



SPEC® CINT2006 Result

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HITACHI

SPECint®2006 = 34.2

BladeSymphony BS320 (Intel Xeon E5640)

SPECint_base2006 = 31.3

CPU2006 license: 872

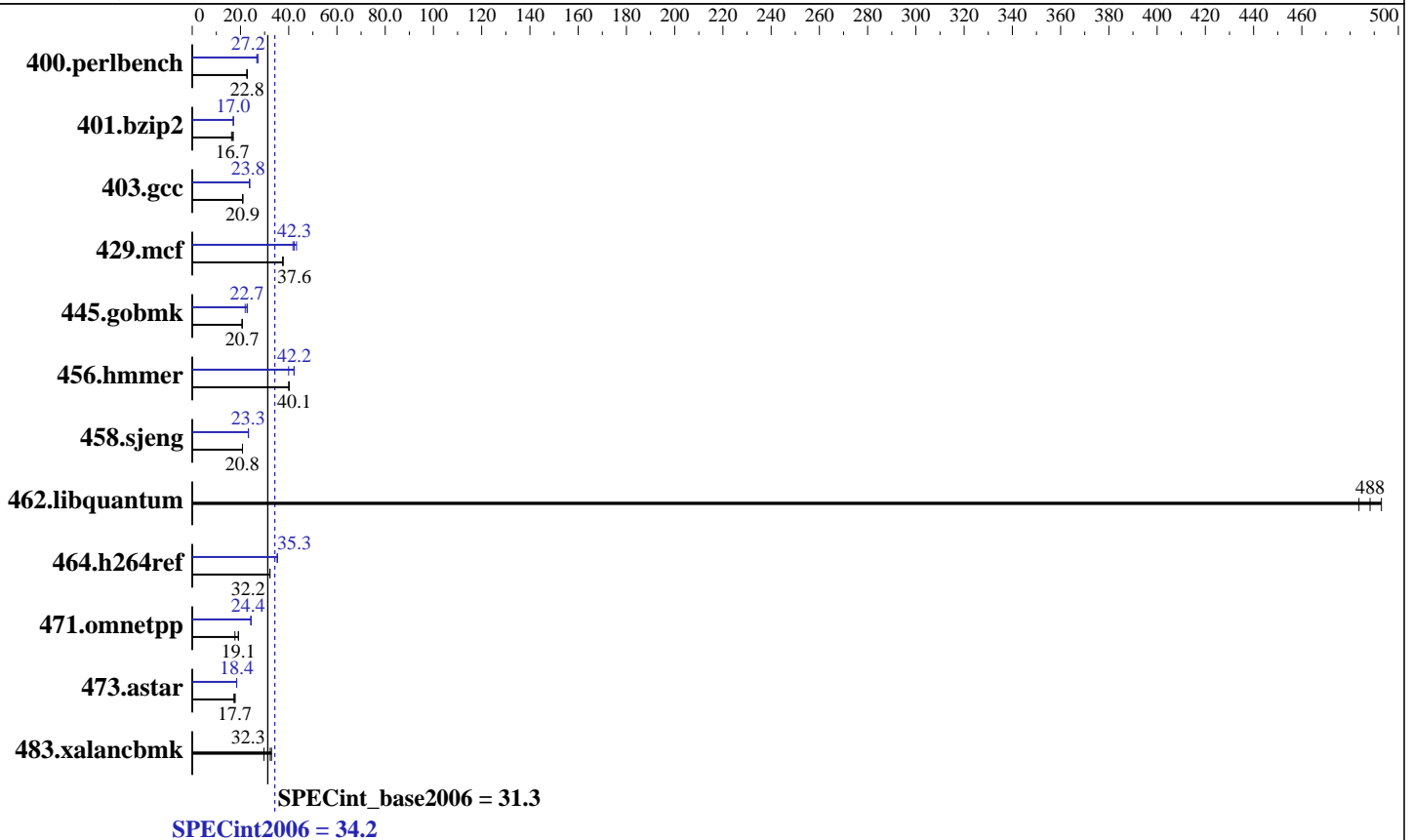
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jul-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon E5640
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
 CPU MHz: 2667
 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: 256 KB I+D on chip per core
 L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB(6 x 4 GB PC3-10600R, 2 rank, CL9-9-9)
 Disk Subsystem: 1 x 73 GB 10000 rpm SAS
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86_64
 Compiler: Intel C++ Compiler 11.1 for Linux Build 20091012 Package ID: l_cproc_p_11.1.059
 Auto Parallel: Yes
 File System: ext3
 System State: Multi-user run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V8.1



