



## Infrastructure Manager for ONAP

Xinhui Li, VMware, lxinhui@vmware.com Gooch Stephen, Windriver, stephen.gooch@windriver.com

## Why Need Infrastructure Manager

- ECOMP
  - MSO calls OpenStack
- ONAP
  - Different NFVI provider
  - Container or VM?
  - OpenStack
    - Community
    - Enterprise
    - Version

#### **ONAP Architecture**

E – Services BSS / OSS Big Data









**ONAP Portal** 

Operational Functions

Dashboard
OA&M

Operation
Administration
& Maintenance

**External Data Movement & APIs** 

Active & Available Inventory

Service Orchestrator

**Design Functions** 



Recipe/Engineering Rules & Policy Distribution

Service Design & Creation

**Policy Creation** 

**Analytic Application Design** 

Data Collection & Analytics

Controllers
Engineering Rules

& Inventory

Infrastructure controller

ONAP Controller

Storage

Common Services, Data Movement, Access Control & APIs

Compute

Networking

OpenStack plugin

VIO plugin

Infrastructure

manager

**VNFs / Applications** 



017 AT& I Intellectual Property. All rights reserved. AT&T, Globe logo, Mobilizing Your World and DIRECTV are registered trademarks and Service marks of AT&T Intellectual Property

## Infrastructure Manager

- Manage different VIM
  - Registry
  - Validation
  - Version
- Operate VIM registries
  - LCM
  - Upgrade
  - Verification



## **Interface Design**

- VIM
  - Version
  - Vendor identification
  - Interface Types
  - Key function categories
    - CPU Utilization Criteria (usage, monitoring)
    - VM/Network Limitations (resource management)
    - Creation, deletion, modify, other (LCM)



## **Model Design Requirements**

- Capability declaration
  - Cluster management and scheduling
  - Infrastructure layer monitoring
  - Hardware advantages
- Customization
  - Settings
  - Update
  - Meta data
- Potential modeling language
  - Tosca, HOT, OVF



# Deployment Model

		Open-O	ECOMP	
Network service	TOSCA		TOSCA	
VNF IM	IFA+		/	
VNF DM	TOSCA NFV			OVF
	TOSCA	Simple Profile		
			НОТ	
	Infrastructure Manager (OpenStack, VMware,)			

#### **Multi-VIM in OPENO**

- Name: Multi-VIM
- Repository Name:
  - multivimdriver-openstack
  - multivimdriver-vmware-vio
- Scope

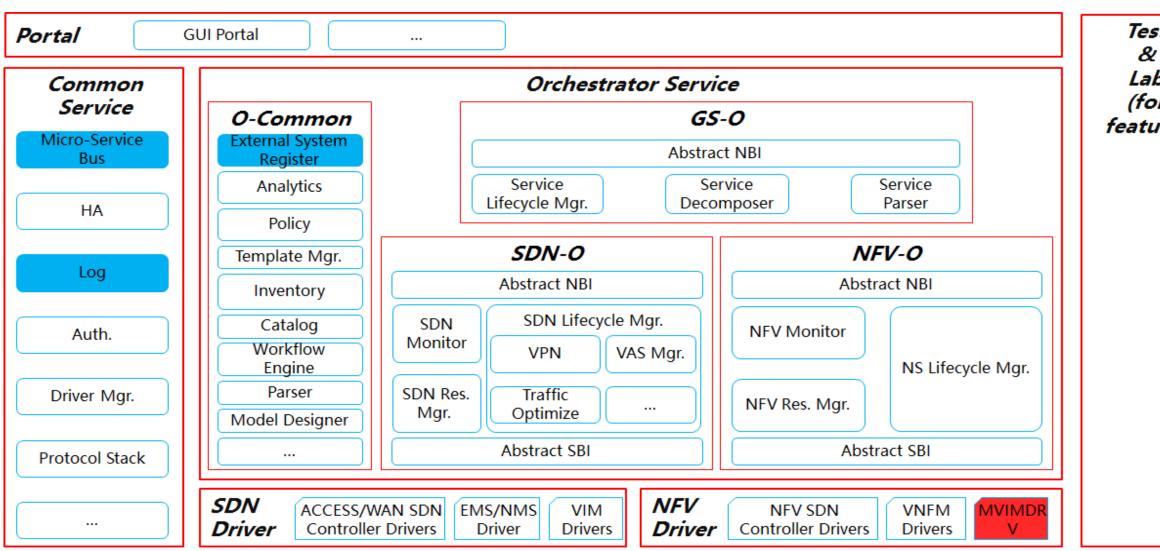
Multiple VIM Driver is to offer single access point of Restful APIs for OPEN-O micro-services (NFVO/VNFM) to access multiple VIMs

Multiple VIM Driver is to encapsulate the variants VIMs as much as possible to minimize the impact of changes of VIMs.

