Magnetic/Hard Disk

(Track #, Surface #, Sector #) "Physical" View of Disk

Steps to perform a disk read (or write):
1) Move Read/Write (R/W) heads over correct track/cylinder
2) Wait for start of specified sector to spin to R/W head
3) Read (or write) specified sector as it spins under the R/W head

- seek time
- rotational delay
- data transfer time
Logical View of Disk as Linear Collection of Blocks

- **Surface #**
  - 0
  - 1
  - 2
  - 3
  - S-1
  - S-2

- **R/W Heads**
  - 0 1 2 3
  - 4 5 6 7 8 9 10 11
  - 12
  - 13 14 15
  - 16 17 18 19

- **Sector #**
  - 0 1 2 3
  - 4 5 6 7
  - 8 9 10 11
  - 12 13 14 15

- **Track #**
  - 0 1 2 3
  - 4 5 6 7

- **Bits of linear block #**: track # | surface # | sector #

- 8-15 are on surface 1 (on the bottom of the disk)

- **Logical View**

- **(track #, surface #, sector #) to Linear block # mapping**

| (0,0,0) | (0,0,1) | (0,0,2) |...
| --- | --- | --- |---

- All of cylinder 0
- All of cylinder 1

- **Bits of linear block #**