OpenStack Cinder Deep Dive

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Cinder's Mission

To implement services and libraries to provide on-demand, self-service access to Block Storage resources via abstraction and automation on top of other block storage devices.

Cinder drivers

Cinder is an abstraction layer for around 80 storage backends:

- ▶ Open: LVM, GlusterFS, Ceph, NFS. . .
- ▶ Proprietary: NetApp, SolidFire, Dell, EMC, HPE, Fujitsu, Hitachi, IBM, Lenovo, VMWare, Violin, Quobyte, Scality, Tegile. . .
- ▶ Protocols: iSCSI, NFS, RBD, Fiber Channel, proprietary. . .
- ▶ Backup: Swift, RBD, GlusterFS, NFS, IBM TSM

Required features

- Volume Create/Delete
- Volume Attach/Detach
- Snapshot Create/Delete
- Create Volume from Snapshot
- Get Volume Stats
- Copy Image to Volume
- Copy Volume to Image
- Clone Volume
- Extend Volume

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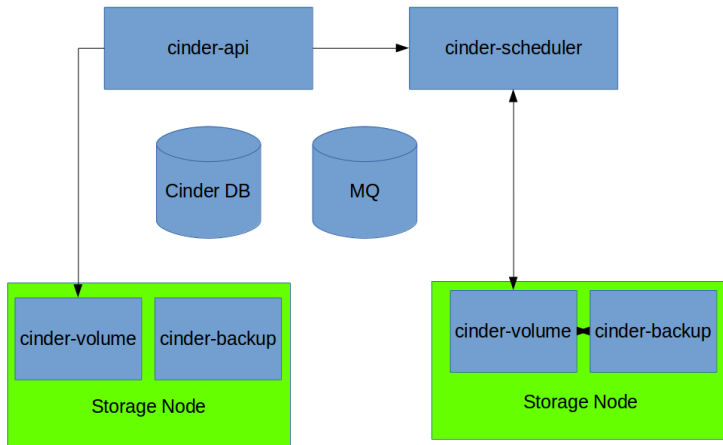 - Depends on cinder-backup service
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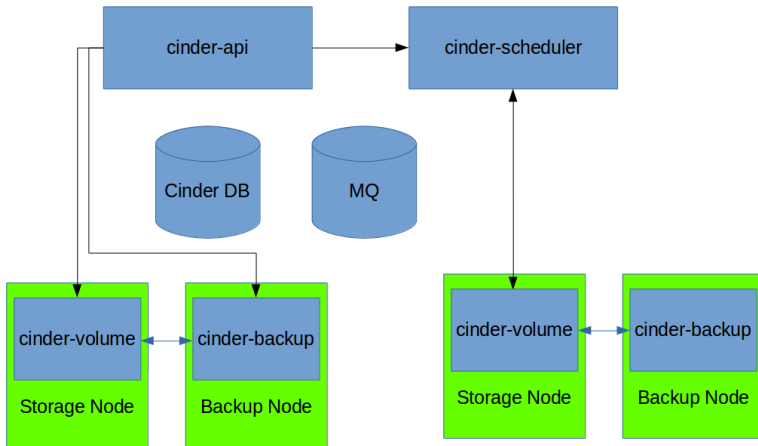 - Low number of supporting drivers
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- *QoS support*
  - Moderate number of supporting drivers

Architecture (pre-Mitaka)

Architecture (since Mitaka)

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Architecture (non-LVM-backends)
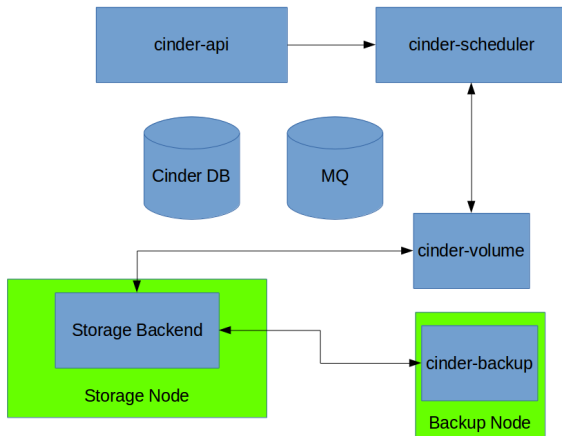
Attach to VM or detach from VM

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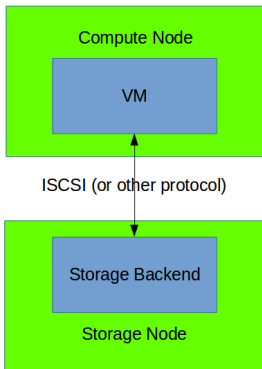
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- Cinder usage outside of OpenStack
  - python-brick-cinderclient-ext project
  - You'll still need DB (MySQL), MQ (RabbitMQ) and Keystone

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- cinder-volume service clustering AKA *c-vol A/A HA support*
  - Right now it is still risky to run multiple c-vols controlling a single storage backend

Thank you!

https://github.com/dulek/openstack-meetup-wroclaw-cinder

remind me to switch to next slide for Q&A

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