

# Architectures of distributed filesystems

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Shanghai Linux Users Group

# About Me

- Davies, 刘洪清
- 豆瓣, Beansdb, DPark, MooseFS
- Facebook, HDFS
- Databricks, Apache Spark
- Juicedata, Founder & CEO, JuiceFS

# File System

- Access and manage data
- File, Directory
- Open, Read, Write, Seek, Close
- Mkdir, Rmdir, Link, Unlink, Symlink, Rename

# Challenge

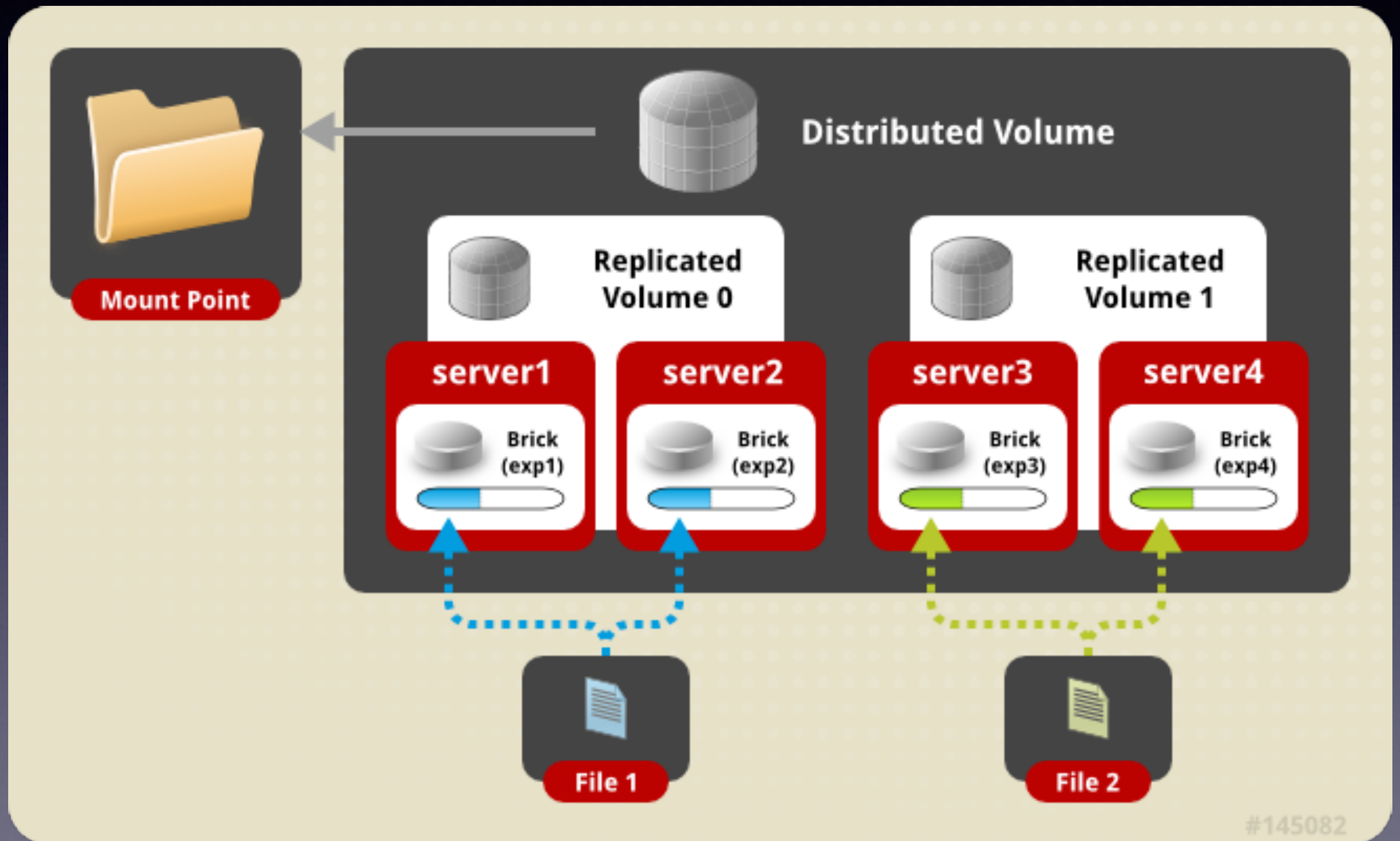
- Sharing
- Capacity
- Performance
- Durability
- Availability

