

Paper: Barrier-Enabled IO Stack for Flash Storage

This paper is about the eliminating the overhead required for guaranteeing the storage order in the modern IO stack. Previous work used Transfer-and-Flush to guarantee the storage order in a set of requests, which is an extremely expensive approach. They made Barrier-Enabled IO stack that enforce the storage order between filesystem and storage device and make the throughput of the filesystem journaling improve significantly. Additionally this paper said cache barrier is necessary to all flash storage and block device layer should be designed to eliminate the DMA transfer overhead in controlling the storage order.