



Inauguration of
Neolith
17 October 2007

Neolith

Hardware

Software

Performance

Neolith Configuration

- 6440 cores in 805 compute servers
- 14 Tbyte primary memory
- Double Data Rate Infiniband with Full Bisection Bandwidth
- 8 disk servers, 5 system servers
- 112 Tbyte secondary disk

Peak Performance

- 60 TFlops
- 32 Tbit/s interconnect bandwidth

Just numbers...

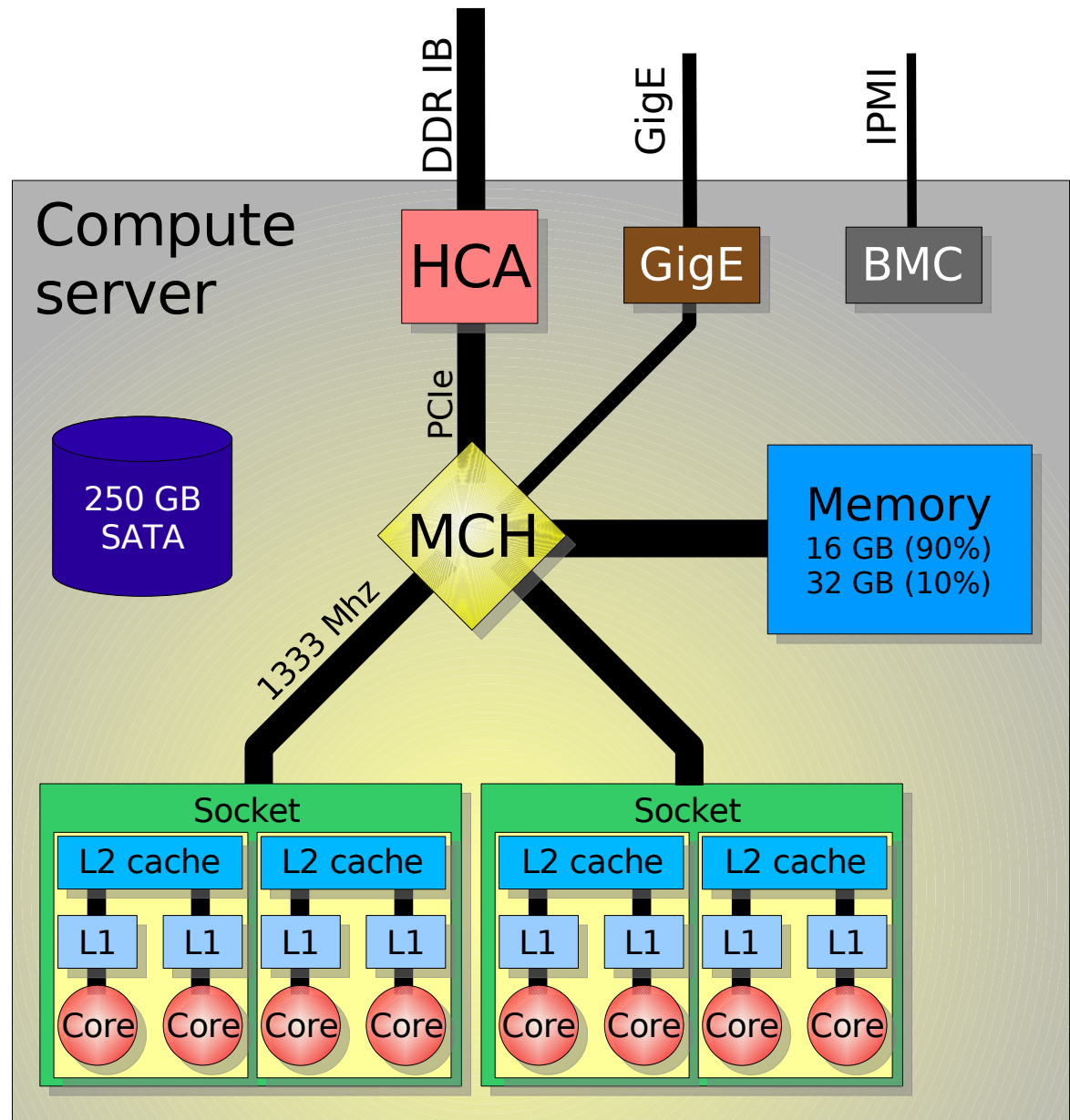
60 Tflops

- 60 000 000 000 000 floating point operations per second
- 60 000 000 000 000 seconds = 1.9 million years
- 34 times faster than Monolith
- 240 000 times faster than Cray 1A

