SPEC® CINT2006 Result

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IBM Corporation

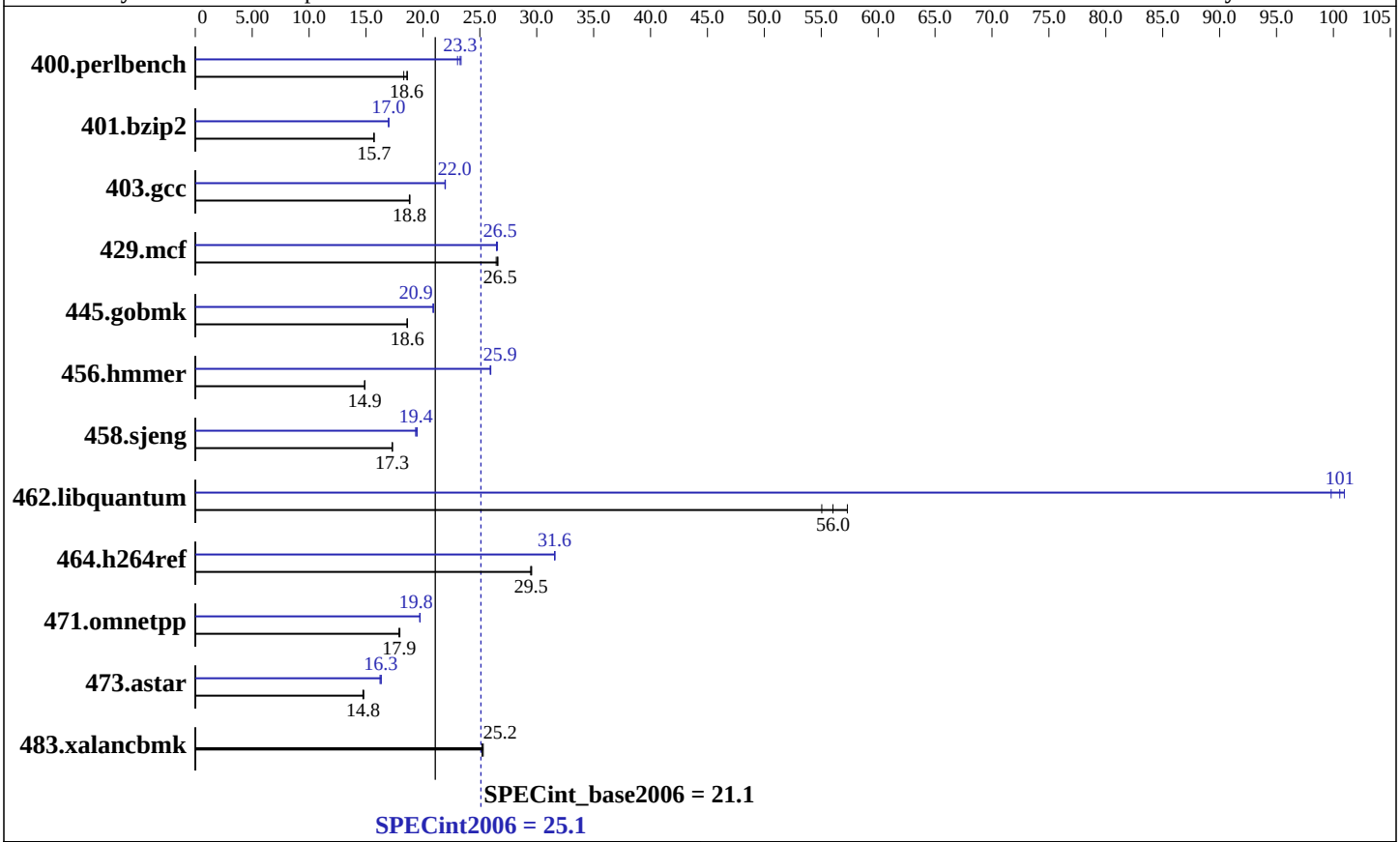
IBM System x3250 M2 (Intel Xeon X3360)

SPECint®2006 = 25.1

SPECint_base2006 = 21.1

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Jun-2008
Hardware Availability: Sep-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X3360
CPU Characteristics:	1333MHz system bus
CPU MHz:	2830
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:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (4 x 2 GB DDR2-6400E ECC)
Disk Subsystem:	1 x 160 GB SATA, 7200RPM
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:	Run level 3 (Full multiuser with network)
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**	524	18.6	533	18.3	**420**	**23.3**	418	23.4	424	23.0
401.bzip2	614	15.7	615	15.7	**614**	**15.7**	568	17.0	**568**	**17.0**	568	17.0
403.gcc	**427**	**18.8**	428	18.8	427	18.8	367	21.9	**367**	**22.0**	366	22.0
429.mcf	343	26.6	345	26.4	**344**	**26.5**	**345**	**26.5**	343	26.6	345	26.5
445.gobmk	563	18.6	**563**	**18.6**	564	18.6	**502**	**20.9**	502	20.9	502	20.9
456.hmmer	**627**	**14.9**	627	14.9	627	14.9	**360**	**25.9**	360	25.9	359	26.0
458.sjeng	699	17.3	699	17.3	**699**	**17.3**	625	19.4	**623**	**19.4**	621	19.5
462.libquantum	**370**	**56.0**	376	55.0	362	57.3	208	99.8	**206**	**101**	205	101
464.h264ref	**750**	**29.5**	751	29.5	749	29.6	701	31.6	**701**	**31.6**	700	31.6
471.omnetpp	348	18.0	349	17.9	**349**	**17.9**	**316**	**19.8**	316	19.8	317	19.7
473.astar	477	14.7	474	14.8	**476**	**14.8**	**431**	**16.3**	430	16.3	433	16.2
483.xalancbmk	273	25.3	**274**	**25.2**	274	25.2	273	25.3	**274**	**25.2**	274	25.2

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.hmmer,
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

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

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.hmmer: `-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`

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.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.xml

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