



Containerised development of Ceph with KCLI

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Agenda



- Why is this needed?
- What is it?
- How to do this yourself?
- Different configurations of classic and crimson OSDs.
- References



The Why.

The Why.



- Engineers rely on bare metal installation on their development boxes for developing Ceph.
- Difficult to develop features that involve cephadm, specific releases, etc.



The What.

Containerised Ceph Deployments



- Replicate exact OS and version.
- Use the exact image tag (release or development) without hassle
- Deploy ceph with cephadm as recommended.

We achieve the above using KCLI.

What is KCLI?



“This tool is meant to provide a unified user experience when interacting with various different virtualization providers.”

Ref - <https://kcli.readthedocs.io/en/latest/#>

KCLI Config - ceph-cluster.yml



```
parameters:
  nodes: 3
  node_ip_offset: 100
  pool: default
  node_prefix_1: ceph
  network_1: ceph-orch
  ip_prefix_1: 192.168.100
  netmask: 255.255.255.0
  numcpus: 1
  memory: 6144
  image: fedora43
  notify: false
  admin_password: password
  disks:
  - 100
  - 10

{% for number in range(0, nodes) %}
  {{ node_prefix_1 }}-node-{{ '%d' % number }}:
    image: {{ image }}
    numcpus: {{ numcpus }}
    memory: {{ memory }}
    reserveip: true
    reservedns: true
    sharedkey: true
    user: fedora
    keys:
      - ~/.ssh/id_ed25519.pub
    nets:
      - name: {{ network_1 }}
        ip: {{ ip_prefix_1 }}.{{ node_ip_offset + number }}
        gateway: {{ ip_prefix_1 }}.1
        mask: {{ netmask }}
        dns: {{ ip_prefix_1 }}.1
    disks: {{ disks }}
    pool: {{ pool }}
    {% if ceph_dev_folder is defined %}
    sharedfolders: [{{ ceph_dev_folder }}]
    {% endif %}
    files:
      - bootstrap-cluster.sh
    cmds:
      - dnf -y install python3 chrony lvm2 podman nano strace firewalld tcpdump net-tools
      - sed -i "s/SELINUX=enforcing/SELINUX=permissive/" /etc/selinux/config
      - setenforce 0
      {% if number == 0 %}
      - bash /root/bootstrap-cluster.sh
      {% endif %}
{% endfor %}
```

Ceph Specific Instructions - bootstrap-cluster.sh



For classic:

https://tracker.ceph.com/projects/crimson/wiki/Bootstrap_clusters_for_classic_deployments

For crimson:

https://tracker.ceph.com/projects/crimson/wiki/Bootstrap_clusters_for_crimson_deployments



The How.



Conclusion

References



- <https://kcli.readthedocs.io/en/latest/#>
- https://tracker.ceph.com/projects/crimson/wiki/KCLI_Setup
- <https://github.com/rkachach/ceph-cluster-setup>

Reach out!



- Upstream community slack
- Mailing List



Thank you!



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