

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>



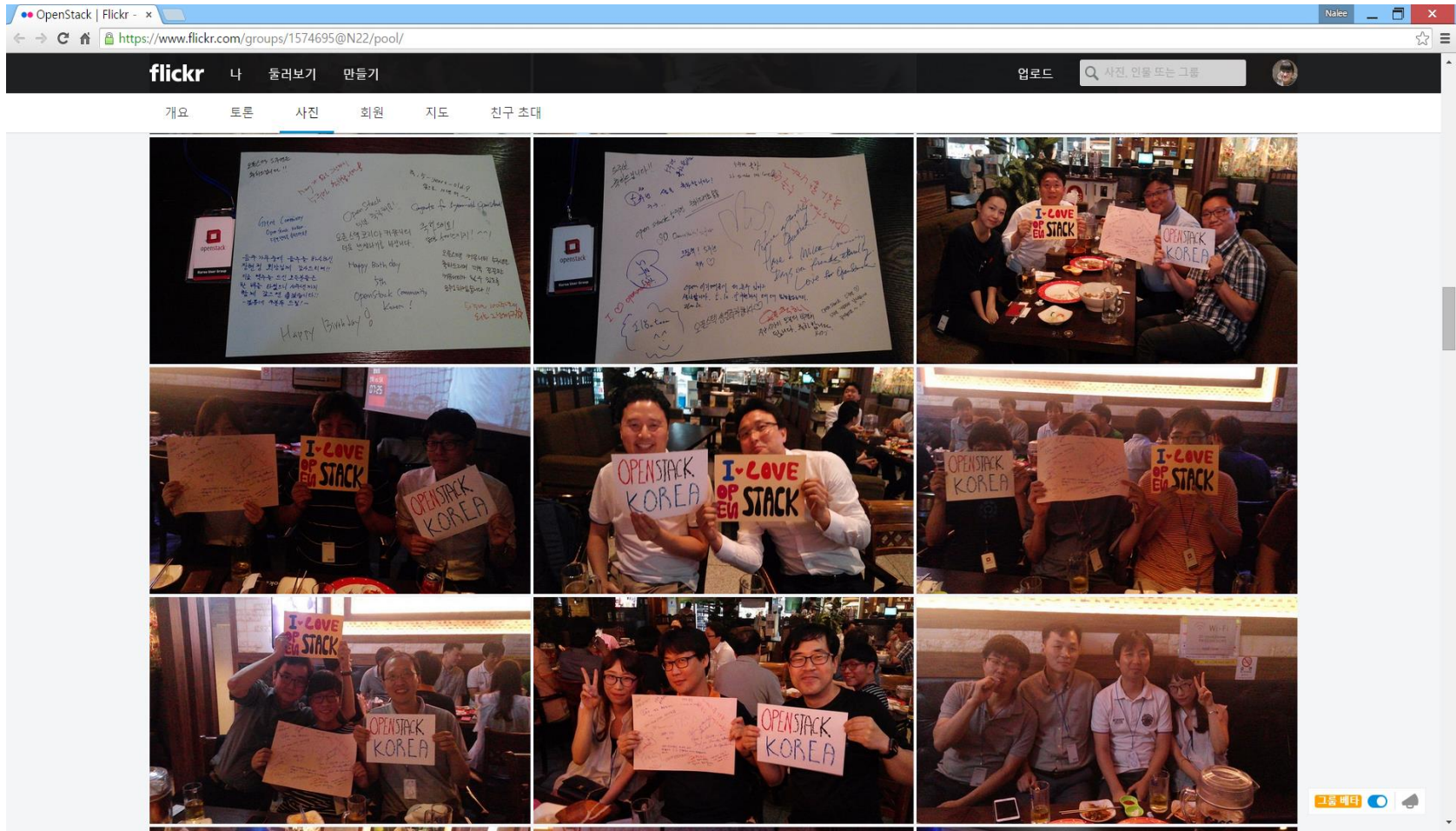
1. Introduction OpenStack Community

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



1. Introduction OpenStack Community

5th OpenStack Celebration party photos~!! - 2015.08.05



OpenStack Korea Community

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

ORGANIZATIONS

509

INDIVIDUAL MEMBERS

27,398

CUMULATIVE CONTRIBUTORS

3,654

OPENSTACK USER GROUPS

80+

COUNTRIES

165

LINES OF CODE

30 million+



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?

