

Conoce Wikimedia Toolforge, plataforma basada en Kubernetes

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Wikimedia Toolforge

kubernetes



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KCD Spain - 2021-06-09
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Team



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CLOUD SERVICES



Toolforge

Shared hosting,
Platform
as a Service

Bots, Webservices, Cron jobs, One time jobs

Grid Engine

Job scheduler

Kubernetes

Container deployment

PAWS

Jupyterhub + DB
and API integration

Wikimedia Cloud VPS

Infrastructure
as a Service

OpenStack based VM Infrastructure

Tools

Beta

Quarry

Maps

Bastion

...

Data Services

Shared Storage

NFS servers

Wikimedia Dumps

Wiki backups,
Analytics data,
Other archives

Wiki Replicas

Production
database
replicas

ToolsDB

Data storage
as a
service



Toolforge



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GridEngine
Kubernetes

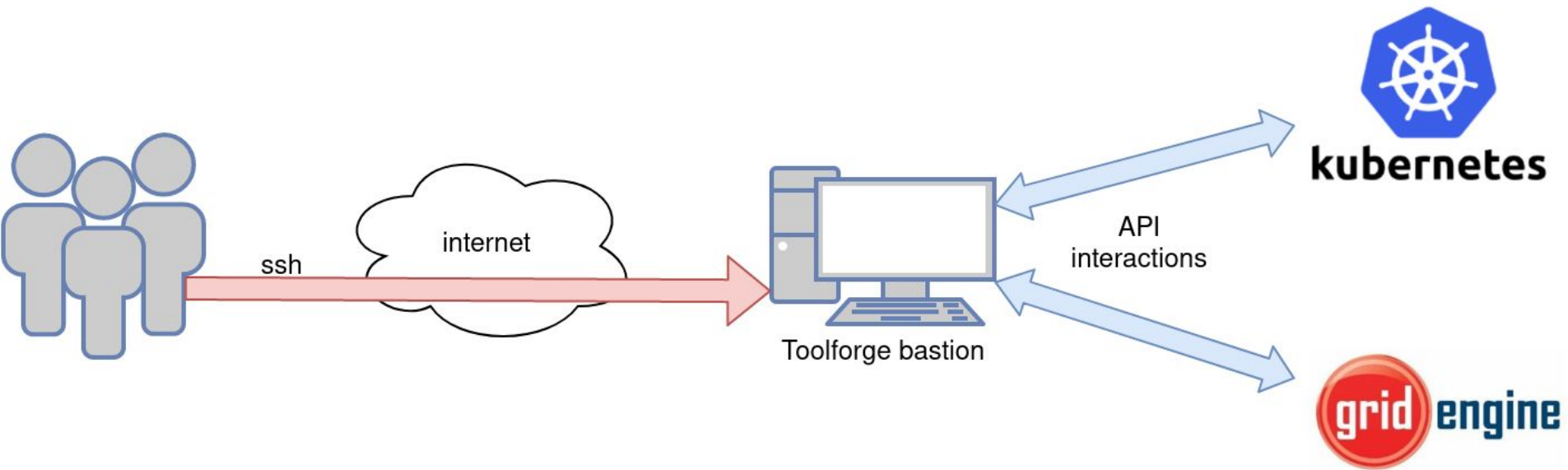


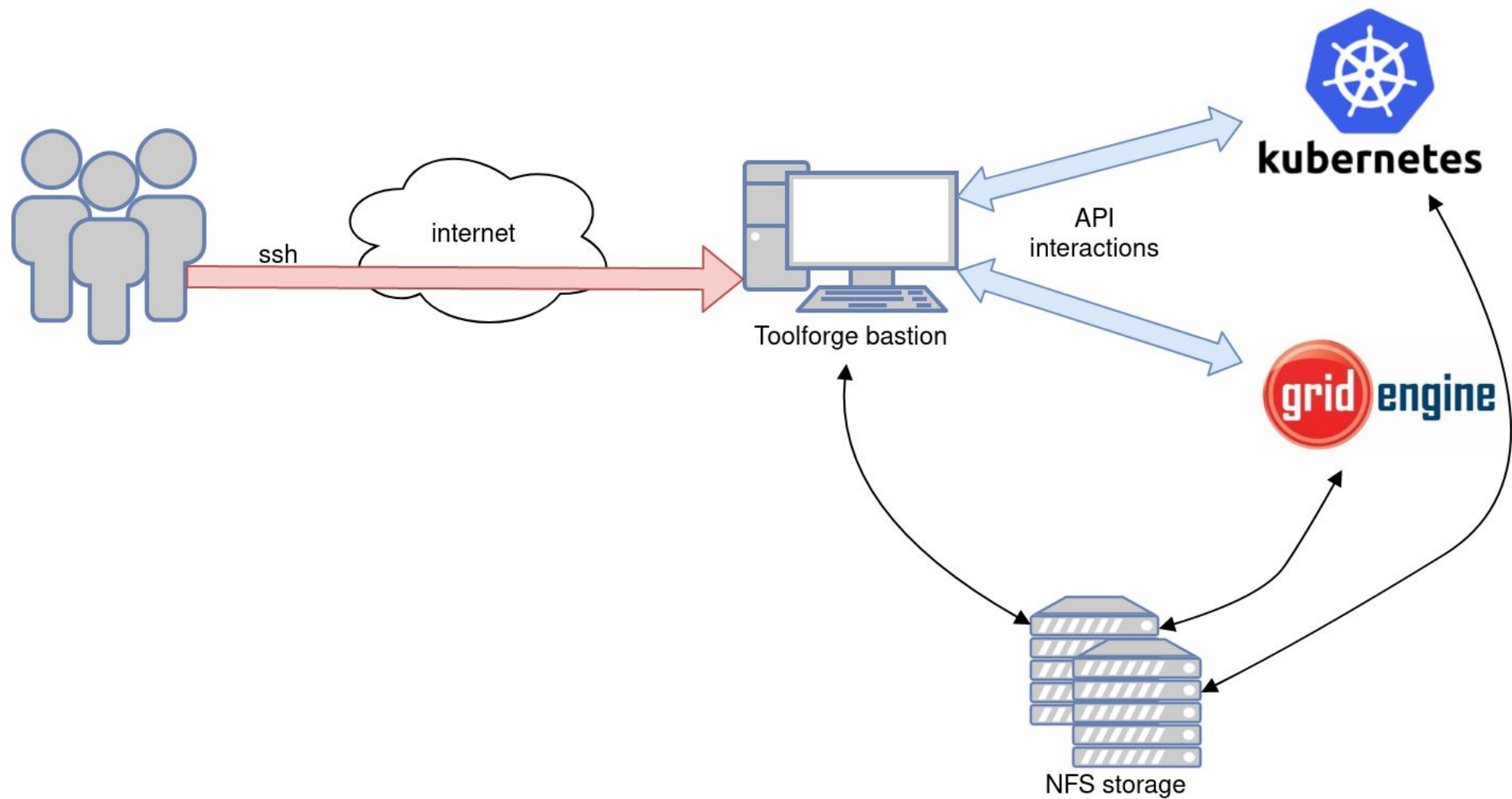
Openstack

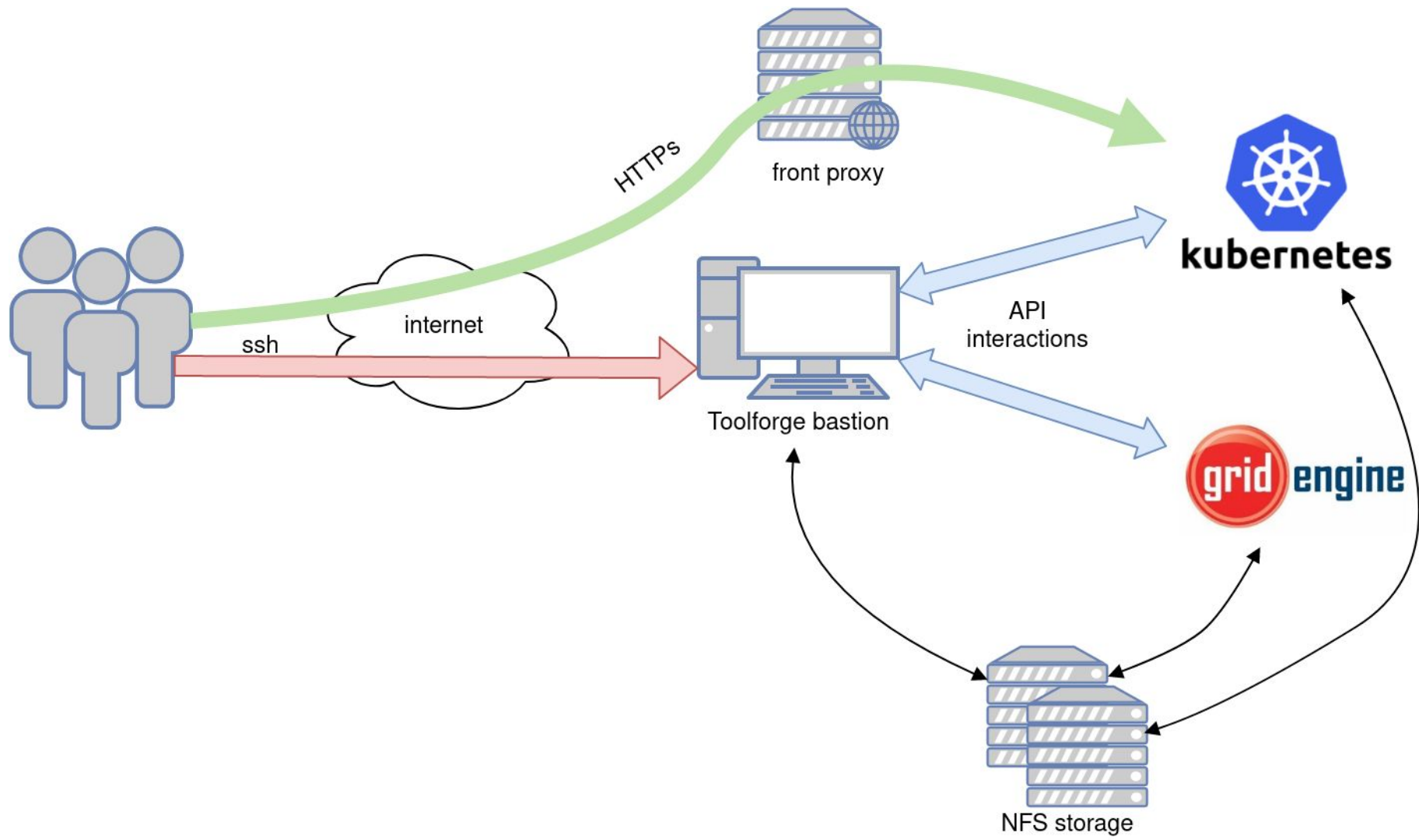




- Webservices
- Jobs







Toolforge Kubernetes



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deployment

- puppet & kubeadm
- external etcd
- nginx-ingress & calico (netfilter)
- baremetal VMs (openstack)
- NFS

