HYPER.SH

Hypervisor-Based Container Runtime

Xu Wang runV project, Hyper.sh
Samuel Ortiz clear container project, Intel

Reinvent Iaas with Container!

Agenda

- Background: Make VM run like container
- runV & Clear Containers: Virtualized Container Projects
- Architectures and Workflows of Virtualized Containers
- Virtualized Containers and Kubernetes
- Use cases of Virtualized Containers

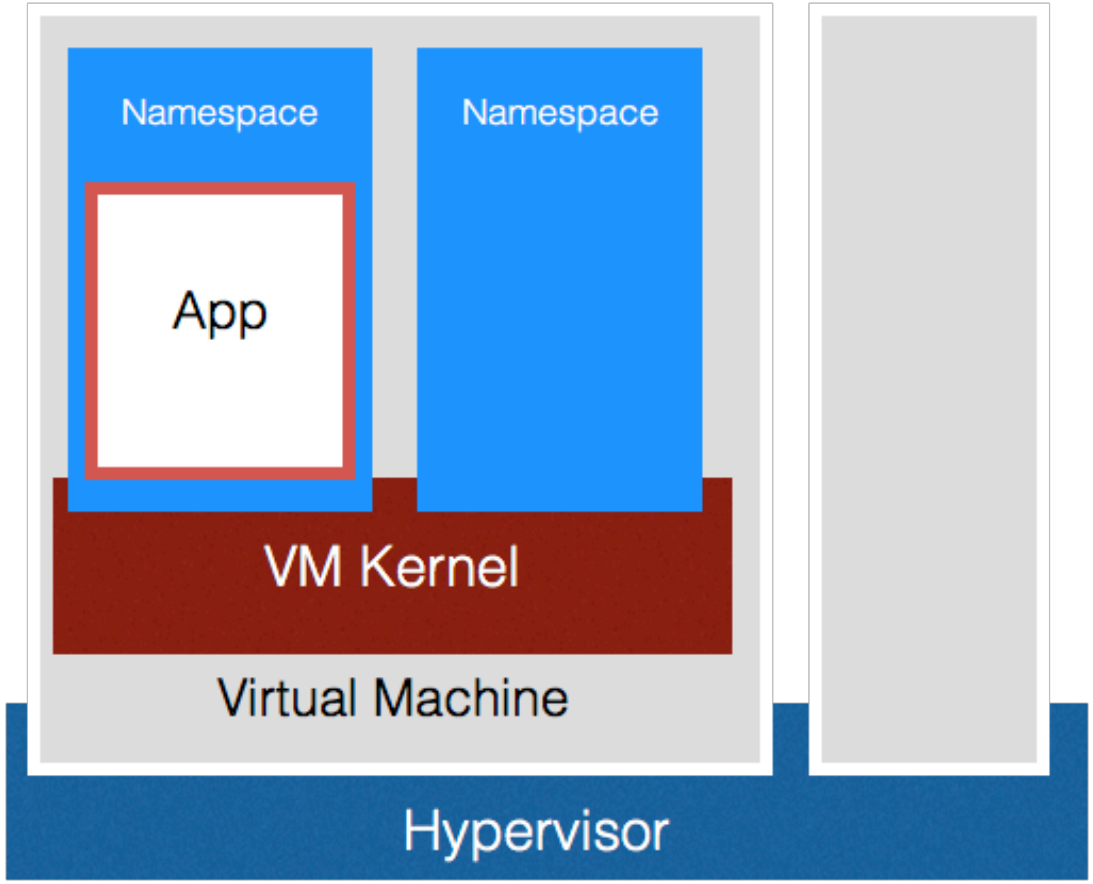
The slides will be updated again before the KubeCon.

