ECE5658

Critiques - week13

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1 Ceph: A Scalable, High-Performance Distributed File System

(1) **summary of the paper:** *Ceph* is scalable distributed file system. Previous distributed file system suffers from single server bottle neck, that results poor scalability. *Ceph* seperate metadata and data management. And dynamic distributed metadata server service meatadata management efficiently. *Ceph* utilize object storage device (OsDs)'s intelligence and serve data management.
(2) **strengths/weakness of the paper:** To Use *Ceph* we cannot use basic POSIX API, that makes port legacy application to run on *Ceph* hard.

2 Barrier-Enabled IO Stack for Flash Storages

(1) **summary of the paper:** Before this paper introduce barrier enabled IO statck, legacy application guarantees persist order by *Transfer-and-flush* method. However, after the emerging of cache barrier command on storage's write cache, the entire IO stack ordering can be achieved without waiting the previous commit transaction finish. This paper describe how they modified IO stack to preserve ordering with low overhead.
(2) **strengths/weakness of the paper:** This works can be done with development of cache barrier command. If later hardware rarely support this command than *BFS* cannot be used. Also, It seems important to reduce fundamental fsync() calls.