

stoney cloud stepping stone & StackHPC

Adding Kubernetes as-a-Service
for stoney cloud users

1992-2024: The story so far...

meiko

Api
NetWorks

 **Quadrics**
A Finmeccanica Company



CRAY

Stack
HPC

StackHPC



meiko

Api
NetWorks

Quadrics
A Finmeccanica Company



CRAY

Stack
HPC

StackHPC



StackHPC - Modus Operandi

- Upstream development of open cloud infrastructure for Research Computing
- Development and integration of HPC technologies into cloud-native contexts
- Consultancy to organisations for managing HPC-cloud transition
- Training and support for sustainability
- Scientific OpenStack community engagement



Dawn

HPC & AI on
Open Cloud
Infrastructure



StackHPC





BUILDING THE OPEN INFRASTRUCTURE BLUEPRINT

HOW **LINUX**, **OPENSTACK**, AND **KUBERNETES**
COMBINE TO DELIVER AN OPEN SOURCE
POWERED INFRASTRUCTURE STACK

READ THE WHITE PAPER →

Kubernetes on OpenStack

- Kubernetes clusters are deployed within client projects
- Clients deploy their own Kubernetes clusters via self-service
- Kubernetes resources integrate with OpenStack cloud infrastructure
- Each client manages their own Kubernetes cluster deployments



openstack. spsrc piotr

Project / Container Infra / Cluster Templates

Cluster Templates

Click here for filters or full text search. + Create Cluster Template Delete Cluster Templates

Displaying 5 items

<input type="checkbox"/>	Name ^	ID	COE	Keypair	Network Driver	
<input type="checkbox"/>	> gb-test	e99bb3ba-9dd4-46d9-b32b-eaf4c32f301a	kubernetes	gbialas	calico	Create Cluster ▾
<input type="checkbox"/>	> k8s-calico-fedora-coreos-32.20200629.3.0-openstack.x86_64	8538afa0-f636-4f7c-9d1c-3797bcc81827	kubernetes	-	calico	Create Cluster ▾
<input type="checkbox"/>	> k8s-esp	b9d49772-4c40-4c65-a8f0-7907842372ff	kubernetes	-	calico	Create Cluster ▾
<input type="checkbox"/>	> k8s-fedora-atomic-32	60ba0ace-b355-4192-b7eb-831230ebe774	kubernetes	-	calico	Create Cluster ▾
<input type="checkbox"/>	> k8s-multihub	aa8471fc-fb7b-4876-a10b-69b44b4ccb67	kubernetes	deployment-sah	calico	Create Cluster ▾

Displaying 5 items

Kubernetes Cluster Templates

Different configurations - tested solutions provided by cloud administrators



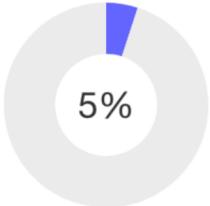
stepping stone

StackHPC

openstack. spsrc piotr

Project / Container Infra / Clusters

Clusters



5%

Stats

Clusters Used 1 of 20
Nodes 4

Click here for filters or full text search. + Create Cluster Delete Clusters

Displaying 1 item

<input type="checkbox"/>	Name ^	ID	Status	Health Status	Master Count	Node Count	Keypair	
<input type="checkbox"/>	> espsrc-prod	40fe05a1-5c2d-4165-8a9d-9df1bc22a954	UPDATE_COMPLETE	HEALTHY	1	3	deployment-sah	Show Certificate

Displaying 1 item

Deploying Kubernetes Clusters

As easy as clicking "Create Cluster"...

