

Site Report

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New GridKa Hardware (Milestone April 2006):

- Installation of new hardware in a second, refurbished server room
- New water chillers available



New GridKa Hardware (Milestone April 2006):

→ Disk storage expansion:

NEC won tender for a three year contract to deliver a total of 4500 TB storage, (3 partial deliveries)



New GridKa Hardware (Milestone April 2006):

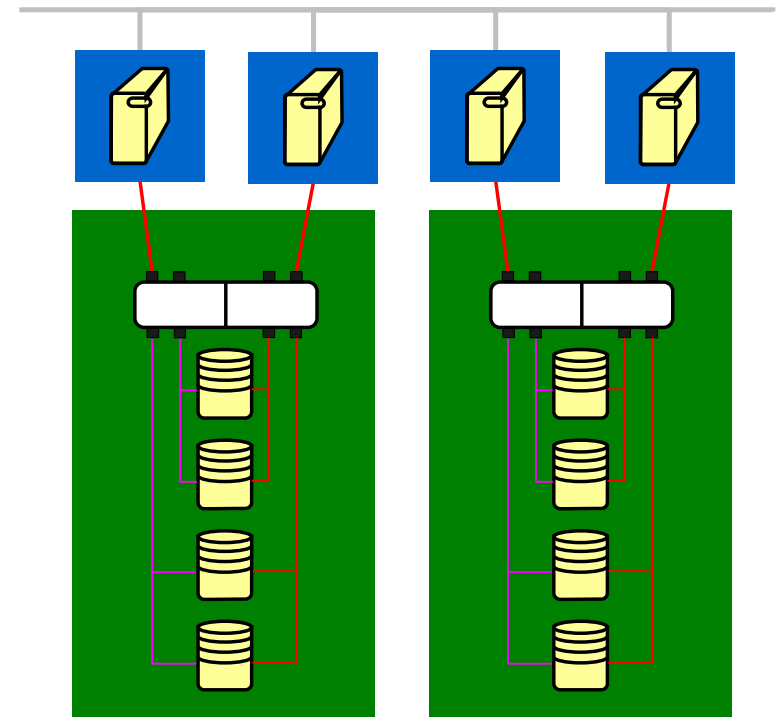
- Disk storage expansion:
 - ✓ first part of 500 TB disk storage delivered in June/06
 - ✓ installed and put into production
 - ✓ consists of
 - 450 TB SATA (400 GB 7k) + 50 TB FC (140 GB 15k)
 - 28 storage controllers which have some interesting features
 - x RAID 6 support for SATA and FC disks
 - x uses chip cards to write error logs – cards are returned with each broken disk
 - 60 servers (dual Opteron, 4 GB, dual SCSI)

New GridKa Hardware (Milestone April 2006):

→ Disk storage expansion – storage servers:

Storage out of the box –

- storage units of 20 TB
- 2 servers connected to 1 storage controller
- 2 (at 2 Gbit) servers for every 20 TB
- dCache pool node on GPFS file system



Next GridKa Hardware Expansion (Milestone 2007):

- Disk storage expansion:
 - ✓ Next delivery (January 2007) will have 300 GB FC and 500 GB SATA disks

Next GridKa Hardware Expansion (Milestone 2007):

→ Tape storage expansion:

Adding additional tape library this week

- GRAU Datasystems XT library
- 5400 slots
- 10 LTO3 drives (IBM)
(expandable to 60)
- support for TSM
- dCache interfaced to TSM



New GridKa Hardware (Milestone April 2006):

→ New worker nodes:

153 dual-socket dual-core Opteron 270 systems
(Barebone: MSI-9245-100, Mainboard: MSI K1-1000D)

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Now running – after series of BIOS,
BMC- and NIC firmware updates!