"All problems in computer science can be solved by another level of indirection, except of course for the problem of ***too many indirections****."*

----David Wheeler

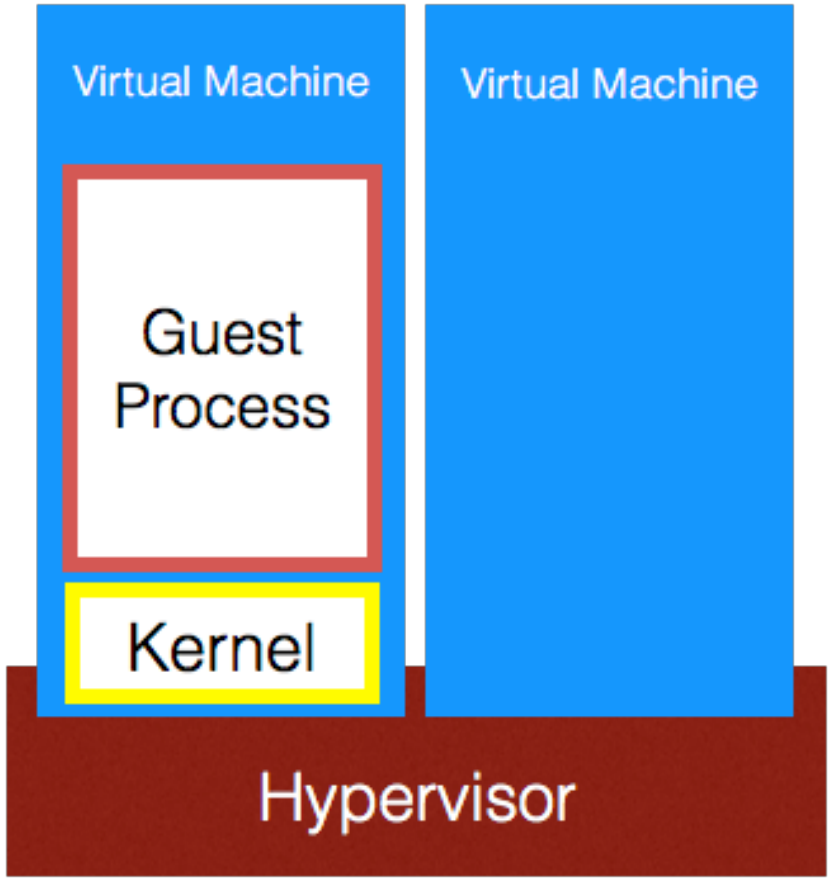
Containers in Cloud

- Containers are ops friendly;
- However, we could not eliminate the VM layer;
- Not Secure == Not Simple

