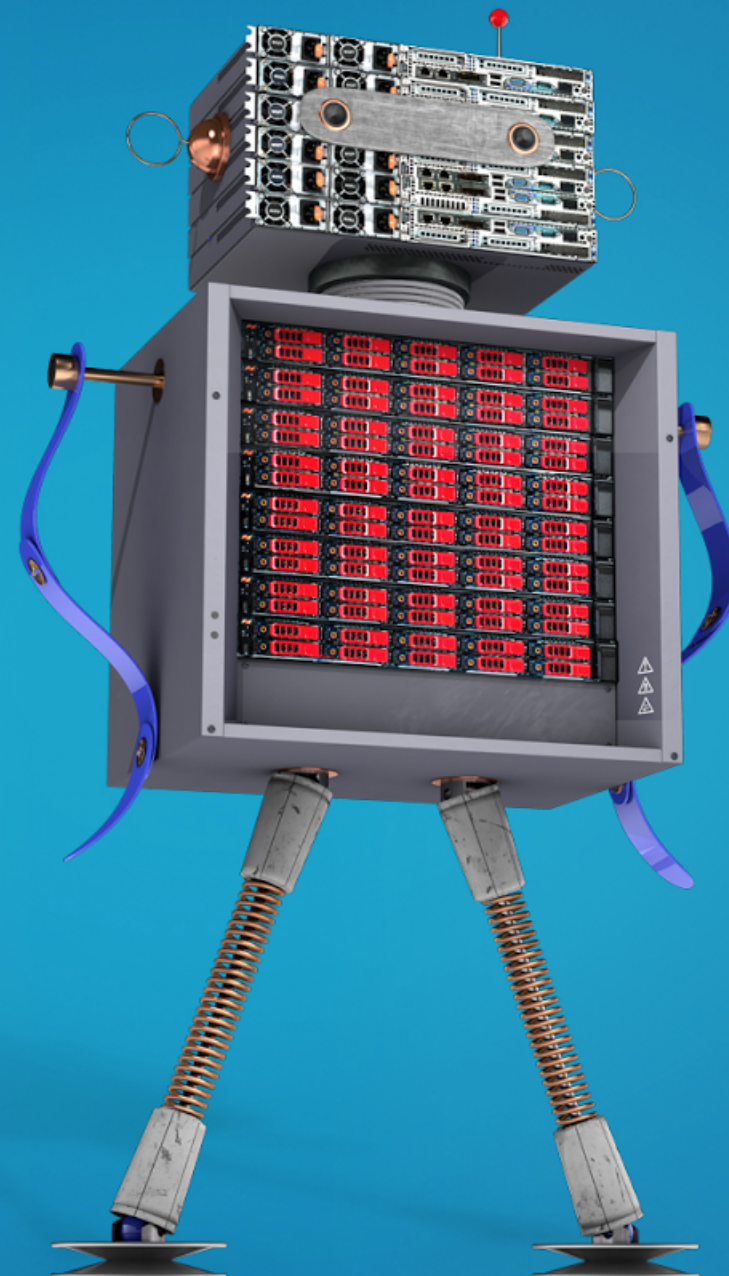


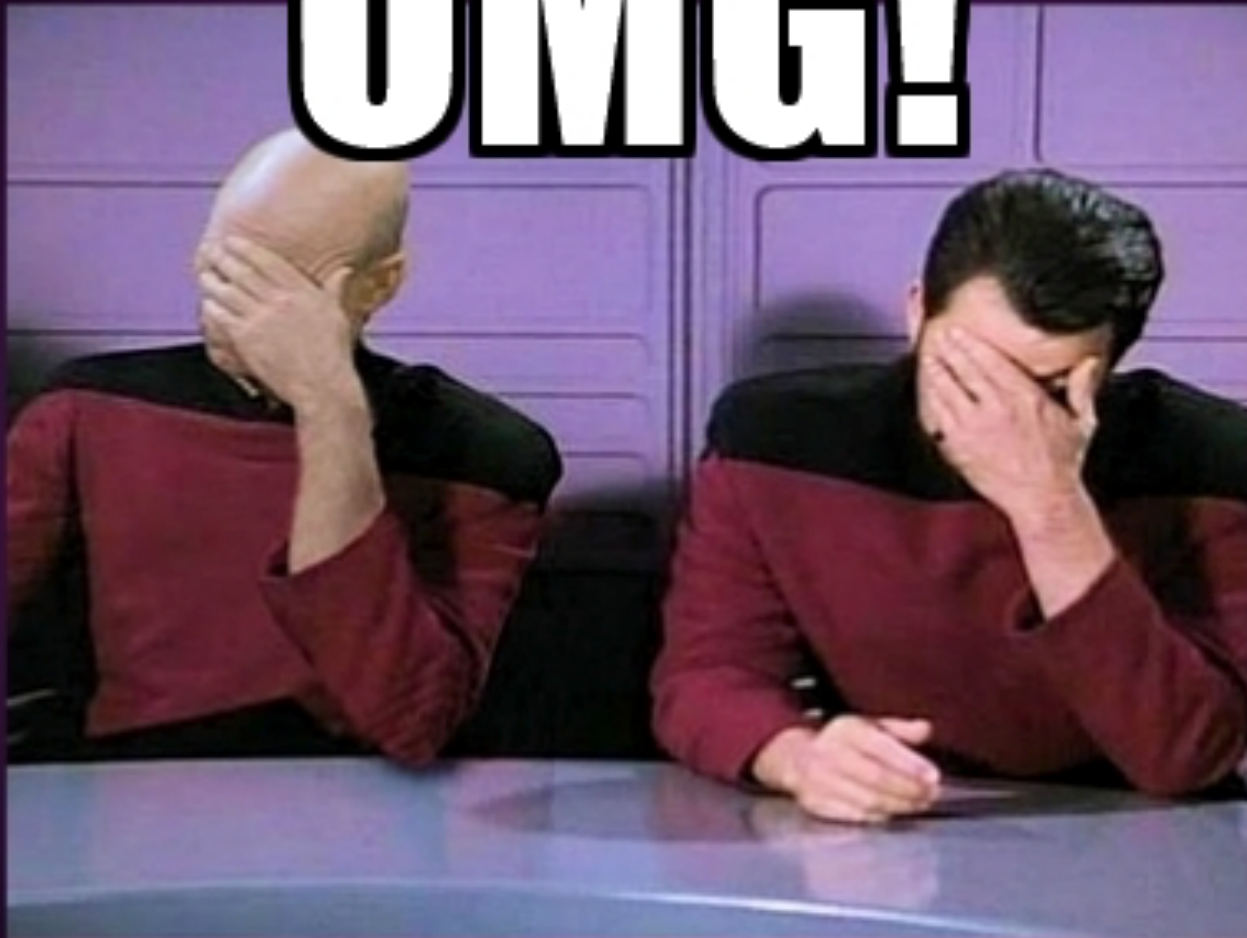
# Cinder and Docker

- Peanut