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Experience OPNFV on Arm
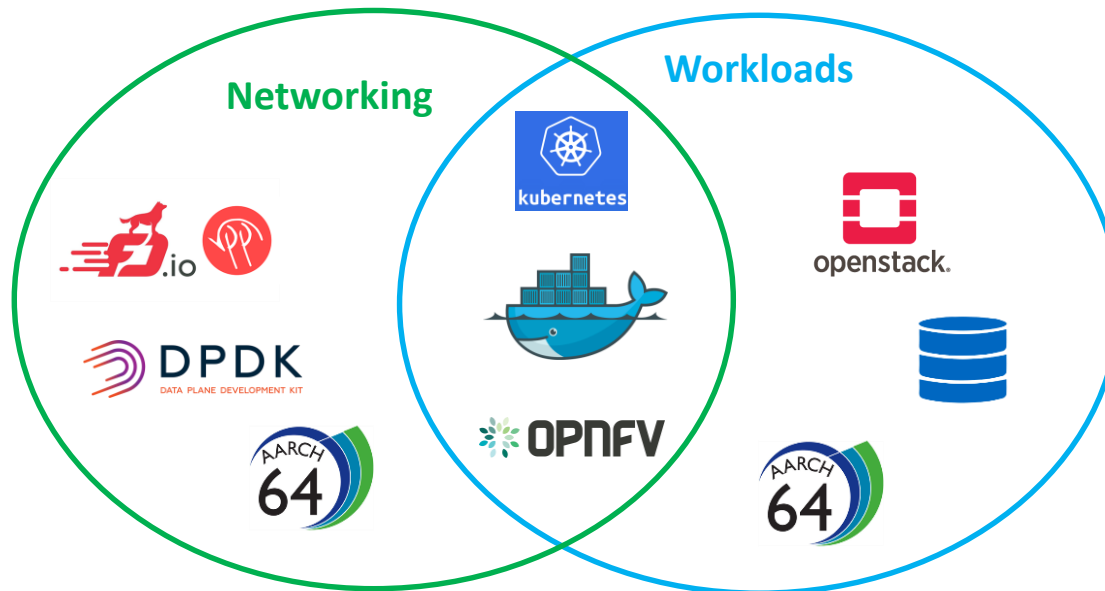
Deploy OPNFV on Arm with Compass4NFV

