Managed Kubernetes mit Cluster API in der stoney cloud

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6. September 2024

Übersicht

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- Wie profitieren unsere Kunden?
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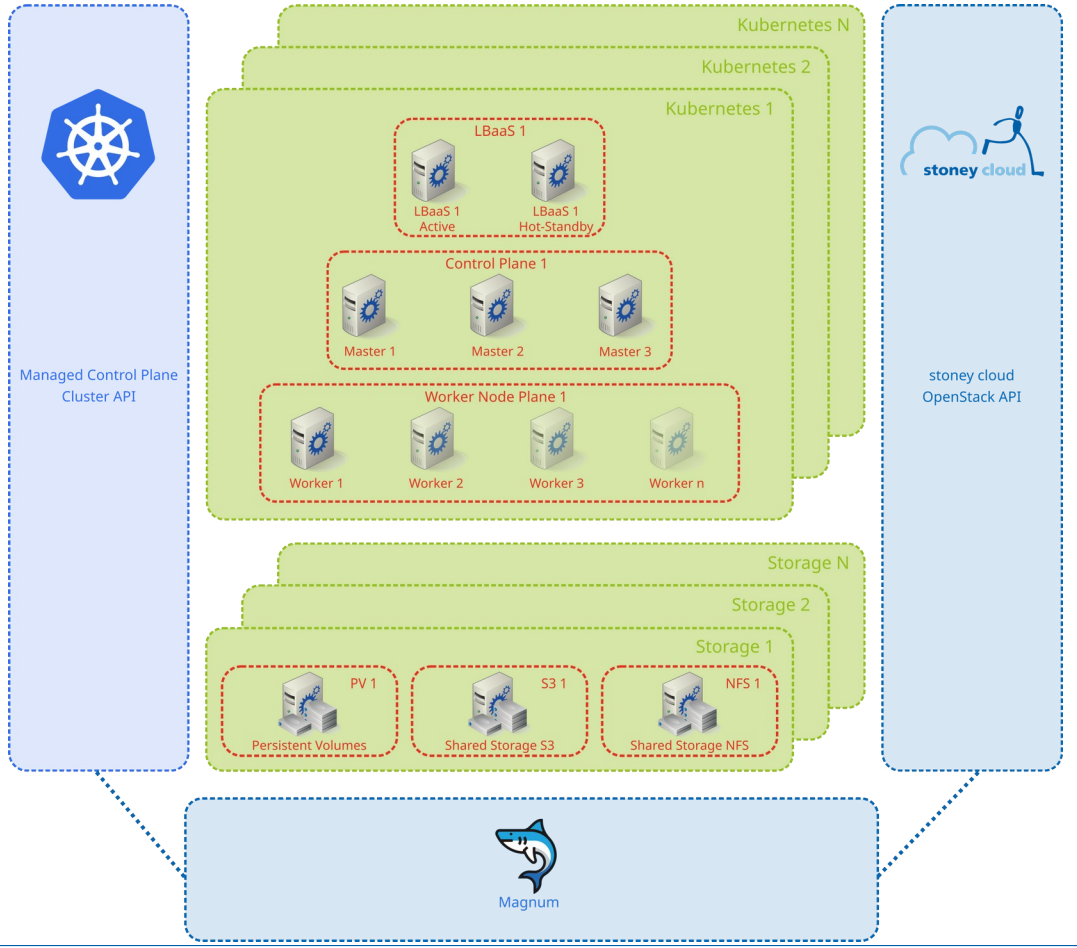
Konzept


Kubernetes N
Kubernetes 2
Kubernetes 1
LBaaS 1
LBaaS 1 Active
LBaaS 1 Hot-Standby
Control Plane 1
Master 1
Master 2
Master 3
Worker Node Plane 1
Worker 1
Worker 2
Worker 3
Worker n
Storage N
Storage 2
Storage 1
PV 1
Persistent Volumes
S3 1
Shared Storage S3
NFS 1
Shared Storage NFS
Managed Control Plane
Cluster API
stoney cloud
stoney cloud
OpenStack API
Magnum

Warum Cluster API?

- Quasi Standard
  - Keine Eigenentwicklung nötig
- Integration in die bestehende OpenStack Cloud
- Standardisierung
  - Provisioning
  - Operation
  - Lifecycle (Upgrades)
- Self Service
  - CLI, Dashboard, OpenTofu & API

Zusammenarbeit mit StackHPC

- Integration des Cluster API Drivers
- Upstream Anpassungen an der Cluster API

StackHPC

Wie profitieren unsere Kunden?

