QingCloud Storage Service

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Overview

- ► QingCloud
- ► Traditional Enterprise Storage
- ► QingCloud Storage
- ► The Summary
- ► Q&A

QingCloud

IaaS + Half PaaS

Computing

Storage

Networking

Security

Management

Various

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QingCloud

- **SDN** (L2 layer isolation)
- PPTP/OpenVPN/GRE/IPSec
- Safety/Security
- High performance
- Billing by seconds
- 105+ APIs

- **Large scale (8 zones)**
- **23000+ users**

- RDB（MySQL）
- KVDB (Redis)

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QingCloud (the roadmap)
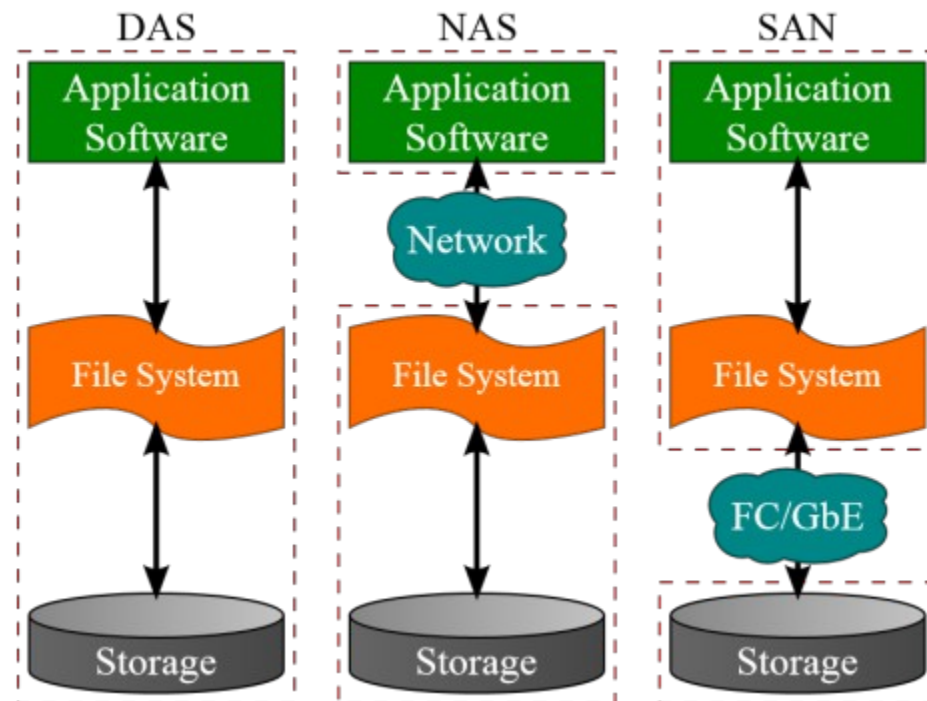
2014