Butter and Chocolate

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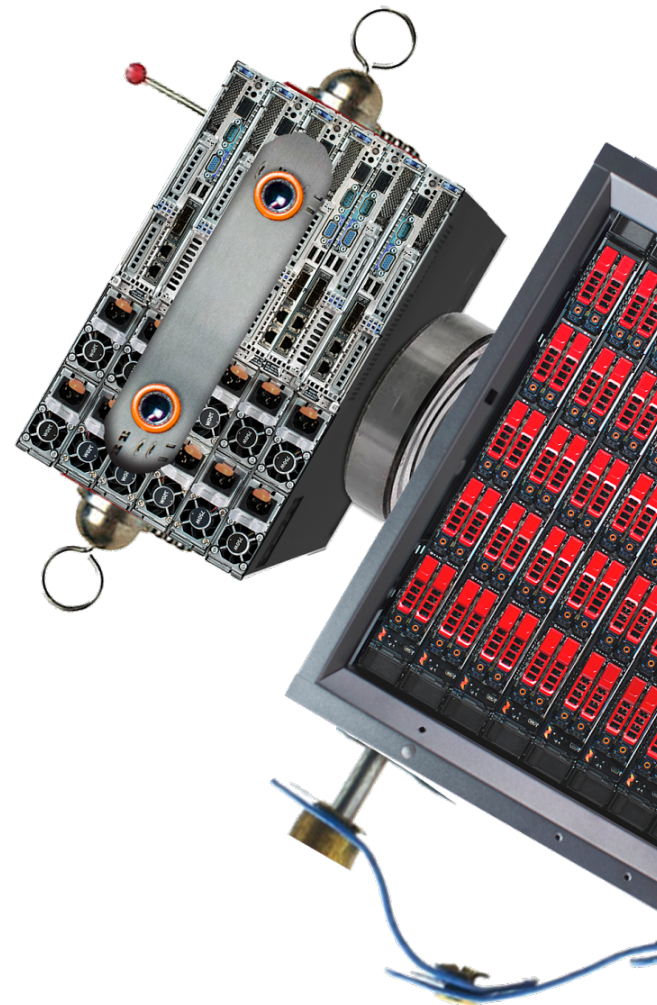