# GlusterFS

- First release 1.2, 2007
- POSIX, aggregated namespace
- stackable translators



# GlusterFS

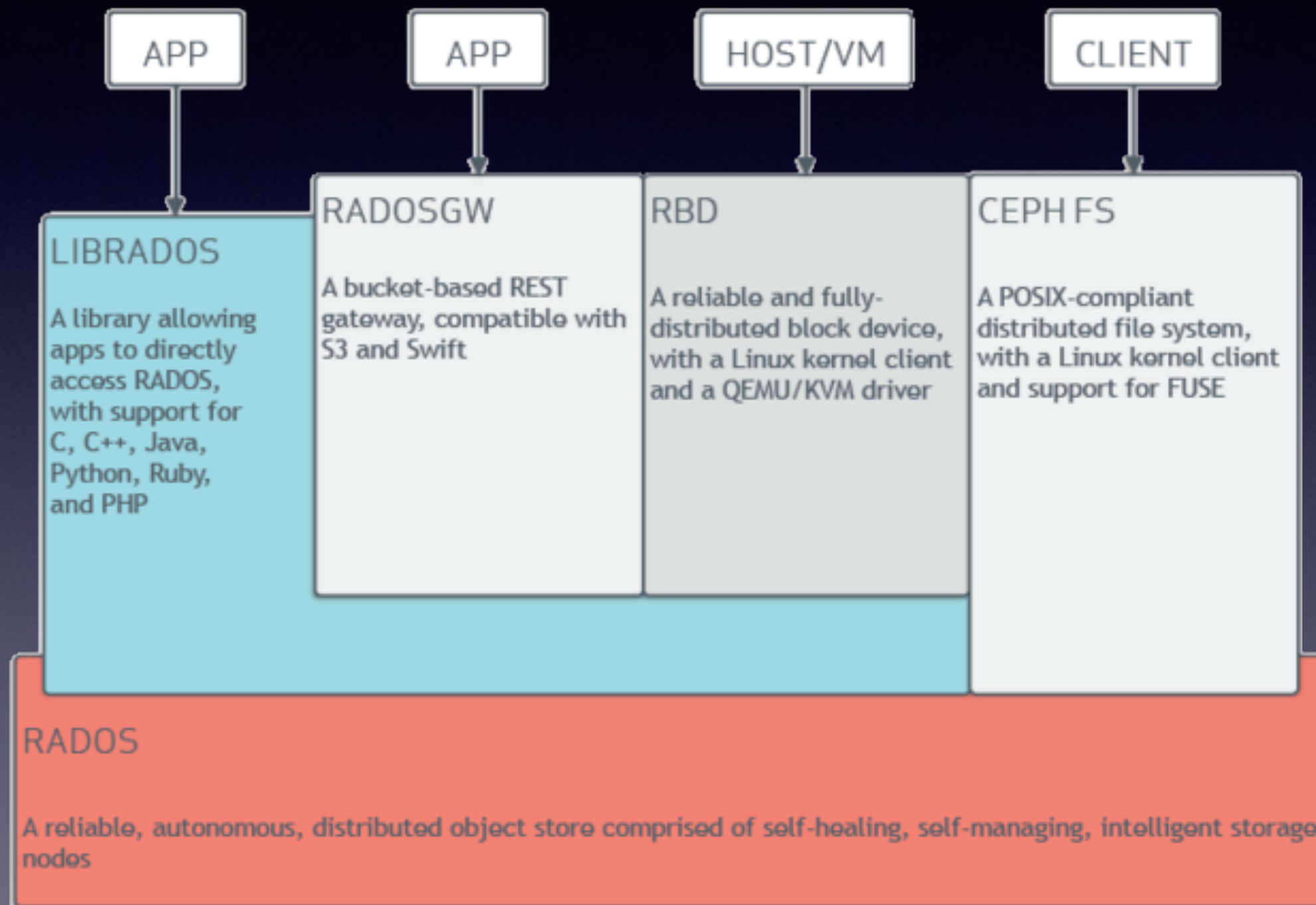


#145082



- Created by Sage Weil, 2007
- Object/Block/FS (Distributed Metadata)
- Supported by Inktank Storage, 2012
- Acquired by Redhat, 2014
- CephFS stable in 2016 (multi-mds is disabled)

