SPEC® CINT2006 Result

IBM Corporation

IBM System x3850 M2 (Intel Xeon X7460)

SPECint®2006 = 25.5

SPECint_base2006 = 21.9

CPU2006 license: 11		**Test date:**	Sep-2008
Test sponsor:	IBM Corporation	**Hardware Availability:**	Sep-2008
Tested by:	IBM Corporation	**Software Availability:**	Nov-2008


```
400.perlbench    22.8
                 18.1
401.bzip2        15.4
                 14.4
403.gcc          17.9
                 14.1
429.mcf          27.2
                 27.2
445.gobmk        19.7
                 18.1
456.hmmer        23.1
                 14.9
458.sjeng        18.3
                 17.5
462.libquantum                                           321
464.h264ref      31.3
                 20.3
471.omnetpp      14.9
                 13.4
473.astar        15.8
                 13.4
483.xalancbmk    22.3
```

SPECint_base2006 = 21.9

SPECint2006 = 25.5
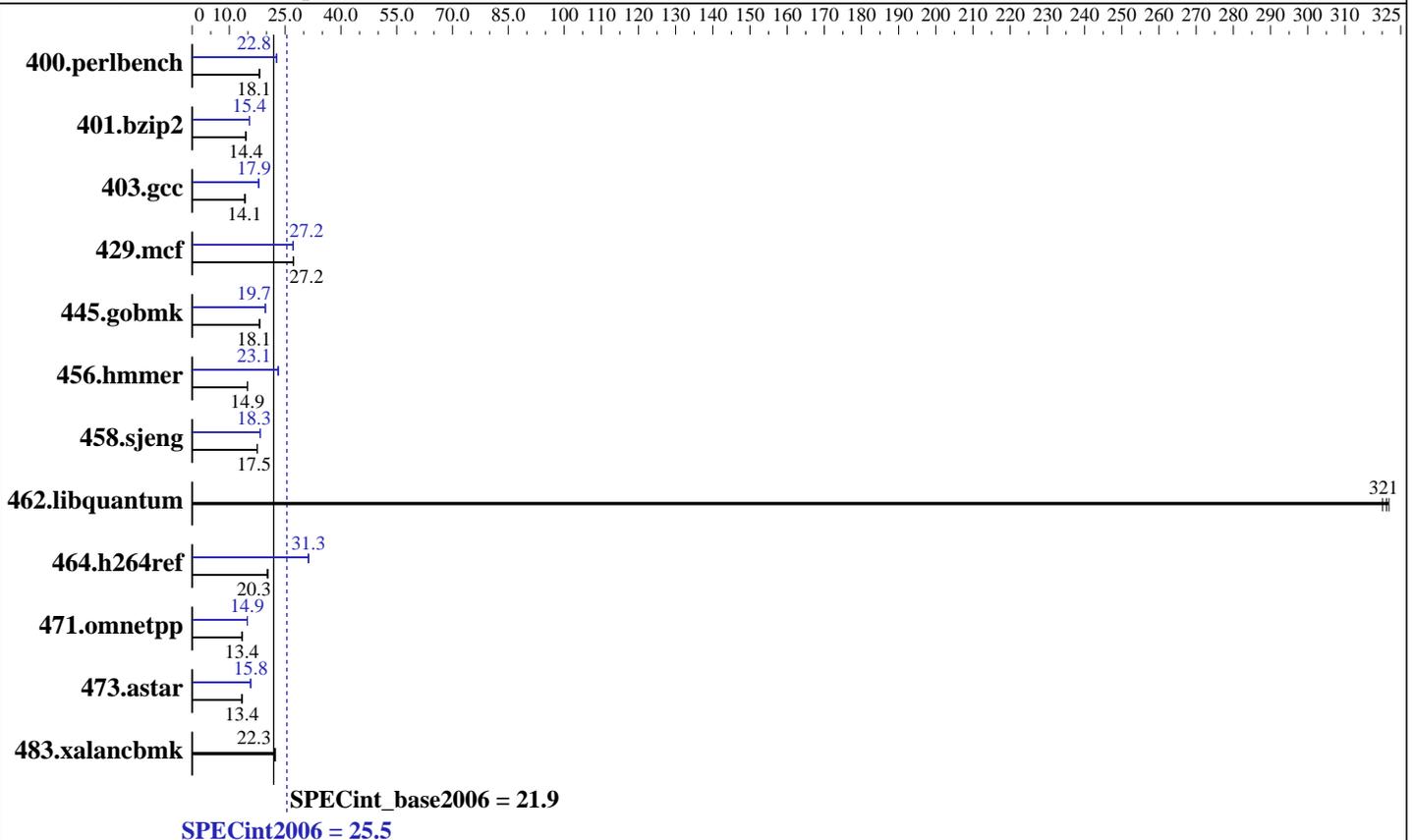
Hardware

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`

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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:

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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

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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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