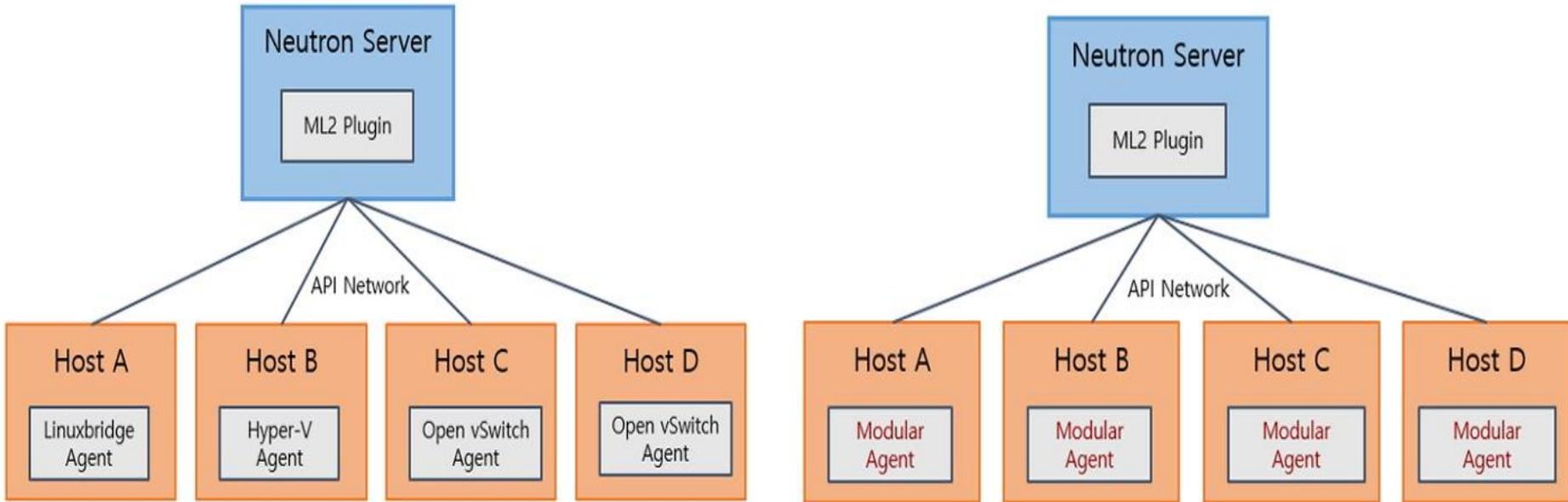
ML2(Modular Layer 2) Plugin



We can't use other agent before release ML2

2. About OpenStack Story

ML2(Modular Layer 2) Plugin



We can use any agents right now.

3. My OpenStack network story

3. My OpenStack network story

Network!!

Everything is difficult to me.

3. My OpenStack network story

Configure Network

```
$ sudo vi /etc/network/interfaces
# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
iface eth0 inet static
    address 10.10.15.11
    netmask 255.255.255.0
    gateway 10.10.15.1
```

Ubuntu

```
$ sudo vi /etc/sysconfig/network-scripts/ifcfg-eth0
DEVICE=eth0
HWADDR=08:00:27:EC:43:E0
TYPE=Ethernet
UUID=84a27f42-ea7d-4f11-a965-2d735f9560e3
ONBOOT=yes
NM_CONTROLLED=yes
BOOTPROTO=none
NETMASK=255.255.255.0
IPADDR=10.10.15.11
GATEWAY=10.10.15.1
USERCTL=no
IPV6INIT=no
PEERDNS=yes
```

CentOS



3. My OpenStack network story

IP Range

10.20.10.1/24

? /24

3. My OpenStack network story

Network terms

Router

SDN

vxlan

switch

Hub

interface

vlan

Bridge

3. My OpenStack network story

Network commands

ovs-vsctl show

ifconfig

ovs-appctl add-flow

ovs-ofctl add-flow

ip route

ping

ip addr

brctl

ip netns

iptables -nL

route



3. My OpenStack network story

OpenStack has grown me.

Thank you

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