Open Compute and OpenStack

Leveraging Next Generation Storage

Tony Afshary, Director Ecosystem Solutions, Seagate Technology
Next Gen Storage with Deployment Model

- Enterprises
  - Open Stack

- Hypescale/Media
  - Archival storage for Images/Movies

- HPC
  - Object Storage Cluster
Ceph Explained

- Ceph is a massively scalable, open source, distributed storage system
- Object Storage, Block Storage, File System
- Autonomic Distributed Object Store (RADOS)
Ceph Deployment

Object Storage Daemons (OSDs):
- 10s to 10000s of OSDs in a cluster
- One per disk or SSD
- Serves stored objects to clients
- Intelligently peers to perform replication and recovery tasks
- Support for erasure encoding of objects
- Support for strong consistency leveraging write journals

Advanced Storage:
- Shingled Magnetic Recording (SMR) Drives (drive managed)
  - Excellent density, cost, read performance, and sequential write streaming.
  - Poor random write performance.
- PCIe Flash
  - Excellent performance, in server integration
  - Poor cost per GB.
Configuration

Benefits

• Accelerate Ceph journals and Metadata with flash
• By moving this data onto flash, cost-effective SMR drives are a well-suited for extremely dense object storage systems reducing storage costs by 25%.

Futures

• Filter driver small IO cache to flash integration
• Ceph cache tiering
• Host aware SMR plus flash
Scaled-Up Hardware Configuration

Fully Populated Open Rack:
- 18 Winterfell Servers
- 33.5 TBs of Flash
- 2.2 PBs of SMR Storage
Thank You!  Questions?

Learn how Seagate accelerates storage with one of the broadest SSD and Flash portfolios in the market

www.seagate.com/flash