



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 66.2

IBM System x3500 (Intel Xeon E5420)

SPECint_rate_base2006 = 55.7

CPU2006 license: 11

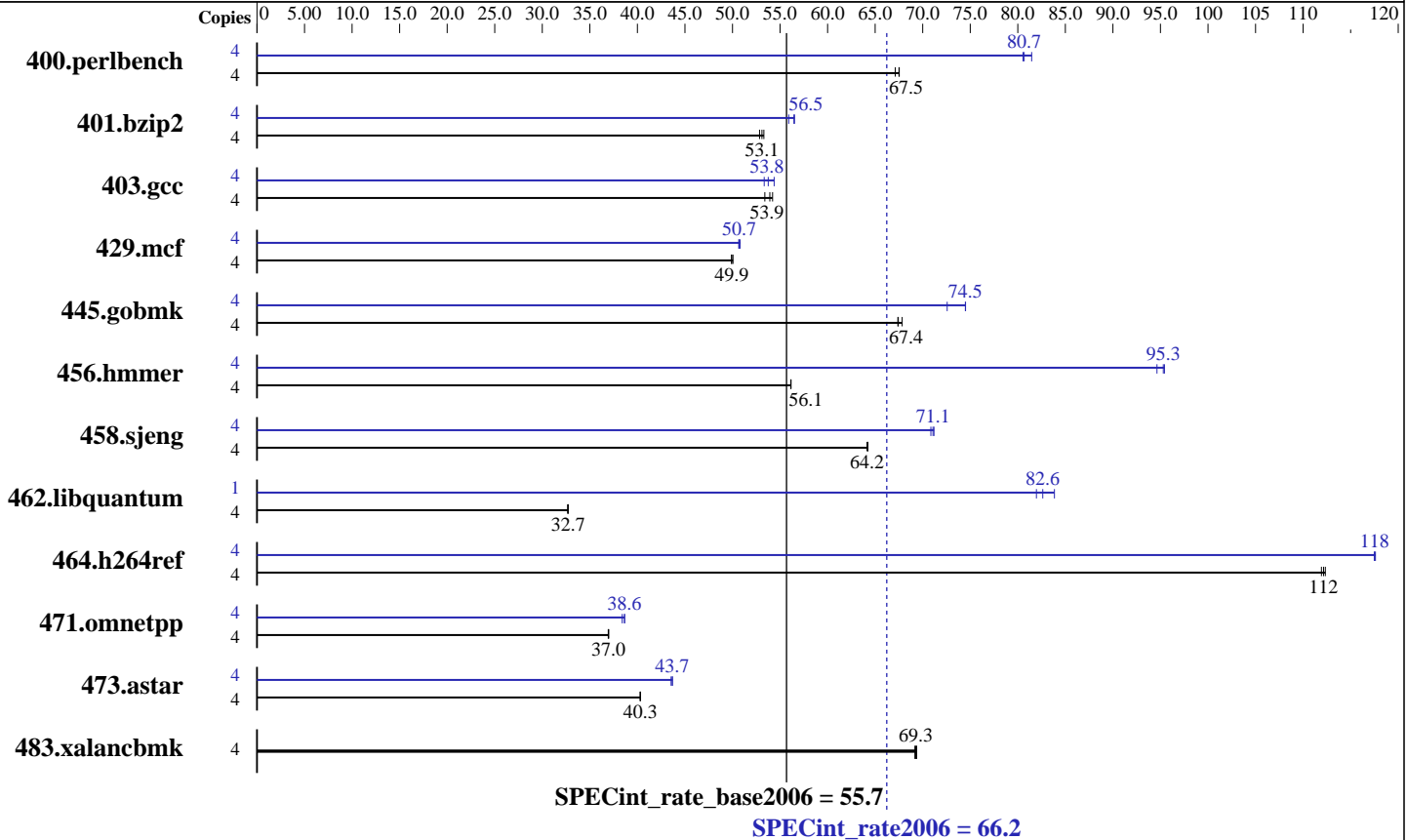
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 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 80 GB SATA, 7200 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	579	67.5	<u>579</u>	<u>67.5</u>	582	67.1	4	480	81.5	485	80.5	<u>484</u>	<u>80.7</u>
401.bzip2	4	724	53.3	730	52.8	<u>727</u>	<u>53.1</u>	4	<u>684</u>	<u>56.5</u>	683	56.5	690	55.9
403.gcc	4	603	53.4	594	54.2	<u>597</u>	<u>53.9</u>	4	592	54.4	604	53.3	<u>599</u>	<u>53.8</u>
429.mcf	4	<u>731</u>	<u>49.9</u>	731	49.9	729	50.1	4	<u>720</u>	<u>50.7</u>	718	50.8	720	50.7
445.gobmk	4	623	67.4	619	67.8	<u>622</u>	<u>67.4</u>	4	<u>563</u>	<u>74.5</u>	578	72.6	563	74.5
456.hmmmer	4	665	56.1	<u>665</u>	<u>56.1</u>	665	56.1	4	391	95.4	<u>392</u>	<u>95.3</u>	394	94.6
458.sjeng	4	753	64.2	755	64.1	<u>754</u>	<u>64.2</u>	4	683	70.9	680	71.2	<u>681</u>	<u>71.1</u>
462.libquantum	4	2533	32.7	<u>2534</u>	<u>32.7</u>	2537	32.7	1	<u>251</u>	<u>82.6</u>	247	83.9	253	82.0
464.h264ref	4	788	112	<u>789</u>	<u>112</u>	791	112	4	<u>753</u>	<u>118</u>	753	118	753	117
471.omnetpp	4	<u>676</u>	<u>37.0</u>	677	36.9	676	37.0	4	<u>647</u>	<u>38.6</u>	651	38.4	647	38.7
473.astar	4	696	40.3	<u>697</u>	<u>40.3</u>	697	40.3	4	<u>643</u>	<u>43.7</u>	645	43.5	643	43.7
483.xalancbmk	4	398	69.4	<u>398</u>	<u>69.3</u>	399	69.2	4	398	69.4	<u>398</u>	<u>69.3</u>	399	69.2

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 Disabled
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.hmmer: -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.20090714.05.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.20090714.05.xml>

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 15:48:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 March 2008.