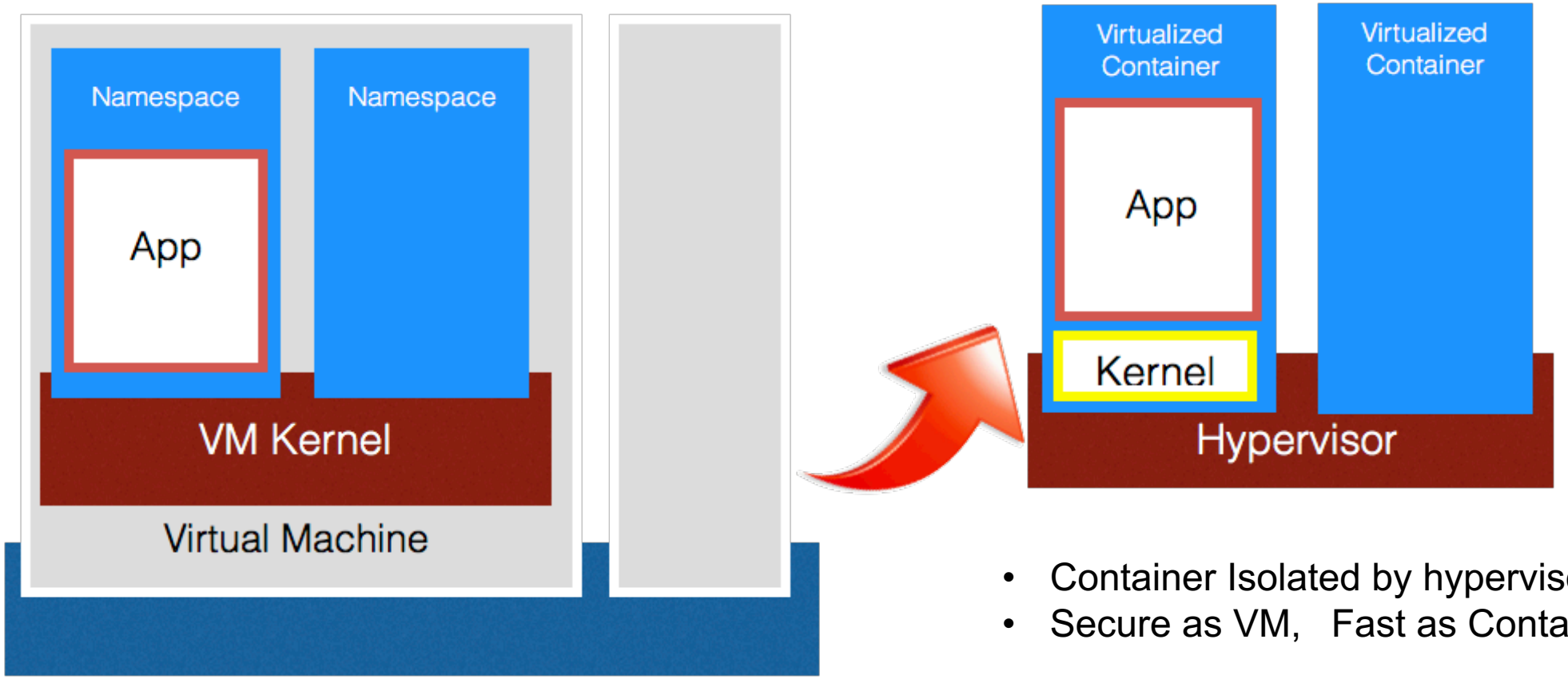


Secure Container? App-Centric VM?

- The problems of virtual machine is about "machine" rather than "virtualization"
- Why not build an App-Centric VM