admission controllers

- registry admission
- ingress admission

RBAC & Psp

- privileged-psp
- tool-psp
- x509 certs & roles

multi-tenancy

maintain_kubeusers

```
for user in ldap:
```

```
    create_namespace(user)
```

```
    create_quotas(user)
```

```
    create_RBAC(user)
```

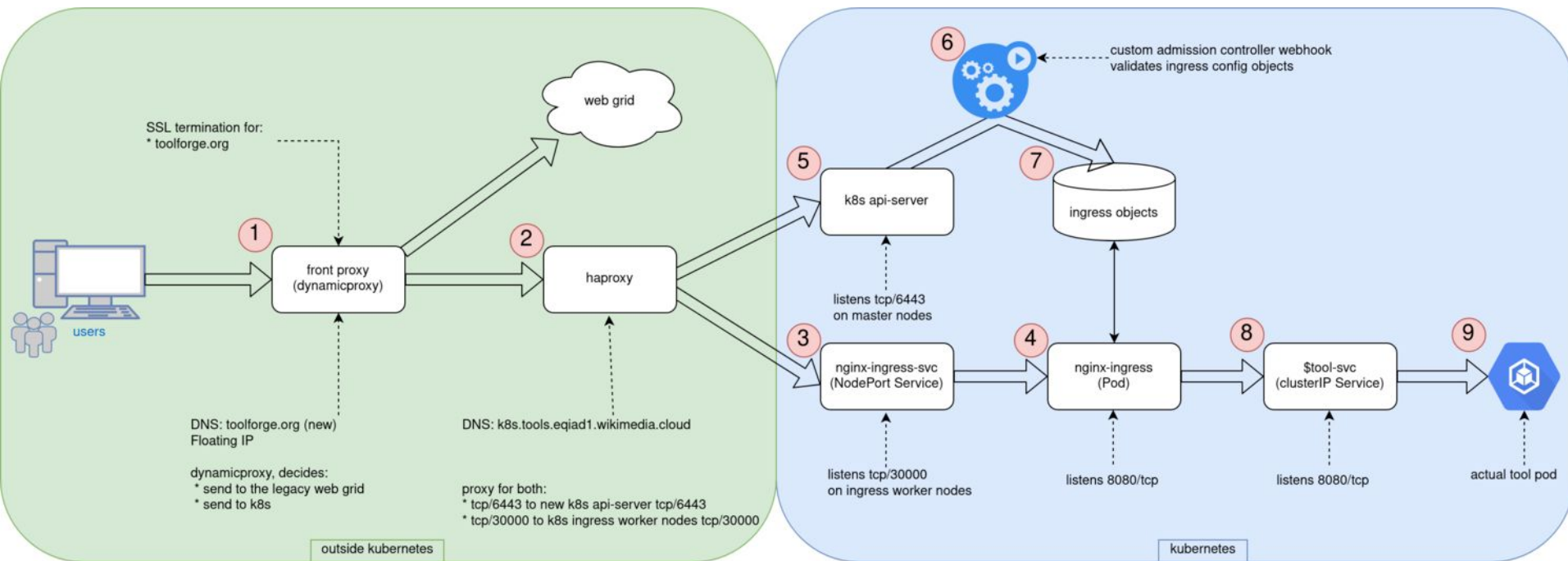
```
    create_certs(user)
```

```
    create_kubeconfig(user)
```

```
    validate_everything(user)
```


ingress

- external nginx: TLS termination
- haproxy
- nginx-ingress / nodePort
- Ingress object per tool



tools-webservice

\$ webservice start:

```
verify_namespace()  
create_service()  
create_ingress( )  
create_deployment( )
```