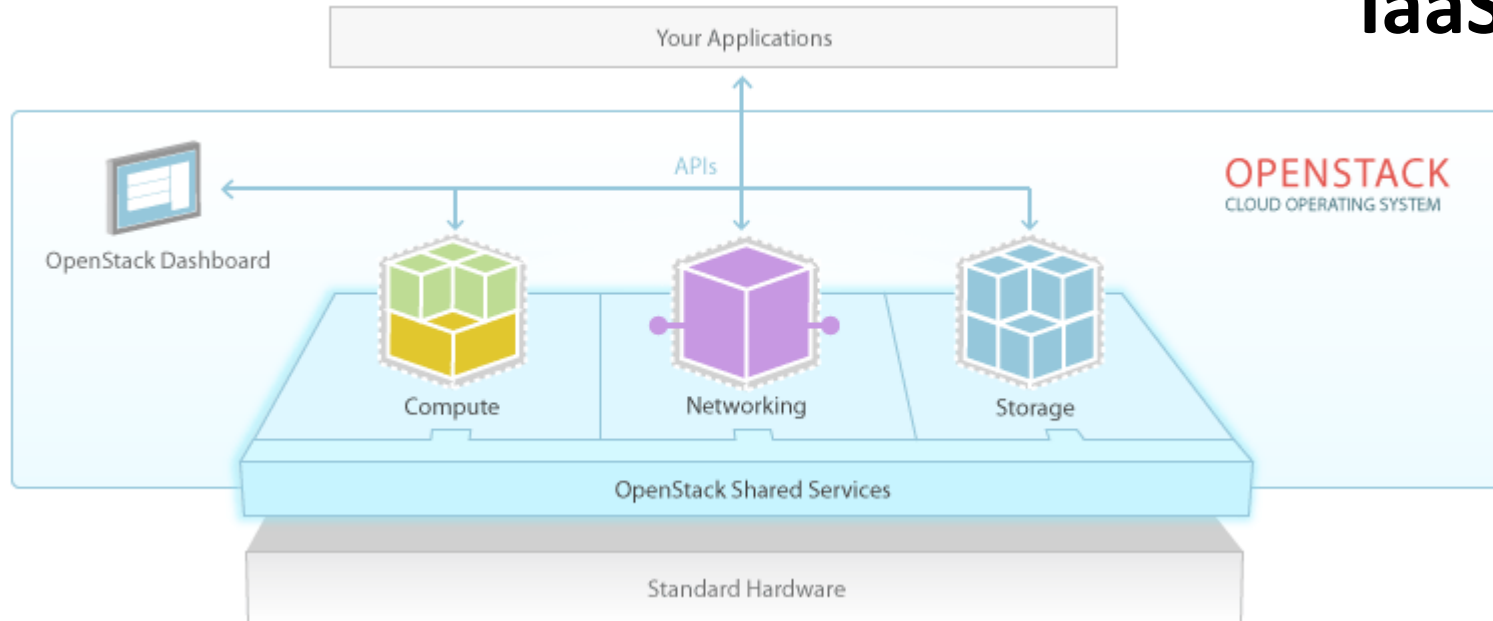


2. About OpenStack Story

Apache 2.0 License

June. 2010

IaaS



IaaS : Infrastructure as a Service



and



