SPEC® CINT2006 Result
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NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

SPECint®2006 = 26.2

SPECint_base2006 = 23.1
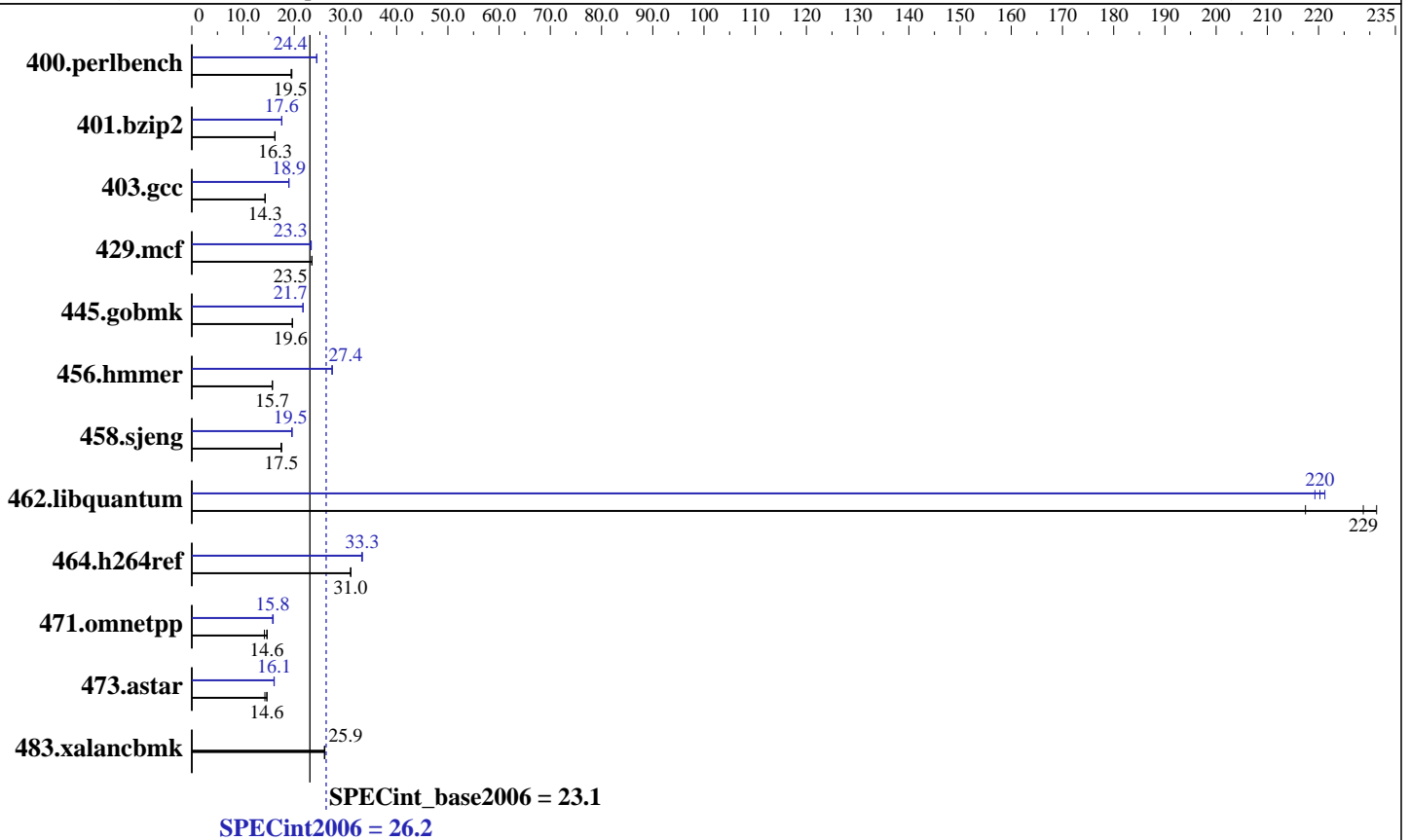
CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Mar-2008
Hardware Availability: Feb-2008
Software Availability: Nov-2007

