DreamObjects

Cloud Object Storage
Powered by Ceph

This slide is all about me, me, me.

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DreamHost
Imagine the Web, Your Way

15 years creating and deploying services

Over 340,000 entrepreneur and developer customers

Open source obsessed
- Hosting over 500,000 WordPress sites
- Contributing Ceph, Ceilometer, Akanda
- OpenStack innovator & contributor

Selection Criteria

Must be able to deploy at large scale
- Cope with large objects, or large numbers of small objects
- Transparently handle continuous component failures

Must be managed in a cost-effective way
- Run on commodity hardware and free open source software
- Automatically handle failures, new hardware, decommissioning

Must be brought to market quickly
- Mature enough to be quickly productized

Must enable hybrid deployments
- Customers should be able to use in hybrid private/public setup
- Customers should have the freedom to build it themselves

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What Is DreamObjects?

It's where data hangs its hat in the cloud.

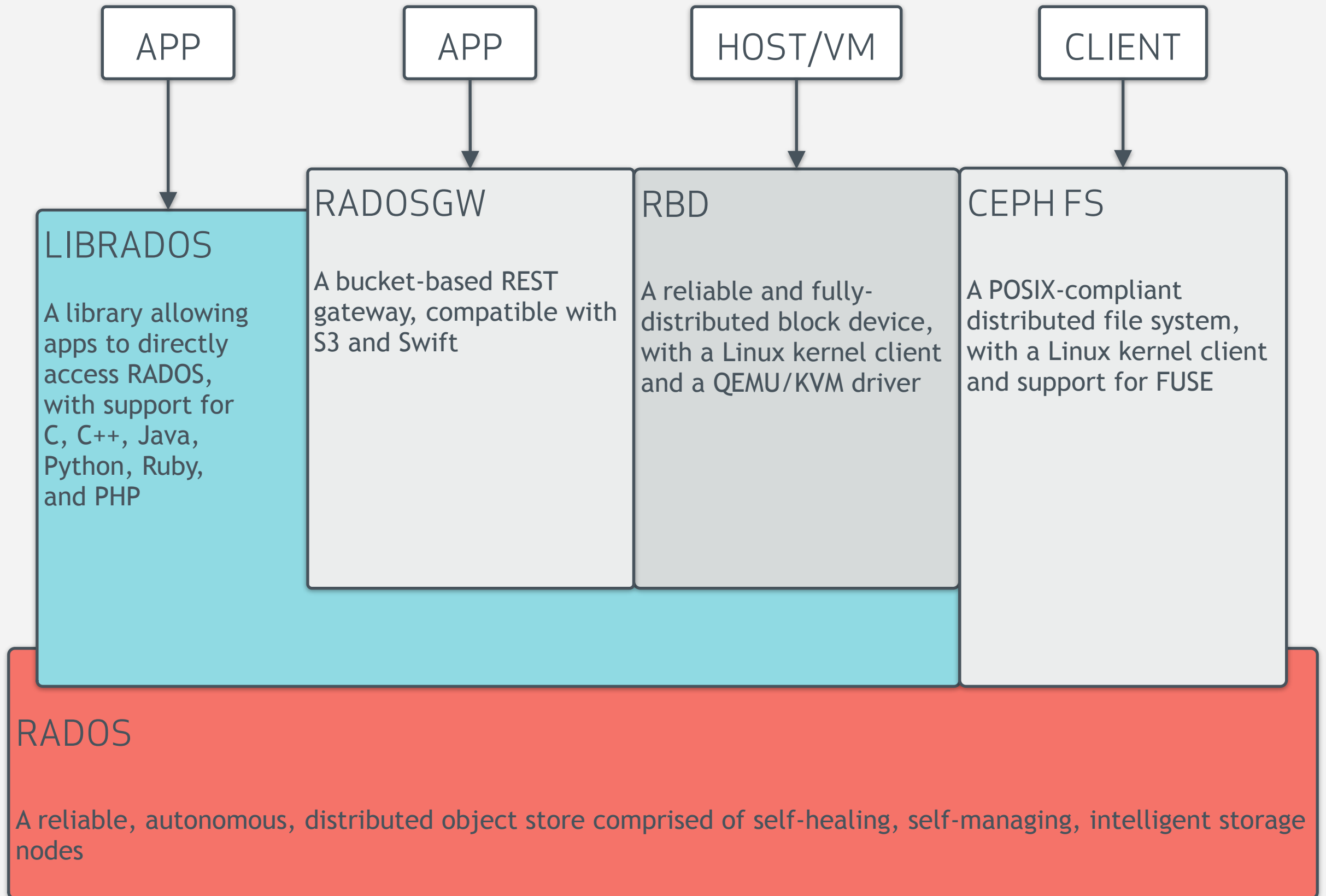| Web App Storage	Backups	Digital Media

Freedom: No vendor lock-in
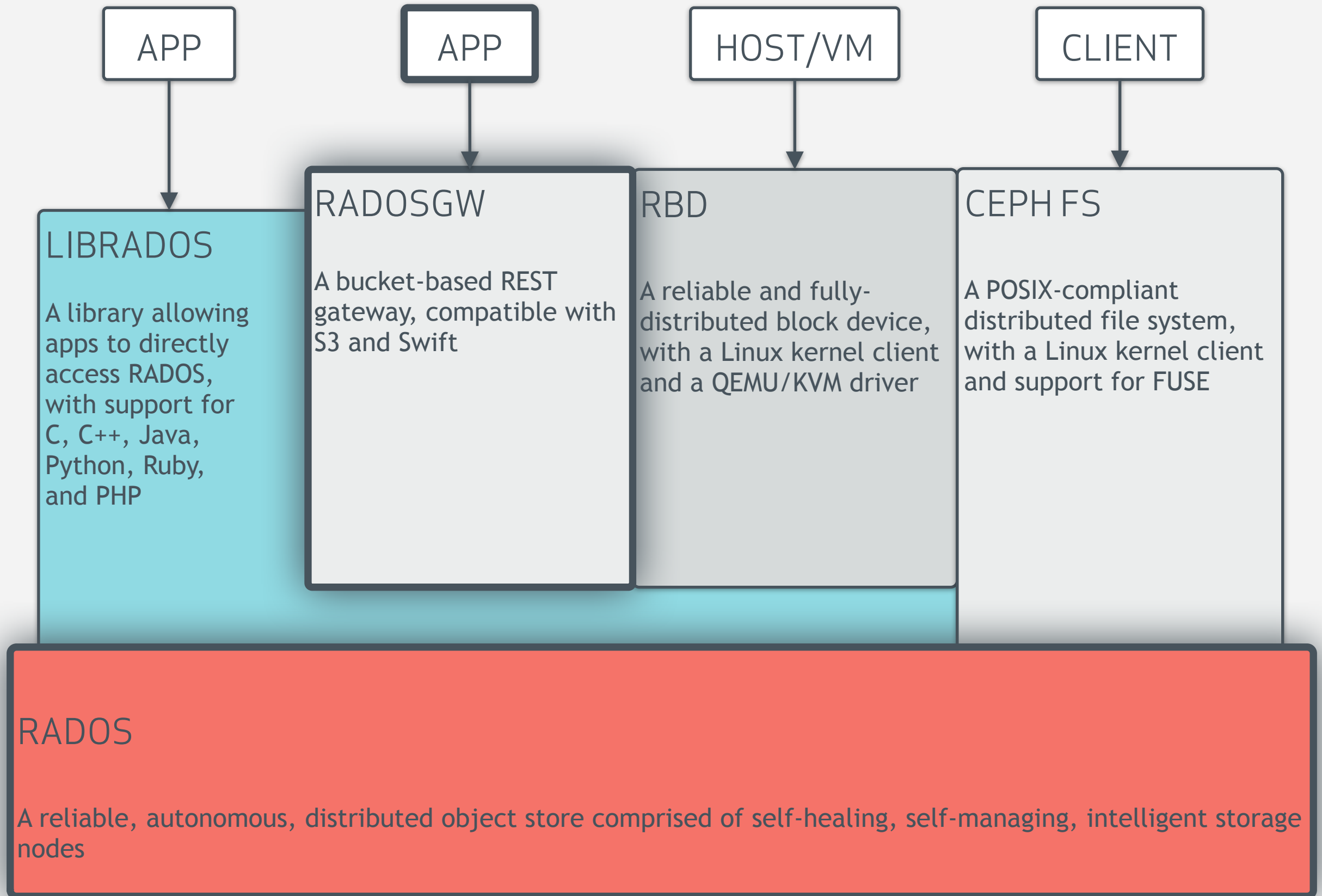- Powered by Ceph, an open source, portable storage platform
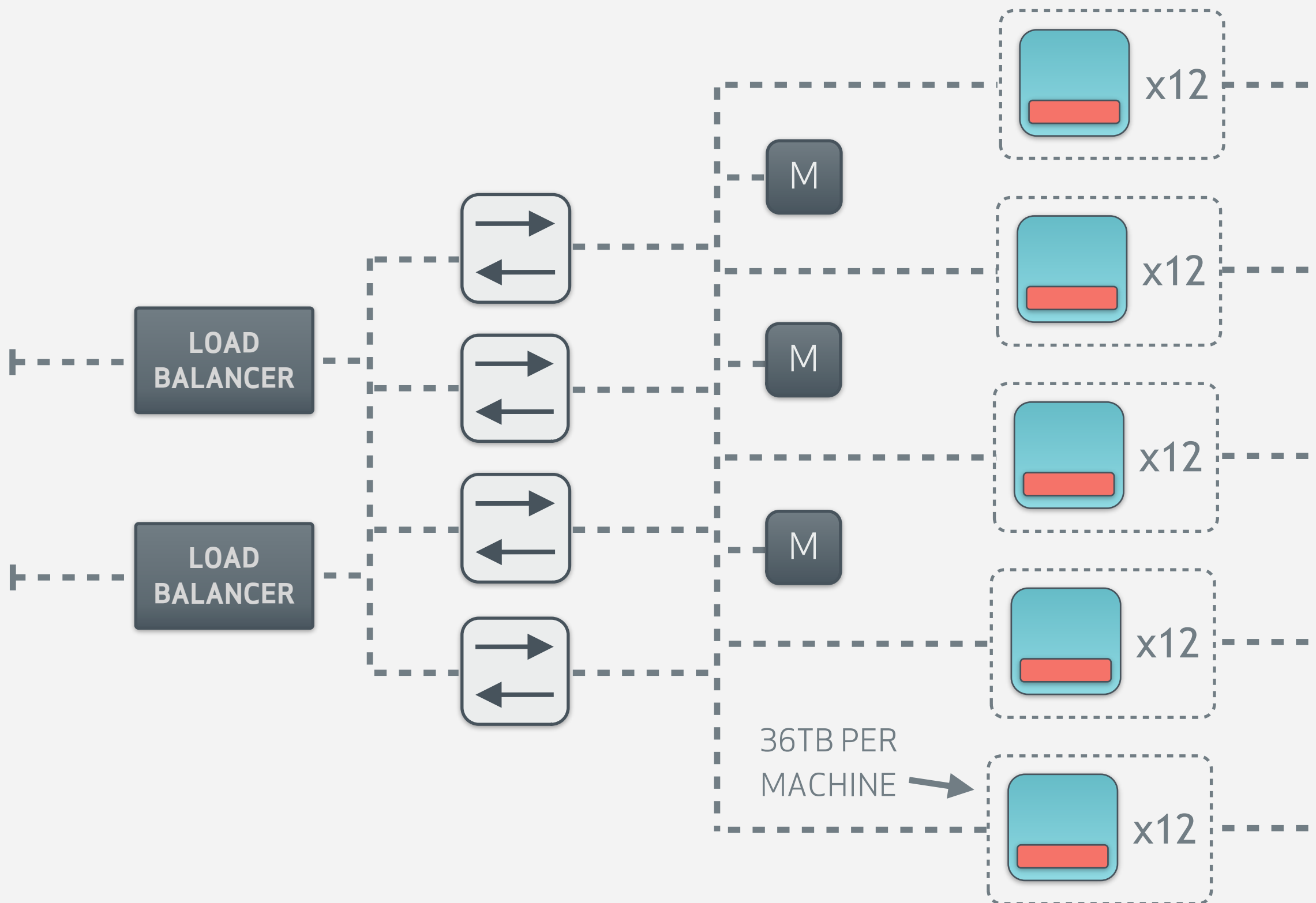
Flexibility: It's compatible
- Access DreamObjects with either Amazon S3 API or Swift API

