

Notes for 11/16/09

Hard disks

Spinning platters and moving heads to read and write data

Each of the platters has tracks, which are concentric circles

Each track has sectors in them

Each platter typically has 10k – 50k tracks

Each track typically has 100 to 500 sectors

A sector is 512 bytes

Platters will typically spin in the range of 5400 rpm to 15000 rpm

ILP – instruction level parallelism, e.g., superscalar

TLP – task level parallelism, e.g., multithreading

DLP – data level parallelism, e.g., vector processing

SMP – shared memory multiprocessor

Shared memory

UMA vs. NUMA – uniform memory access versus nonuniform memory access

Whether or not all memory addresses take a uniform amount of time to read or write

MPI – message passing interface

Instead of sharing memory, one processor will send data over the network to another processor