



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 25.3

IBM System x3650 (Intel Xeon E5440)

SPECint_base2006 = 22.0

CPU2006 license: 11

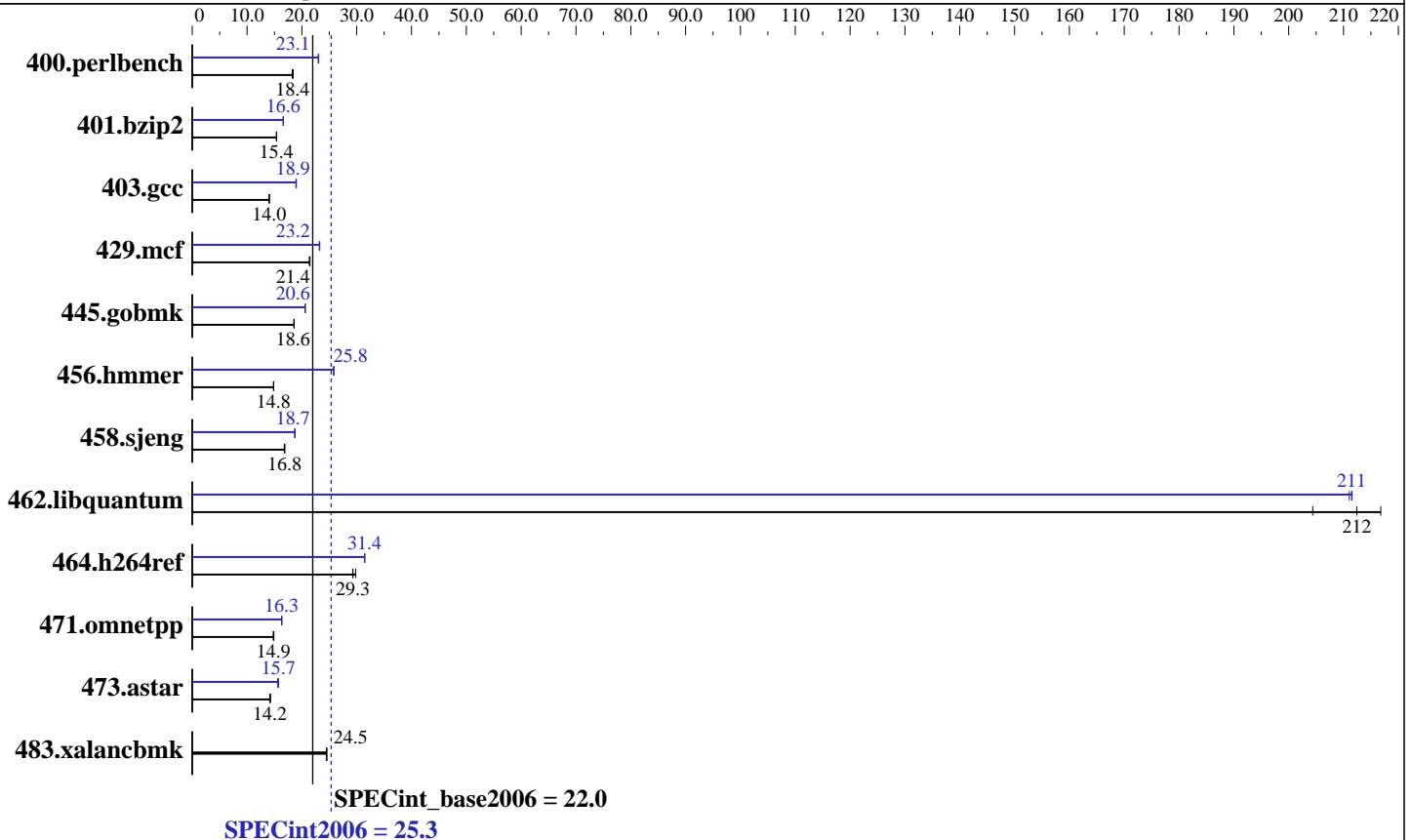
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5440
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2826
 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: 16 GB (8 x 2 GB DDR2-5300F ECC)
 Disk Subsystem: 1 x 36 GB SAS, 15000 RPM
 Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64), kernel 2.6.16.21-0.8-smp
 Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap 8.1 Binutils 2.17.50.0.15



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	531	18.4	<u>532</u>	<u>18.4</u>	536	18.2	426	23.0	<u>424</u>	<u>23.1</u>	424	23.1
401.bzip2	628	15.4	<u>628</u>	<u>15.4</u>	627	15.4	580	16.6	<u>581</u>	<u>16.6</u>	582	16.6
403.gcc	573	14.1	574	14.0	<u>573</u>	<u>14.0</u>	425	18.9	<u>425</u>	<u>18.9</u>	424	19.0
429.mcf	427	21.4	<u>426</u>	<u>21.4</u>	425	21.5	392	23.3	393	23.2	<u>393</u>	<u>23.2</u>
445.gobmk	565	18.6	<u>565</u>	<u>18.6</u>	564	18.6	509	20.6	<u>509</u>	<u>20.6</u>	509	20.6
456.hmmmer	<u>628</u>	<u>14.8</u>	629	14.8	628	14.8	<u>362</u>	<u>25.8</u>	362	25.8	361	25.8
458.sjeng	716	16.9	721	16.8	<u>719</u>	<u>16.8</u>	<u>647</u>	<u>18.7</u>	647	18.7	644	18.8
462.libquantum	<u>97.5</u>	<u>212</u>	101	204	95.6	217	97.9	212	<u>98.0</u>	<u>211</u>	98.2	211
464.h264ref	<u>755</u>	<u>29.3</u>	742	29.8	756	29.3	704	31.4	703	31.5	<u>704</u>	<u>31.4</u>
471.omnetpp	<u>421</u>	<u>14.9</u>	423	14.8	420	14.9	384	16.3	382	16.4	<u>383</u>	<u>16.3</u>
473.astar	491	14.3	497	14.1	<u>495</u>	<u>14.2</u>	<u>446</u>	<u>15.7</u>	450	15.6	446	15.7
483.xalancbmk	281	24.5	282	24.5	<u>281</u>	<u>24.5</u>	281	24.5	282	24.5	<u>281</u>	<u>24.5</u>

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

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Enabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to null
Powersaved dameon was disabled in OS

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Base Portability Flags

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



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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/spec/users/rahul/cpu2006.1.0/lib -lsmarheap

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
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

Continued on next page



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Peak Optimization Flags (Continued)

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/spec/users/rahul/cpu2006.1.0/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/spec/users/rahul/cpu2006.1.0/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



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The flags file that was used to format this result can be browsed at
<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.20.html>

You can also download the XML flags source by saving the following link:
<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.20.xml>

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

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