Yibo Cai

27-Jun-2018

Agenda

- OPNFV overview

- Deploy OPNFV on Arm – experience sharing

- Compass4NFV architecture
  - Bare-metal provisioning
  - Virtual provisioning

- OPNFV CI/CD and testing
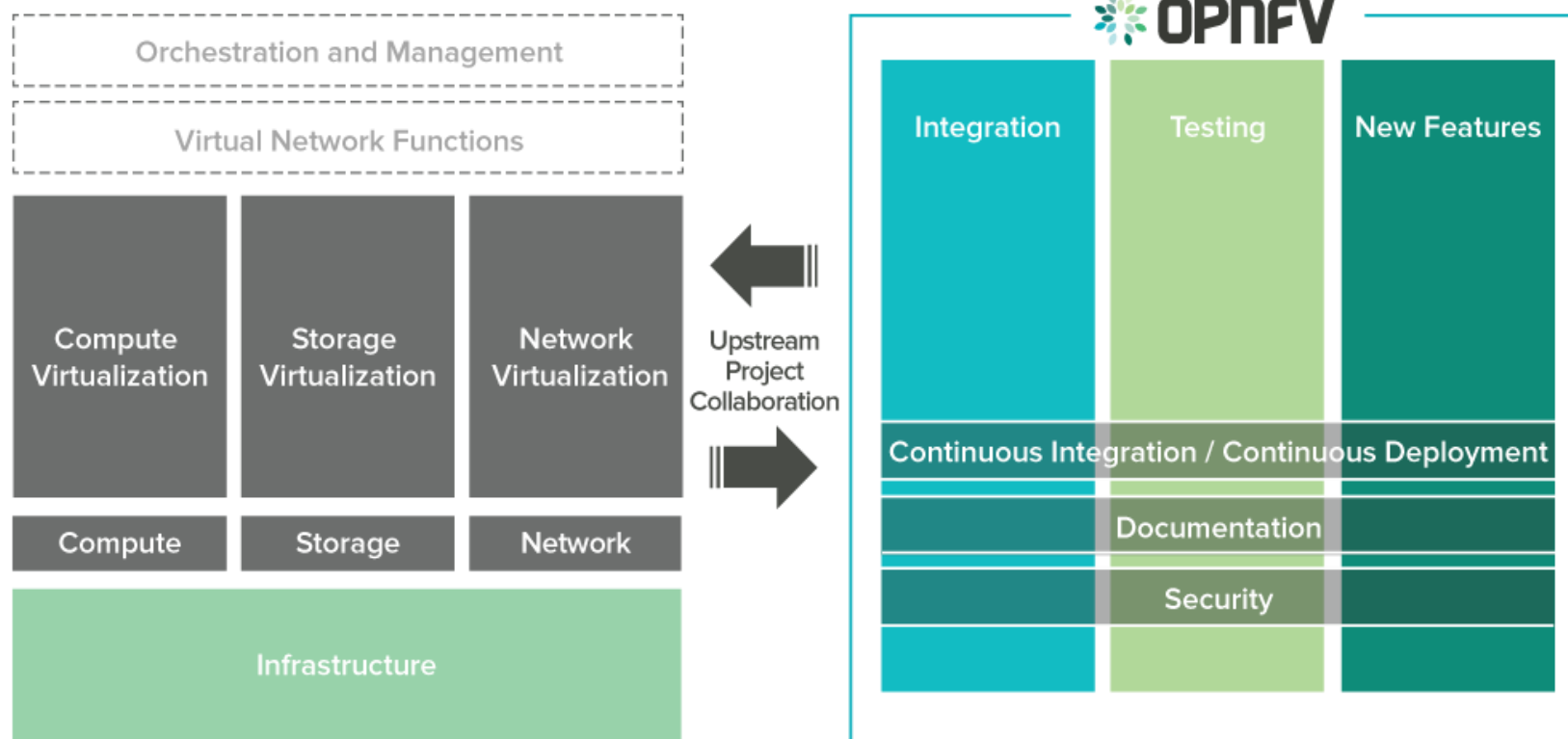
- Compass4NFV on Arm

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About us

- Arm CE-OSS (Central Engineering – Open Source Software)
- Optimization and enablement for Arm platform

OPNFV overview

Leverage upstream OSS to construct a reference NFV platform.

Major components: Integration, Deployment, Testing

https://www.opnfv.org/software/technical-overview

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Deploy OPNFV on Arm – A frustrating experience

Fuel installer

- Great experience, if it works.
- Debugging is hard.
- Deployment is very time consuming.

Kubernetes on OpenStack

- Unofficial, cannot integrate with OPNFV community.
- What if I only need Kubernetes, not OpenStack?

Joid installer

- Only supports Ubuntu.
- Doesn't support Kubernetes on Arm.

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Compass4NFV advantages

- Official OPNFV installer.

- Lightweight, easy for debugging.

- Doesn't support Arm, but welcomes contributions.

- Supports both OpenStack and Kubernetes.

- Containerized deployment, easy to maintain.

- Distro neutral, Ansible based, flexible configuration.

