Cinder

Or: Openstack's Block Storage Service

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Cinder's role inside OpenStack

Cinder is a service used to provide Virtualized Block Storage Devices to the end users of OpenStack without requiring them to have any knowledge of where that storage is actually deployed or on what type of device.

Cinder's components: cinder-api

The role of cinder-api is to accept and manage API
calls to:

 – create, delete, list and show volumes,

 – create, delete, list and show snapshots,

 – attach and detach volumes (called by nova).

Cinder's components cinder-volume

cinder-volume is:
- handling all the requests coming from cinder-api,
- is keeping the Block Storage Database up to date,
- is interacting with other processes (like cinder-scheduler) through the message queue,
- is interacting directly with variuos types of storage back-ends.

Multiple cinder-volumes instances can be run using different configuration files and back-ends to allow scalabilty but also one cinder-volume can be manage multiple back-ends.

Cinder's components cinder-scheduler

cinder-scheduler's main role is choosint the best back-end to use for placing the new volume. It interacts with cinder-volume through the message queue and the Block Storage Database and can be decoupled from the host running cinder-api,volume. Different filters are available as plug-ins.

Cinder's components: message queue

The message queue is used for communication between the Cinder's components.

Cinder: components interaction 1/2
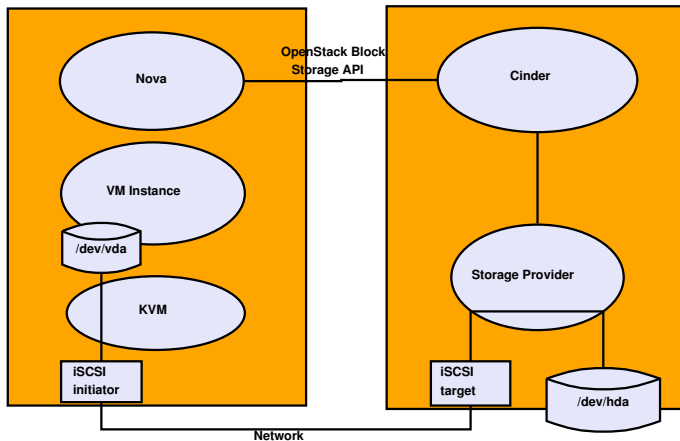
Cinder: components interaction 2/2

Interaction example:

- nova calls cinder-api via API providing connection information (hostname, iSCSI initiator name, etc),
- cinder-api passes the message to cinder-volume,
- cinder-volumes calles the storage volume driver or uses the queue to ask cinder-scheduler for a good candidate,
- the storage volume driver does everything to allow the connection (eg. give access),
- the storage volume driver returns connection information to nova,
- nova creates then the connections using the given parameteres,
- nova passes the volume device/file to the hypervisor.

Notes and Remarks

- Logs directory is: `/var/log/cinder`
- Files you are going to edit often:
  - cinder-api conf. file is:
    `/etc/cinder/cinder-api.conf`
  - cinder-volume conf. file is:
    `/etc/cinder/cinder-volume.conf`
- We will see everything in more detail during the tutorial.

Useful Links

- – Configure Cinder
- – Cinder Project Documentation