32 Tbit/s

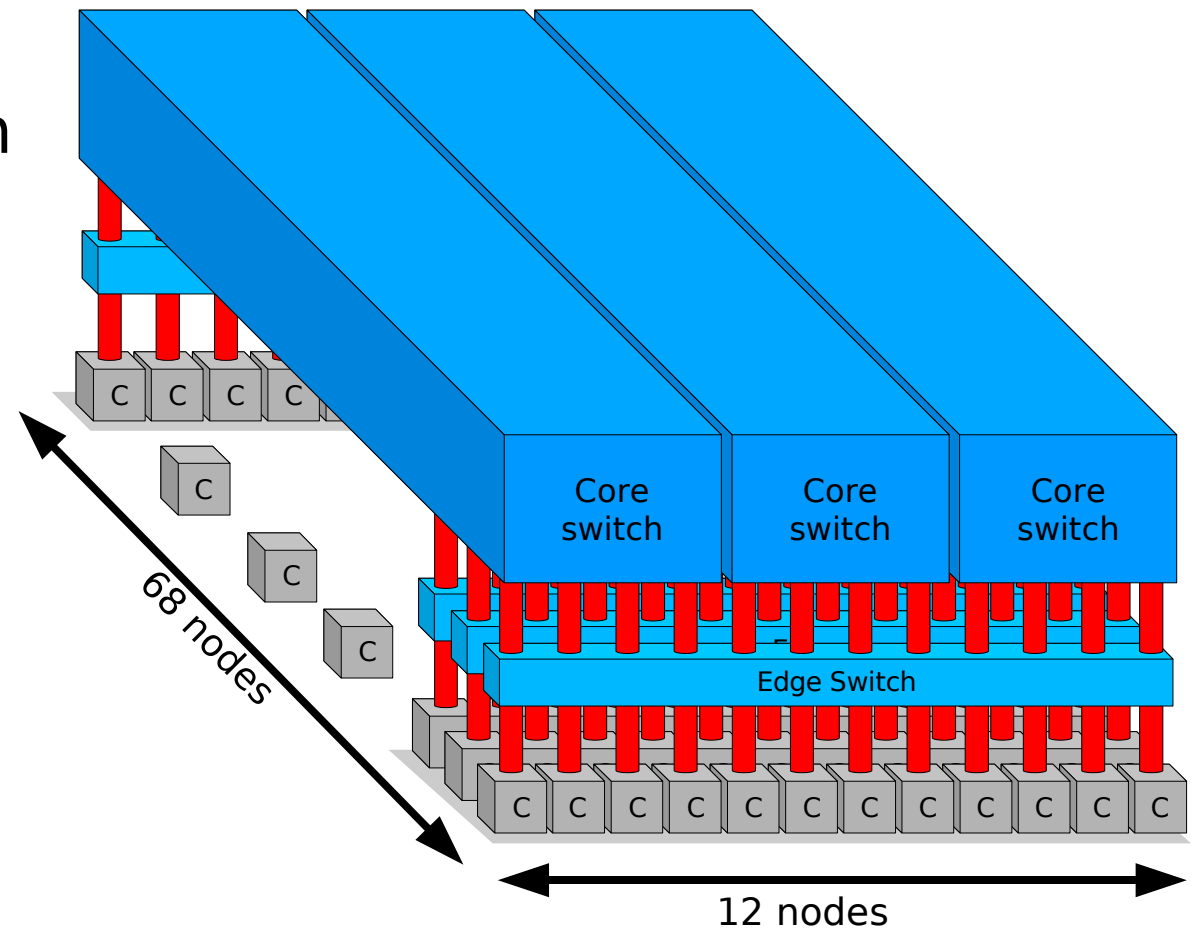
- 3 555 555 times faster than 8+1 Mbit ADSL
- Can transfer 14 Tbyte in 3.5 seconds