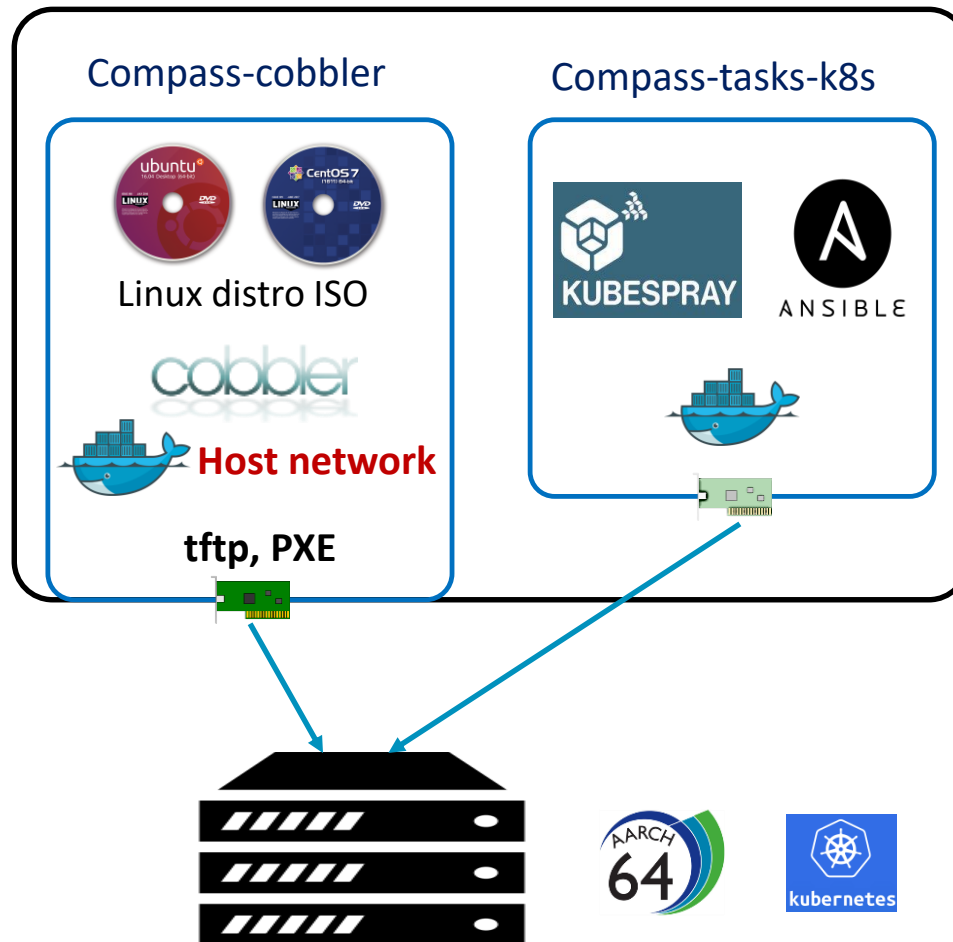One line of code for a quick start:

```
curl https://raw.githubusercontent.com/opnfv/compass4nfv/master/quickstart_k8s.sh | bash
```