- KVDB （ Memcached ）

2015

- AutoScaling
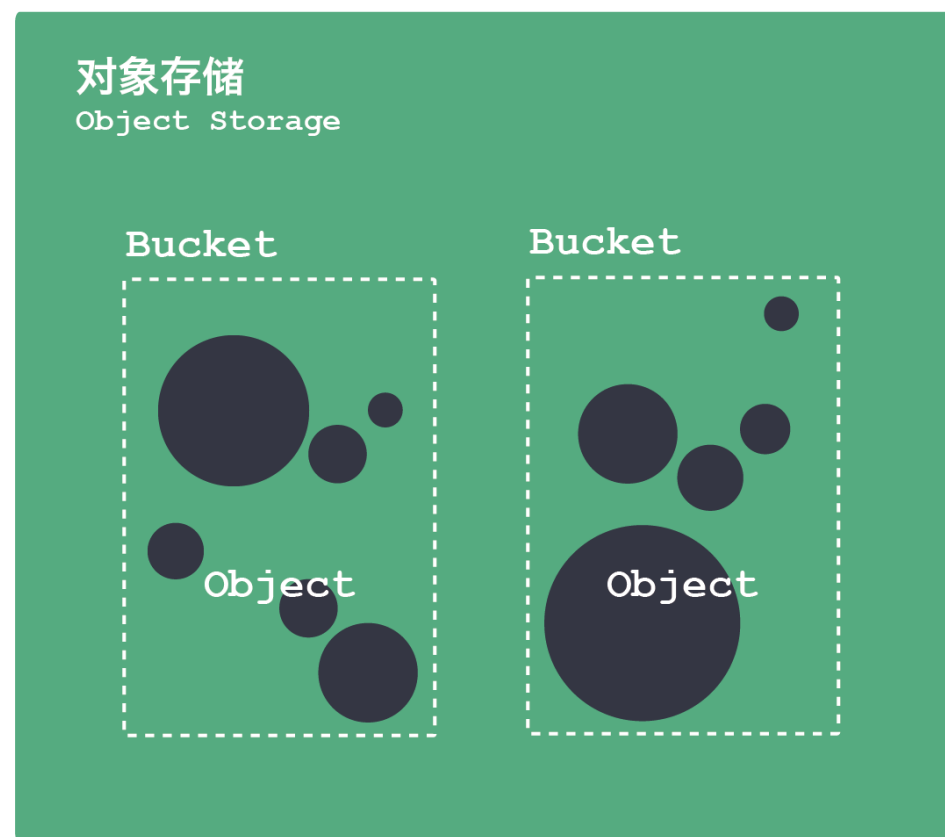
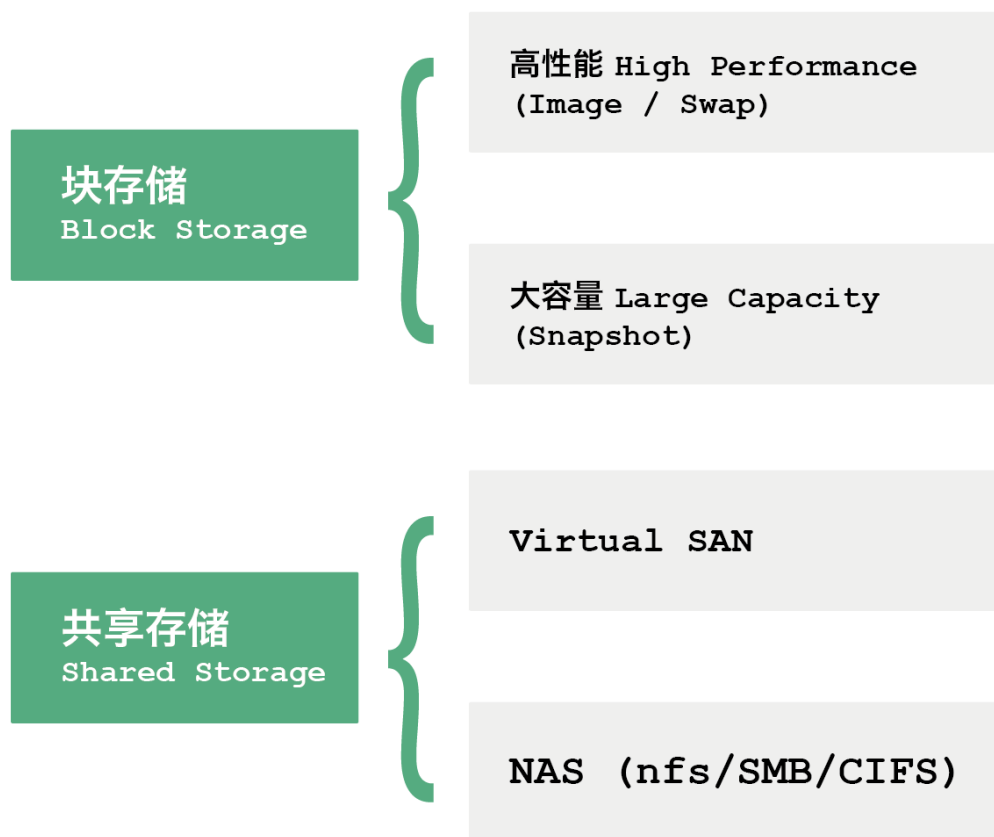- Virtual SAN

- SSD Volume

2015

- Object Storage

- Message Queue

- RDB (PostgreSQL)

- Big data platform

- Container

- More...