- Self-Service
  - Unkomplizierte Provisionierung
  - Unkomplizierte Skalierbarkeit
  - Rolling Updates
- Cloud Agnostic
  - Flexibilität
  - Unabhängiger vom Cloud-Provider
- Cluster Verwaltung durch uns

Beispiel OpenStack CLI

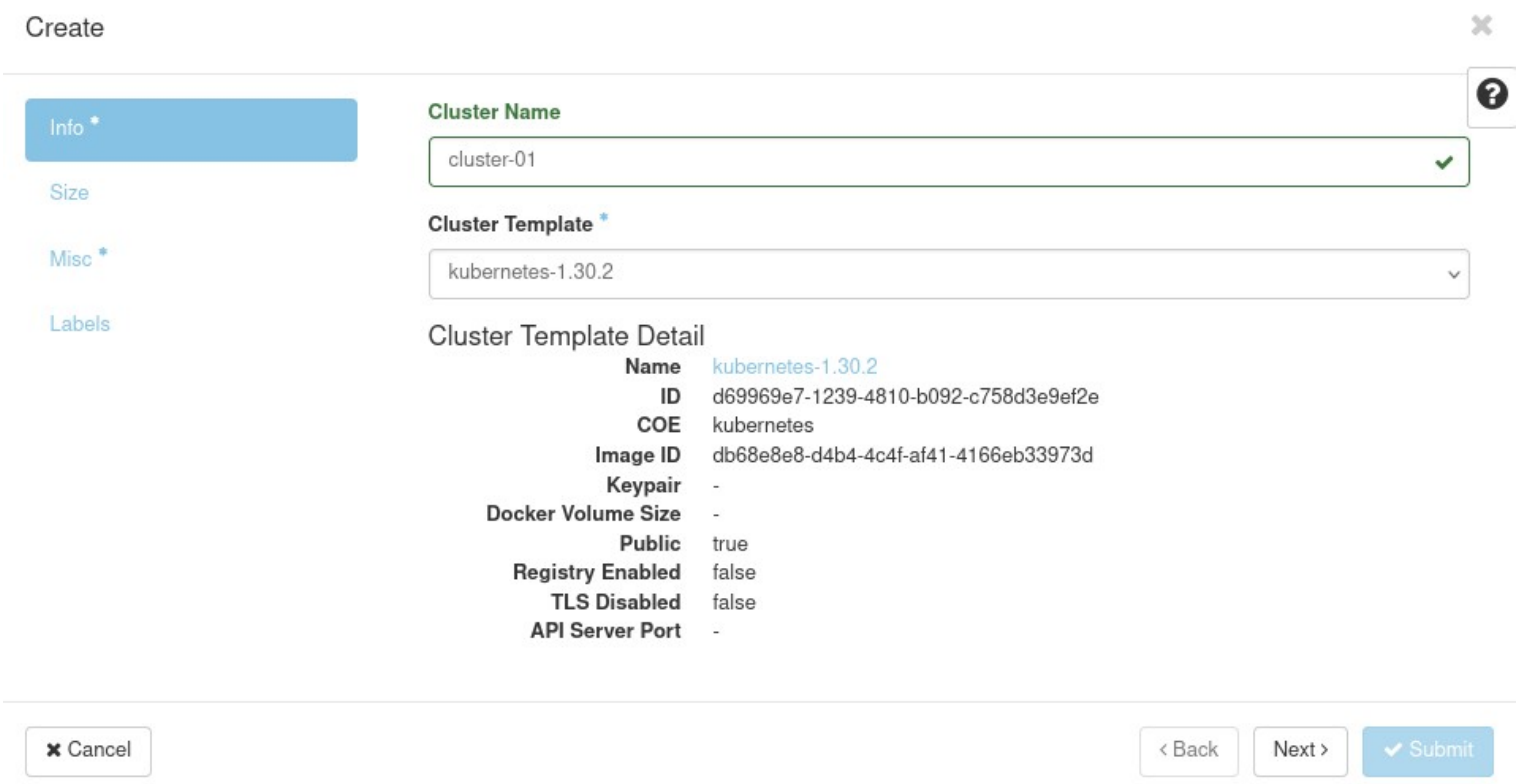
Cluster Erstellung:

```
openstack coe cluster create \
    --cluster-template kubernetes-1.30.2 \
    cluster-01
```