OpenStack Korea Community

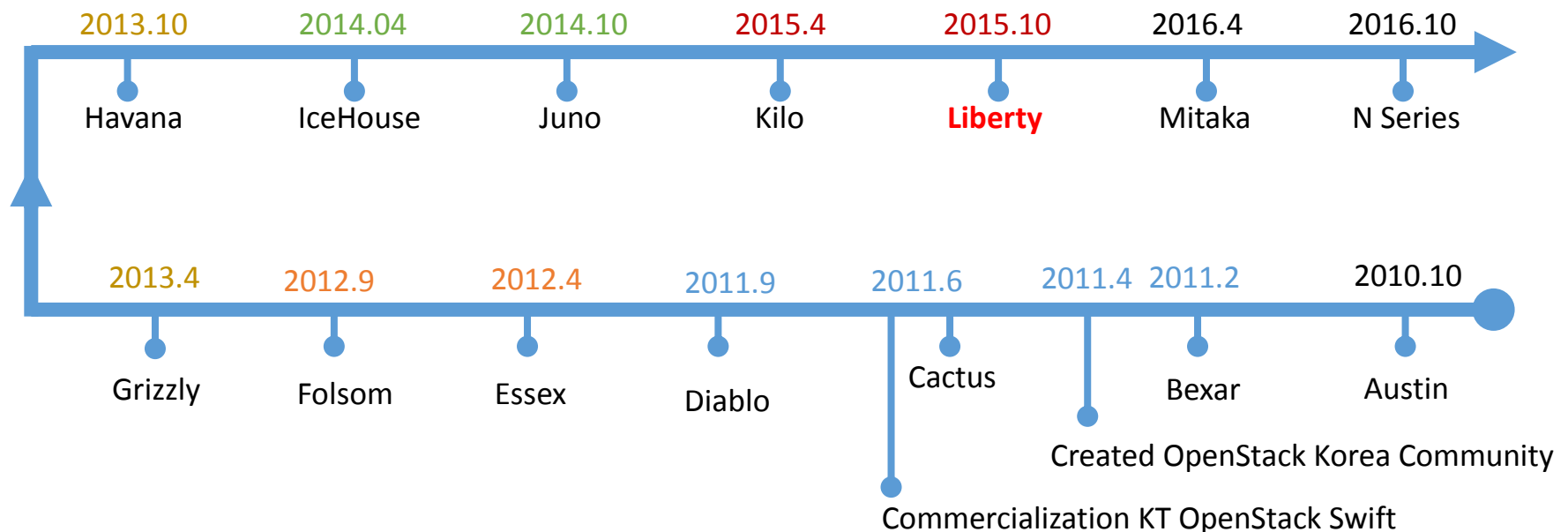


2. About OpenStack Story

About OpenStack Release History



2. About OpenStack Story

