Hardware Performance

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Computation

- CPU performance (frequency $\times$ cores $\times$ sockets)
  - E.g.: 2.5 GHz $\times$ 12 cores $\times$ 2 sockets = 60 Gcycles/s
  - The number of cycles per operation depend on the instruction stream
- Memory (throughput $\times$ channels)
  - E.g.: 25.6 GB/s per DDR4 DIMM $\times$ 3

Communication via the network

- Throughput, e.g., 125 MiB/s with Gigabit Ethernet
- Latency, e.g., 0.1 ms with Gigabit Ethernet

Input/output devices

- HDD mechanical parts (head, rotation) lead to expensive seek

$\Rightarrow$ Access data consecutively and not randomly

$\Rightarrow$ Performance depends on the I/O granularity

- E.g.: 150 MiB/s with 10 MiB blocks