Priced RIght: Unique Pricing Model
- $0.07/GB, inbound data transfer is free, unlimited API requests

APP

APP

HOST/VM

CLIENT

LIBRADOS

A library allowing apps to directly access RADOS, with support for C, C++, Java, Python, Ruby, and PHP

RADOSGW

A bucket-based REST gateway, compatible with S3 and Swift

RBD

A reliable and fully-distributed block device, with a Linux kernel client and a QEMU/KVM driver

CEPH FS

A POSIX-compliant distributed file system, with a Linux kernel client and support for FUSE

RADOS

A reliable, autonomous, distributed object store comprised of self-healing, self-managing, intelligent storage nodes

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LOAD BALANCER

LOAD BALANCER

M

M

M

x12

x12

x12

x12

x12

36TB PER MACHINE

radosgw   M ceph-mon   ceph-osd

DreamObjects Hardware Specs

STORAGE NODE

Dell PowerEdge R515
6 core AMD CPU, 32GB RAM
2x 300GB SAS drives (OS)
12x 3TB SATA drives
2x 10GbE, 1x 1GbE, IPMI

MANAGEMENT NODE

Dell PowerEdge R415
2x 1TB SATA
1x 10GbE

LOAD BALANCER   x2

MANAGEMENT NODE [↑↓]   x4

STORAGE NODE
STORAGE NODE
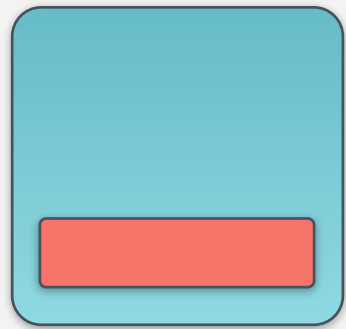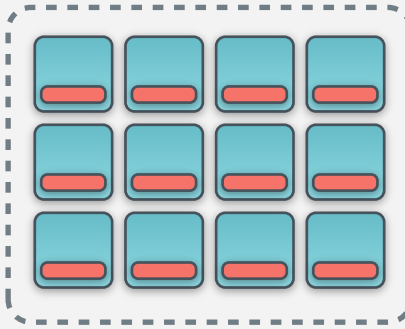STORAGE NODE
STORAGE NODE   x90
STORAGE NODE
STORAGE NODE

