SPEC® CINT2006 Result
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IBM Corporation

SPECint®_rate2006 = 200

IBM System x3550 M2 (Intel Xeon E5520)

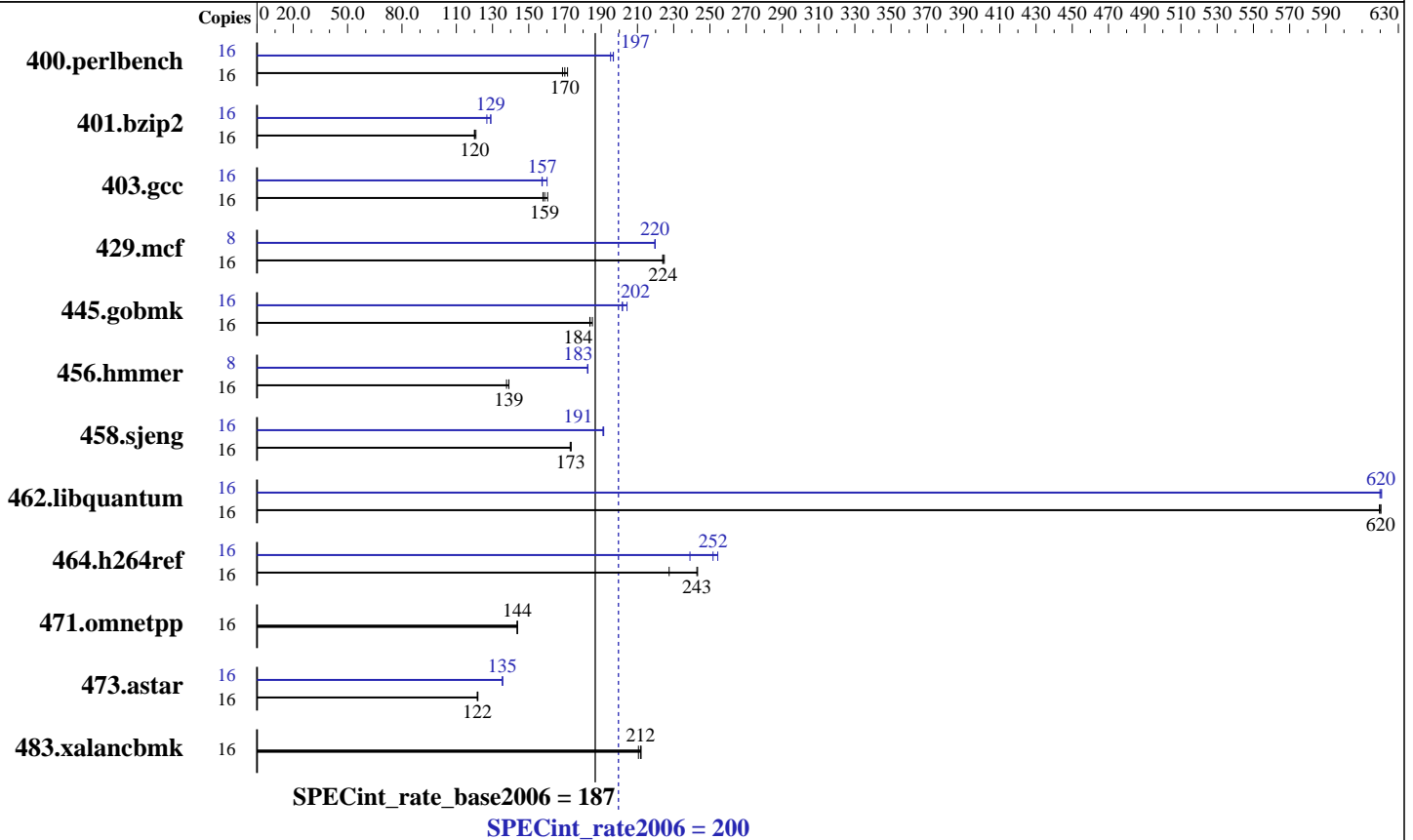SPECint_rate_base2006 = 187

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

Test date: Dec-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009

Copies 0 20.0 50.0 80.0 110 130 150 170 190 210 230 250 270 290 310 330 350 370 390 410 430 450 470 490 510 530 550 570 590 630

