Paper “RAID”

- Redundant array of independent disks
- What are the two main goals of RAID?
- What is Amdahl’s Law?
- What are downsides of redundant disks?
Paper “RAID”
Paper “RAID”

• Seek time, rotational latency, data transfer time
• *What are techniques to reduce these times?*
• DMA (Figure 2)

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Paper “RAID”

• Fine-grained vs. coarse-grained interleaving
• “Hot spots”; concentrated/distributed patterns
• Load balancing
Paper “RAID”

- Reliability and correlated disk failures
- Buffering/caching
- Floating parity
- On-line spare disks
Paper “Differential RAID”

- SSD vs. HD
- SLC vs. MLC
- Bit error rate (BER)
- Correlated failures
- Age differential: low vs. high differential?
- Diff-Raid technique 1: distribute parity unevenly (why?)
- Diff-Raid technique 2: reshuffle parity on drive replacements (why?)

Paper “Differential RAID”

- Wear-leveling algorithms
- RAID-5 reliability (Figure 2)