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Compass4NFV architecture

© 2018 Arm Limited
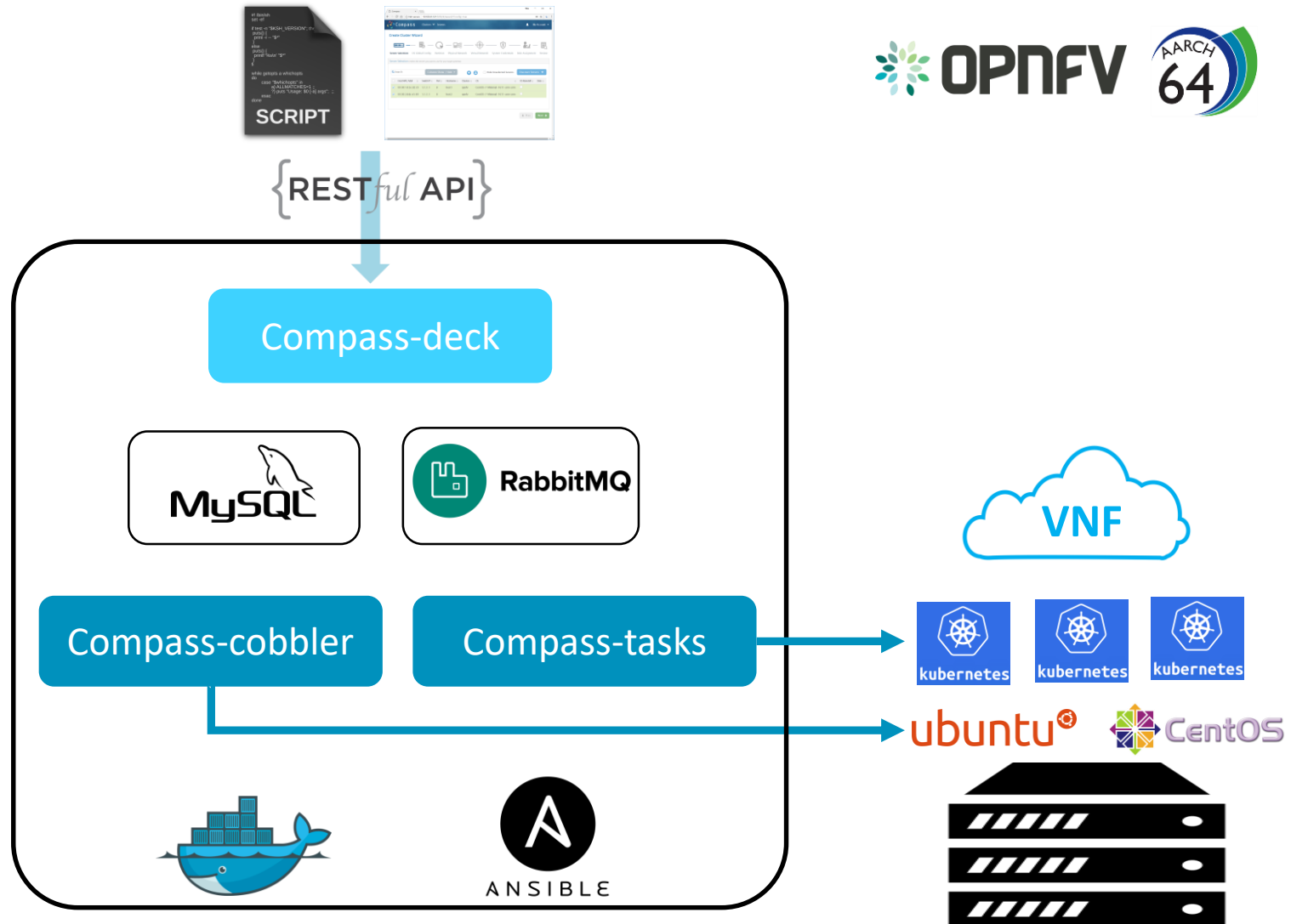
Compass4NFV deployment