Integrates with stoney cloud compute, storage and networking

Open Source Contributions

Testing code

Giving feedback

Solving problems

Contributing back



[occm] [cinder-csi-plugin] Sanitize AZ name #2634

<> Code ▾

Merged

k8s-ci-robot merged 1 commit into `kubernetes:master` from `stackhpc:master` Sep 4, 2024

Conversation 24

Commits 1

Checks 0

Files changed



scrungus commented Aug 23, 2024

Contributor ⋮

What this PR does / why we need it: AZ names can contain unicode characters, for example "Württemberg". The current behaviour is that this causes the occm pod to crash:

```
$ crictl logs a358b0388996d (openstack-cloud-controller-manage
error syncing 'test-hshu2j73dym-default-worker-6s4mq-s9swb'
```

This PR sanitizes the label value before it is applied.
We also see the same problem in cinder-csi-plugin:

```
$ kubectl logs -n openstack-system openstack-cinder-csi-node
...
I0822 14:53:22.576401    1 main.go:101] Received NotifyRe
```

So this change also sanitises the label coming from the metadata service.

Special notes for reviewers:

I believe a similar fix is needed for cinder-csi-plugin

Release note:

Reviewers

jichenjc

dulek

anguslees

Assignees

jichenjc

Labels

approved

cncf-cla: yes

lgtn

ok-to-test

release-note

size/S

Projects

None yet

Milestone

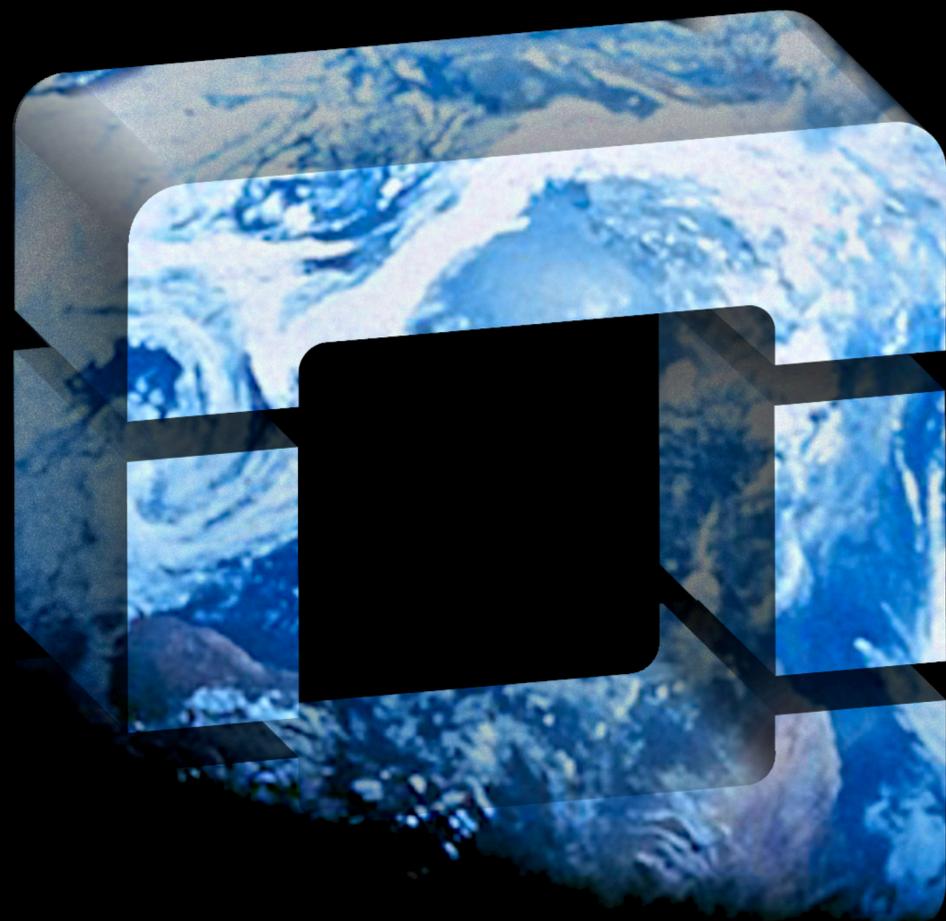
No milestone



stepping stone

In Summary

- StackHPC is very happy to have found a good partner in stepping stone AG
- We hope the Kubernetes service available on stoney cloud continues to be a success!
- StackHPC looks forward to further work together and future collaborations



Thank You Questions?

StackHPC

The Rise of the HPC Cloud

Stig Telfer

stig@stackhpc.com

@oneswig

<https://www.stackhpc.com>