MANAGEMENT NODE [M]   x3

3TB per OSD
x 12 OSDs per node
= 36TB per node
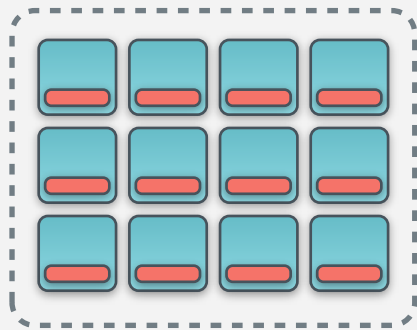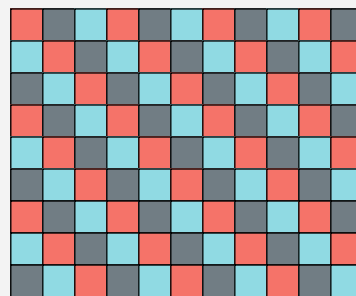
36TB per node
x 90 nodes
= ~3PB total capacity
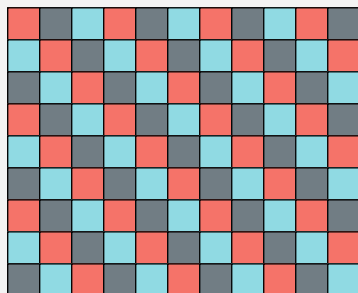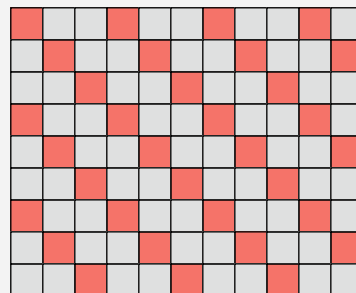
~3PB total capacity
/ 3 replicas per object
= **~1PB usable capacity**

Deployment

DreamHost deploys Ceph with Opscode Chef
- Reduce operations overhead
- Maintain efficiency to keep costs down
- Provide consistency
  - Always deploy / manage resources the same way

Ceph has cookbooks:

https://github.com/ceph/ceph-cookbooks

Monday, November 5, 12

DreamObjects

HELP IS OFF

| MANAGE OBJECTS | MIGRATIONS | USAGE REPORTS | STORAGE PLANS |

Users

+ CREATE NEW USER

---

mattfelten   🔑 2 KEYS   📦 2 BUCKETS

🔑 KEYS

SECRET KEY

| S3 | bLCLxvKFa2Su0mr/TqUq | 👓 SHOW SECRET KEY | ✗ REMOVE KEY |
| Swift | mattfelten:tqhgdNpptf | 👓 SHOW SECRET KEY | ✗ REMOVE KEY |

📦 BUCKETS

PERMISSIONS   OBJECTS

| raptorbeast | PRIVATE | 👍 VIEW OBJECTS | ✗ REMOVE BUCKET |
| testbucket | PUBLIC | 👍 VIEW OBJECTS | ✗ REMOVE BUCKET |

+ ADD KEY   **+ ADD BUCKET**   **👍 VIEW OBJECTS**   **✗ REMOVE USER**

---

stestr8   2 KEYS   2 BUCKETS

+ ADD KEY   **+ ADD BUCKET**   **👍 VIEW OBJECTS**   **✗ REMOVE USER**

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DreamObjects

○ Manage Account
○ Manage Domains
○ Manage Email
○ Manage Users
○ MySQL Databases

MANAGE OBJECTS | MIGRATIONS | USAGE REPORTS | STORAGE PLANS

Users

anotherbucket

anotherbucketforstuffs

buckeeeet

bucket

bucketbuketbucketbucket

bucketforotherthings

ihadqdobaforlunch

raptorbeast

raptorbeast2

russiancircles

telekinesis

**thisisareallylongbucketnametha
twrapsbecauseitsreallylong...**

↻ RELOAD BUCKET LIST

Choose one of your buckets and we'll load your objects!

i This object viewer will let you **view**, **edit** and **upload objects** inside of your buckets.

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DreamObjects

HELP IS OFF

MANAGE OBJECTS | MIGRATIONS | USAGE REPORTS | STORAGE PLANS

Current Usage

For your plan details, head to the Storage Plans page.