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Deploy on bare-metal
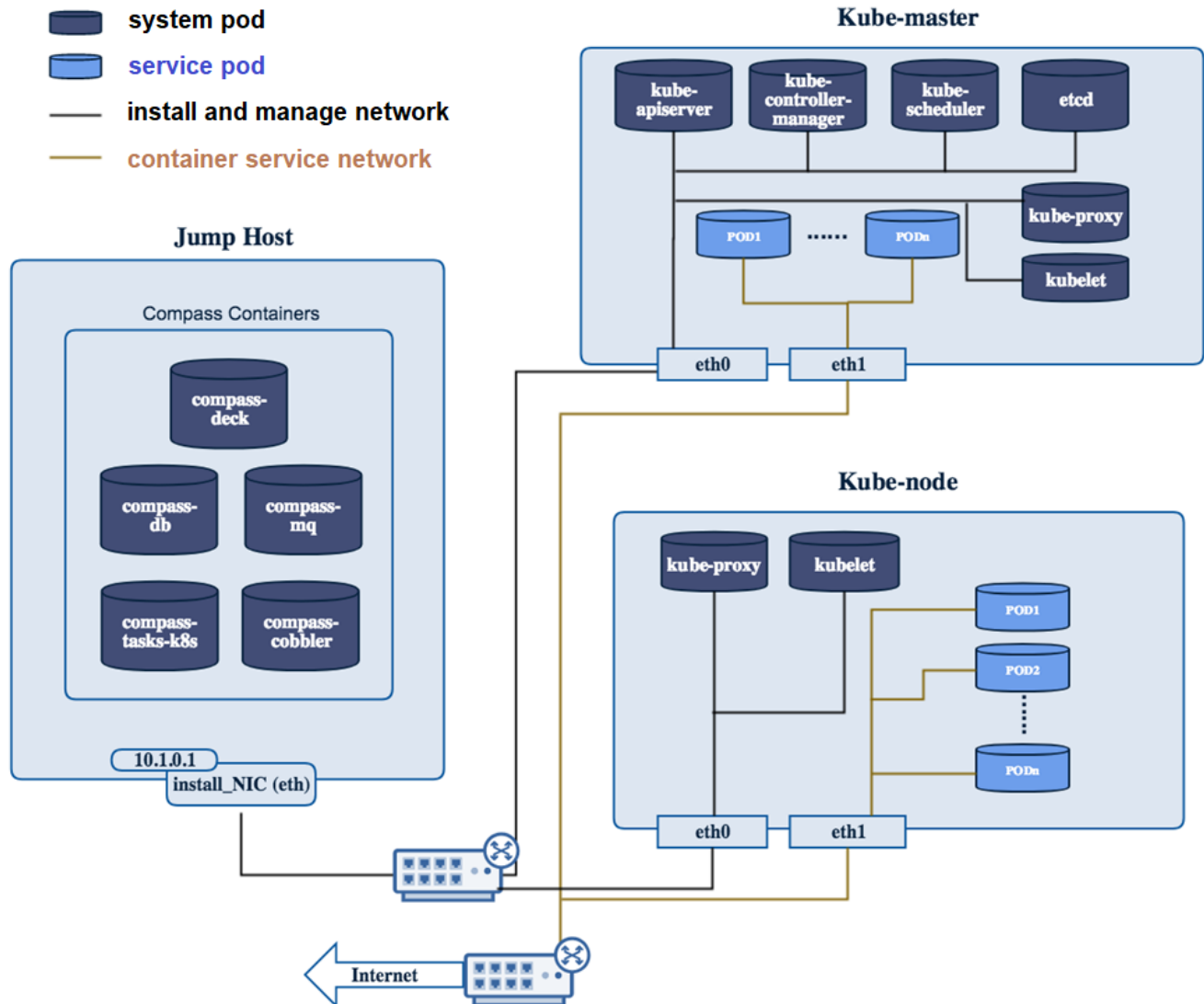
Host configuration

```
TYPE: baremetal
FLAVOR: cluster
POWER_TOOL: ipmitool

ipmiVer: '2.0'

hosts:
  - name: host1
    mac: '14:30:04:F2:24:CB'
    ipmiUser: uuuuuuuu
    ipmiPass: xxxxxxxx
    ipmiIp: 172.16.130.81
    interfaces:
      - eth1: '14:30:04:F2:24:CC'
    roles:
      - kube_master
      - etcd
      - ha

  - name: host2
    mac: '14:30:04:F2:24:3B'
    ipmiIp: 172.16.130.82
    ipmiUser: uuuuuuuu
    ipmiPass: xxxxxxxx
    interfaces:
      - eth1: '14:30:04:F2:24:3C'
    roles:
      - kube_node
```

