



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 16.0

IBM System x3650 (Intel Xeon E5320)

SPECint_base2006 = 13.8

CPU2006 license: 11

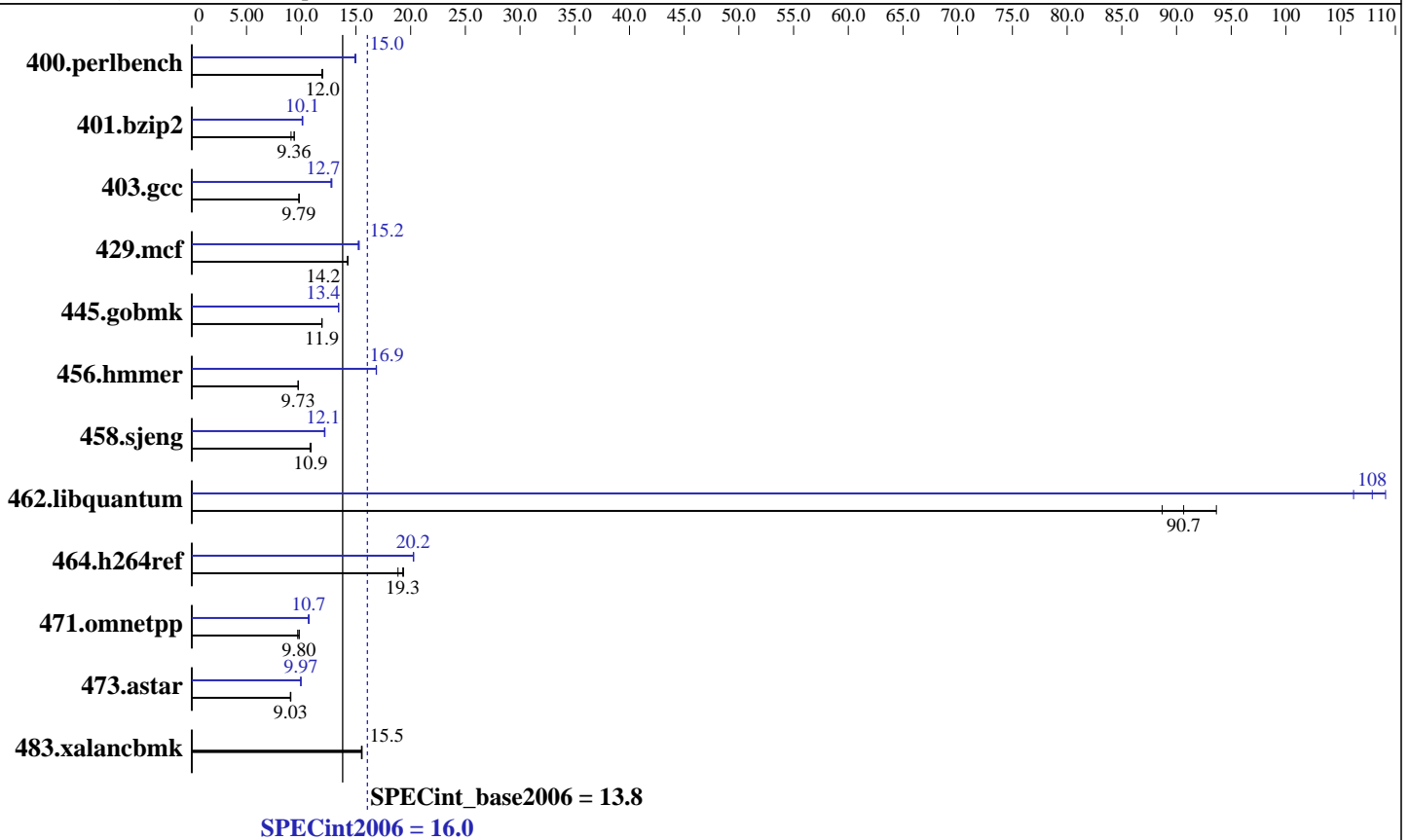
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2008

Hardware Availability: Feb-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5320
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 1866
 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: 8 MB I+D on chip per chip, 4 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	822	11.9	817	12.0	<u>817</u>	<u>12.0</u>	<u>652</u>	<u>15.0</u>	652	15.0	655	14.9
401.bzip2	1064	9.07	1031	9.36	<u>1031</u>	<u>9.36</u>	957	10.1	<u>954</u>	<u>10.1</u>	952	10.1
403.gcc	820	9.82	<u>822</u>	<u>9.79</u>	822	9.79	<u>632</u>	<u>12.7</u>	629	12.8	632	12.7
429.mcf	640	14.2	<u>640</u>	<u>14.2</u>	640	14.3	<u>598</u>	<u>15.2</u>	600	15.2	596	15.3
445.gobmk	882	11.9	882	11.9	<u>882</u>	<u>11.9</u>	782	13.4	782	13.4	<u>782</u>	<u>13.4</u>
456.hmmmer	<u>959</u>	<u>9.73</u>	959	9.73	960	9.72	554	16.9	553	16.9	<u>553</u>	<u>16.9</u>
458.sjeng	<u>1113</u>	<u>10.9</u>	1111	10.9	1120	10.8	<u>997</u>	<u>12.1</u>	994	12.2	998	12.1
462.libquantum	<u>229</u>	<u>90.7</u>	234	88.7	221	93.6	190	109	195	106	<u>192</u>	<u>108</u>
464.h264ref	1174	18.8	1144	19.4	<u>1148</u>	<u>19.3</u>	1093	20.2	1091	20.3	<u>1093</u>	<u>20.2</u>
471.omnetpp	<u>638</u>	<u>9.80</u>	637	9.81	646	9.67	583	10.7	587	10.7	<u>585</u>	<u>10.7</u>
473.astar	779	9.01	775	9.05	<u>778</u>	<u>9.03</u>	705	9.95	704	9.98	<u>704</u>	<u>9.97</u>
483.xalancbmk	443	15.6	<u>444</u>	<u>15.5</u>	445	15.5	443	15.6	<u>444</u>	<u>15.5</u>	445	15.5

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.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.20090714.06.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.20090714.06.xml>

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