\$ webservice stop:

```
destroy_everything( )
```

numbers

- Pods: ~1.500
 - Tools: ~1.000
- Nodes: ~50
 - RAM: ~500 GB
 - vCPU: ~270
- Ingress traffic: ~50 Mbps
 - ~50 HTTP req/s
- General cloud traffic: ~2 Gbps

<https://grafana-labs.wikimedia.org/d/toolforge-kubernetes/toolforge-kubernetes>

Next



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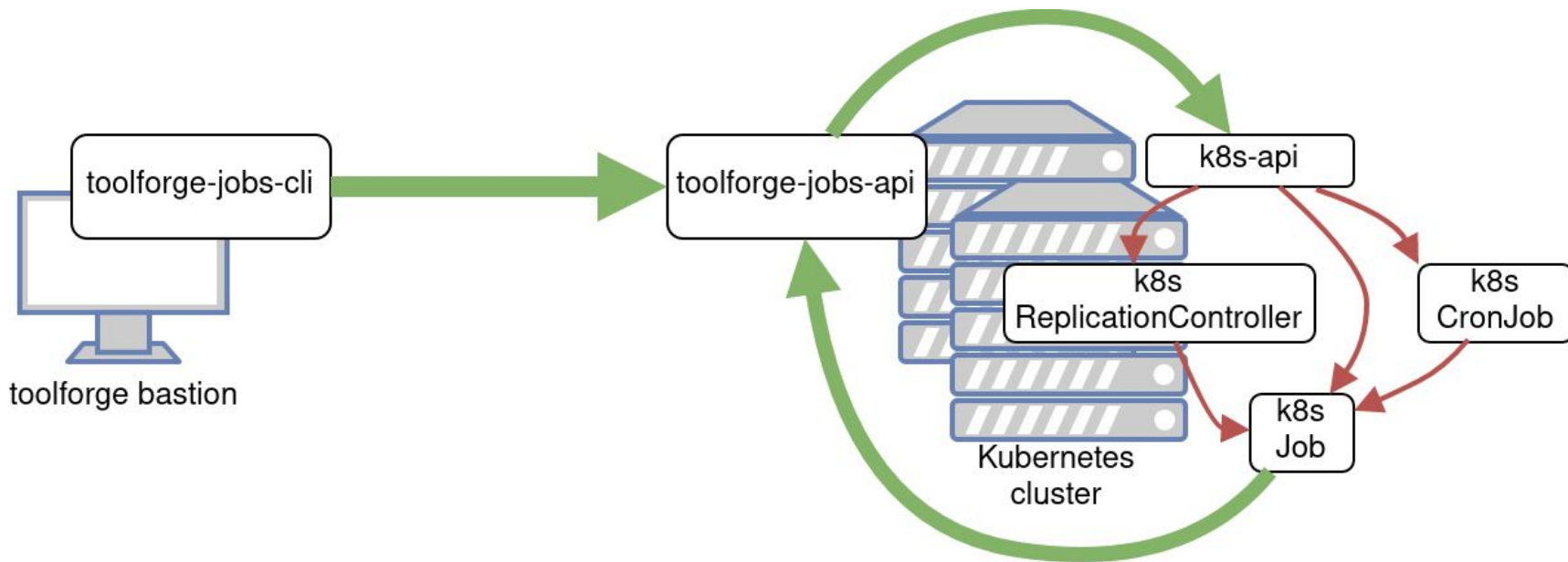
PSP

- Deprecated upstream in 1.21 :-)
- KEP-2579: Pod Security Admission Control ?
- OpenPolicyAgent ?

etcd & ceph

- Openstack VMs -> ceph
- etcd performance problems
- local hypervisor disk

toolforge-jobs-framework



buildpacks

- user-built docker images
- admin controls: security & storage

NFS? Cinder?

- NFS -> old tech
- Openstack cinder integration?

Examples



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- <https://wikidata-game.toolforge.org/>
- <https://copyvios.toolforge.org/>
- <https://k8s-status.toolforge.org/>
- <https://openstack-browser.toolforge.org/>

Docs & Code

- <https://wikitech.wikimedia.org>
- <https://github.com/wikimedia/puppet>
- <https://github.com/wikimedia/labs-tools-maintain-kubeusers>
- <https://github.com/wikimedia/operations-software-tools-webservice>

Q&A