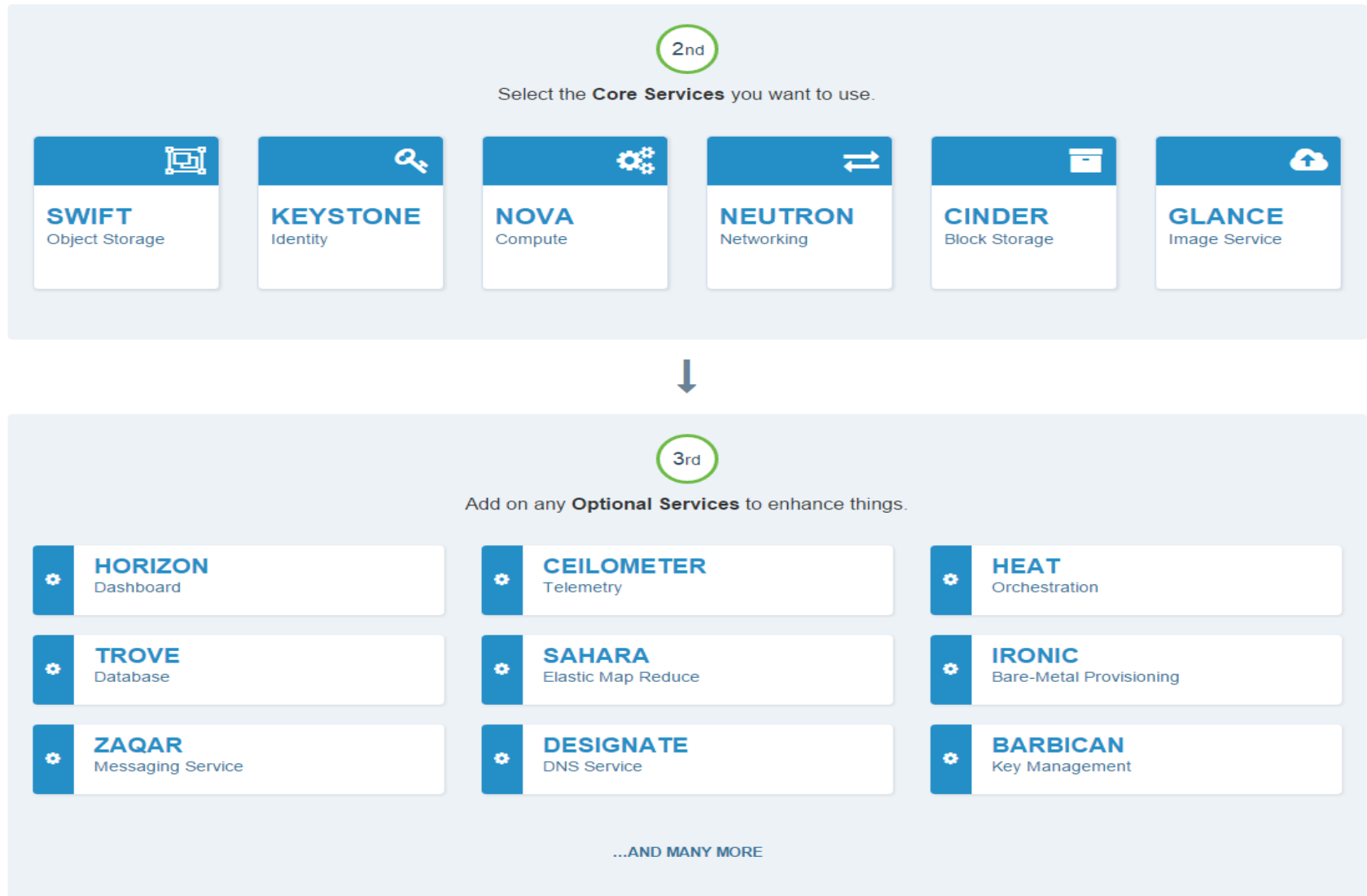


2. About OpenStack Story

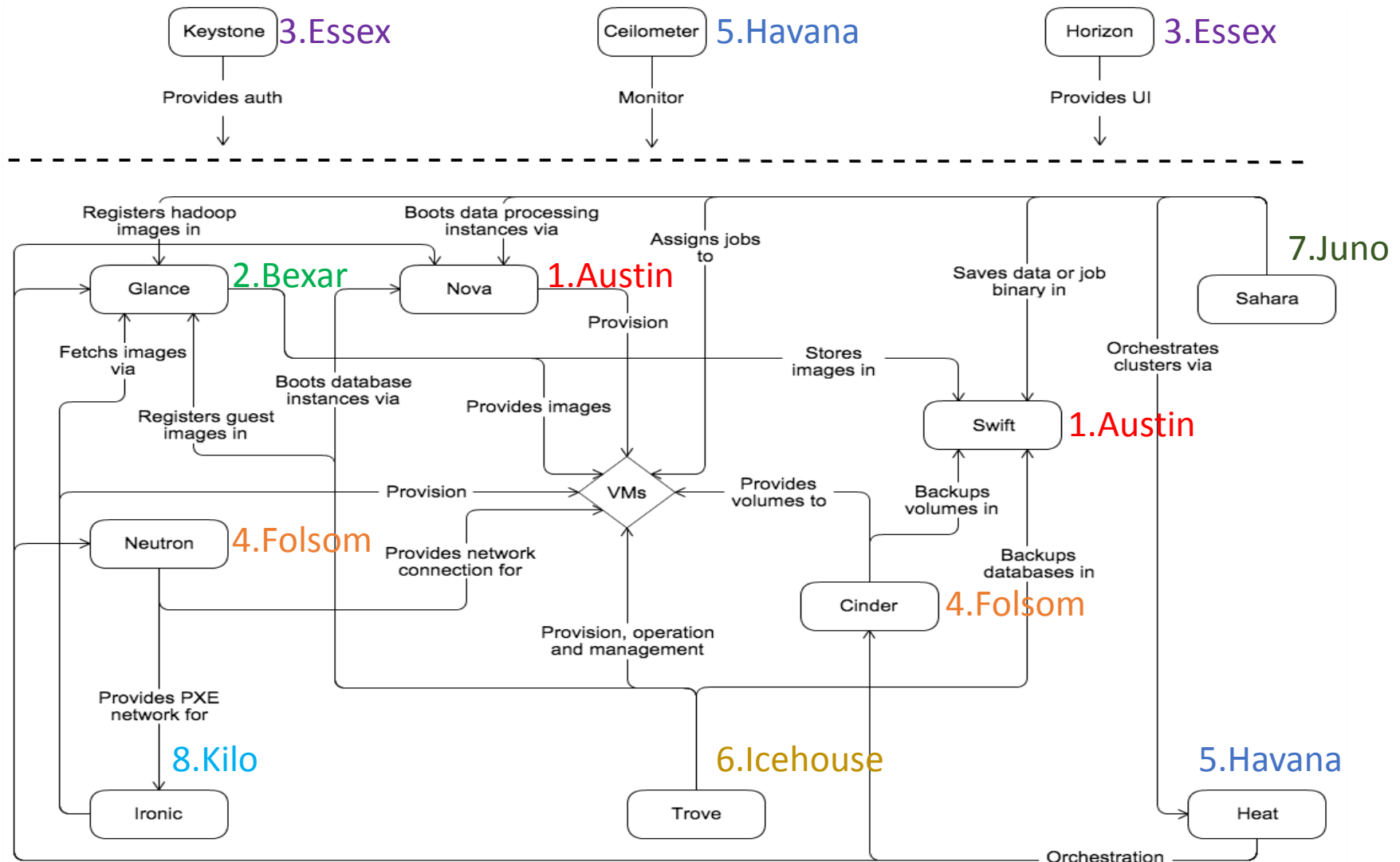
What is OpenStack Component?



