

Lecture 25: I/O Introduction

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Motivation: Who Cares About I/O?

- **CPU Performance: 60% per year**
- **I/O system performance limited by *mechanical* delays (disk I/O)**
 - < 10% per year (IO per sec or MB per sec)
- **Amdahl's Law: system speed-up limited by the slowest part!**
 - 10% IO & 10x CPU => 5x Performance (lose 50%)
 - 10% IO & 100x CPU => 10x Performance (lose 90%)
- **I/O bottleneck:**
 - Diminishing fraction of time in CPU
 - Diminishing value of faster CPUs

I/O Systems

