

Enterprise Container Management mit OpenShift

Tobias Derksen



Über mich ...



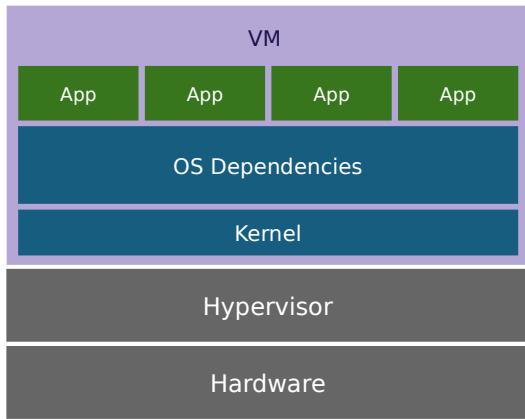
Tobias Derksen

- IT Consultant @codecentric
- DevOps Specialist
- OpenShift Trainer
- RedHat Certified Engineer

Übersicht Container

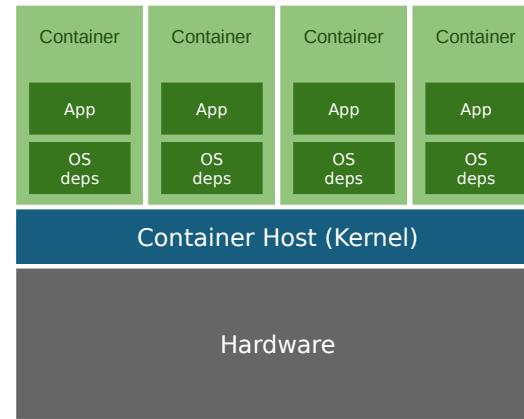
Virtuelle Maschine <-> Container

Virtuelle Maschinen



Virtuelle Maschine sind isoliert
Applikationen sind nicht isoliert

Container



Container sind isoliert
Applikationen auch

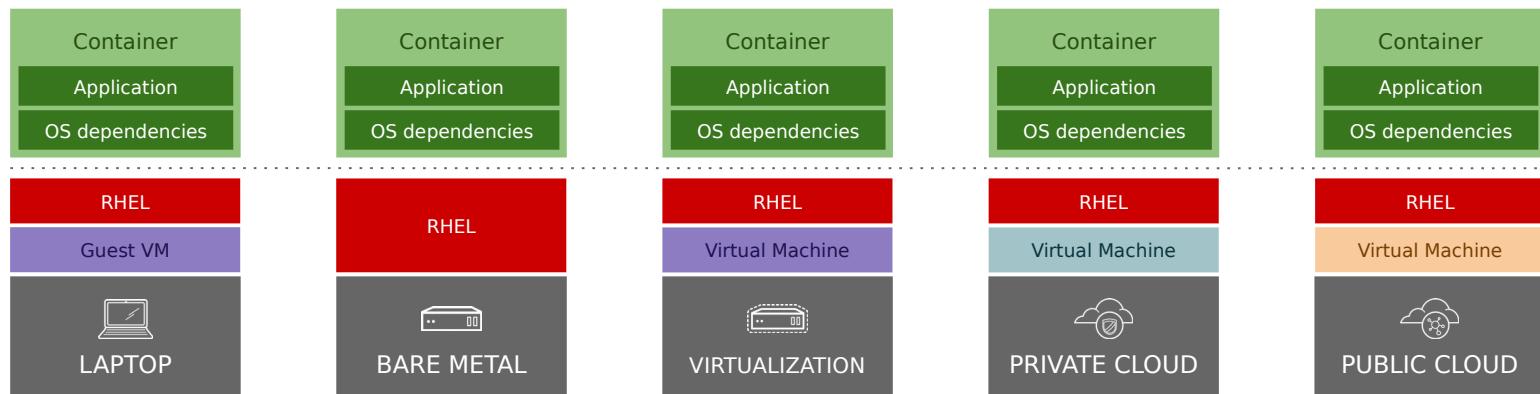
Virtuelle Maschine <-> Container



- + VM Isolation
- Complete OS
- Static Compute
- Static Memory
- High Resource Usage

- + Container Isolation
- + Shared Kernel
- + Burstable Compute
- + Burstable Memory
- + Low Resource Usage

Build once, run everywhere



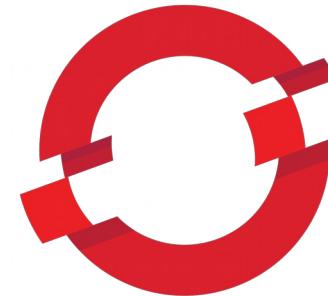
Container Runtime



Container Management

Container Orchestrierung

- Container starten
 - Container stoppen
 - Container überwachen
 - Container auf Nodes verteilen
-
- Networking
 - DNS
 - Speicherverwaltung
 - Interaktionen
 - Service Discovery