# OMG!



# NOT ANOTHER DOCKER TALK

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# Little about Cinder

Started during the Grizzly release

Move Nova-Volume out of Nova

Provide a Block Storage Service for OpenStack

Back then three or four drivers, handful of contributors

Today close to 80 supported backend devices

LOTS and LOTS of regular contributors

If you're a storage vendor, you probably have a Cinder Driver (for better or worse)







Docker/Containers have been around a while (“a long while”)

“Hey, Griffith... you ever look at adding storage support to Containers?” (I hadn’t, kinda wrapped up in this OpenStack thing, but that sounds neat)

In Docker 1.9 Volume Plugins hit the scene,

- Seeing rapid growth similar to what we saw with Cinder

It’s super early, but the pace of Containers is making OpenStack and Cinder’s early days look almost glacial (that’s both good and bad IMO)

Vendors adding volume plugins

Folks creating projects to be the “Cinder of Containers”

# Docker Extensibility



Starting in Docker 1.9

Volume

Network

Authorization

Dynamically registered and sustainable

Consumed solely through the Docker API/CLI

Up to consuming eco-system to leverage functionality

- i.e Container Schedulers.

# Docker Volume Plugins

Dramatically simplify external storage for containers

Service that runs alongside Docker daemon receiving Plugin requests and doing the work