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	432	22.6	428	22.8	<u>429</u>	<u>22.8</u>	359	27.2	365	26.8	<u>360</u>	<u>27.2</u>
401.bzip2	567	17.0	592	16.3	<u>578</u>	<u>16.7</u>	566	17.0	<u>566</u>	<u>17.0</u>	565	17.1
403.gcc	386	20.9	<u>385</u>	<u>20.9</u>	384	21.0	339	23.7	338	23.8	<u>339</u>	<u>23.8</u>
429.mcf	243	37.5	<u>243</u>	<u>37.6</u>	242	37.7	218	41.8	<u>216</u>	<u>42.3</u>	211	43.2
445.gobmk	506	20.7	<u>507</u>	<u>20.7</u>	507	20.7	478	22.0	<u>462</u>	<u>22.7</u>	458	22.9
456.hammer	<u>233</u>	<u>40.1</u>	233	40.1	232	40.1	221	42.2	<u>221</u>	<u>42.2</u>	233	40.0
458.sjeng	<u>581</u>	<u>20.8</u>	580	20.8	581	20.8	518	23.3	<u>520</u>	<u>23.3</u>	521	23.2
462.libquantum	42.8	484	42.0	493	<u>42.4</u>	<u>488</u>	42.8	484	42.0	493	<u>42.4</u>	<u>488</u>
464.h264ref	688	32.1	686	32.2	<u>688</u>	<u>32.2</u>	<u>627</u>	<u>35.3</u>	627	35.3	627	35.3
471.omnetpp	<u>327</u>	<u>19.1</u>	326	19.2	353	17.7	257	24.3	<u>257</u>	<u>24.4</u>	257	24.4
473.astar	406	17.3	<u>396</u>	<u>17.7</u>	396	17.7	<u>381</u>	<u>18.4</u>	382	18.4	380	18.5
483.xalancbmk	<u>213</u>	<u>32.3</u>	210	32.9	232	29.7	<u>213</u>	<u>32.3</u>	210	32.9	232	29.7

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
KMP_AFFINITY set to granularity=fine,scatter

Platform Notes

BIOS Settings:
Intel HT Technology = Disabled

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64

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Base Portability Flags (Continued)

429.mcf: -DSPEC_CPU_LP64
 445.gobmk: -DSPEC_CPU_LP64
 456.hmmer: -DSPEC_CPU_LP64
 458.sjeng: -DSPEC_CPU_LP64
 462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
 464.h264ref: -DSPEC_CPU_LP64
 471.omnetpp: -DSPEC_CPU_LP64
 473.astar: -DSPEC_CPU_LP64
 483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
 -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
 -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
 -L/home/bsc/smartheap/lib -lsmartheap64

Base Other Flags

C benchmarks:
 403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
 icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):
 icpc -m64

471.omnetpp: icpc -m32



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Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

```

Peak Optimization Flags

C benchmarks:

```

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
               -prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div -static(pass 2) -prof-use(pass 2)
            -auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-alloc
          -opt-malloc-options=3 -auto-ilp32

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
            -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
            -ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
            -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
              -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
              -prof-use(pass 2) -unroll2 -ansi-alias

```

C++ benchmarks:

```

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
              -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
              -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
              -L/home/bsc/smartheap/lib -lsmartheap

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Peak Optimization Flags (Continued)

```
473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
           -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs
           -L/home/bsc/smartheap/lib -lsmartheap64
```

483.xalancbmk: basepeak = yes

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/Intel-ic11.1-linux64-revE.20100929.03.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.03.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 12:52:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 September 2010.