- 2 x Intel Xeon Clovertown Quadcore
- 64-bit architecture
- 2.33 GHz
- 4Flop/clock/core (using SSE3)

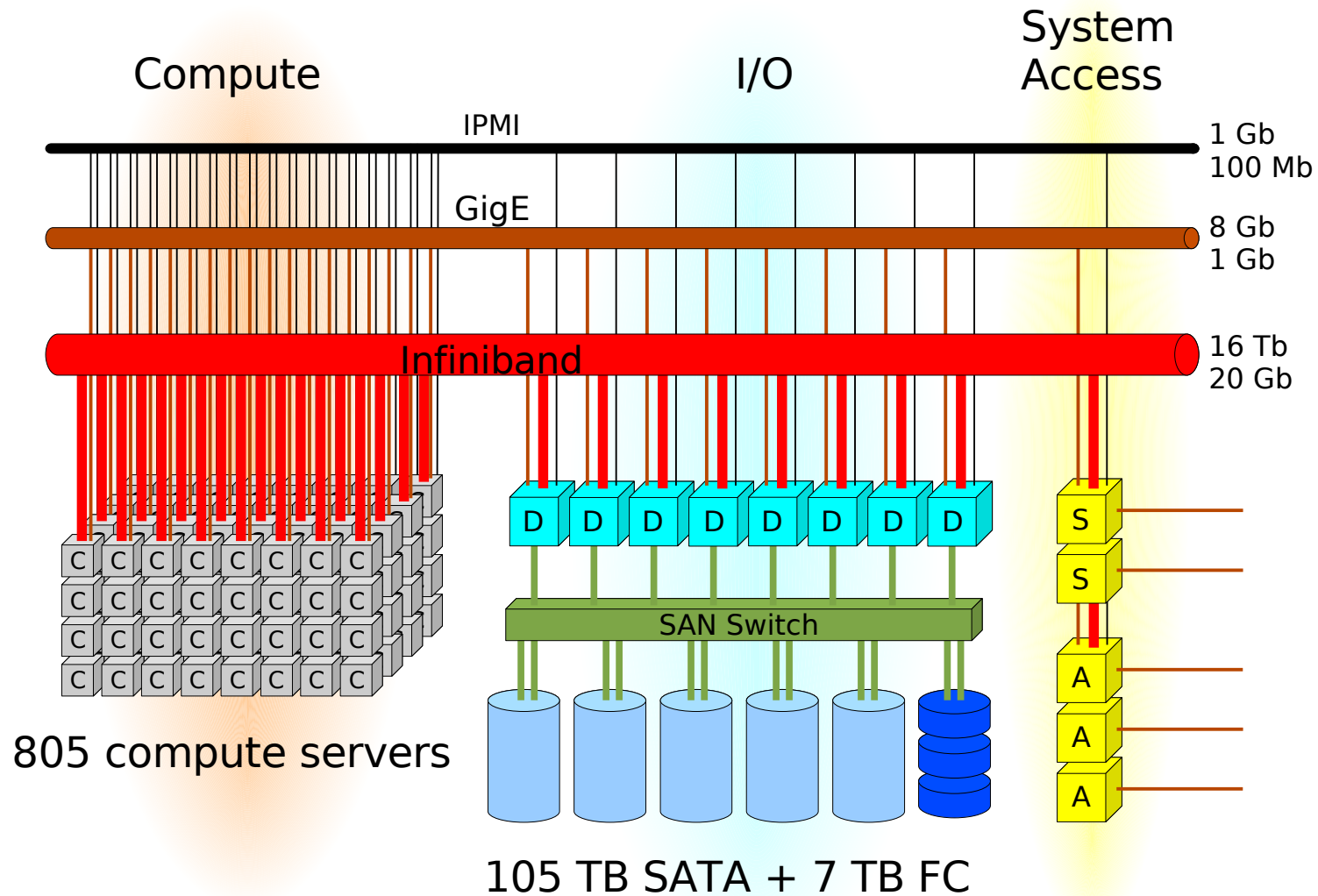


Double Data Rate Infiniband

- Fat tree topology
- Full bisection bandwidth
- 3 Core switches (288 ports)
- 68 + 2 Edge switches (24 ports)
- 20 + 20 Gbit/s channel bandwidth