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Traditional Enterprise Storage

▶ DAS (Direct Attached Storage)

▶ SAN (Storage Area Network)

▶ NAS (Network Attached Storage)

QingCloud Storage

块存储
Block Storage

高性能 High Performance
(Image / Swap)

大容量 Large Capacity
(Snapshot)

共享存储
Shared Storage

Virtual SAN

NAS (nfs/SMB/CIFS)

对象存储
Object Storage

Bucket

Bucket

Object

Object

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QingCloud Block Storage

▶ 高性能
  - **4** replicas
  - Throughout (128MB/s)
  - IOPS (4K 随机读：**85,000**； 4K 随机写 6,900)
  - Up to 1TB per disk
  - Up to 2TB per instance

▶ 大容量
  - 3 replicas
  - Throughout (36MB/s)
  - IOPS (4K 随机读：9,200； 4K 随机写 4,100)
  - Up to 5TB per disk

▶ SSD volume (Coming soon)

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QingCloud Block Storage

► Image

    – System Image

    – Customized Image

    – Image Sharing

    – Migration between zone (in plan)

► Swap

QingCloud Block Storage

► Snapshot
- 与实时副本的区别
- 全量 & 增量
- Offline & online
- 多张盘并行备份
- 备份链
- 备份回滚
- 备份导出
- 定时备份（coming soon）

SS-HBK0GNOY 备份链示意图 ↻

|			
ss-sum09jsz	2014-03-11 17:33:56	853 MB	增量备份 20140311
ss-xix0d8h2	2014-03-10 17:31:43	1023 MB	增量备份 20140310
ss-8ekg9k1v	2014-03-09 00:16:32	919 MB	增量备份 20140309
ss-hqorb8ki	2014-03-08 00:15:26	402 MB	增量备份 20140308
ss-qdd713aw	2014-03-07 00:14:30	824 MB	
ss-o2e01ig3	2014-03-06 00:13:36	3 MB	
ss-ygda0jbk	2014-03-05 00:12:42	125 MB	
ss-v9dzxgi9	2014-03-04 23:42:13	230 MB	增量备份 20140304
ss-icj3jz2z	2014-03-03 23:26:38	1 GB	增量备份 20140303
ss-pjeeprj0	2014-03-02 14:33:12	100 MB	增量备份 20140302
ss-hbk0gnoy	2014-03-01 13:33:16	10.00 GB	第一次全量备份 20140301