More Problems:

→ "The water-cooled cooling devices"

Benchmark Update:

- Basis:
<http://www.slac.stanford.edu/conf/hepixon5/talks/friday/alef.pdf>
<http://hepixon.caspar.it/spring2006/TALKS/3apr.alef.dualcore.pdf>
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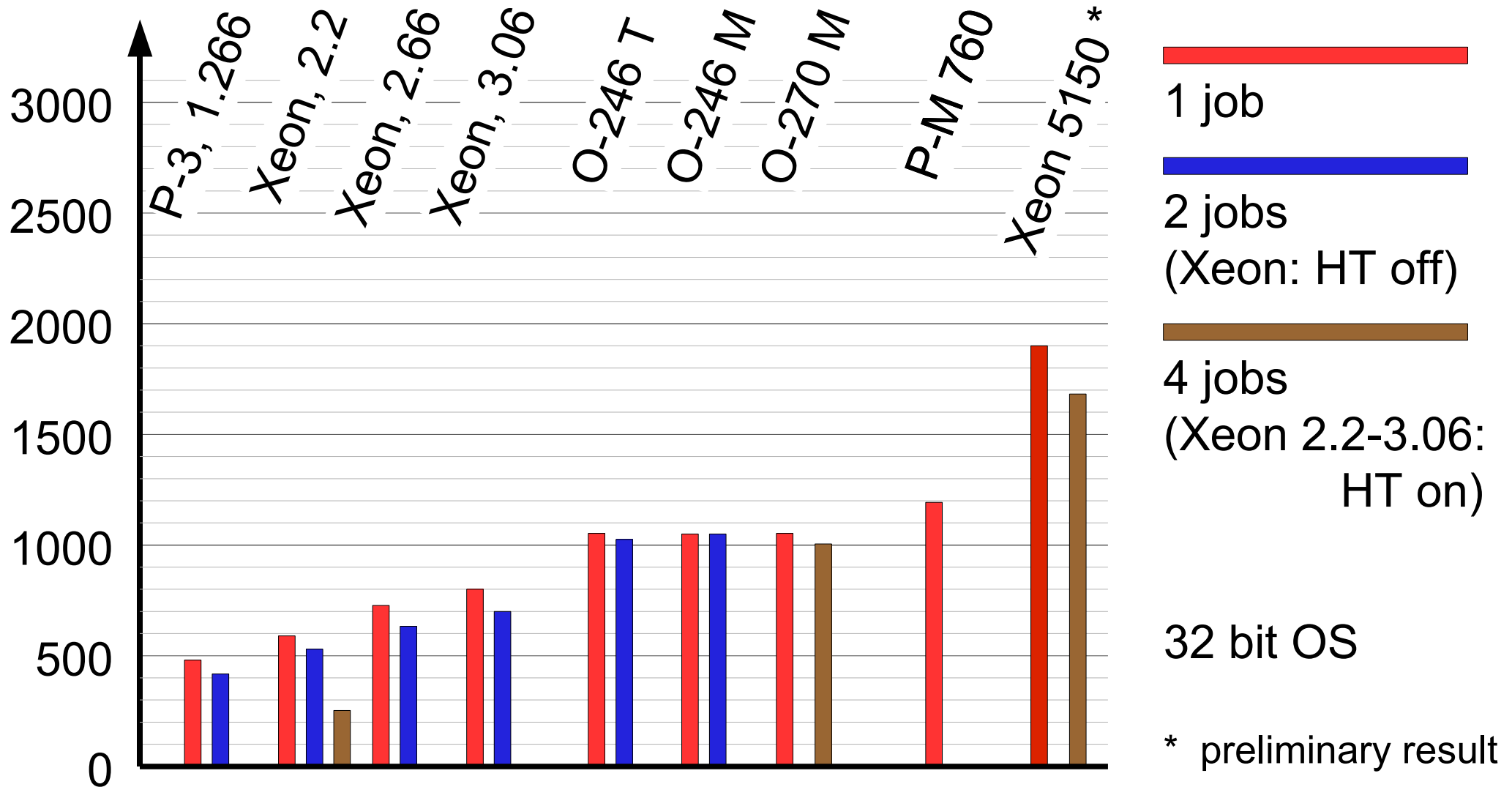
Benchmark Update:

- Benchmark: SPEC CPU2000 (CINT2000)
- OS: Scientific Linux
- Compiler: gcc-3.4.x
- Compiler options: -O3 -funroll-loops -march
- Benchmark usage:
1 benchmark run per CPU core in parallel

Benchmark Update:

→ New results: Intel Xeon 5150 (Woodcrest, 2.66 GHz)