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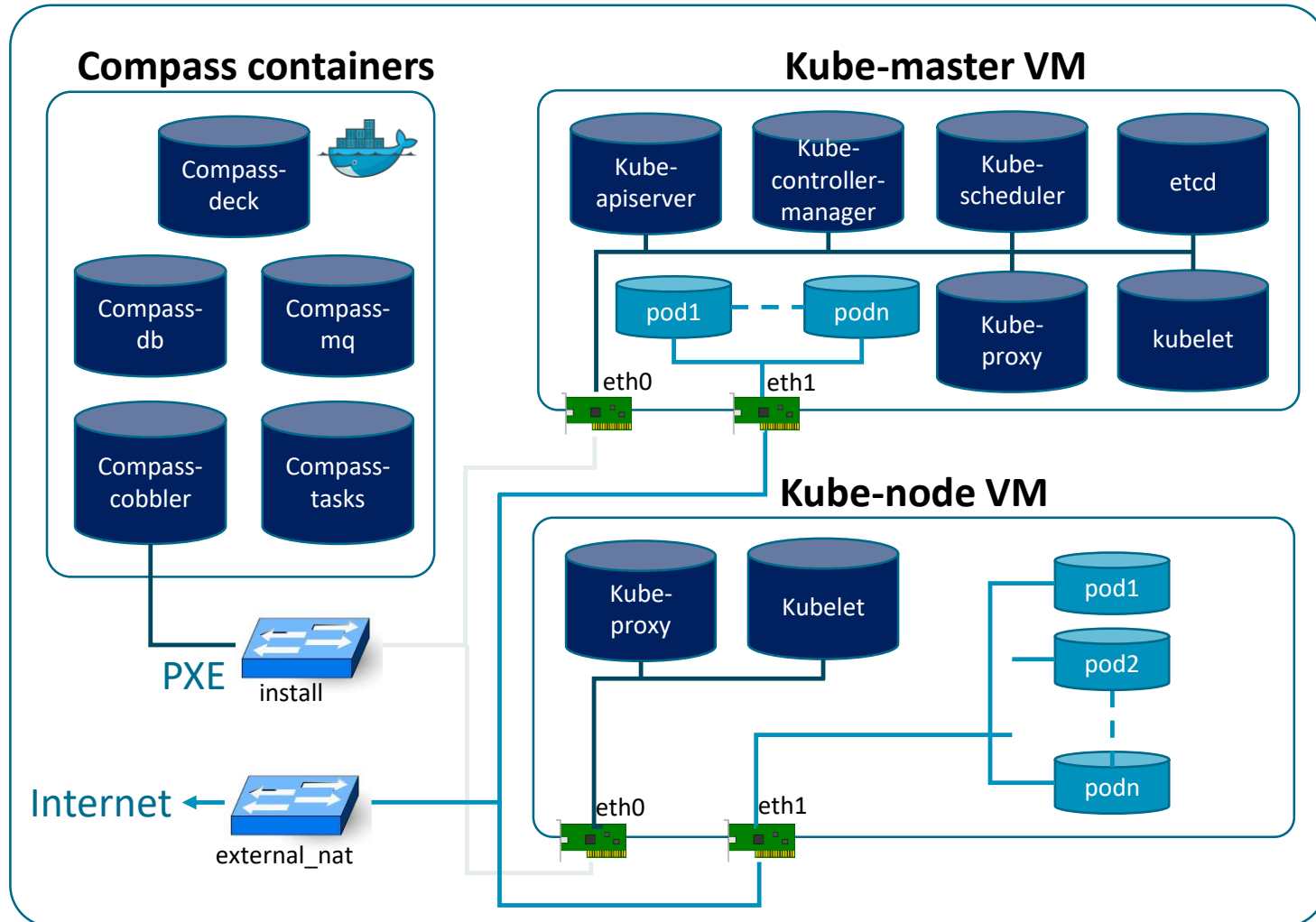
Deploy on VM