Extensible storage orchestration

Volume is ready at `/var/lib/plugin/volumes/vol1/data`

Serves requests for Volume

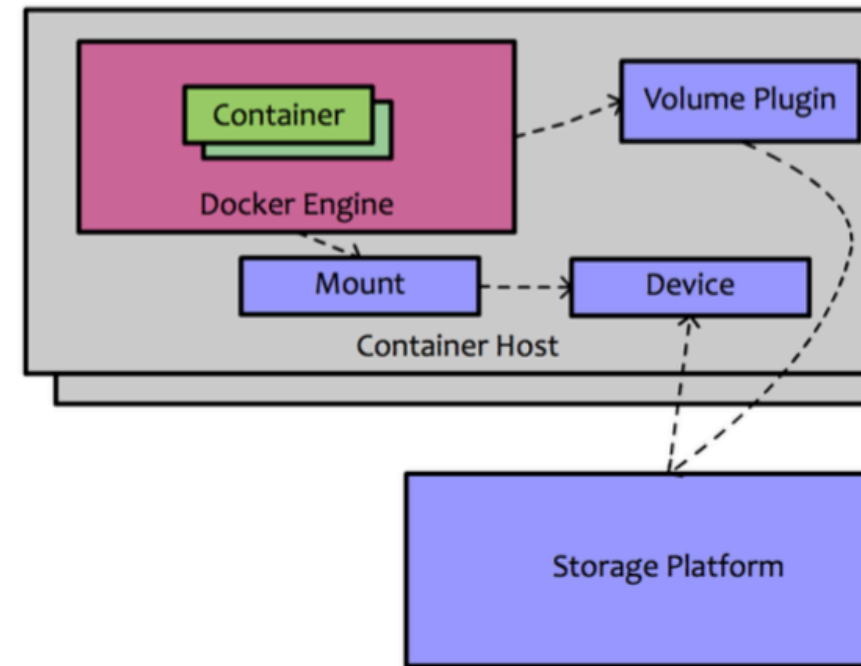
Create

Remove

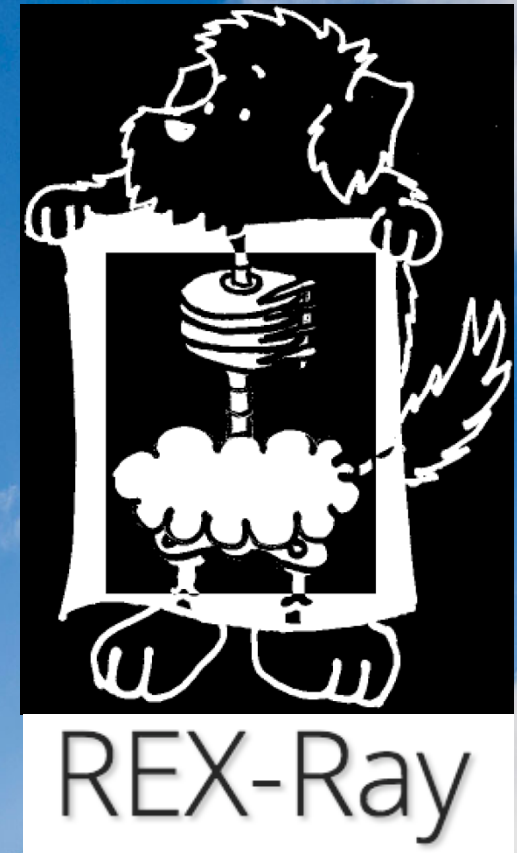
Mount

Unmount

Path



# What are my Options?





# They're all pretty cool

Good stuff in all of them

Abstraction layers

They attempt to be the Cinder of Containers

Lots O Backend drivers

Provide Docker interface and Socket Listener

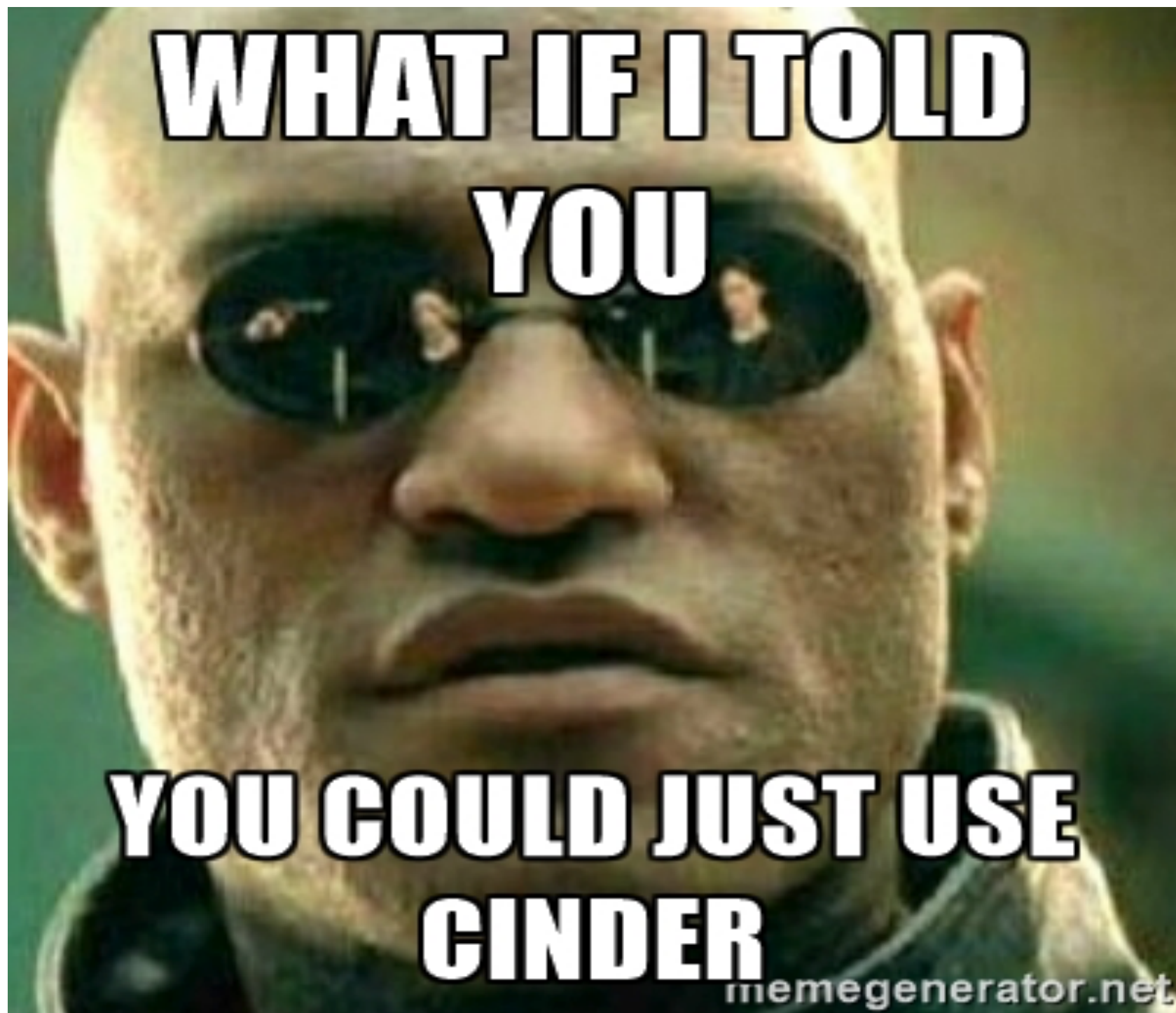
All seem to have some level of support for OpenStack/Cinder