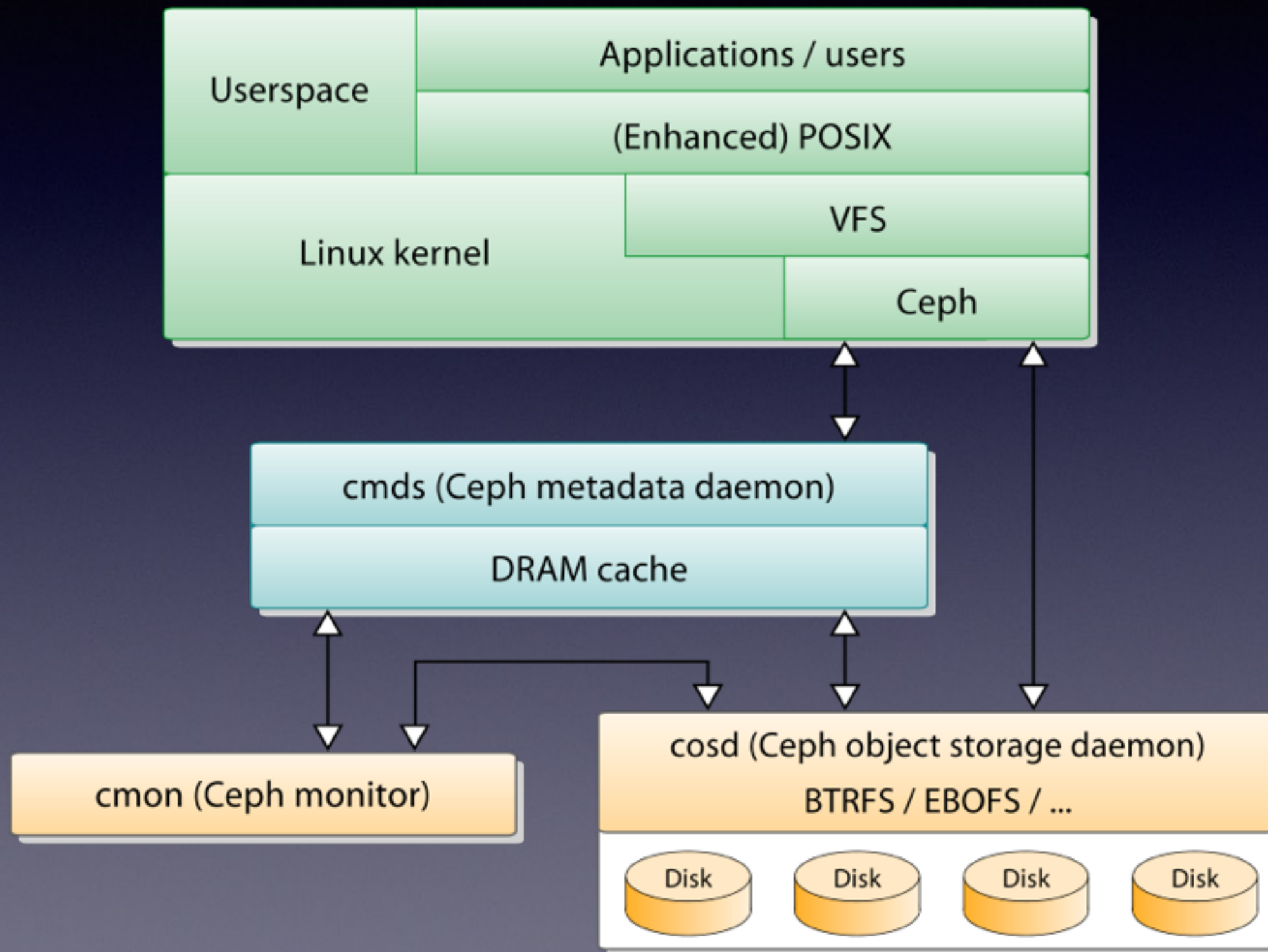
# Ceph



[https://en.wikipedia.org/wiki/Ceph\\_\(software\)](https://en.wikipedia.org/wiki/Ceph_(software))



