SPEC® CINT2006 Result

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IBM Corporation

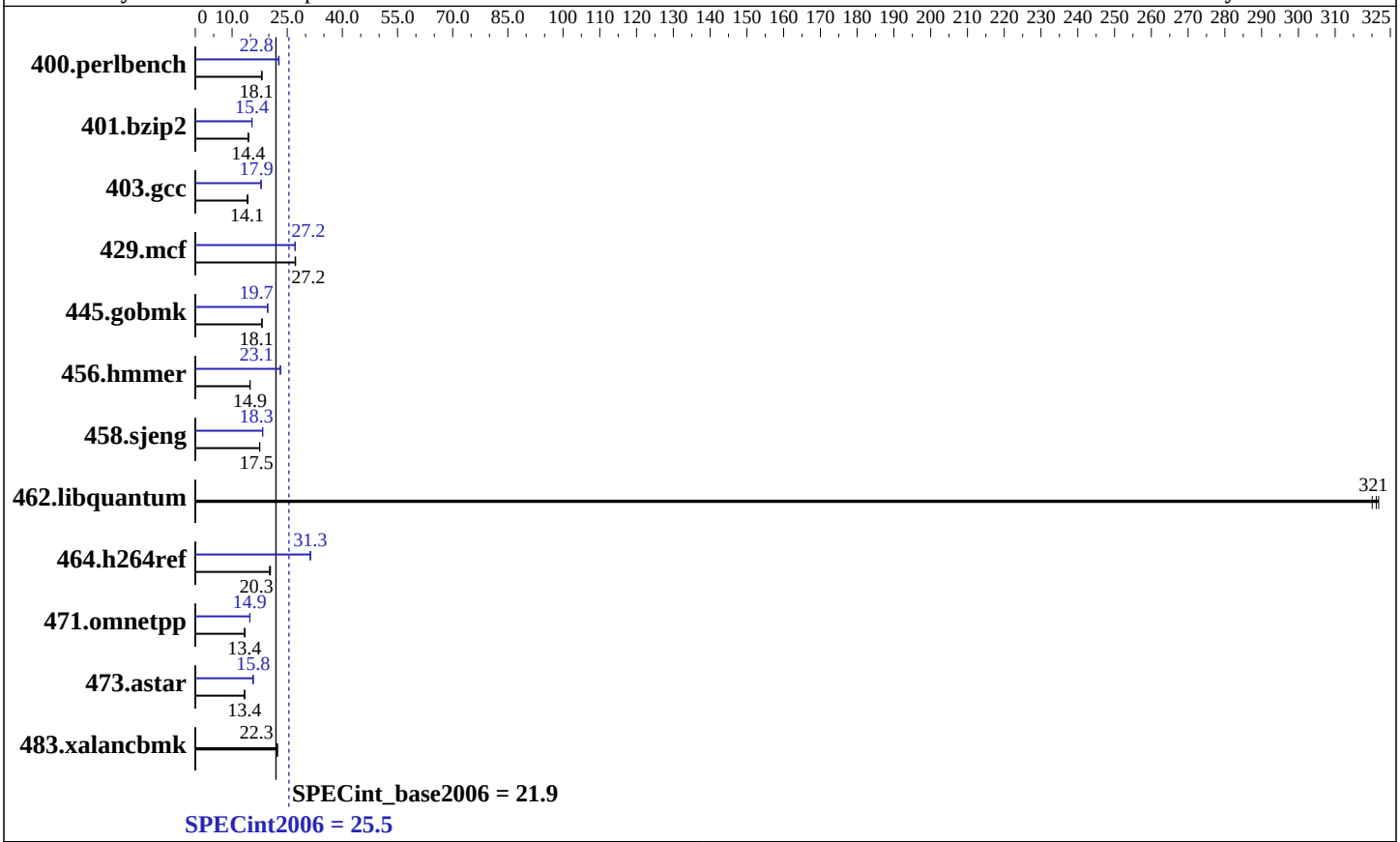
IBM System x3850 M2 (Intel Xeon X7460)

SPECint®2006 = 25.5

SPECint_base2006 = 21.9

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

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



Hardware

CPU Name:	Intel Xeon X7460
CPU Characteristics:	
CPU MHz:	2667
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip
CPU(s) orderable:	1,2,3,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	9 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache:	16 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (16 x 4 GB PC2-5300P)
Disk Subsystem:	1 x 73 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cc_b_11.0.042
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**539**	**18.1**	542	18.0	539	18.1	432	22.6	429	22.8	**429**	**22.8**
401.bzip2	671	14.4	666	14.5	**669**	**14.4**	625	15.4	627	15.4	**626**	**15.4**
403.gcc	570	14.1	**570**	**14.1**	562	14.3	449	17.9	**450**	**17.9**	450	17.9
429.mcf	336	27.2	**335**	**27.2**	334	27.3	**335**	**27.2**	337	27.1	335	27.2
445.gobmk	578	18.1	**579**	**18.1**	579	18.1	533	19.7	**533**	**19.7**	533	19.7
456.hmmer	626	14.9	**627**	**14.9**	628	14.9	**403**	**23.1**	403	23.2	404	23.1
458.sjeng	**691**	**17.5**	690	17.5	691	17.5	661	18.3	**661**	**18.3**	660	18.3
462.libquantum	64.4	322	64.7	320	**64.5**	**321**	64.4	322	64.7	320	**64.5**	**321**
464.h264ref	**1091**	**20.3**	1082	20.4	1095	20.2	**708**	**31.3**	708	31.2	706	31.4
471.omnetpp	**465**	**13.4**	463	13.5	466	13.4	420	14.9	422	14.8	**421**	**14.9**
473.astar	525	13.4	**524**	**13.4**	524	13.4	450	15.6	445	15.8	**446**	**15.8**
483.xalancbmk	**310**	**22.3**	309	22.3	310	22.3	**310**	**22.3**	309	22.3	310	22.3

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
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
Hardware Prefetch Disabled, Adjacent Sector Prefetch Disabled
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
```

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:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/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/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

456.hmmer:
```
/opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/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) -xSSE4.1 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4

462.libquantum: basepeak = yes

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.03.html
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.02.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.04.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.03.xml
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.02.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.04.xml

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Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 20:52:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 October 2008.