OpenStack Cinder

Presenter
Anil Bidari,

Founder and CEO Cloud Enabled

Email:
anil.bidari@thecloudenabled.com
Cinder – overview its role in OpenStack

- Cinder service provides persistent block level storage volumes.

- Cinder allows you to create storage volumes and attach them to Nova instances.

- Once attached, you can create a file system on top of these volumes (NTFS for Windows and ext3/ext4 for Linux).

- In easy words, think of cinder volumes like a D drive of your VM.

**Why do you need to use cinder?**

- You have launched to Nova instance running Windows Server 2012 which has C drive of 100 GB, you would want additional 500 GB for your data.

- Cloud Enabled recommends you to store your critical data on D drive (cinder volume) instead C drive. In case of accidental deletion of a VM you can always launch new instance and attach to the new VM.
Cinder- Main Components

- **Cinder-Api**
  - Accepts API requests and routes them to for action

- **Cinder-Scheduler**
  - Routes requests to the appropriate volume service

- **Cinder-Volume**
  - Volume service will route them to storage backends using vendor-supplied drivers.
Cinder Support/Matrix

- Dell Eqallogic
- Fujitsu (Eternus)
- EMC (VMAX & VNX)
- GlusterFS
- Hitachi (hNAS, VPS)
- HP 3par
- IBM
- Netapp
- Huawei T (v1, v2, v3)
Cinder - Backends

- Cinder-API
- Cinder-Scheduler
- Cinder-Volume
  - LVM (SATA)
  - EMC (15K RPM Disks)
  - HP 3par (SSD Drives)

Copyright Cloud Enabled, web: www.thecloudenabled.com, All rights Reserved.
Cinder - Enabling Backends (sample config file)

- Cinder support multi-backend environments
- Sample config file

```
[lvmdriver-1]
volume_group = cinder-volumes-1
volume_driver = cinder.volume.drivers.lvm.LVMVolumeDriver
volume_backend_name = LVM

[3par]
use_multipath_for_image_xfer = true
volume_driver = cinder.volume.drivers.hpe.hpe_3par_fc.HPE3PARFCDriver
volume_backend_name = 3parfc

[emc]
use_multipath_for_image_xfer = true
volume_driver = cinder.volume.drivers.emc.emc_smis_fc.EMCSMISFCDriver
volume_backend_name = mcfc
```
Cinder behind the scenes: How Volume gets created

1. **Client** issues request to create volume on Dashboard.
2. **Horizon** accepts the request and processes it, putting it in the AMQP queue for processing.
3. The Cinder API authenticates the request.
4. The Cinder Scheduler generates a candidate list based on volume criteria (size, availability zone, volume type).
5. The Cinder Volume reads the response message from the Cinder scheduler.
6. The Cinder Volume invokes backend driver methods to create the requested volume.
7. The Cinder Volume collects volume metadata and connection information.
8. The Cinder Volume posts the response message to the AMQP queue.
9. The Cinder API reads the response message from the queue.
10. The Cinder API responds back to the client with the status of the creation request, volume UUID, etc.

Copyright Cloud Enabled, web: www.thecloudenabled.com, All rights reserved.
About Us
What we do …

Cloud and Devops

Consulting | Implementation | Training | Managed services

Website: http://theclouденabled.com, Social Media: http://www.facebook.com/theclouденabled
Our Presence

USA Office
- New Jersey

India Office
- Bangalore

Web
- https://thecloudenabled.com
ONE OF THE 15 GLOBAL SYSTEM INTEGRATORS OF OPENSTACK

Cloud Enabled

No matter you want to deploy Private or Public powered by OpenStack. Our exceptionally great Cloud Architects will guide you on POC, Architectural design, installation, and also provide vendor neutral sizing or infrastructure resource.

Areas of OpenStack Expertise

Reviews
Cloud Implementation and Migration Services Offering

**Implementation Services**
- OpenStack Nova instances migration to Amazon Web Services EC2
- VMware ESXI based VM’s migration to Amazon Web Services EC2

**Migration Services**

**Hypervisors Implementation**
- ESXi
- Hyper-V
- XenServer
- KVM
All the implementation service are backed by Cloud Enabled Enthusiastic Support Services. **Comprehensive Support Services**

- OpenStack Cloud Support Service
- Apache CloudStack Support service
- 24×7 Support team backed by Cloud Enabled enthusiastic Support Engineers
- Deployment and Management of MySQL DB Active/Active Support services
- We also are ware one Size does not fit all and based on business criticality you can choose one of our two support options.
e-learning Platform

visit us @ https://training.thecloudenabled.com
E-learning platform highlight

Advanced course - $100 and above
Openstack training Feedback

Openstack IaaS Expert training by An Expert - ★★★★★
by Gunasekaran on Mar 1st 2015
"You can’t have a better training on Openstack other than from ”Cloudenabled”.
1. Training content is made to meet the industry expectation rather than just clearing a certification
2. Training is being conducted by a trainer who owns a cloud consultation and support company - So training by a real time expert rather than from trained trainer"

Best Openstack Training I’ve ever attended - ★★★★★
by Karthi on Mar 3rd 2015
Anil has designed the course using his extensive hands-on experience. He takes pride in sharing his wealth of knowledge that he has gained over the past several years on multiple private and public cloud deployments. His hands-on labs are very useful in understanding the underpinning concepts. I strongly recommend anyone who wants to master openstack implementation; to attend his training.

Openstack training? Look nowhere else. - ★★★★★
by Ramesh on Mar 6th 2015
At Cloud Enabled, you build the cloud right from scratch multiple times. You don’t see the trainer ‘show’ you things. This makes all the difference. One comes in like a clean slate and at the end of the training, he answers all possible questions on openstack. I had the privilege of listening right from the horse’s mouth. Anil is exceptional in his knowledge of cloud and he is passionate about sharing that knowledge. His team is as enthusiastic as himself. He is possibly the only trainer who tells the recruiters ‘you can hire my students with your eyes closed’. There are openstack training institutes; then there is Cloud Enabled.

Live demo on “Openstack Cinder”