Open Networking Korea 2016 Fall
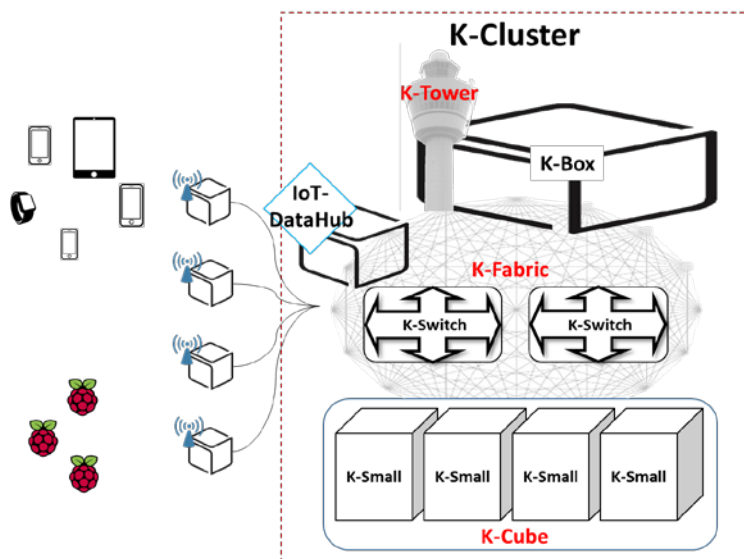
K-ONE GIST 김종원 교수팀

K-Cluster: A NFV-Cloud Playground with DevOps Automation

What is K-Cluster?

K-Cluster

- A Building Block for K-ONE Playground
- Comprise of…
  - K-Tower
  - K-Fabric
  - K-Cube
- Reference Model of μCloud Cluster
  - Edge Computing Concept
  - Cheap & Easy
- Playground for…
  - IoT-SDN/NFV-μCloud
  - Multisite Infrastructure
  - Clustering Software
- Automated Operation with K-Tower
  - SmartX Provisioning/Visibility/Orchestration/Intelligence Center

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K-Cluster Hardware Configuration

K-Tower (Intel® ONP Server)
- **CPU**: 2x Intel® Xeon™ Processor E5-2640v3 (2.6GHz, 8-cores)
- **RAM**: 4x DDR4 16GB 2133MHz
- **SSD**: 400GB (NVMe Support)
- **NIC**: Intel® X710-DA2 (10Gx2p), Intel® I350 (1Gx2p)

K-Switch (Edgecore AS5712-54X Switch)
- **Ports:** 48 x 10G SFP Ports, 6 x 40G QSFP+ Ports
- **Chip:** Broadcom BCM56854 Trident II 720Gbps
- **CPU:** Intel Atom C2538 4 Cores, 2.4GHz
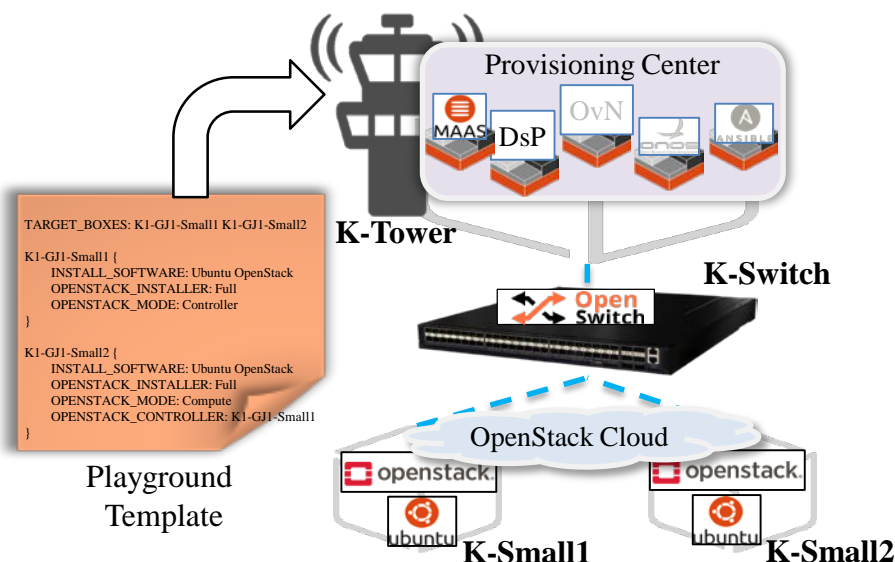- **NOS Supported (OpenSwitch, PicOS, Cumulus Linux, ONL)**

K-Small (SuperMicro SuperServer SYS-E200-8D)
- **CPU**: Intel® Xeon™ D-1528, 6 Cores, 1.90 GHz
- **RAM**: DDR4 32GB 2133MHz
- **SSD**: 480GB
- **NIC**: 2 x 10GBase-T Ports, 2 x 1G Ports (Intel® i350-AM2)

DevOps Automation over K-Cluster

Provisioning Center

MAAS DsP OvN ANSIBLE

K-Tower

K-Switch

Open Switch

```
TARGET_BOXES: K1-GJ1-Small1 K1-GJ1-Small2

K1-GJ1-Small1 {
    INSTALL_SOFTWARE: Ubuntu OpenStack
    OPENSTACK_INSTALLER: Full
    OPENSTACK_MODE: Controller
}

K1-GJ1-Small2 {
    INSTALL_SOFTWARE: Ubuntu OpenStack
    OPENSTACK_INSTALLER: Full
    OPENSTACK_MODE: Compute
    OPENSTACK_CONTROLLER: K1-GJ1-Small1
}
```

Playground Template

OpenStack Cloud

openstack ubuntu **K-Small1**

openstack ubuntu **K-Small2**

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