Virtualized Container: Keep it Simple

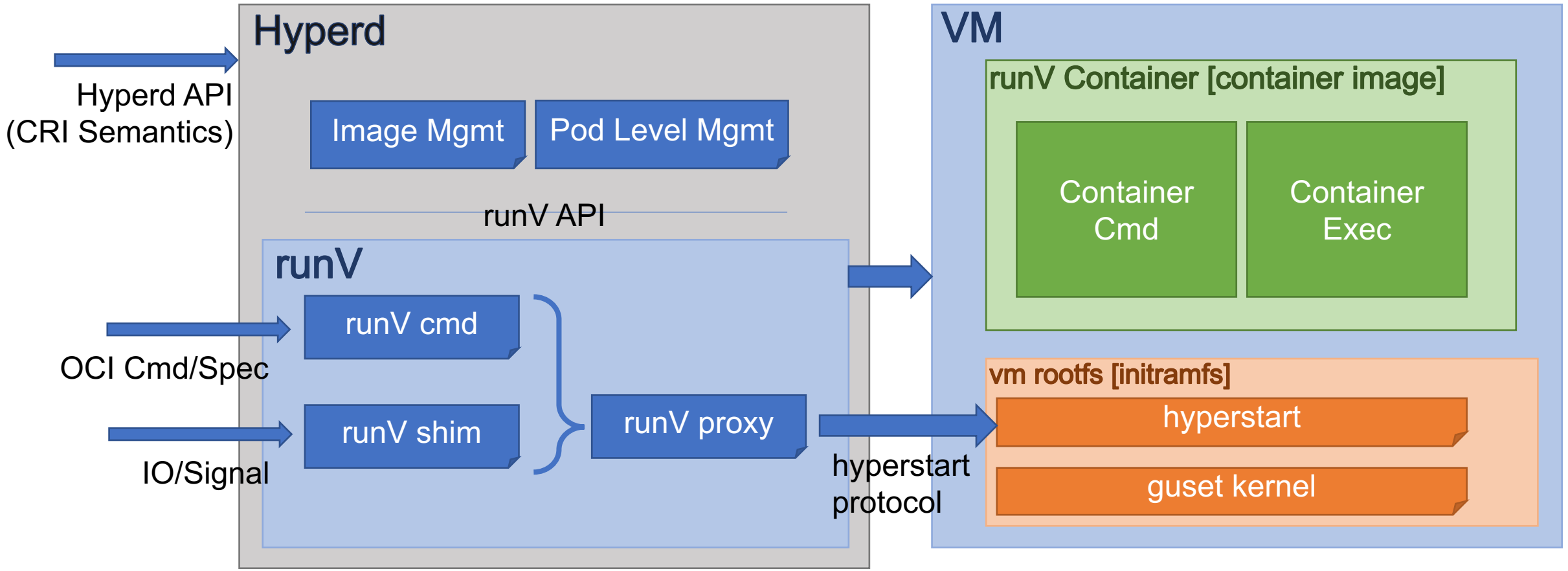


- Container Isolated by hypervisor
- Secure as VM, Fast as Container

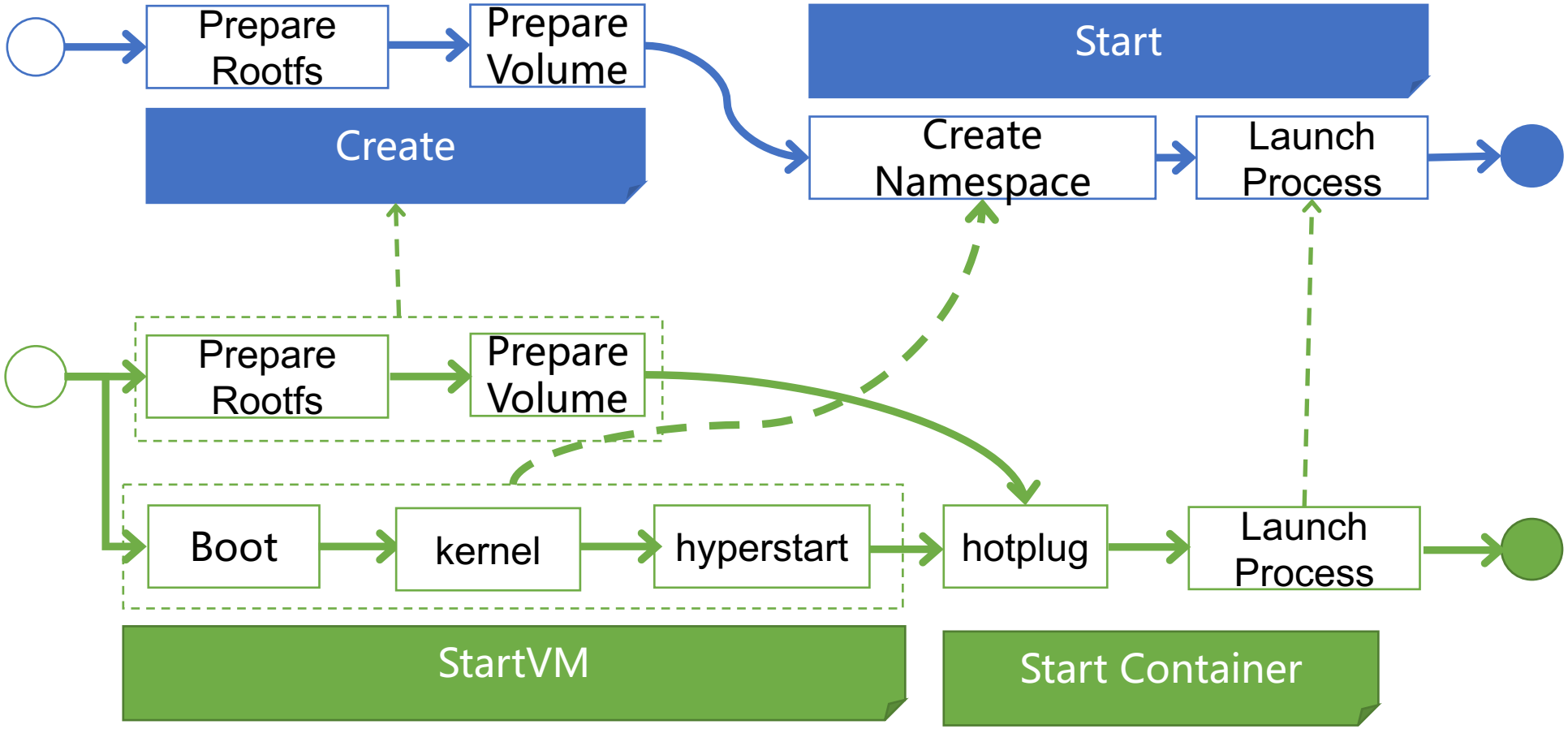
runV: Project Status

- https://github.com/hyperhq/runV
  - Version 1.0 (Sep 2017)
    - Supported arch: x86_64, aarch64, power, s390x
    - Supported hypervisor: kvm/qemu, xen (fv), xenpv, kvmtool
    - Contributors: HyperHQ, Huawei, ZJU, Intel, IBM
    - OCI runtime spec 1.0
    - Containerd & CRI-O
  - Next