- Flocker
- Rex-Ray

BUT, why do we need another layer?







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Good reasons to do this



There's a ton of investment in Cinder already

Pretty minor steps to break it out and use it for "other" stuff

We have been using a hacked up version of it with bash scripts to do various perf testing for quite a while

If you can hack together how to make an iSCSI attach, that's about all you need to know

May not need to duplicate a bunch of code

Maybe you already have an OpenStack deployment... leverage that beast!



# What you need

## Running Cinder deployment

Cinder services

- rabbit,
- mysql,
- keystone
- **(if you've already got OpenStack deployed just point to it)**



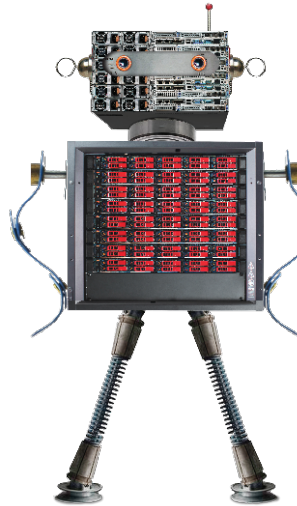
DANGER DANGER

We are iSCSI centric.



You need some additional coding for things like Fibre Channel, Ceph or other storage protocols.

- You might be able to use the OpenStack os-brick library on the host, but how to do logging?

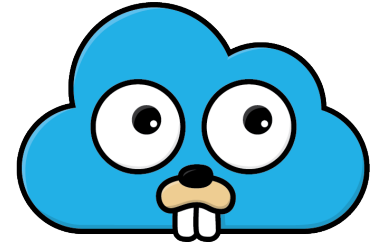


# What's behind the curtain

## Gophercloud

Cool Golang SDK from Rackspace that talks to OpenStack  
We have worked with them to get a couple things added that we need.

<http://gophercloud.io/>



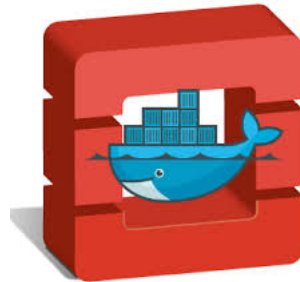
## Cinder-docker-plugin

Uses the Docker Volume Helper module

- A little bit of code to implement the calls

You can use your Cinder backend

- All 80 of them.
- Types, Snapshots QoS etc....





ut WAIT...

The great thing about Docker is SIMPLICITY!!!!

Cinder... not so much any more

KEEP DOCKER SIMPLE (Should we make T-shirts?)