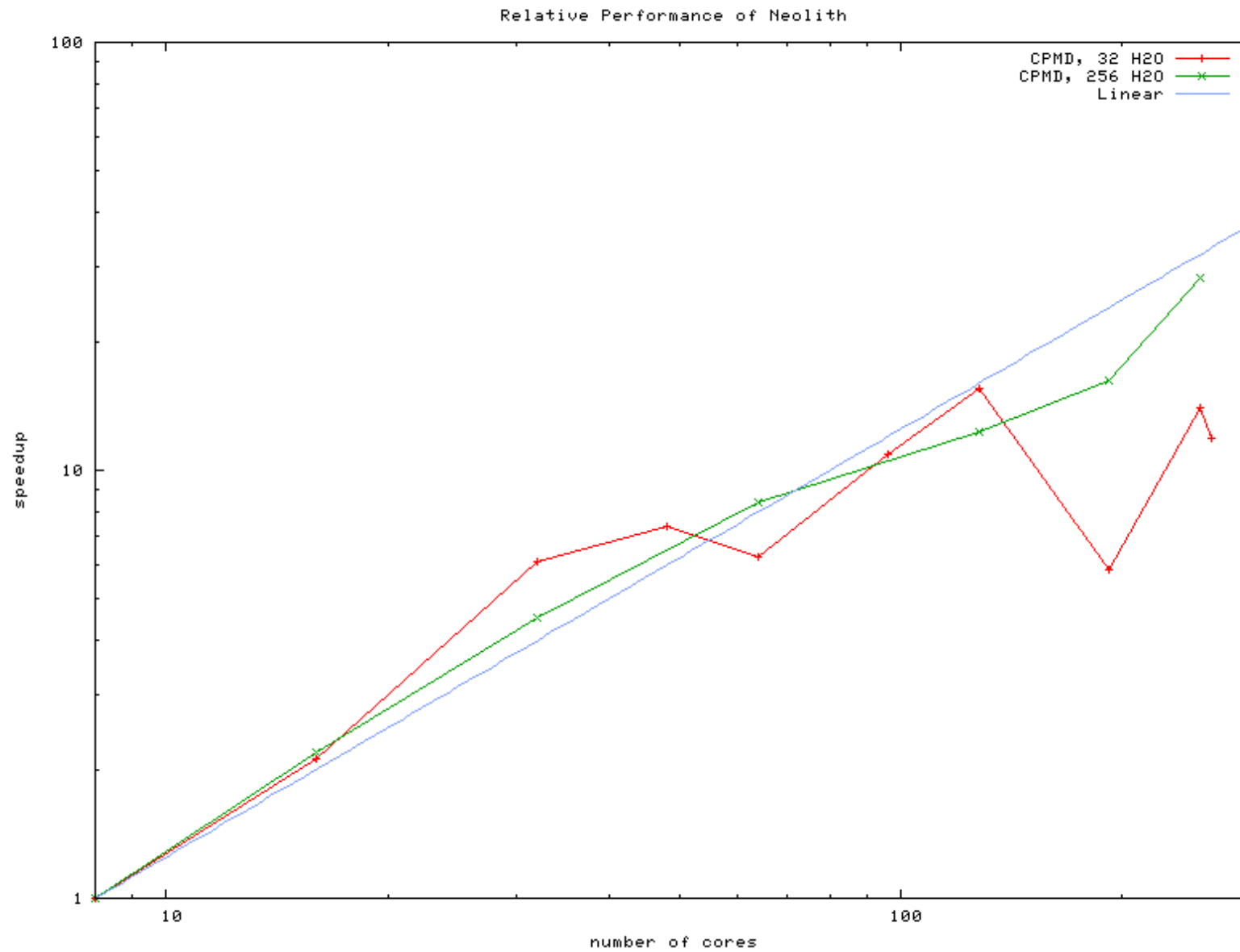


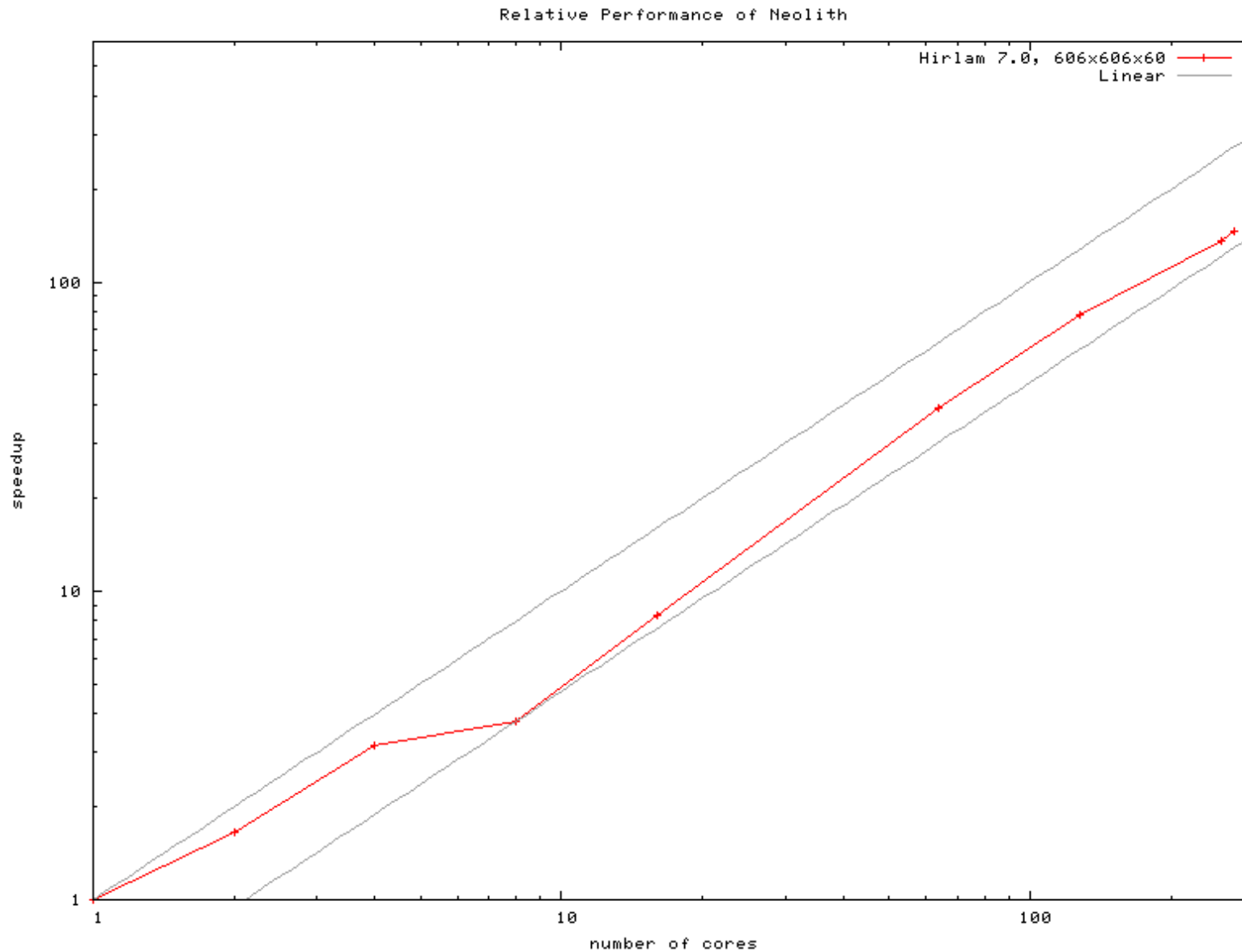
I/O, system and access servers



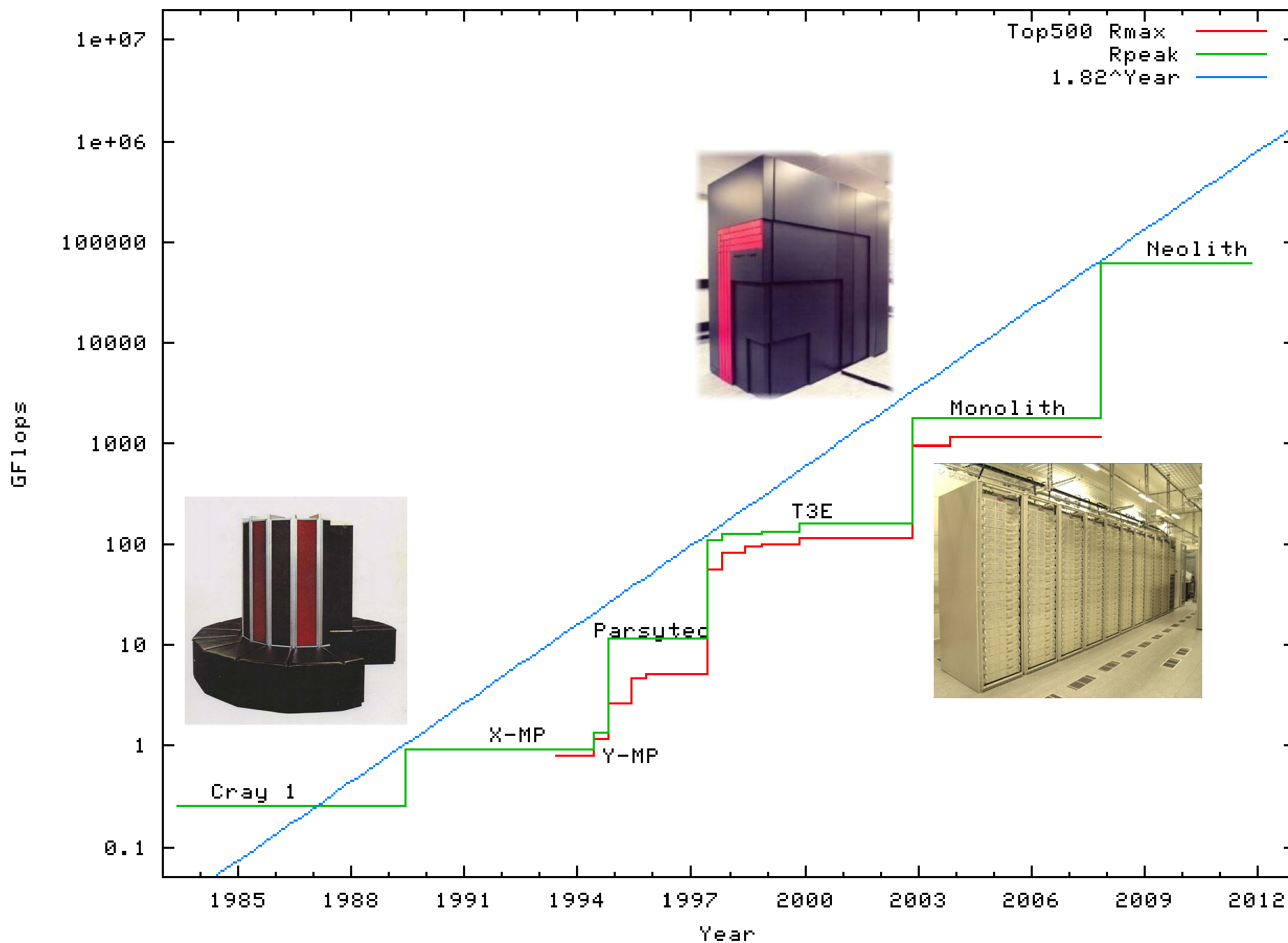
Software

- OS: Linux
- Distribution: CentOS
- File system: GPFS
- MPI: Scali MPI, OpenMPI
- Compiler: Intel, PGI, GCC
- Math lib: Intel MKL
- Job Mgmt/Scheduler: Slurm/Moab
- Conf Mgmt: Perseus, Systemimager





Performance of NSC's fastest supercomputers



Neolith Movie