Benchmark	Copies (blue)	blue value	Copies (black)	black value
400.perlbench	16	197	16	170
401.bzip2	16	129	16	120
403.gcc	16	157	16	159
429.mcf	8	220	16	224
445.gobmk	16	202	16	184
456.hmmer	8	183	16	139
458.sjeng	16	191	16	173
462.libquantum	16	620	16	620
464.h264ref	16	252	16	243
471.omnetpp	16	144		
473.astar	16	135	16	122
483.xalancbmk	16	212		

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Hardware

CPU Name:	Intel Xeon E5520
CPU Characteristics:	Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 x 4 GB PC3-10600R-ECC)
Disk Subsystem:	1 x 73 GB SAS, 15000RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SP2 with patch kernel 20090119, Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ Compiler Perfessional 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080
Auto Parallel:	No
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	927	169	**920**	**170**	912	171	16	801	195	795	197	**795**	**197**
401.bzip2	16	**1285**	**120**	1287	120	1278	121	16	1217	127	**1197**	**129**	1197	129
403.gcc	16	803	160	816	158	**811**	**159**	16	804	160	819	157	**818**	**157**
429.mcf	16	**651**	**224**	649	225	652	224	8	332	220	**332**	**220**	332	220
445.gobmk	16	907	185	914	184	**913**	**184**	16	822	204	832	202	**832**	**202**
456.hmmer	16	1084	138	1074	139	**1074**	**139**	8	409	182	**409**	**183**	409	183
458.sjeng	16	**1118**	**173**	1117	173	1120	173	16	1012	191	**1013**	**191**	1014	191
462.libquantum	16	535	620	**534**	**620**	534	620	16	535	620	534	621	**534**	**620**
464.h264ref	16	1456	243	**1458**	**243**	1556	227	16	1392	254	**1407**	**252**	1482	239
471.omnetpp	16	**696**	**144**	696	144	696	144	16	**696**	**144**	696	144	696	144
473.astar	16	921	122	**923**	**122**	924	122	16	829	136	**829**	**135**	829	135
483.xalancbmk	16	521	212	**521**	**212**	524	211	16	521	212	**521**	**212**	524	211

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
   The config file option 'submit' was used.
    numactl was used to bind copies to the cores
```

Platform Notes

```
   Turbo Mode Enable
   CPU C State Enable
```

General Notes

```
   'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
```

Base Compiler Invocation

C benchmarks:
```
     icc
```

C++ benchmarks:
```
     icpc
```

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Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -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/11.0/080/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/080/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/080/bin/intel64/icc

C++ benchmarks (except as noted below):
    icpc

473.astar: /opt/intel/Compiler/11.0/080/bin/intel64/icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

```
      458.sjeng: -DSPEC_CPU_LP64
  462.libquantum: -DSPEC_CPU_LINUX
       473.astar: -DSPEC_CPU_LP64
  483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
  400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                 -prof-use(pass 2) -ansi-alias -opt-prefetch

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

       403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
                 -opt-malloc-options=3

       429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                 -prof-use(pass 2) -opt-prefetch

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

     456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
                 -ansi-alias -auto-ilp32

     458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                 -prof-use(pass 2) -unroll4 -auto-ilp32

  462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static
                 -opt-malloc-options=3 -opt-prefetch

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

C++ benchmarks:

```
   471.omnetpp: basepeak = yes

      473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                 -ansi-alias -opt-ra-region-strategy=routine -auto-ilp32
                 -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64
```

Continued on next page

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Peak Optimization Flags (Continued)

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-ic11.0-int-linux64-revA.20091028.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20091028.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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