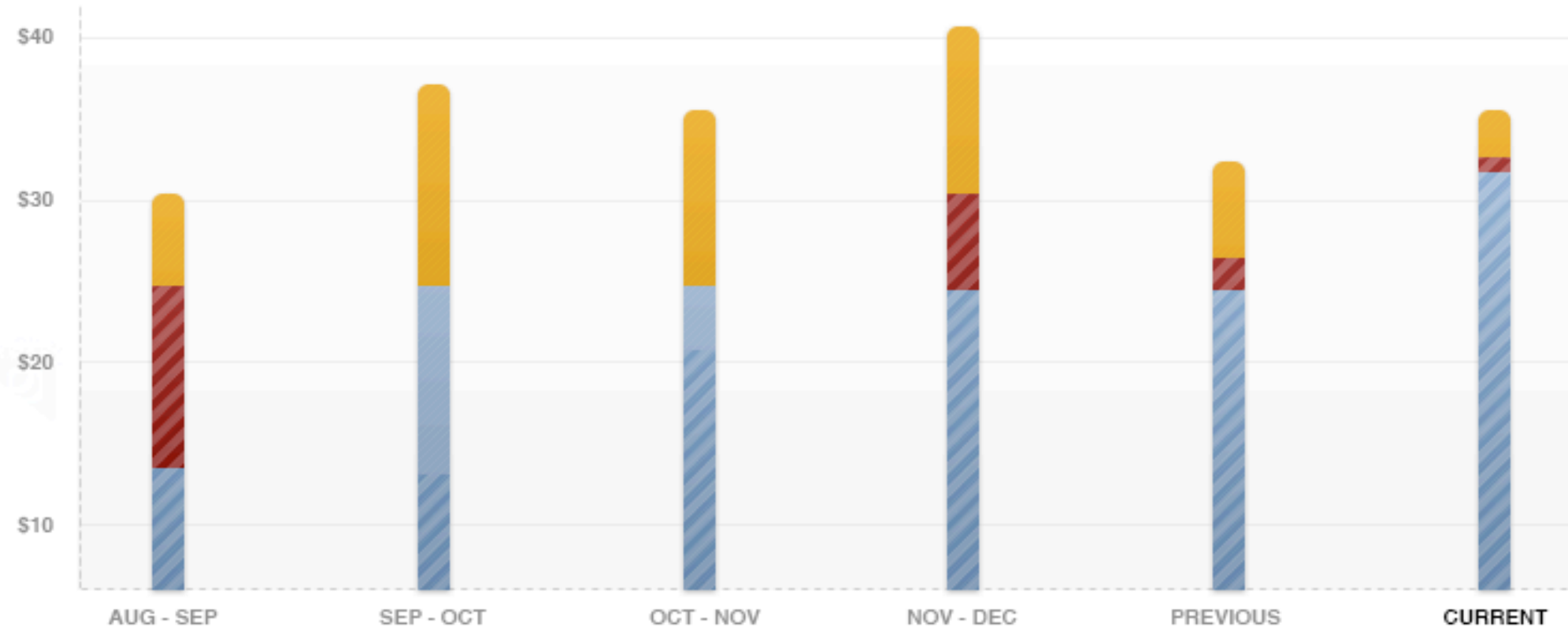| STORAGE		BANDWIDTH	TOTAL PRICE
PREPAID	OVERAGE	OUT	
500 *of* 500 GB	12 GB	25.3 GB	$38.31
$34.95 ⊕	$1.08 ⊕	$2.28 ⊖	

Recent Usage

▨ USED STORAGE   ▨ UNUSED STORAGE   ▨ STORAGE OVERAGE   ▨ BANDWIDTH OUT

$40

$30

$20

$10

AUG - SEP | SEP - OCT | OCT - NOV | NOV - DEC | PREVIOUS | CURRENT

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Monday, November 5, 12

Case Study Available (Soon!)

INKTANK HELPS DREAMHOST DELIVER CLOUD STORAGE WITH CEPH

An Inktank Technical Case Study

http://inktank.com/dhcs

Questions?

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Read about DreamObjects:
http://inktank.com/dhcs