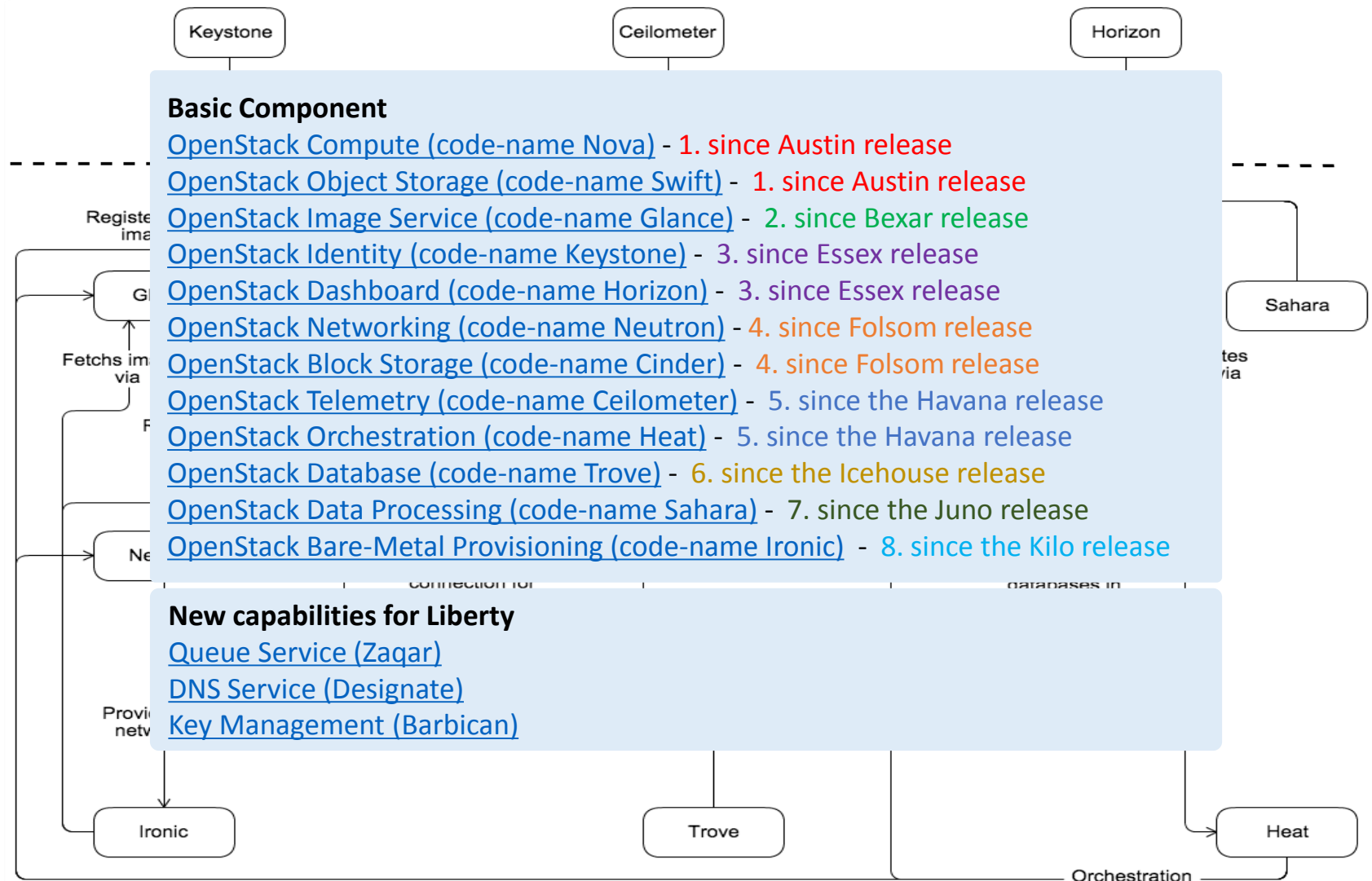
2. About OpenStack Story



2. About OpenStack Story



2. About OpenStack Story



2. About OpenStack Story

Network Service

NEUTRON 



2. About OpenStack Story

Starting from **Folsom**

Quantum

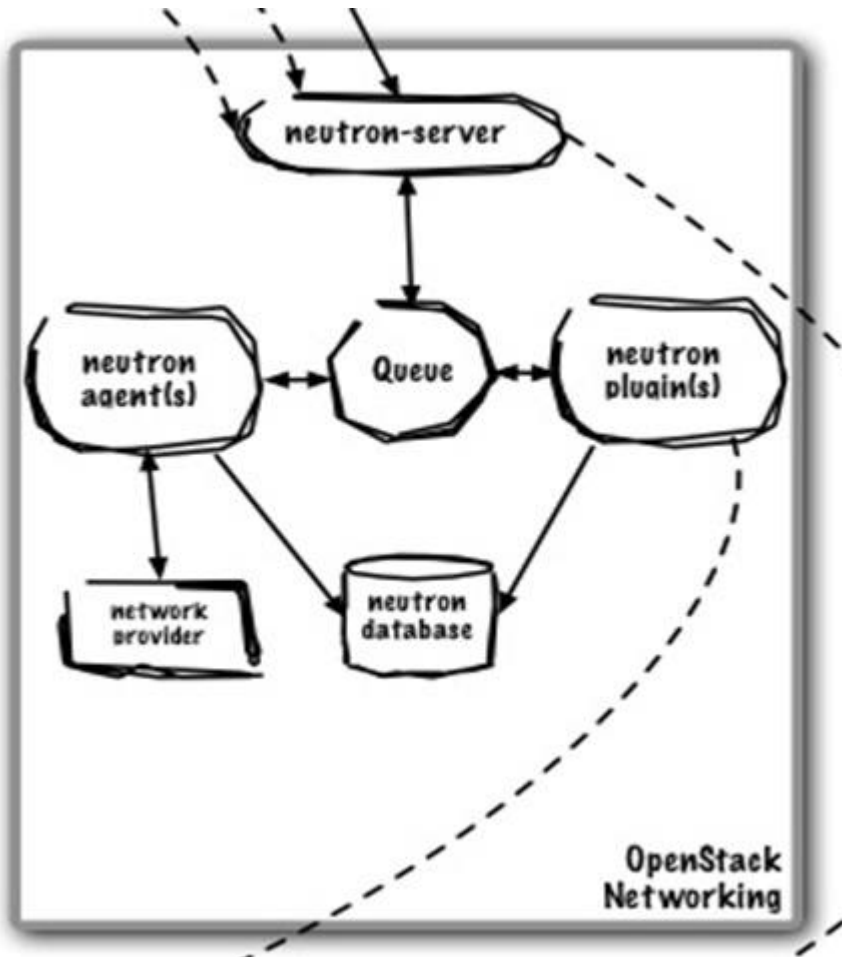
