



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 25.6

IBM System x iDataPlex dx340 (Intel Xeon E5440)

SPECint_base2006 = 22.1

CPU2006 license: 11

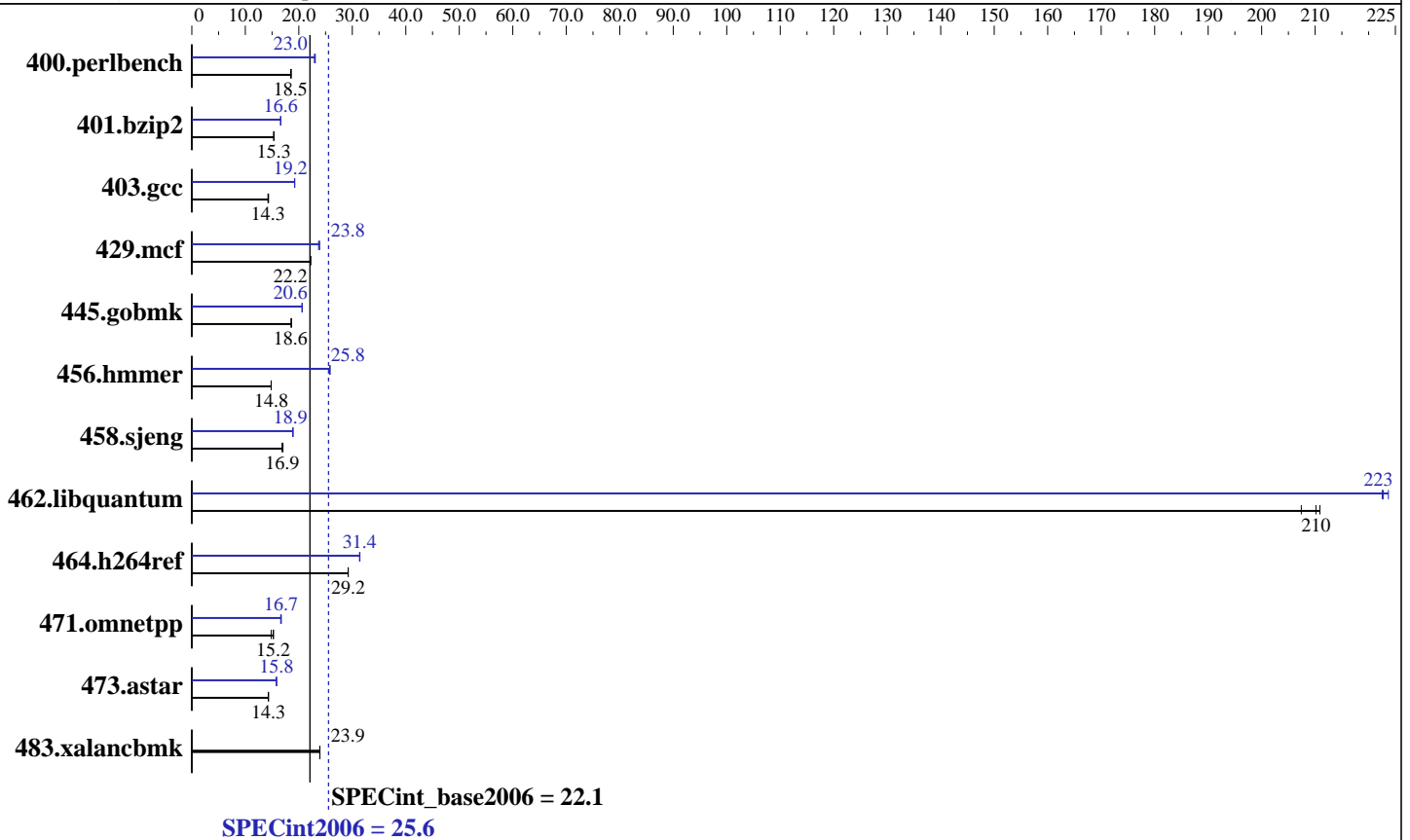
Test date: Apr-2008

Test sponsor: IBM Corporation

Hardware Availability: Jun-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5440
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2833
 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 160 GB SATA, 7200 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	526	18.6	<u>528</u>	<u>18.5</u>	529	18.5	423	23.1	<u>425</u>	<u>23.0</u>	426	22.9
401.bzip2	628	15.4	<u>630</u>	<u>15.3</u>	630	15.3	580	16.6	582	16.6	<u>581</u>	<u>16.6</u>
403.gcc	565	14.3	561	14.3	<u>565</u>	<u>14.3</u>	<u>419</u>	<u>19.2</u>	419	19.2	419	19.2
429.mcf	<u>411</u>	<u>22.2</u>	410	22.2	412	22.1	<u>382</u>	<u>23.8</u>	385	23.7	382	23.9
445.gobmk	564	18.6	<u>564</u>	<u>18.6</u>	564	18.6	509	20.6	<u>509</u>	<u>20.6</u>	508	20.6
456.hmmmer	629	14.8	629	14.8	<u>629</u>	<u>14.8</u>	361	25.8	362	25.8	<u>362</u>	<u>25.8</u>
458.sjeng	717	16.9	710	17.0	<u>715</u>	<u>16.9</u>	640	18.9	<u>640</u>	<u>18.9</u>	640	18.9
462.libquantum	99.9	207	<u>98.6</u>	<u>210</u>	98.2	211	92.6	224	<u>93.0</u>	<u>223</u>	93.1	223
464.h264ref	757	29.2	757	29.2	<u>757</u>	<u>29.2</u>	<u>705</u>	<u>31.4</u>	704	31.4	706	31.4
471.omnetpp	409	15.3	421	14.8	<u>411</u>	<u>15.2</u>	<u>375</u>	<u>16.7</u>	376	16.6	374	16.7
473.astar	489	14.3	<u>491</u>	<u>14.3</u>	491	14.3	<u>444</u>	<u>15.8</u>	443	15.8	444	15.8
483.xalancbmk	288	24.0	<u>288</u>	<u>23.9</u>	289	23.9	288	24.0	<u>288</u>	<u>23.9</u>	289	23.9

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
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

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.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-linux64-revC.20090714.02.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revC.20090714.02.xml>

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