# CephFS

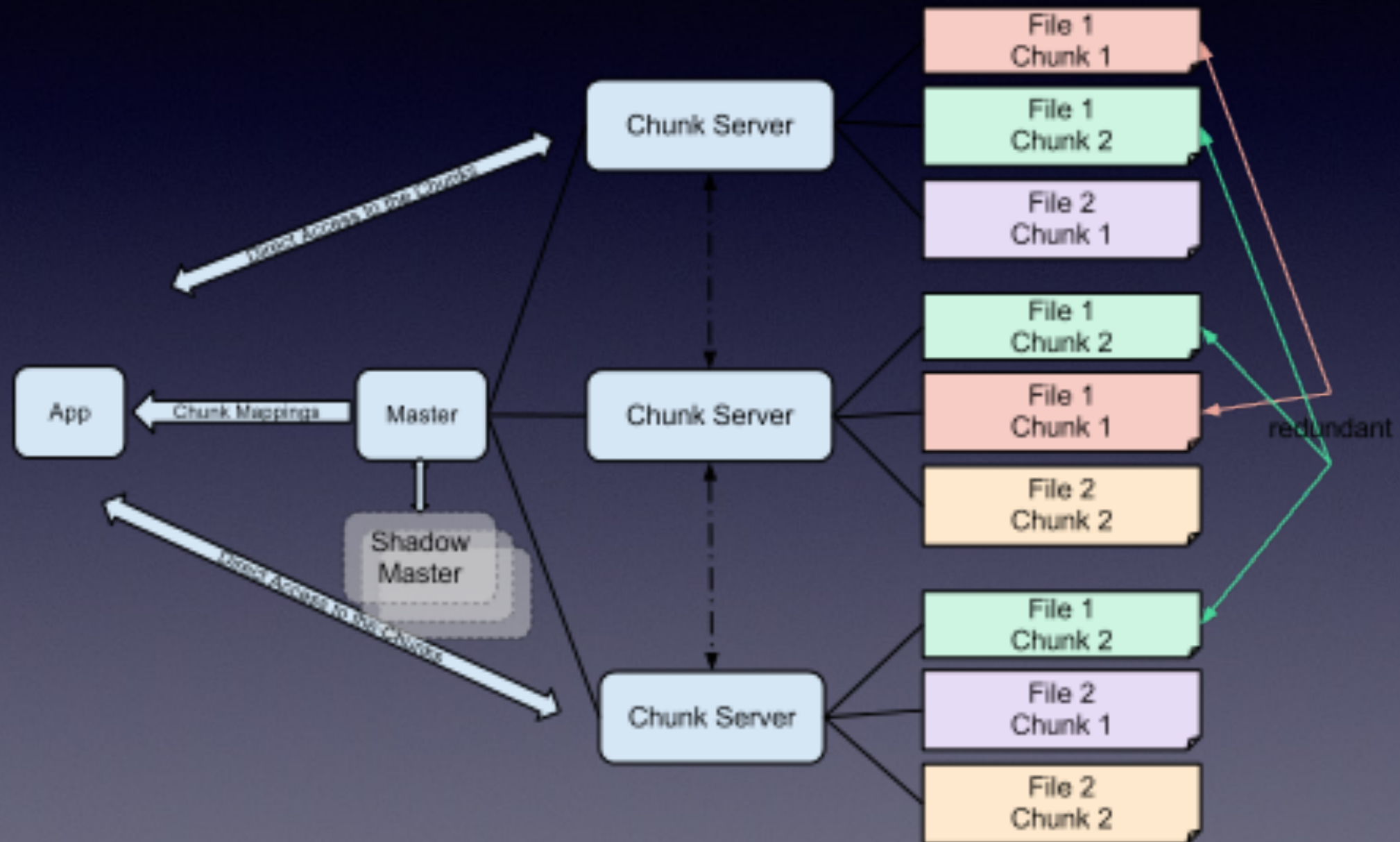


[https://en.wikipedia.org/wiki/Ceph\\_\(software\)](https://en.wikipedia.org/wiki/Ceph_(software))

# GFS

- Grew out of BigFiles
- Paper: GFS 2003
- Colossus (EC, sharded metadata)