Multiple VIM Driver is to expose a plugin frame to enable adding/removing VIMs without re-deploying the multiple VIM driver micro-service itself.

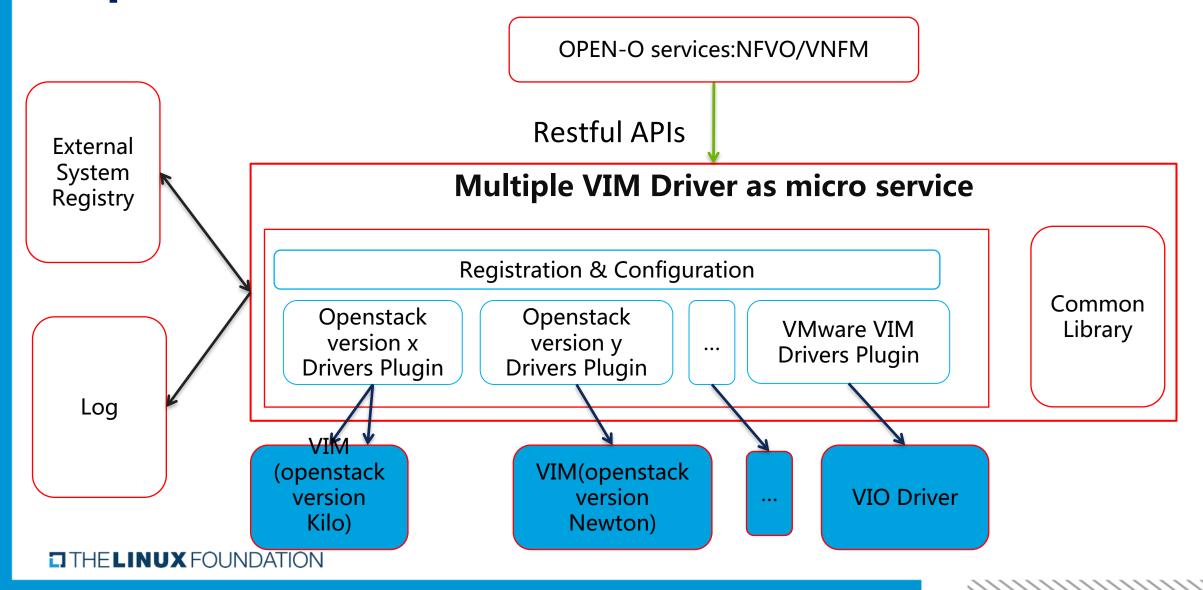


## **Project Scope**

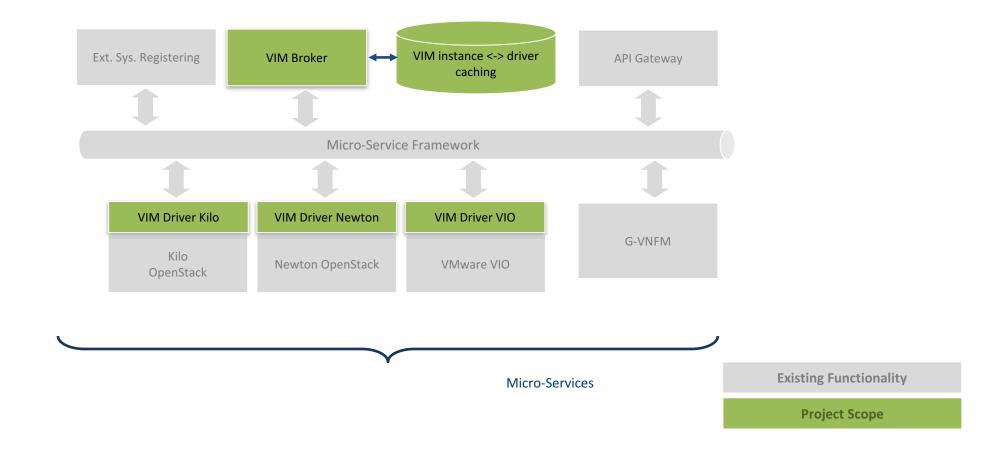


Test Lab (for feature)

### **Expose Rest API**



#### **Multi VIM driver R2**





#### **VMware contribution**

- VIO --- VMware Integrated OpenStack
- Supported use case
- Scope --- participated since Dec, 2016, target for use case integration by R2 release time window.

#### Windriver contribution

- OpenStack driver
  - Kilo
  - Newton
- EPA enabled



Q&A