



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 20.4

IBM System x3200 M2 (Intel Xeon X3320)

SPECint_base2006 = 17.6

CPU2006 license: 11

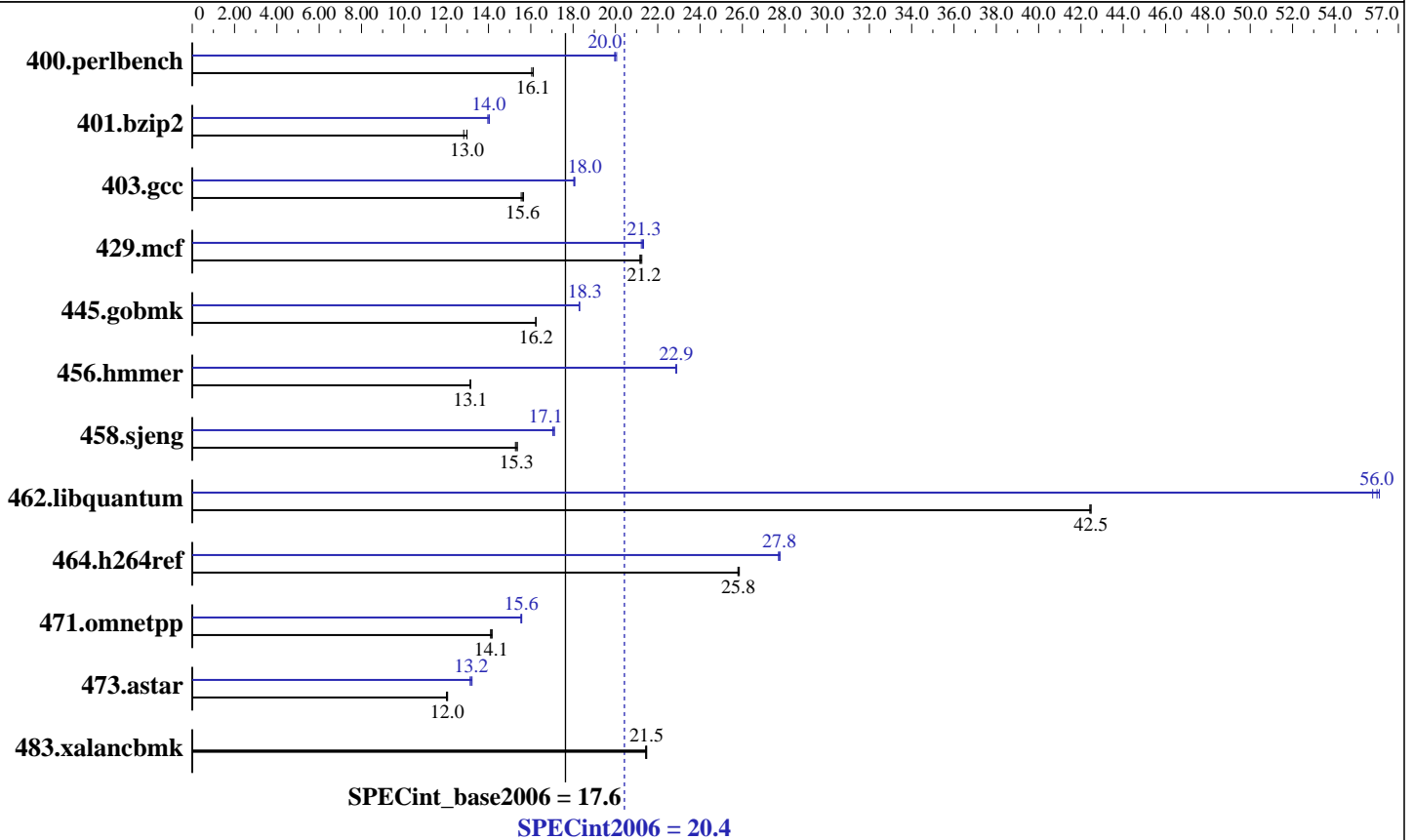
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X3320
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	606	16.1	606	16.1	609	16.0	<u>489</u>	<u>20.0</u>	487	20.1	489	20.0
401.bzip2	743	13.0	752	12.8	743	13.0	687	14.0	688	14.0	691	14.0
403.gcc	514	15.7	518	15.5	515	15.6	445	18.1	446	18.0	446	18.0
429.mcf	431	21.2	430	21.2	429	21.2	<u>429</u>	<u>21.3</u>	430	21.2	428	21.3
445.gobmk	646	16.2	646	16.2	646	16.2	573	18.3	573	18.3	573	18.3
456.hmmmer	710	13.1	710	13.1	710	13.1	<u>408</u>	<u>22.9</u>	408	22.9	408	22.9
458.sjeng	787	15.4	790	15.3	792	15.3	707	17.1	707	17.1	710	17.0
462.libquantum	488	42.4	488	42.5	488	42.5	369	56.1	370	56.0	371	55.8
464.h264ref	856	25.9	858	25.8	857	25.8	<u>797</u>	<u>27.8</u>	797	27.8	799	27.7
471.omnetpp	441	14.2	442	14.1	443	14.1	<u>402</u>	<u>15.6</u>	402	15.5	401	15.6
473.astar	583	12.0	584	12.0	582	12.1	<u>532</u>	<u>13.2</u>	535	13.1	531	13.2
483.xalanbmk	321	21.5	321	21.5	322	21.4	<u>321</u>	<u>21.5</u>	321	21.5	322	21.4

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 null

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalanbmk: -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 -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
-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.hmmr: -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-ic10.1-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/Intel-ic10.1-INT-ia32-linux-flags.20090713.xml>

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