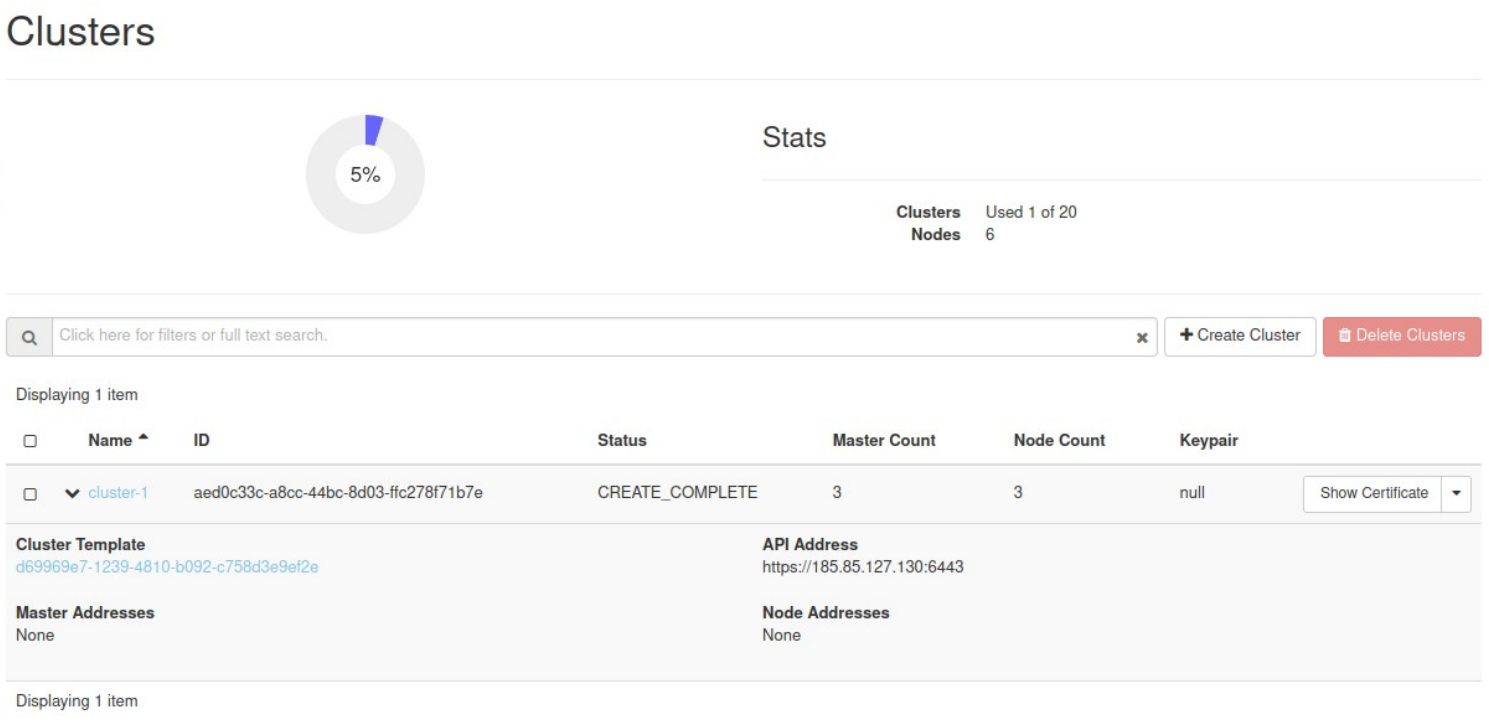
Resultat nach ~7 Minuten:

```
+--------------------------------------+------------+------------+--------------+-----------------+
| uuid                                 | name       | node_count | master_count | status          |
+--------------------------------------+------------+------------+--------------+-----------------+
| 200174b4-f12f-444b-80a9-7636490d97f9 | cluster-01 |          3 |            3 | CREATE_COMPLETE |
+--------------------------------------+------------+------------+--------------+-----------------+
```

Beispiel OpenStack Dashboard



Beispiel OpenStack Dashboard



Beispiel OpenTofu (ehemals Terraform)