- ✎ 修改
- 🗄 创建新硬盘
- 🕑 回滚
- 🗑 删除

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QingCloud Shared Storage

► Implementation (1st version)
  - Virtual SAN
  - 以 iSCSI 的方式暴露高性能或大容量盘

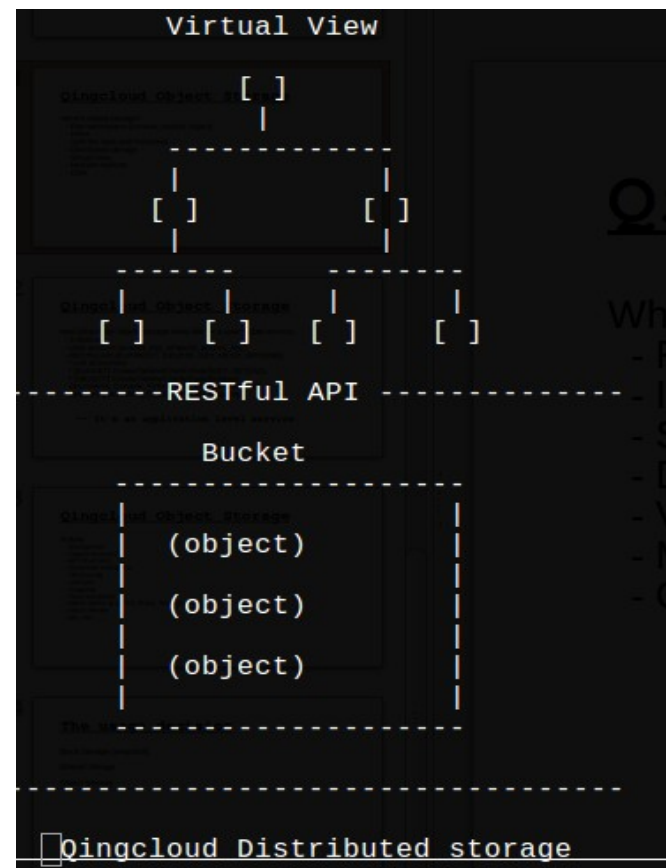► Next step
  - Support NFS， SMB/CIFS (integrate object storage)
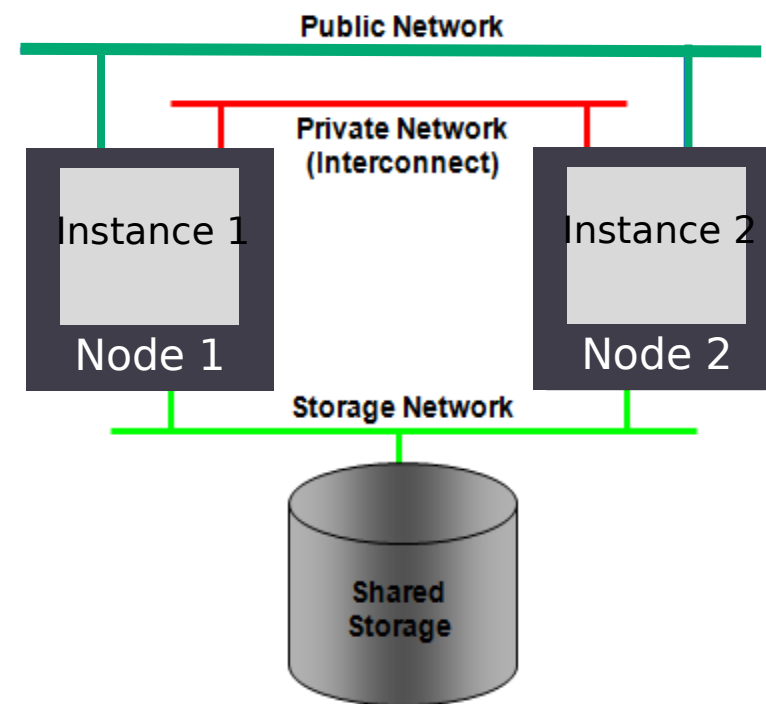
QingCloud Object Storage

► **What's happening**

  – 400 亿 TB till 2020，90% 非结构化数据 (IDC prediction)

► **Limitations of SAN and** hierarchical filesystems

QingCloud Object Storage

► Flat namespaces (service, bucket, object)

► Split the data and metadata

► Multiple replicas

► Virtual view

► CDN

QingCloud Object Storage

► How QingCloud Object Storage looks like for a user? (1st version)

- 3 replicas
- User account (access_key_id/secret_access_key)
- RESTful API (PUT/POST; DELETE; GET; HEAD; OPTIONS)
  - List all buckets
  - [BUCKET] Create/ Delete/Check/Stats/{GET, SET}/ACL
  - [OBJECT] Create /Delete/Check/Stats/ Multipart
- Documents, Console, Python SDK, command line tool
- Monitoring and billing (Traffic, API calls, Capacity)

-- It's an application level service.

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QingCloud Object Storage

▶ Future

- API level ACL
- Customized metadata
- Versioning
- Lifecycle
- Logging
- Tape backend
- More SDKs (e.g. Go, Ruby, Node.js, etc...)
- More clients (e.g. fuse, mobile)
- Etc...

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The Summary

We deliver software defined storage via Internet.

We are hiring　前端攻城狮

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