Create/Attach/Detach/Remove

leave all the other stuff in Cinder?

or remove it? - but I don't think I'll get that change merged :(

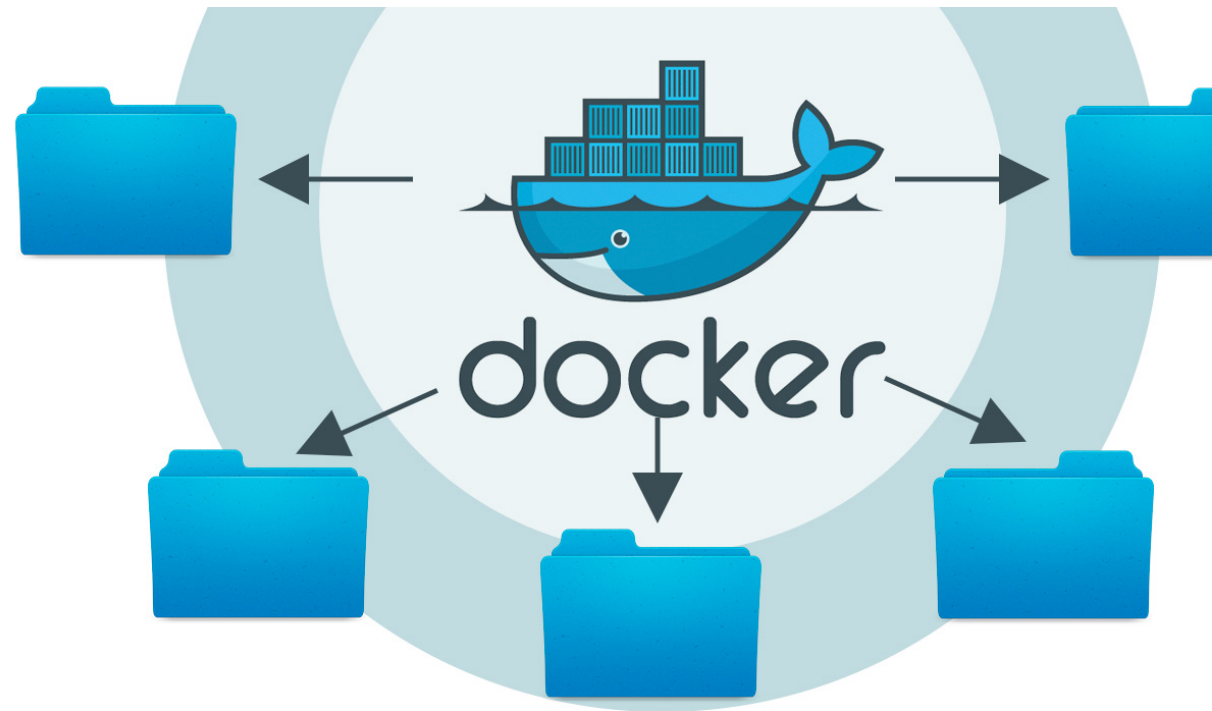
What about a stand alone Cinder?

Without keystone?



everything you need and nothing you don't

- Create
- Remove
- Mount
- Unmount
- Path
- Get
- List



ts

Working on a Docker repository!

Since it's **golang** code, OpenStack won't allow it.

POC cinder-docker-driver code (soon with godep):

<https://github.com/ebalduf/cinder-docker-driver>

A better release coming soon.

## How it works

Install Open-iscsi

```
sudo apt-get install open-iscsi
```

OR

```
sudo yum install iscsi-initiator-utils
```

Make sure go lang is installed

Run the following to pull down the code.

```
go get -u github.com/ebalduf/cinder-docker-driver
```

Place and Edit the config file (next slide)

Run the daemon

```
./cinder-docker-driver
```



## the config file

var/lib/cinder/dockerdriver/config.json

```
defaultVolSz": 1,  
mountPoint": "/var/lib/cinder/mnt",  
initiatorIFace": "eth0",  
hostUUID": "8d1789e3-a47c-4071-a12e-6e3f8486ef9b",  
endpoint": "http://10.10.1.72:5000/v2.0",  
username": "admin",  
password": "admin",  
tenantID": "9493a83b3085486d880edcf9ca593665"
```

A full-page background image of a bright blue sky filled with large, fluffy white cumulus clouds. The clouds are scattered across the frame, with some appearing closer and more detailed, while others are further away and more ethereal. The overall tone is bright and airy.

Did someone say "Demo"?

Thank you



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