# GFS

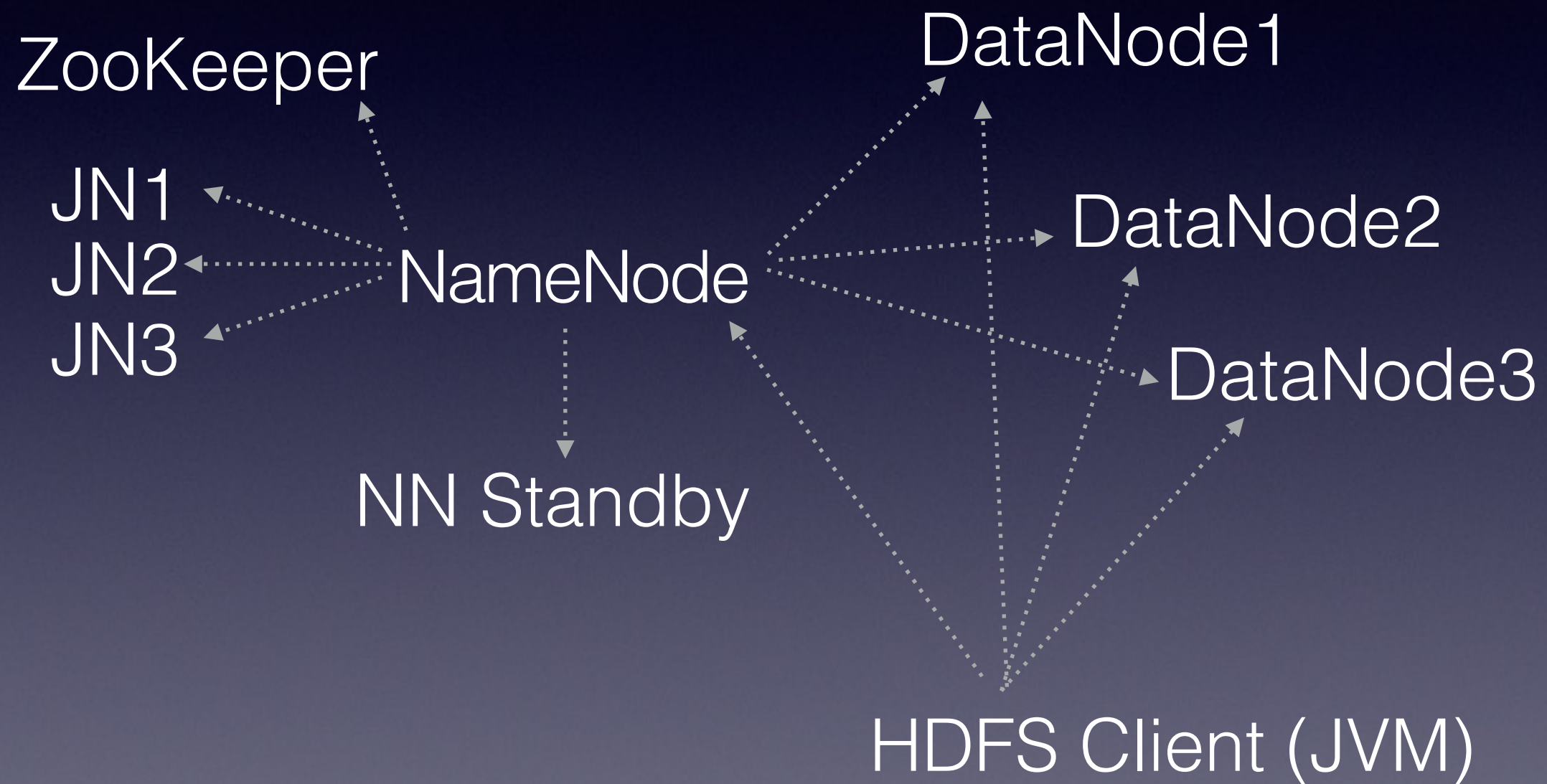


# HDFS

- Core of Hadoop
- EC (3.0)