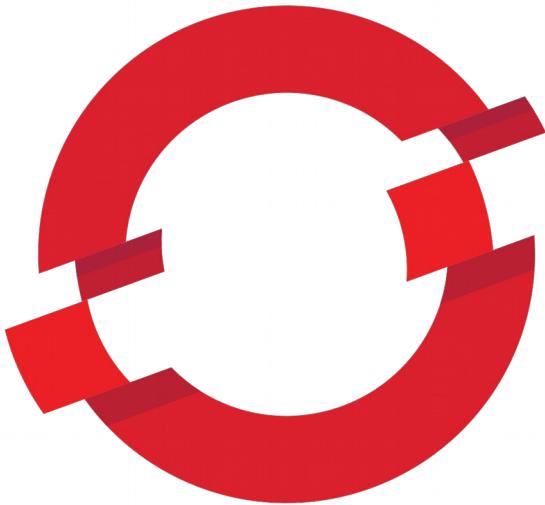
OPENSIFT



kubernetes



redhat.



OPENSIFT

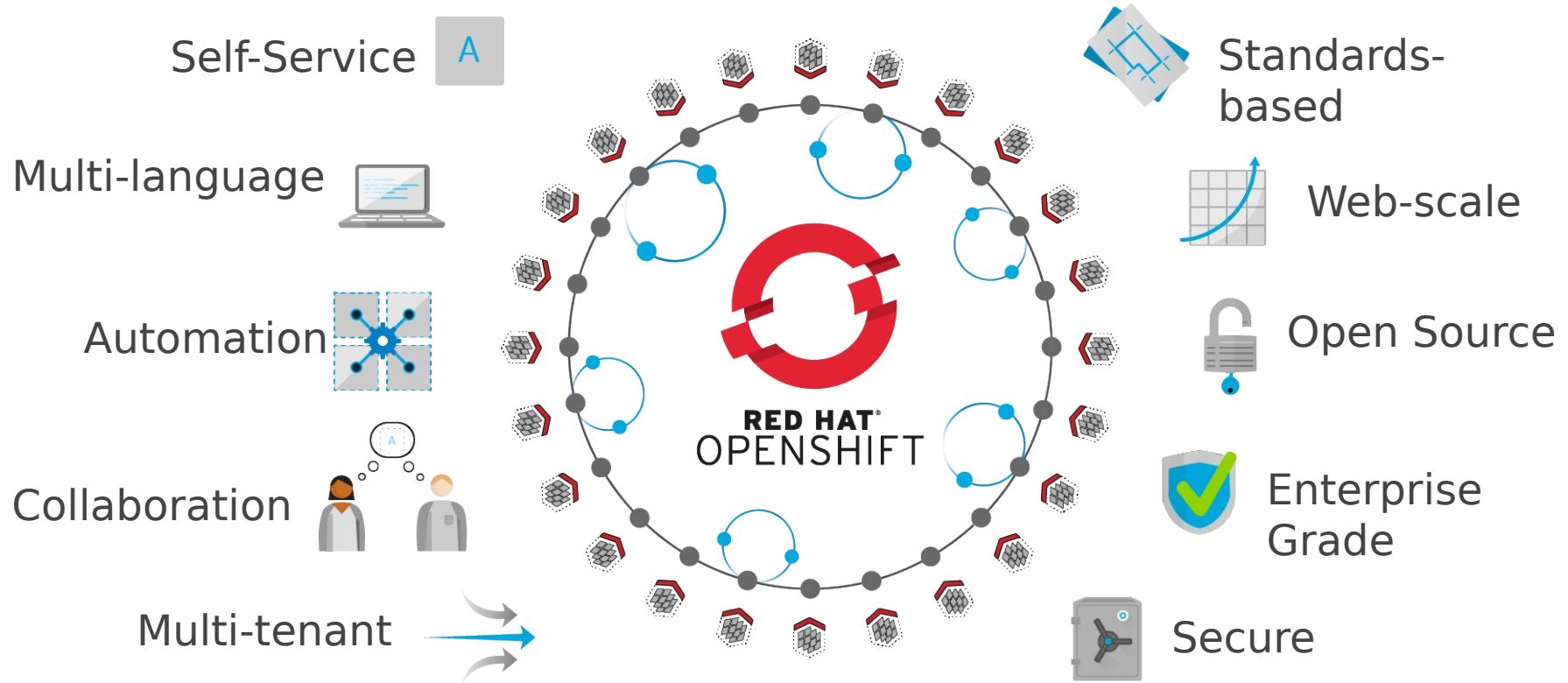
OPENSIFT
origin

OpenShift ist ... kubernetes plus