400.perlbench 24.4 / 19.5
401.bzip2 17.6 / 16.3
403.gcc 18.9 / 14.3
429.mcf 23.3 / 23.5
445.gobmk 21.7 / 19.6
456.hmmer 27.4 / 15.7
458.sjeng 19.5 / 17.5
462.libquantum 220 / 229
464.h264ref 33.3 / 31.0
471.omnetpp 15.8 / 14.6
473.astar 16.1 / 14.6
483.xalancbmk 25.9

SPECint_base2006 = 23.1
SPECint2006 = 26.2

Hardware

CPU Name:	Intel Xeon X5450
CPU Characteristics:	3.00 GHz, 2x6 MB L2 shared, 1333 MHz bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73.2 GB SAS, 15000RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17

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Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	504	19.4	500	19.5	**502**	**19.5**	400	24.4	401	24.4	**400**	**24.4**
401.bzip2	596	16.2	593	16.3	**594**	**16.3**	549	17.6	550	17.5	**549**	**17.6**
403.gcc	563	14.3	562	14.3	**562**	**14.3**	**425**	**18.9**	424	19.0	425	18.9
429.mcf	389	23.4	388	23.5	**389**	**23.5**	393	23.2	**392**	**23.3**	391	23.3
445.gobmk	534	19.6	**534**	**19.6**	534	19.6	**483**	**21.7**	482	21.7	483	21.7
456.hmmer	593	15.7	**593**	**15.7**	593	15.7	341	27.4	**341**	**27.4**	340	27.4
458.sjeng	690	17.5	695	17.4	**692**	**17.5**	618	19.6	619	19.5	**619**	**19.5**
462.libquantum	95.3	217	89.6	231	**90.6**	**229**	**94.1**	**220**	93.7	221	94.5	219
464.h264ref	713	31.1	**713**	**31.0**	714	31.0	**665**	**33.3**	667	33.2	665	33.3
471.omnetpp	**427**	**14.6**	425	14.7	441	14.2	395	15.8	393	15.9	**395**	**15.8**
473.astar	478	14.7	492	14.3	**480**	**14.6**	438	16.0	436	16.1	**437**	**16.1**
483.xalancbmk	**266**	**25.9**	266	26.0	266	25.9	**266**	**25.9**	266	26.0	266	25.9

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
   OMP_NUM_THREADS set to number of cores

Platform Notes

Bios settings:
Intel SpeedStep Technology: Disabled

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode

Base Compiler Invocation

C benchmarks:
      icc

C++ benchmarks:
      icpc

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Base Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:

```
-fast -vec-guard-write -parallel -par-runtime-control
```

C++ benchmarks:

```
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib -lsmartheap
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

```
401.bzip2: /opt/intel/cce/10.1.008/bin/icc
           -L/opt/intel/cce/10.1.008/lib
           -I/opt/intel/cce/10.1.008/include
```

```
456.hmmer: /opt/intel/cce/10.1.008/bin/icc
           -L/opt/intel/cce/10.1.008/lib
           -I/opt/intel/cce/10.1.008/include
```

C++ benchmarks:
```
icpc
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
```

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Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

   400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias
              -prefetch

   401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
              -auto-ilp32

   403.gcc: -fast -inline-calloc -opt-malloc-options=3

   429.mcf: -fast -prefetch

   445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo
              -no-prec-div -ansi-alias

   456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive
              -auto-ilp32

   458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

   462.libquantum: -fast -unroll4 -Ob0 -prefetch
              -opt-streaming-stores always -vec-guard-write
              -opt-malloc-options=3 -parallel -par-runtime-control

   464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
              -ansi-alias

C++ benchmarks:

   471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
              -no-prec-div -ansi-alias -opt-ra-region-strategy=block
              -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

   473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
              -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
              -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

   483.xalancbmk: basepeak = yes

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Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090713.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090713.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 18:25:11 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 April 2008.