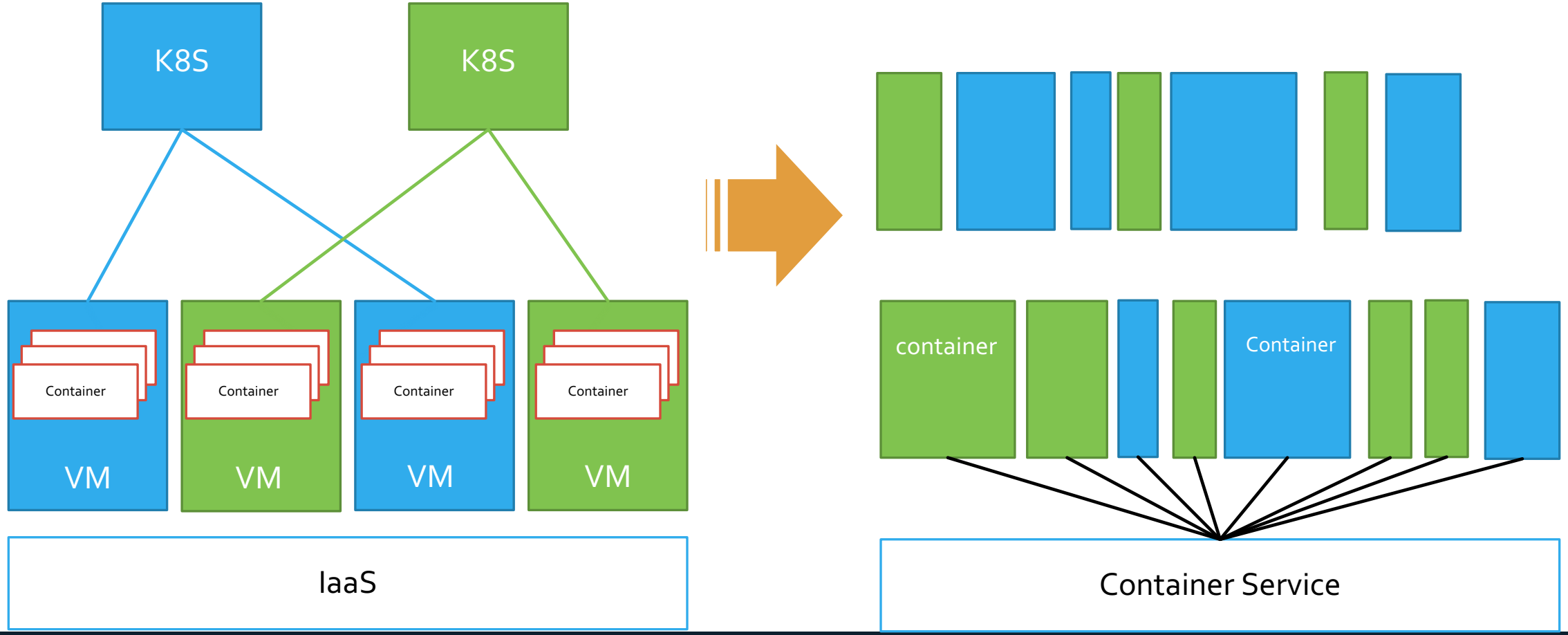
Architecture of Virtualized Containers



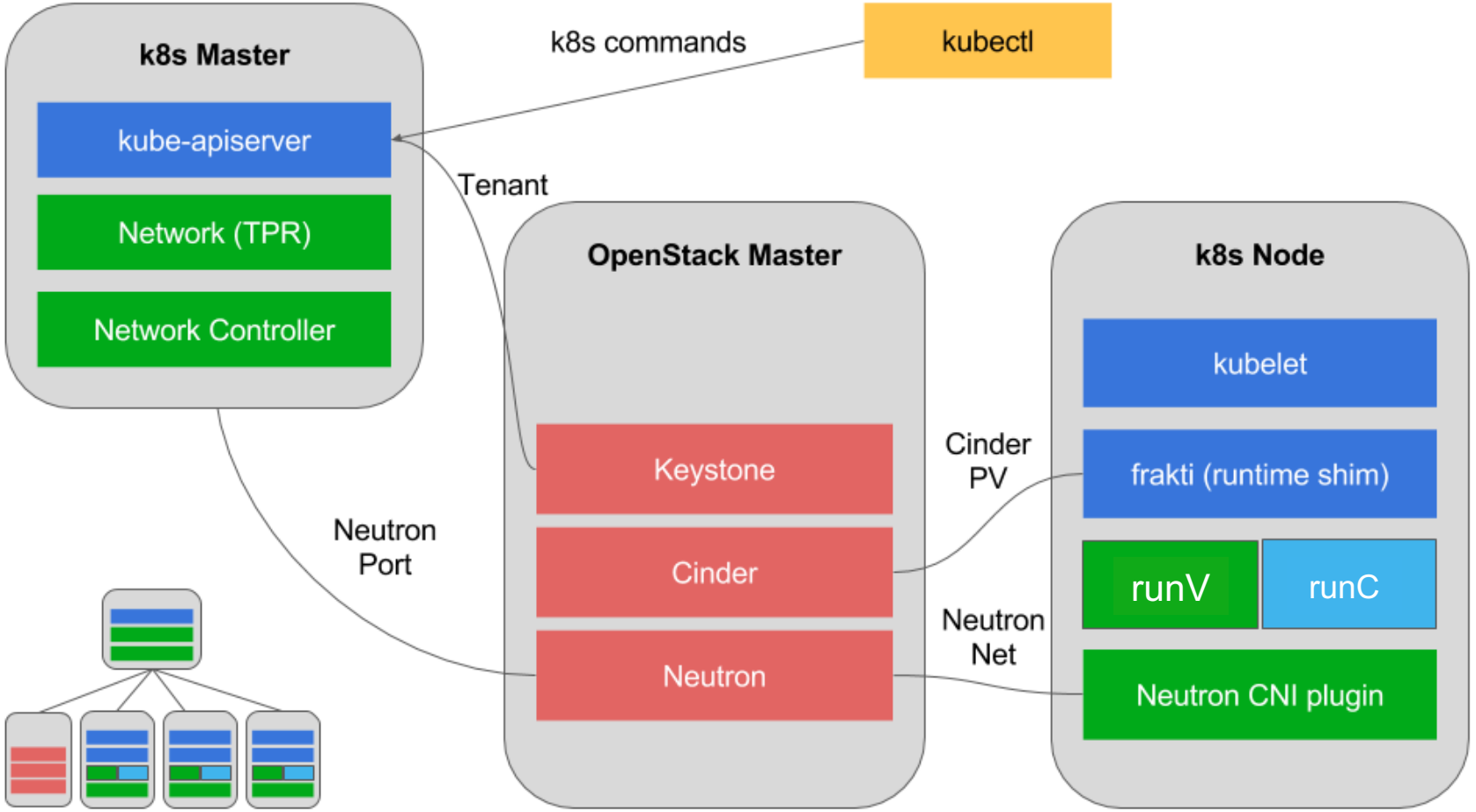
Virtualized Containers: Fast as Containers