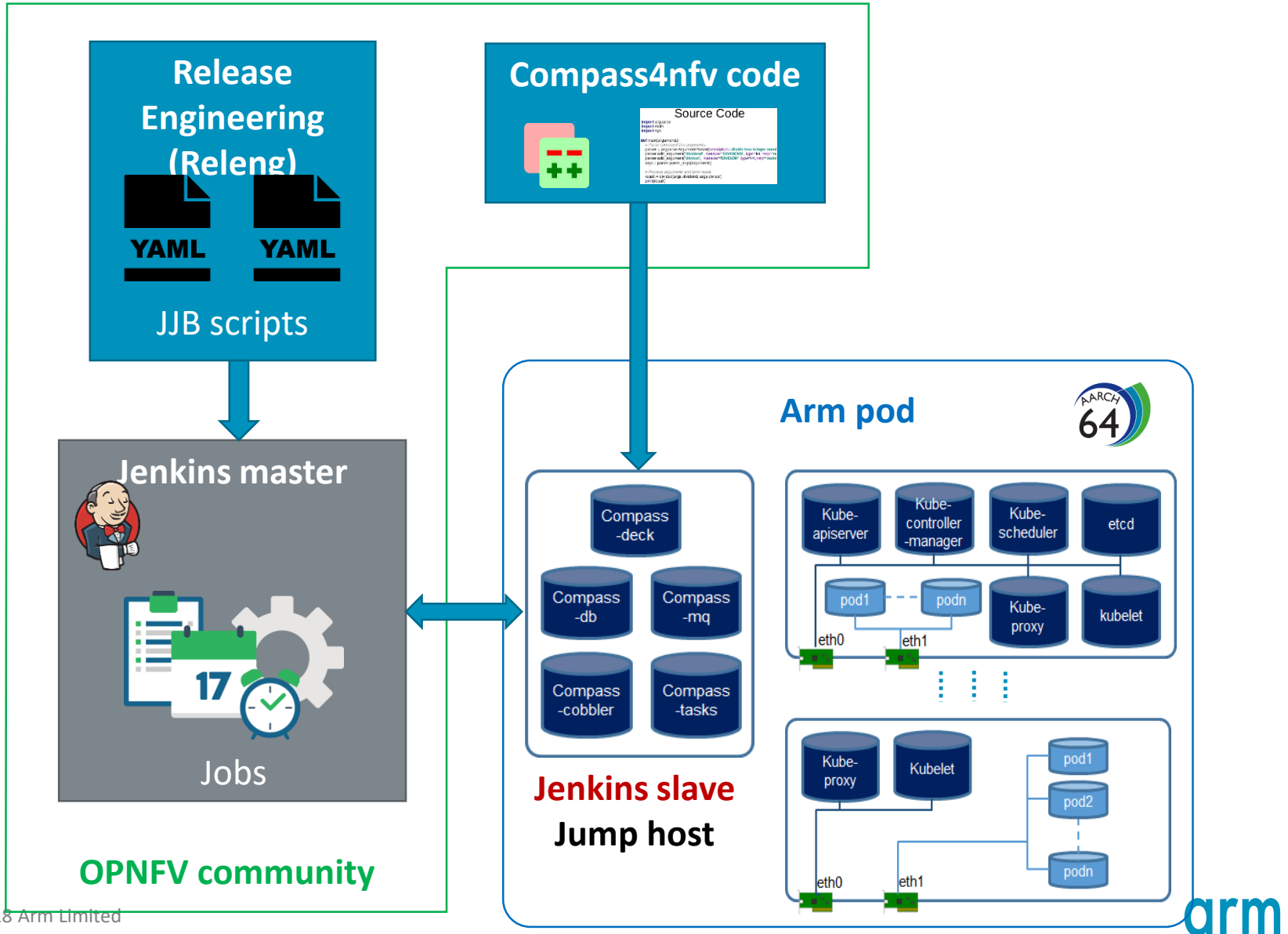Host configuration

Jump Host

```
TYPE: virtual
FLAVOR: cluster

hosts:
  - name: host1
    roles:
      - kube_master
      - etcd
      - ha

  - name: host2
    roles:
      - kube_master
      - etcd
      - ha

  - name: host3
    roles:
      - kube_master
      - etcd
      - ha

  - name: host4
    roles:
      - kube_node

  - name: host5
    roles:
      - kube_node
```

Compass containers

- Compass-deck
- Compass-db
- Compass-mq
- Compass-cobbler
- Compass-tasks

PXE install

Internet ← external_nat

Kube-master VM

- Kube-apiserver
- Kube-controller-manager
- Kube-scheduler
- etcd
- pod1 — podn
- Kube-proxy
- kubelet

eth0   eth1

Kube-node VM

- Kube-proxy
- Kubelet
- pod1
- pod2
- podn

eth0   eth1

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OPNFV CI/CD

Compass4NFV on Arm

- Supported features
  - Run Compass core containers on Arm jump host
  - Bare-metal OS deployment (CentOS, Ubuntu AArch64)
  - Kubernetes deployment (v1.9.x AArch64)

- Arm daily CI/CD jobs ready in OPNFV community

- 30+ patches merged to support Compass4NFV on Arm

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Thank You

Danke

Merci

谢谢

ありがとう

Gracias

Kiitos

감사합니다

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