



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 29.0

IBM System x3200 M2 (Intel Core 2 Duo E4600)

SPECint_rate_base2006 = 25.8

CPU2006 license: 11

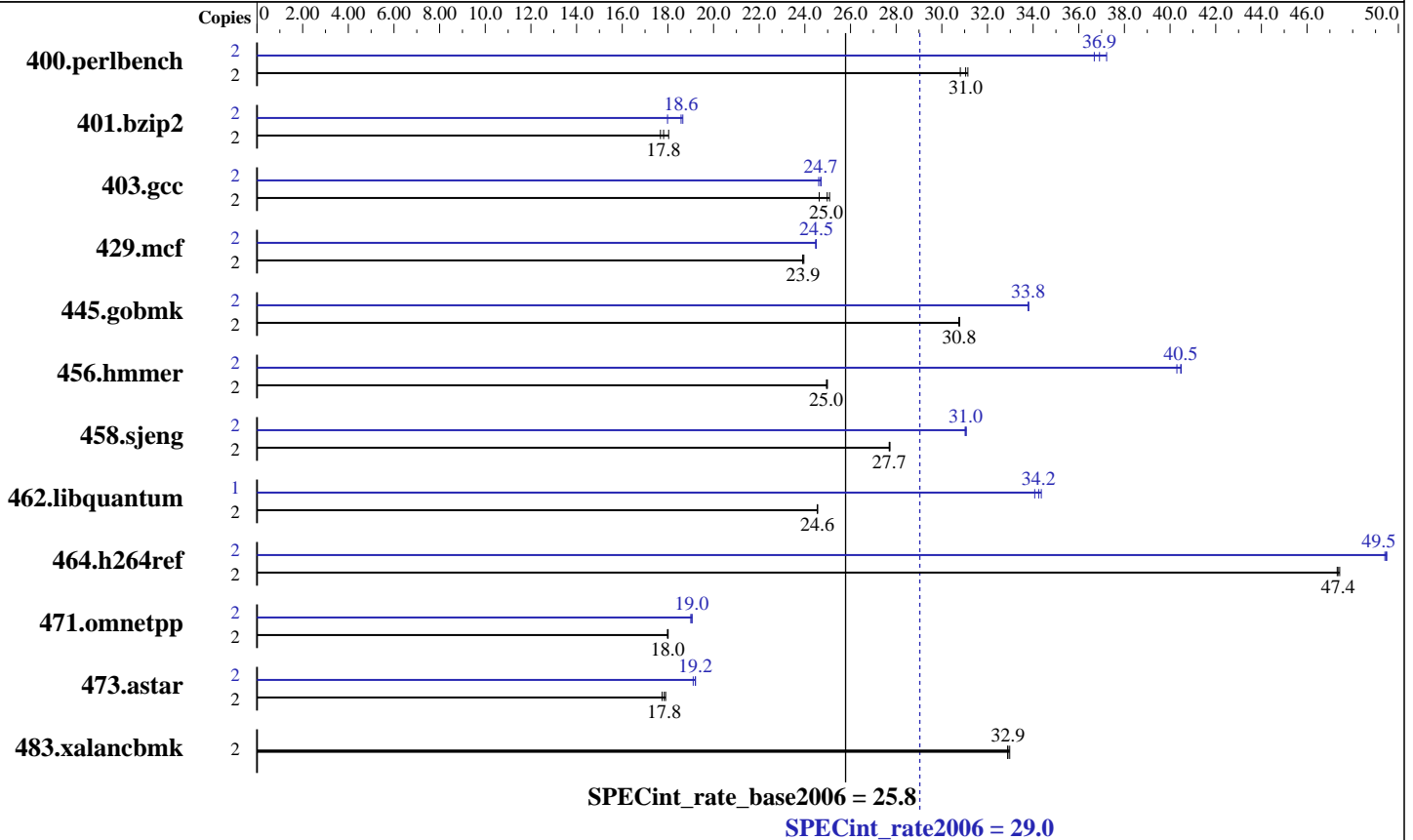
Test date: Feb-2008

Test sponsor: IBM Corporation

Hardware Availability: Feb-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



Hardware

CPU Name: Intel Core 2 Duo E4600
 CPU Characteristics: 800MHz system bus
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 2 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 8 GB (4 x 2 GB DDR2-5300 ECC)
 Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
 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 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	<u>629</u>	<u>31.0</u>	634	30.8	627	31.1	2	<u>529</u>	<u>36.9</u>	525	37.2	533	36.7
401.bzip2	2	<u>1084</u>	<u>17.8</u>	1070	18.0	1092	17.7	2	<u>1039</u>	<u>18.6</u>	1073	18.0	1035	18.7
403.gcc	2	<u>645</u>	<u>25.0</u>	654	24.6	642	25.1	2	<u>652</u>	<u>24.7</u>	652	24.7	654	24.6
429.mcf	2	<u>762</u>	<u>23.9</u>	763	23.9	761	24.0	2	744	24.5	745	24.5	<u>744</u>	<u>24.5</u>
445.gobmk	2	682	30.8	682	30.7	<u>682</u>	<u>30.8</u>	2	<u>621</u>	<u>33.8</u>	621	33.8	621	33.8
456.hmmmer	2	<u>747</u>	<u>25.0</u>	748	24.9	747	25.0	2	463	40.3	<u>461</u>	<u>40.5</u>	461	40.5
458.sjeng	2	874	27.7	873	27.7	<u>874</u>	<u>27.7</u>	2	779	31.1	<u>779</u>	<u>31.0</u>	780	31.0
462.libquantum	2	1688	24.6	1689	24.5	<u>1688</u>	<u>24.6</u>	1	608	34.1	<u>605</u>	<u>34.2</u>	603	34.4
464.h264ref	2	<u>935</u>	<u>47.4</u>	935	47.3	933	47.4	2	<u>895</u>	<u>49.5</u>	894	49.5	896	49.4
471.omnetpp	2	<u>694</u>	<u>18.0</u>	695	18.0	694	18.0	2	658	19.0	<u>656</u>	<u>19.0</u>	656	19.1
473.astar	2	784	17.9	<u>787</u>	<u>17.8</u>	791	17.7	2	735	19.1	731	19.2	<u>731</u>	<u>19.2</u>
483.xalancbmk	2	<u>419</u>	<u>32.9</u>	419	33.0	420	32.9	2	<u>419</u>	<u>32.9</u>	419	33.0	420	32.9

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
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
taskset utility used to bind CPU(s) to processes

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 -inline-calloc -opt-malloc-options=3

C++ benchmarks:

-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/spec/users/rahul/cpu2006.1.0/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
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

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.hmmr: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

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

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-INT-ia32-linux-flags.html>



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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-INT-ia32-linux-flags.xml>

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

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