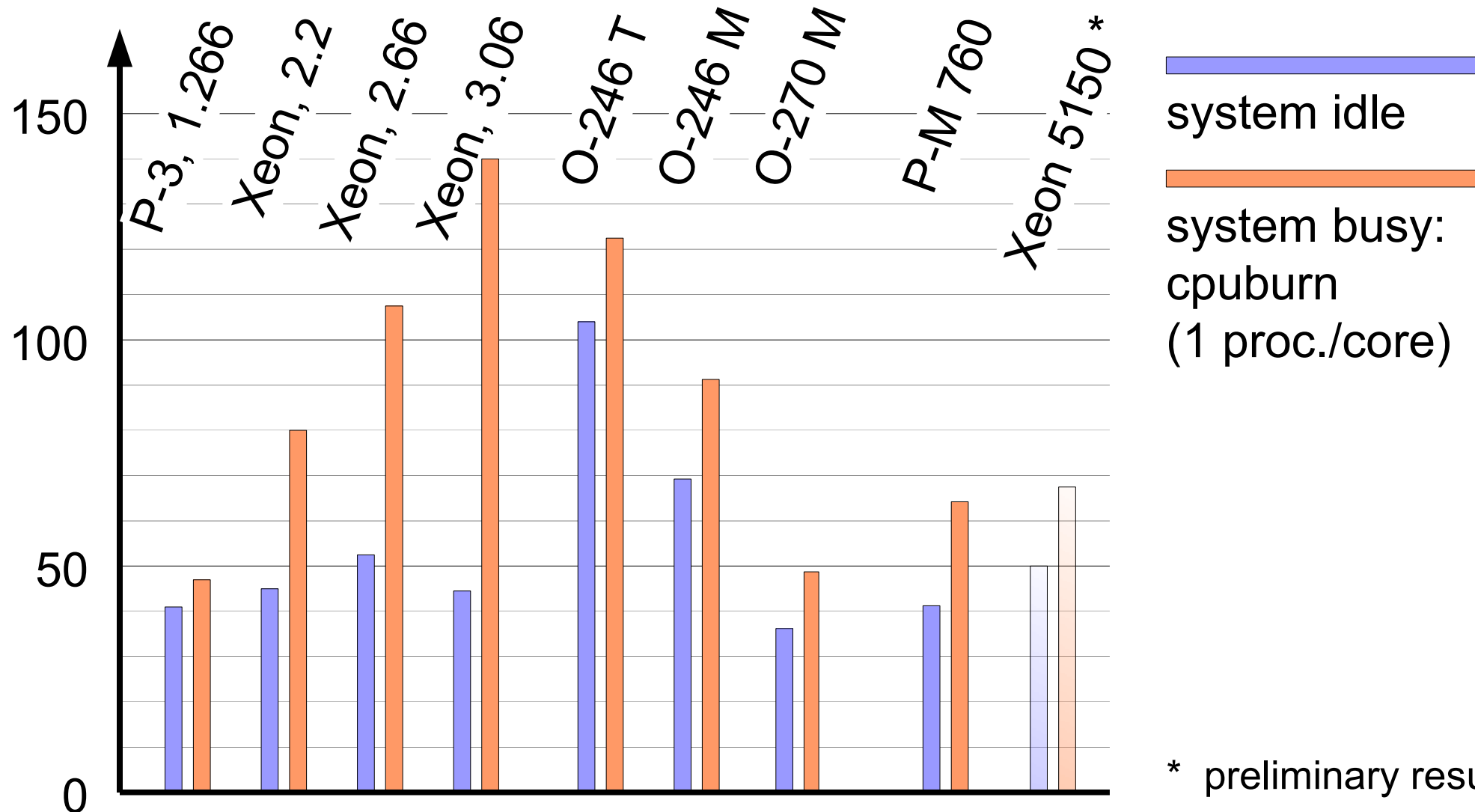
CPU Speed (SPECint_base2000 per Job)



Benchmark Update:

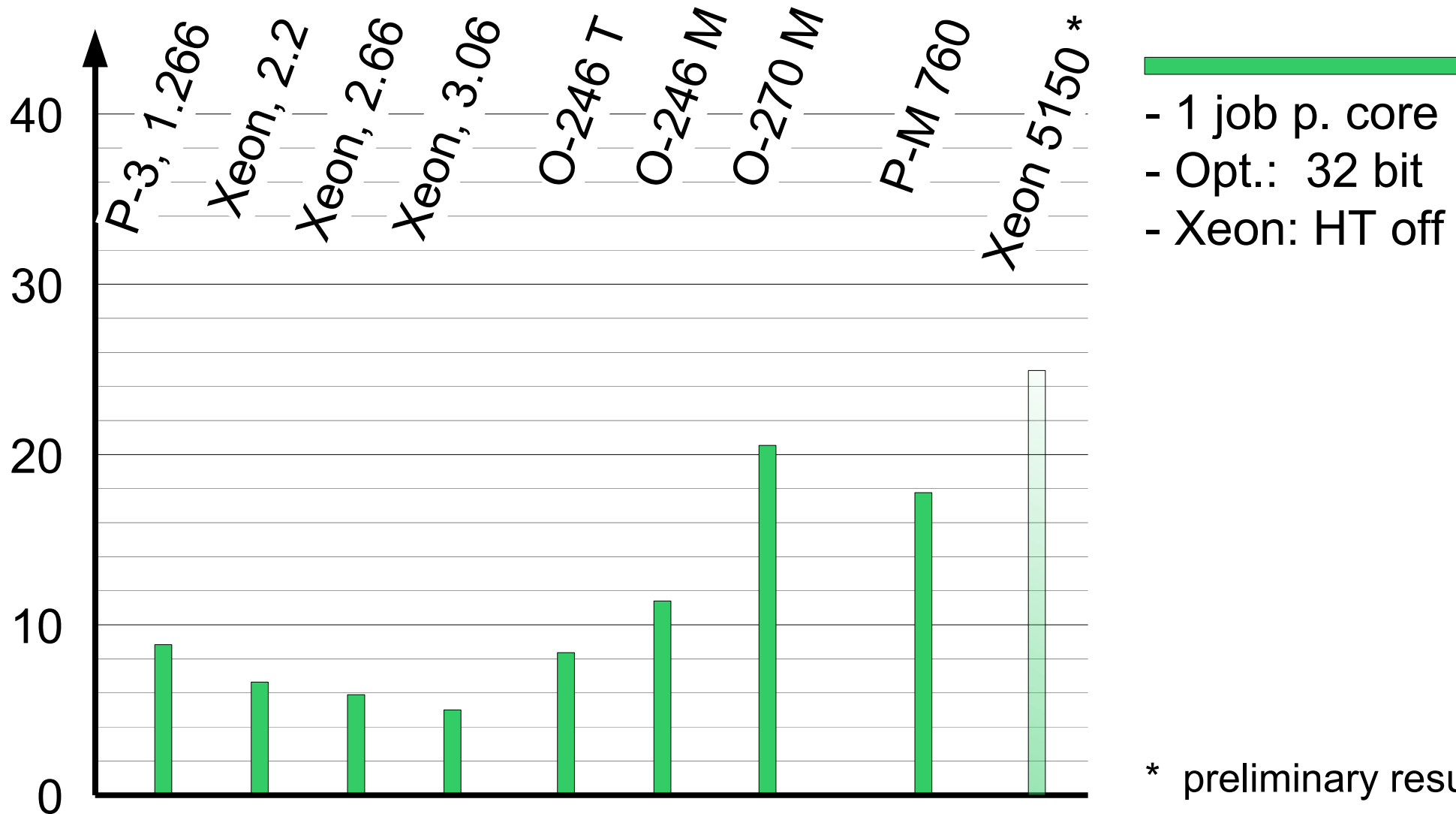
- Electric power consumption:
CPU load: cpuburn (1 per core)
-

Electric Power Consumption (Whole System, W per CPU Core)



* preliminary result

Thermic Efficiency (SPECint_base2000 per W)



* preliminary result

Benchmark Update:

- HEPiX CPU technology tracking pages:
<http://hepixon.caspar.it/afs/hepixon.org/project/ptrack/>

Benchmark Update:

- Next benchmark release (SPEC CPU2006) available since August – rerun benchmarks.
 - "Rate" results (SPECint_rate_base2006) now close to the "speed" numbers (SPECint_base2006).
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Questions, Comments?
