Containers in OVN

Hot yet?

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OVN objects

- Logical Switch
- Logical Port
- Firewall rule (ACL)
- Logical Router
- Logical Router Port
OVN Physical Space

Datacenter Network (Tunnels)
Docker integration

Docker Host VM

C1

C2

C3

OVS

Hypervisor

OVS

Datacenter Network

Untrusted

Trusted
Docker integration

Hypervisor

OVs

VM

Datacenter Network

Logical Space

External

S

C2

C5

C1

C3

C4

S

R
Docker integration

Hypervisor

Datacenter Network

Logical Space

External

S

R

V1

V2
Docker Security

Hypervisor

Distributed Firewall

Datacenter Network
Docker OpenStack Integration

• docker network create -d openvswitch --subnet=192.168.1.0/24 foo
• docker run --net=foo --name=busybox busybox
Docker OpenStack Integration

- Nova
- Neutron
- OVN
- Tenant
- Docker
- OVS
- VM
- HV

- C1
- C2
- C3
Pure Overlay

C1  C2
OVS  VM

C3  C4
OVS  VM

OVS  VM

Tunnels
Demo
Kubernetes

• A pod is a group of containers that share the same network namespace.

• Containers inside a pod speak via localhost with each other.

• A host can have multiple pods.

• Containers speak to the outside world via the pod IP.

• All pods in a cluster should be able to talk to each other via their own IP.

• A pod should also be able to speak to Kubernetes central daemons.

• Pods are fungible. They can be destroyed and re-created in a different host with a different IP.
Kubernetes Services

• A Service is a front end to a Pod (or group of pods)

• Pods discover each other via the Service IP.

• The service IP is constant (a VIP), but the pods backing it can change.

• In-built load balancers in each VM.

• Service discovery by application happens either via DNS or via Environmental variables.

• Each service has a set of endpoint objects (pods) that can be queried.
Replication Controller

- Responsible to maintain a fixed amount of pods backing a service.
- Scale up or scale down the number of pods backing a service.
- Opportunity to perform rolling upgrades in your deployment.
Kubernetes integration

Datacenter Network

Hypervisor

OVS

VM

P1

P2

P3

P4

P5

P6

master

Logical Space

R

S

P1

P2

P3

S

M

P4

P5

P6
Demo
Work for V1.0

• Integrate with native OVS load-balancers and NAT.
• Cleaner Security integration with k8s native extensions
• Integrate with OVN L3 gateway for north-south.
• External Load-balancer support for north-south traffic