# HDFS

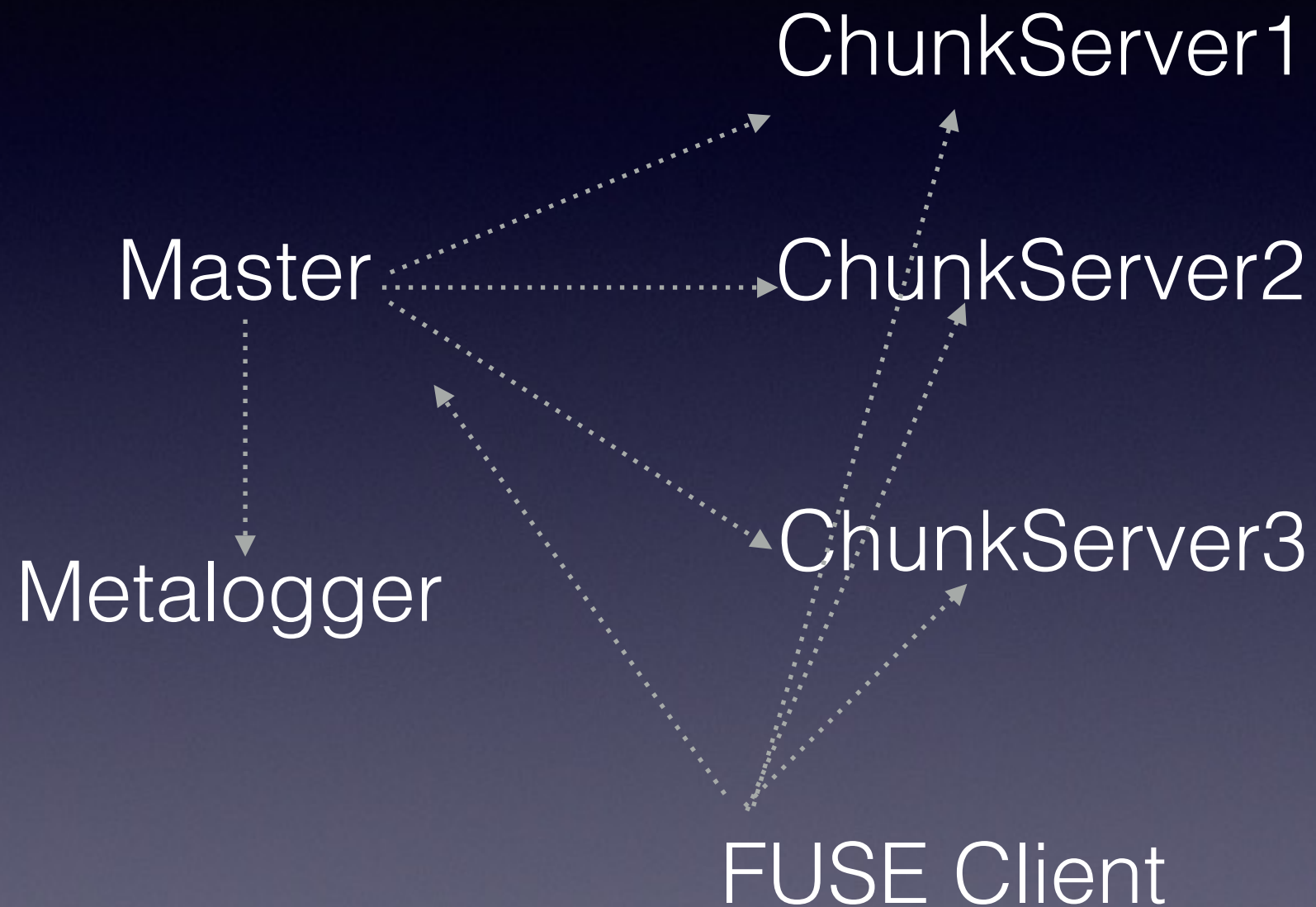




# MooseFS

- POSIX
- HA (only in Pro)
- EC (4.0)

# MooseFS

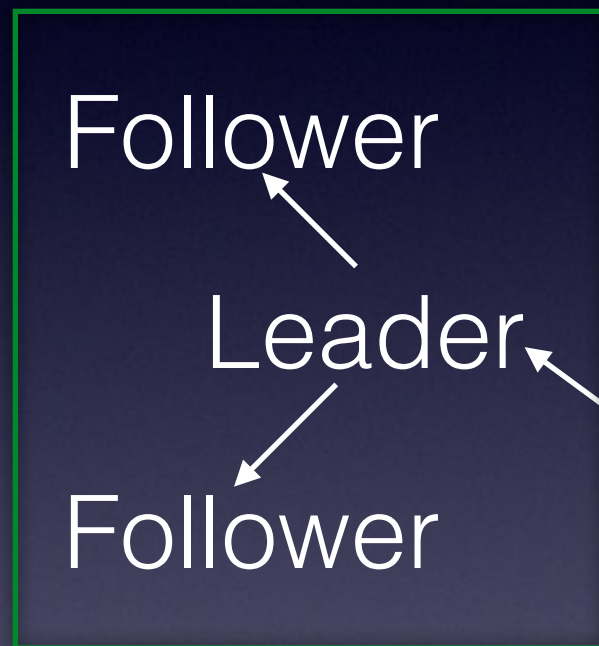


# JuiceFS

- Designed for Clouds
- Based on object storage
- Serverless (FS as a Service)