Changing Name to Havana

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

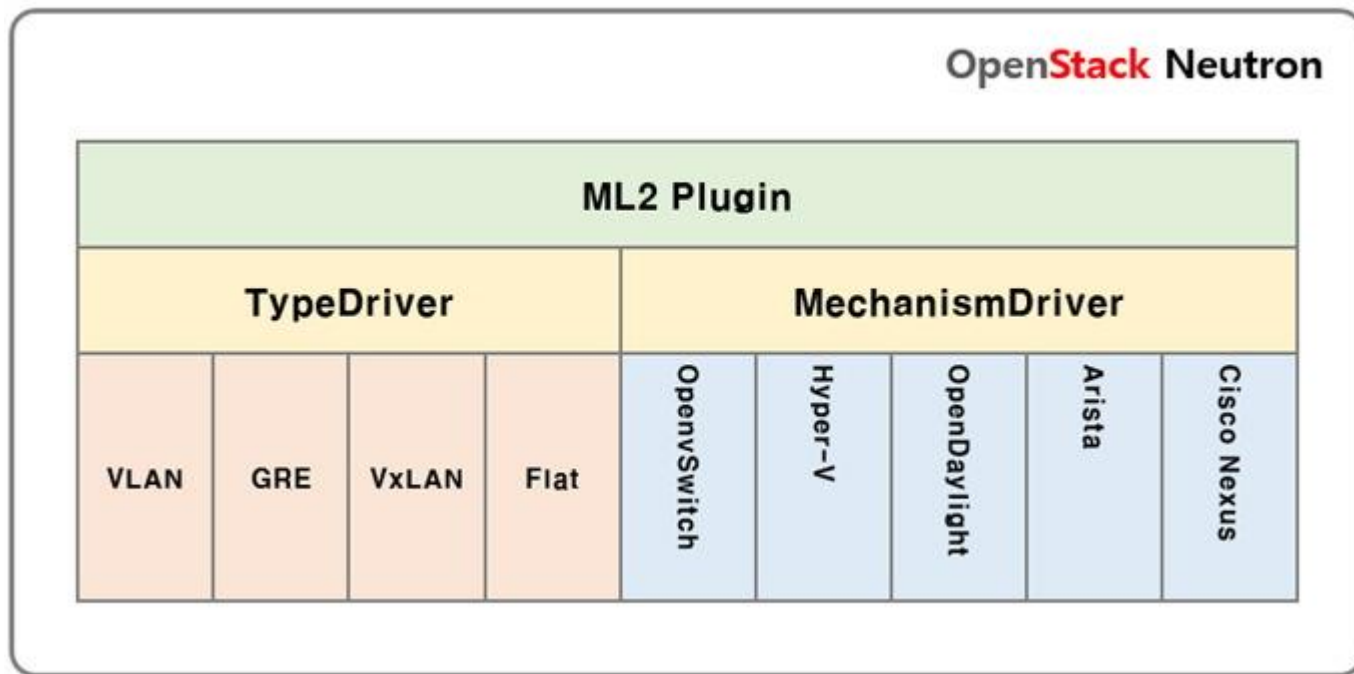
Support Neutron Plugins per Hypervisor



2. About OpenStack Story

ML2(Modular Layer 2) Plugin

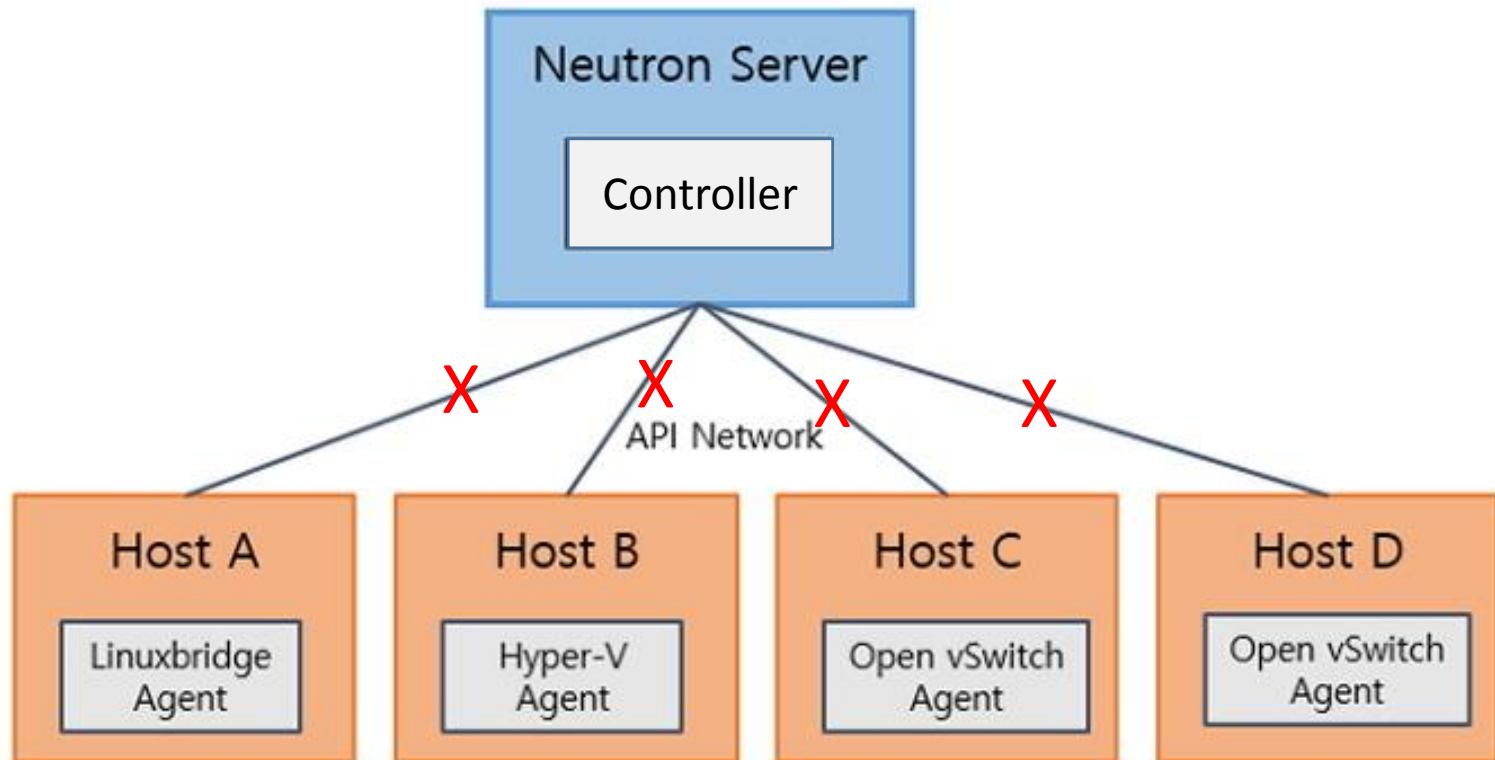


