KubeVirt
Cats and Dogs Living Together?

Stephen Gordon

@xsgordon / sgordon@redhat.com
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  => Katacontainers, gVisor
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CONVERGING INFRASTRUCTURE
Existing solutions force us to manage both separately. How can we bring these two worlds closer together?
Enter KubeVirt
What is KubeVirt?

Technology enabling developer use of Kubernetes as a unified platform for building, modifying, and deploying applications residing in both containers and virtual machines in a common, shared environment.

Add virtual machines to your Kubernetes/OpenShift projects directly from the service catalog!
What is KubeVirt?

- Drops directly into existing Kubernetes Clusters
- Takes as K8S-native an approach as possible
- Leverage Container Networking Interface (CNI), Container Storage Interface (CSI), and other K8S-native integrations.
- Apache License, Version 2.0

http://kubevirt.io
Components

- **KubeVirt**
  The virtual machine operator

- **Containerized Data Importer (CDI)**
  Importing disks

- **OpenShift Web Console (Optional)**
  With UI extensions

- **Virt-v2v (APB)**
  Importing a whole virtual machine
Virtual Machine Operator and API

- Virtual Machines have their own kind
  - Ability to express all common virtual machine parameters and actions
  - Targeted feature set is comparable to libvirt

- Implemented as a CRD
  - Inheriting authn, authz, client ool support, ...

---

apiVersion: kubevirt.io/v1alpha1
group: kubevirt.io
class: VirtualMachine
kind: VirtualMachine
metadata:
  name: vm-fedora
spec:
  domain:
    devices:
      disks:
        ...
      resources:
        requests:
          memory: 1024M
      volumes:
      ...
status:
  interfaces:
    - ipAddress: 172.17.0.12
  nodeName: localhost
  phase: Running
Example Use Case
Example Use Case: We have a VM!
Example Use Case: Import

Import Using V2V or from an image.
Example Use Case: New Functionality
Example Use Case: Decomposition
Demo
Demo

Pre-requisites:

- kubectl
- minikube/minishift

http://kubevirt.io/get_kubevirt/

NB: Yes, we’re running nested virt here - fine for getting started!
Future Plans

- Operators for KubeVirt, Common Data Importer, etc.
- Additional VM life-cycle actions.
- Additional Networking options (Multiple Networks, SR-IOV).
- Add more flows to the UI.
- Turn-Key storage solutions.
- VM ReplicaSets, DaemonSets, etc.
- Initial Istio support.
Collaborating

- Website:
  - [https://kubevirt.io](https://kubevirt.io)
- GitHub:
  - [https://github.com/kubevirt/](https://github.com/kubevirt/)
- Mailing List:
  - [https://groups.google.com/forum/#!forum/kubevirt-dev](https://groups.google.com/forum/#!forum/kubevirt-dev)
- IRC:
  - #kubevirt on irc.freenode.net
- Slack (K8S virtualization working group):
  - #virtualization on kubernetes.slack.com