# JuiceFS

Juicedata



meta

data

S3 GCS OSS Ceph

Cloud Provider

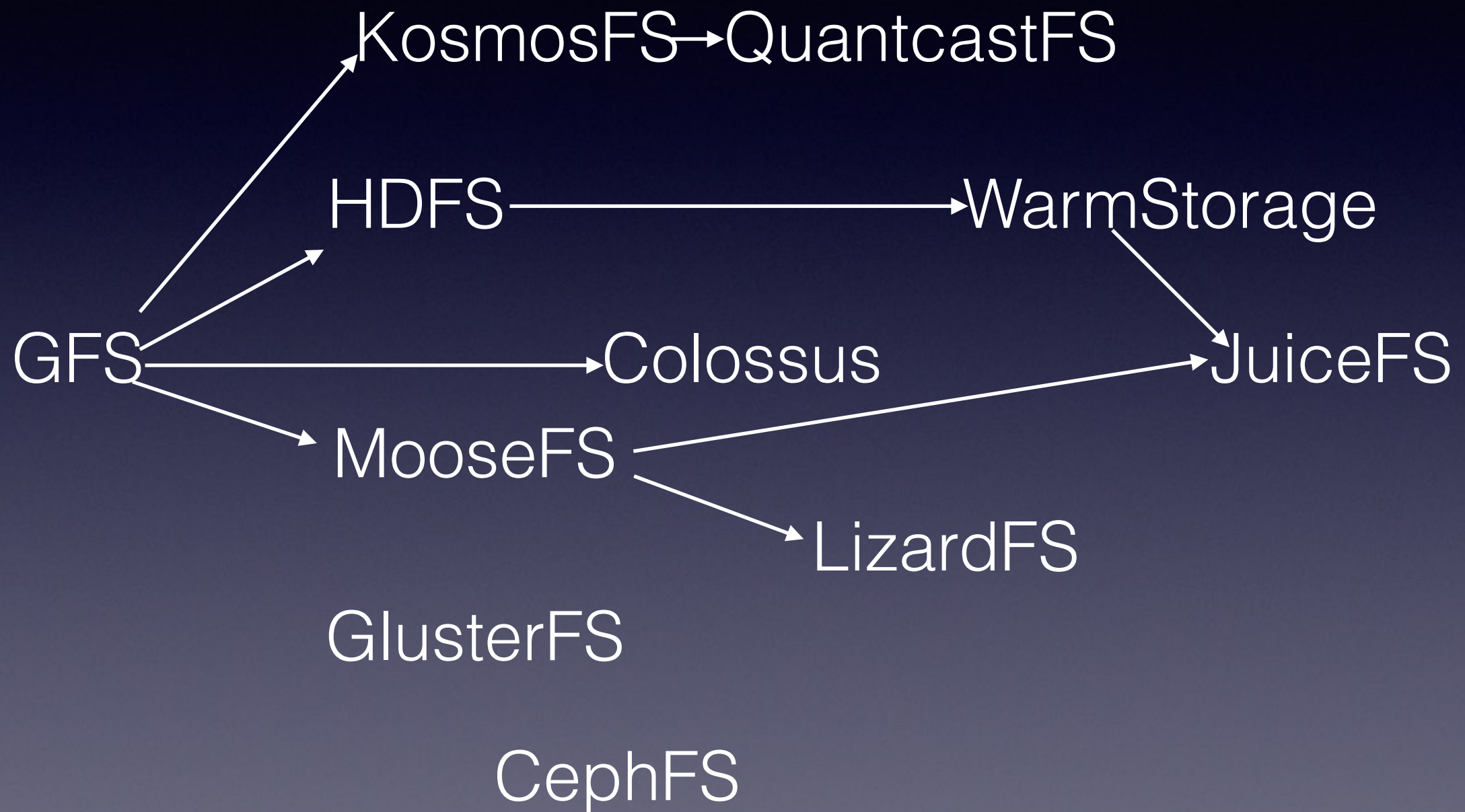
client

kernel/FUSE

Application

Customer

# Timeline



2000

2005

2010

2015



# Q & A

Thanks!

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