KubeVirt Community Update

Fabian Deutsch, Red Hat
KVM Forum, Lyon, 2019
Session link

Red Hat

Bonjour.

Kubernetes API to run virtual machines.

Run containers and VMs on Kubernetes.

Red Hat

Developers are solving problems

The landscape is evolving

Containers and Kubernetes help the application developer

The landscape is diverse

There is no single workload form-factor addressing all use-cases

Enable:

One platform
For application developers
To run any workload

In reality:
The world is not only about developers.

Converge to:

One platform
For administrators
To maintain

Platform = Workloads
+ monitoring
+ alerting
+ logging
+ auditing
+ auth
+ life-cycle management
+ support and SLAs
+ knowledge and experience
+ documentation
+ …

Inherently becomes:

One platform
For an organization
To be flexible & efficient

Demo

Script ~ Recording


Virtualization Features

SR-IOV

Passthrough of network devices. Contributed by StackPath

vGPU and GPU passthrough

Mostly shared with logic for containers. Contributed by NVIDIA

CDI for VM image import and conversion

Truth is: Today storage consumption differs a little from container storage

v2v from VMware and others

Mind the gap: Needs to be shaped up

Live and Block Migration

For shared and non-shared storage

SELinux and other security improvements

Additional features (incomplete)

- Cloud-init
- Multiple networks
- virtio-driver delivery
- Stateless VMs
- VM replica sets
- Disk overlays
- Console support
- Workload and Node Affinity

WIP:

- Pause and unpause

But not:

- Snapshots
- Hot-plug


Delivery and Operations

CI: Kubernetes and OpenShift

450+ functional tests

Operator for life-cycle management
Incl. Non-disruptive updates

Owns KubeVirt installation, upgrades, and removal


Community & Ecosystem

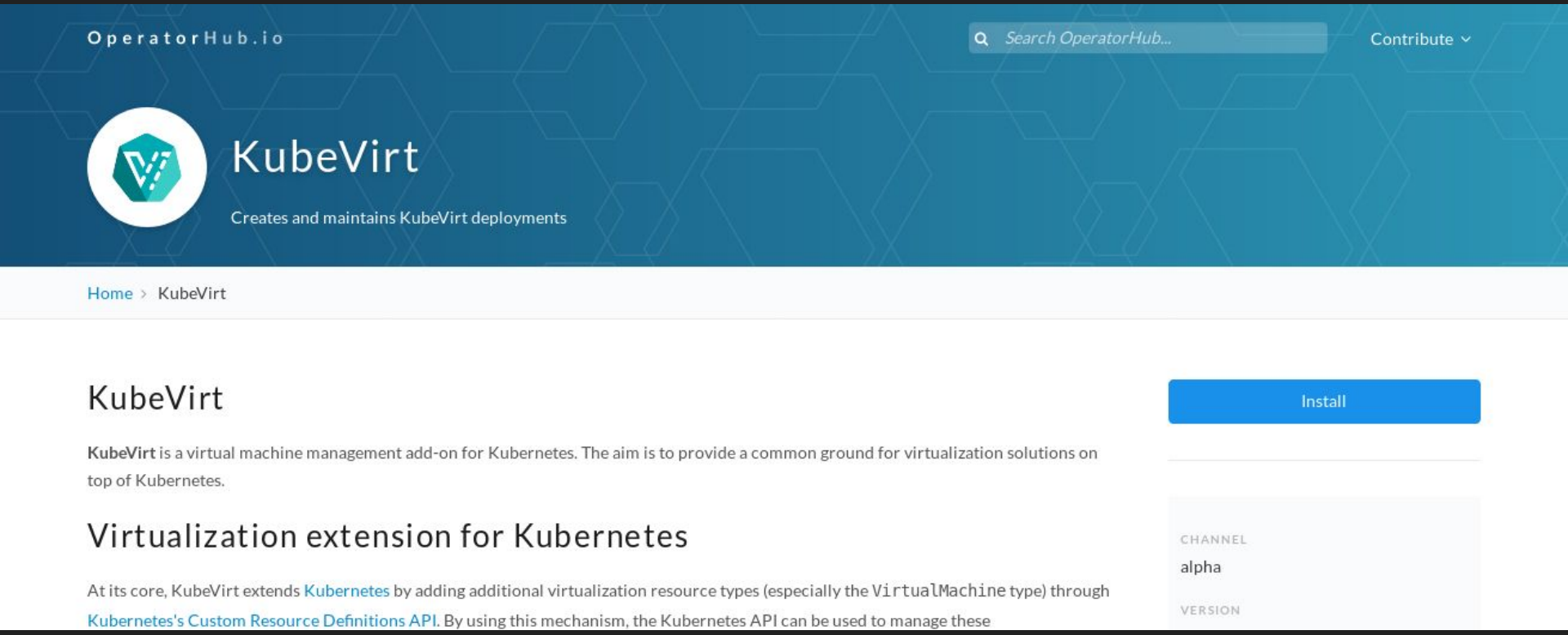
KubeVirt Community

- 1,600+ GitHub Stars
- 68 Code Contributors (Red Hat)
  17 Code Contributors (non-Red Hat)
- 1,500+ Pull Requests
- 320+ GitHub Forks
- 22+ releases (close to stable release)
- Weekly Community Meeting
  and #virtualization on slack

- (Some) Existing users and contributors*

Akamai	✓	
Apple		✓
Cloudflare	✓	✓
Cisco	✓	
Loodse	✓	(✓)
OSI	✓	(✓)
Red Hat	✓	✓
SAP	✓	(✓)
StackPath	✓	✓

* In the last 6 months +++ (…) In other repos



https://operatorhub.io/operator/kubevirt

Red Hat

Hyperconverged Cluster Operator (HCO)

Opinionated: Everything (network, storage, …) to run **classic VMs** with KubeVirt on a bare-metal Kubernetes cluster.
https://github.com/kubevirt/hyperconverged-cluster-operator/

Katacoda

https://www.katacoda.com/kubevirt

+ AWS + GCE + minikube push button-getting-started

Red Hat

Sandbox

https://lists.cncf.io/g/cncf-toc/message/3525

https://blog.openshift.com/kubevirt-joins-cloud-native-computing-foundation/

Red Hat


Vendors

Red Hat

CNV

Container-native virtualization (CNV)

in Technology Preview
and an add-on to OpenShift

Red Hat

loodse

Kubermatic 2.1

Native Support For KubeVirt […]

Deploy Kubernetes clusters to KubeVirt

KubeVirt running on their Managed Kubernetes solution on AWS


Future


Mature, and meet reality.

Thank you.

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https://github.com/fabiand
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https://kubevirt.io

kubevirt-dev@googlegroups.com
https://kubernetes.slack.com/messages/virtualization

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