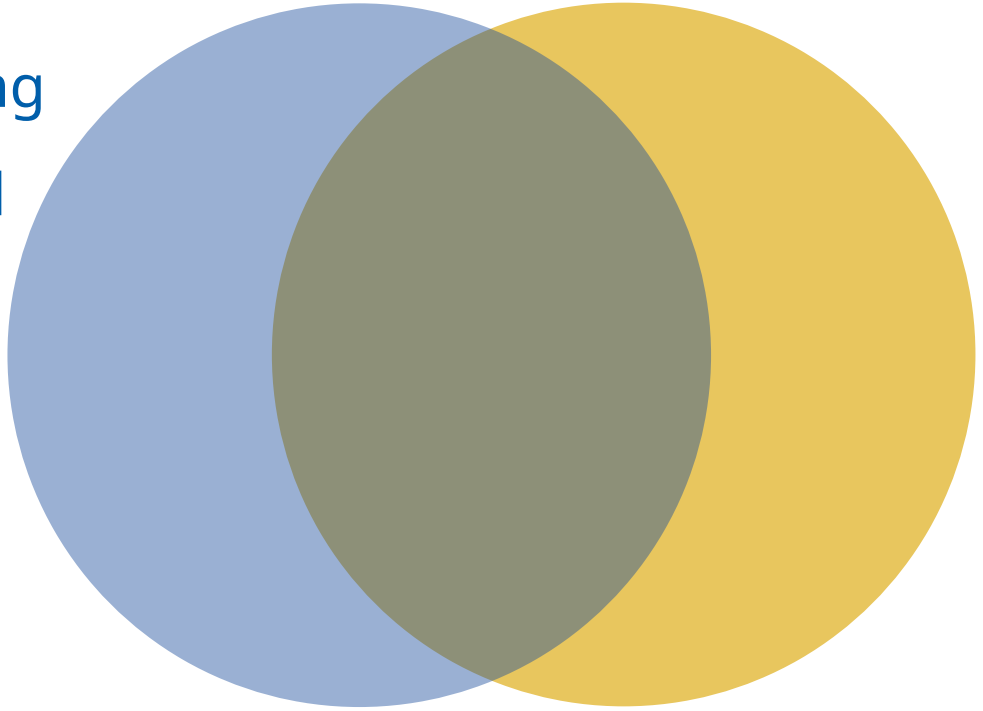

```
data "openstack_containerinfra_clustertemplate_v1" "k8s_template_1_30" {
  name = "kubernetes-1.30.2"
}

resource "openstack_containerinfra_cluster_v1" "cluster_1" {
  name                = "cluster-1"
  cluster_template_id = data.openstack_containerinfra_clustertemplate_v1.k8s_template_1_30.id
  master_count        = 3
  node_count          = 3
}
```

Fazit

stepping stone AG

- Automatisierung
- Quasi Standard
- Deklarativ
- Integration



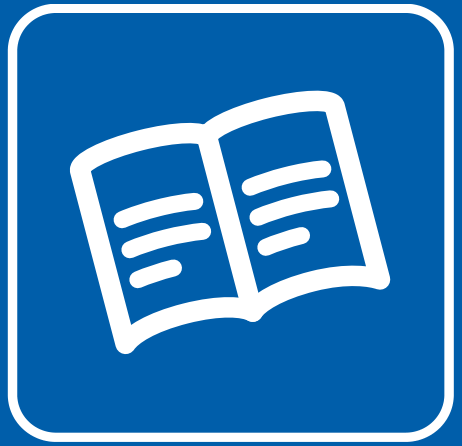
Kunde

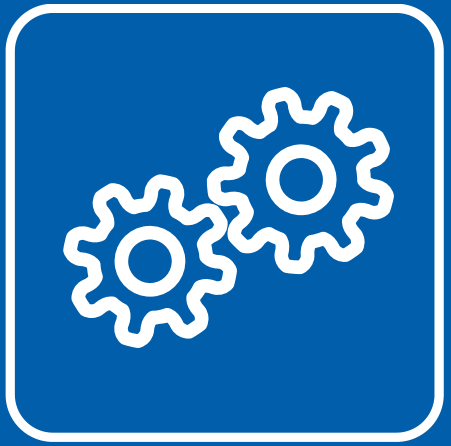
- Self-Service
- Auto-Scaling
- Rolling Updates
- Cloud agnostic

Fragen?









Links

- https://www.stepping-stone.ch/
- https://www.stoney-backup.com/
- https://www.stoney-cloud.com/
- https://www.stoney-mail.com/
- https://www.stoney-meet.com/
- https://www.stoney-office.com/
- https://www.stoney-services.com/
- https://www.stoney-storage.com/
- https://www.stoney-wiki.com/

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