Starting from Havana



2. About OpenStack Story

ML2(Modular Layer 2) Plugin

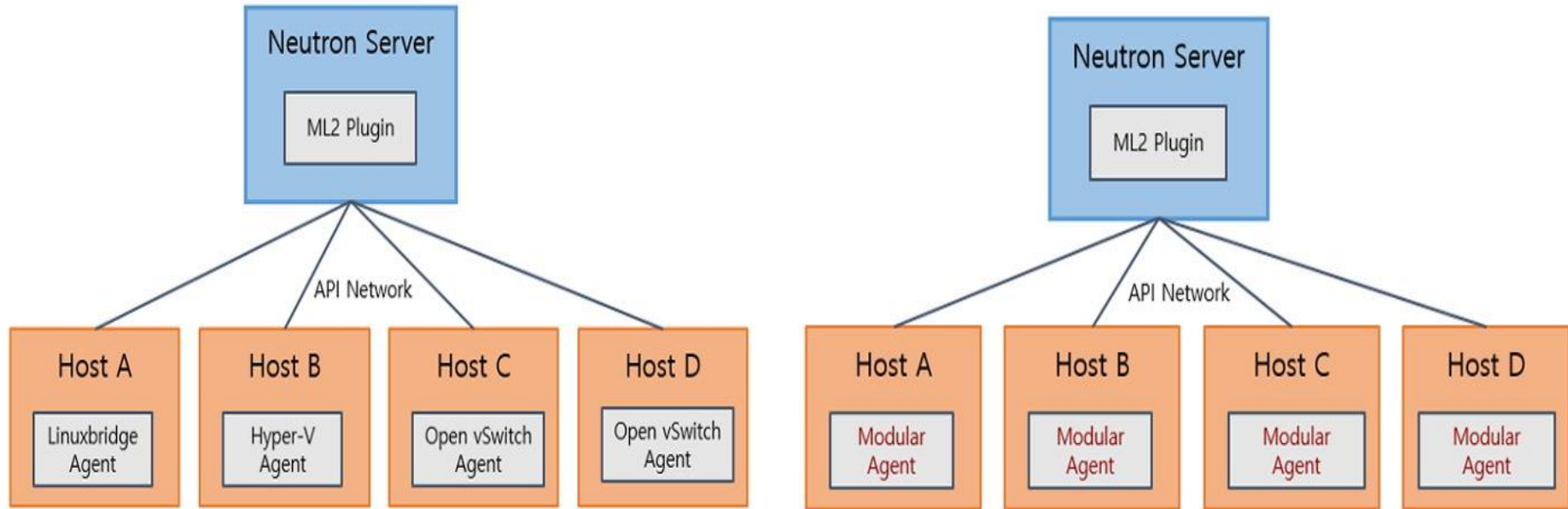


We can't use other agent before release ML2



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

Hub

interface

switch

Bridge

vlan



3. My OpenStack network story

Network commands

ovs-vsctl show

ifconfig

ovs-ofctl add-flow

ovs-appctl add-flow

ip route

ip addr

ping

brctl

ip netns

iptables -nL

route



3. My OpenStack network story

OpenStack has grown me.



Thank you

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