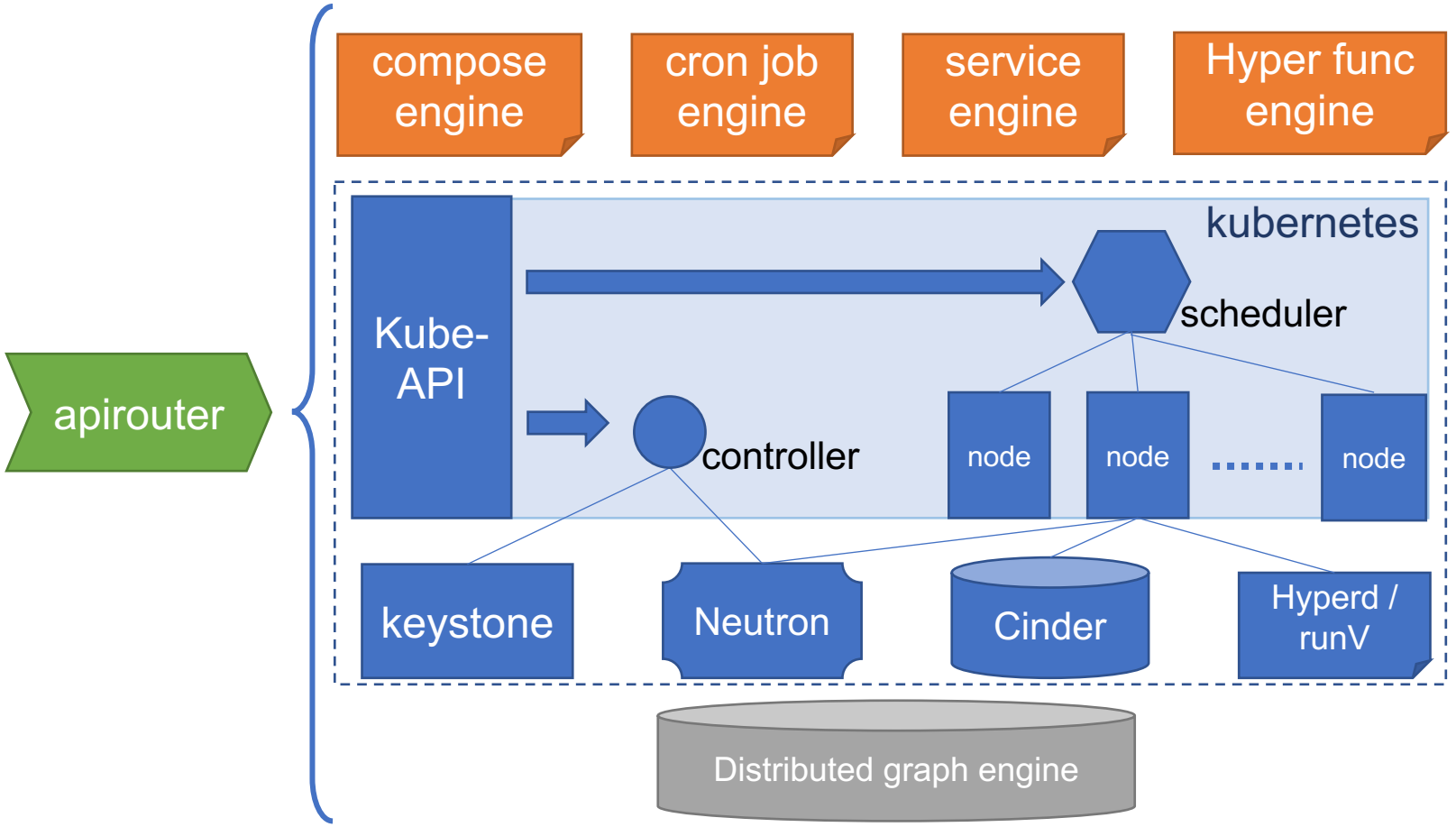
Make Multi-Tenant K8S Simple



stackube: Multi-tenant Kubernetes based on Virtualized Containers



Use Cases of Virtualized Containers: hyper.sh



High level app engines

stackube (hypernetes)
openstack/stackube

Thank You!