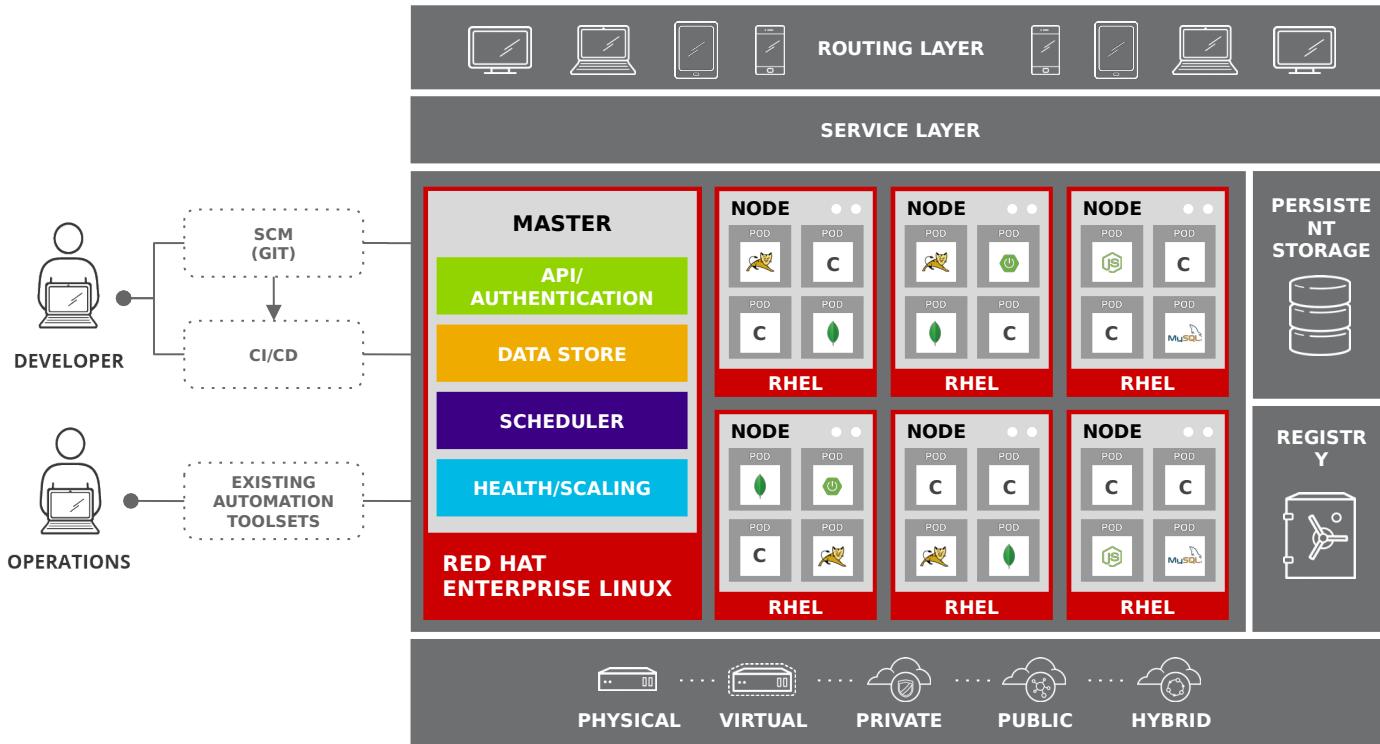
- Routing
- Metriken
- Logging
- Web Oberfläche
- Builds
- Image Registry
- Sicherheitsmaßnahmen
- Templates

Mit Redhat Subscription:

- Trusted Registry
- Security Newsletter
- Support

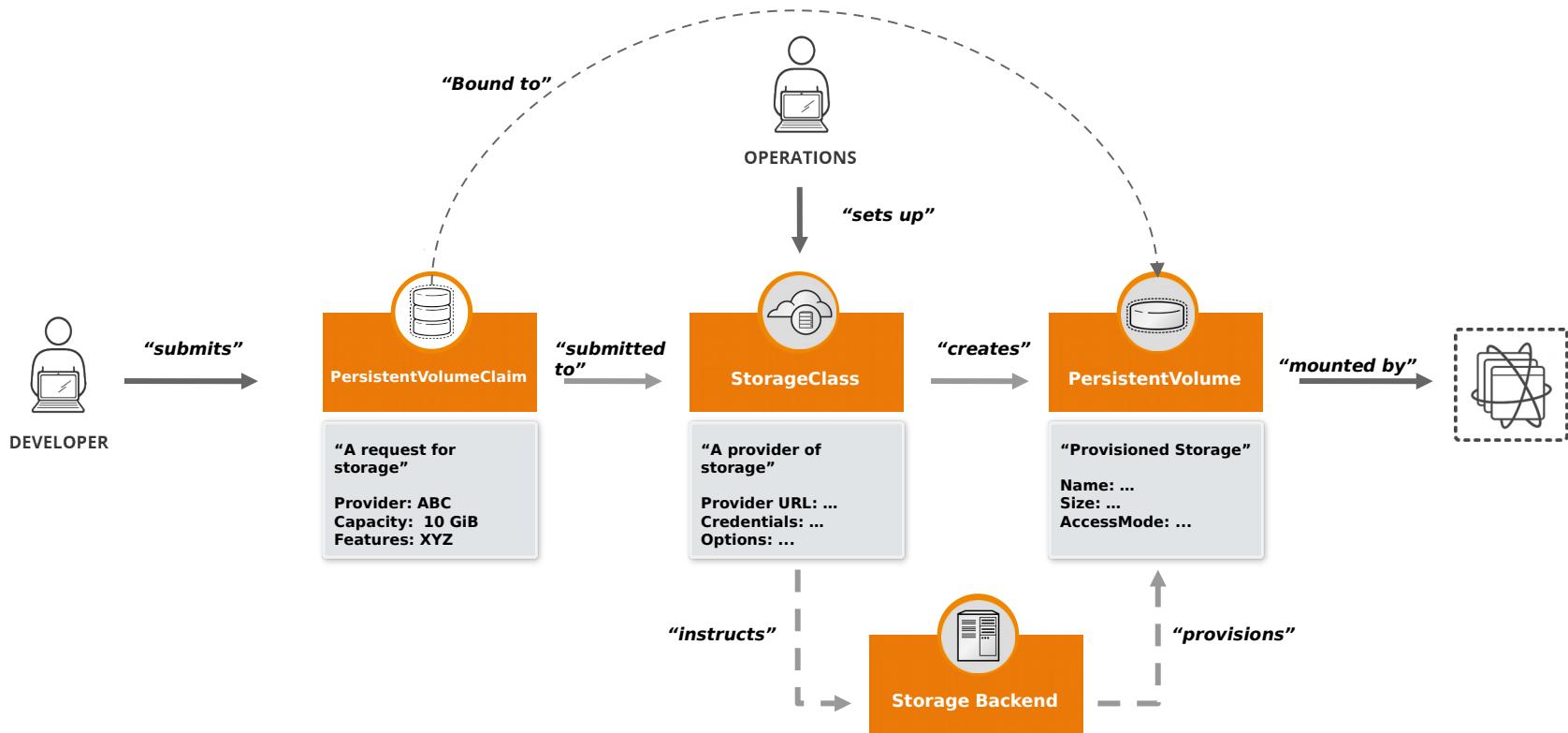


Architektur



Persistent Storage Provider

- HostPath
- EmptyDir (Ephemeral Storage)
- GlusterFS / OpenShift Container Storage
- NFS (unsupported)
- Ceph
- Diverse Cloud Mechanismen (AWS, GCE, Azure, etc)
- Dynamic Provisioning



Authentication

- Htpasswd
- LDAP inkl. Gruppen Sync
- GitHub + GitHub Enterprise
- GitLab
- Google
- Generic OpenID Connect

App Entwicklung

Features

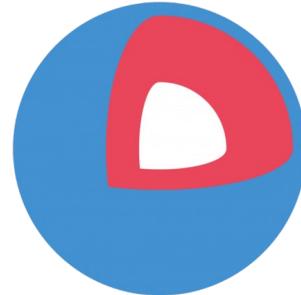
- Source-to-image
- Builds
- (Jenkins) Pipelines
- Webhook-Trigger
- Self-Service provisioning
- Auto Scaling inkl. Load Balancing
- Service Discovery
- Health Checks

Demo

Ausblick

OpenShift 4+

- Neuer Unterbau: CoreOS
- Neue Container Runtime: cri-o
- Neuer Installer
- Over-the-air Updates
- Istio
- CodeReady Workspaces
- Cluster Operators
- Operator Hub
- Quay Container Registry



RED HAT®
CODEREADY



Stay connected

Slides & Beispiele

<https://github.com/lukeelten/openshift-slac>

 Adress
codecentric AG

Köpenicker Straße 31
10179 Berlin - Mitte

 Contact

Email:
tobias.derksen@codecentric.de
GitHub: <https://github.com/lukeelten>

 Telefon

Telefon: +49 (0) 170 2295 733



Hello, World!