Filesystems and Volume Mangers.....

- bio hints
  - release
    - issued by FS when space is freed
    - indicates space is unreferenced and the device does not need to continue to track it
  - COW now (snapshot)
    - pre-allocate (COW) the range so that a susequent write is guaranteed to succeed and not get an ENOSPC because the repository is ENOSPC
  - Don't COW (snapshot)
    - range of blocks that we never need to snapshot

Discussion Topics

- Why aren't people using DM-Multipath?
- power-of-2 chunk sizes
  - does not fit well with hw raid
  - need non-power-of-2 to allow proper alignment of filesystem on hw-raid
- Barriers
  - cache flushes now done by barriers