SPEC® CINT2006 Result
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SGI

SGI Altix XE 270 (Intel Xeon X5570, 2.93 GHz)

$SPECint®_rate2006 = $ 255

$SPECint_rate_base2006 = $ 239

CPU2006 license: 4		**Test date:** Apr-2009
Test sponsor: SGI		**Hardware Availability:** Mar-2009
Tested by: SGI		**Software Availability:** Feb-2009

Copies 0 30.0 60.0 90.0 120 150 180 210 240 270 300 330 360 390 420 450 480 510 540 570 600 630 660 690 720 770

- 400.perlbench: 16 — 257; 16 — 222
- 401.bzip2: 16 — 160; 16 — 151
- 403.gcc: 16 — 200; 16 — 199
- 429.mcf: 8 — 277; 16 — 274
- 445.gobmk: 16 — 266; 16 — 243
- 456.hmmer: 8 — 244; 16 — 185
- 458.sjeng: 16 — 253; 16 — 229
- 462.libquantum: 16 — 762; 16 — 762
- 464.h264ref: 16 — 328; 16 — 323
- 471.omnetpp: 16 — 175
- 473.astar: 16 — 174; 16 — 158
- 483.xalancbmk: 16 — 271

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Hardware

CPU Name:	Intel Xeon X5570
CPU Characteristics:	Quad Core, 2.93 GHz
	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2934
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*4GB DDR3-1333 CL9 RDIMMs)
Disk Subsystem:	3 TB RAID 0
	6 x 500 GB SATA (Seagate Barracuda 7200 rpm)
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.30-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080
Auto Parallel:	No
File System:	xfs
System State:	Multi-user, run level 3
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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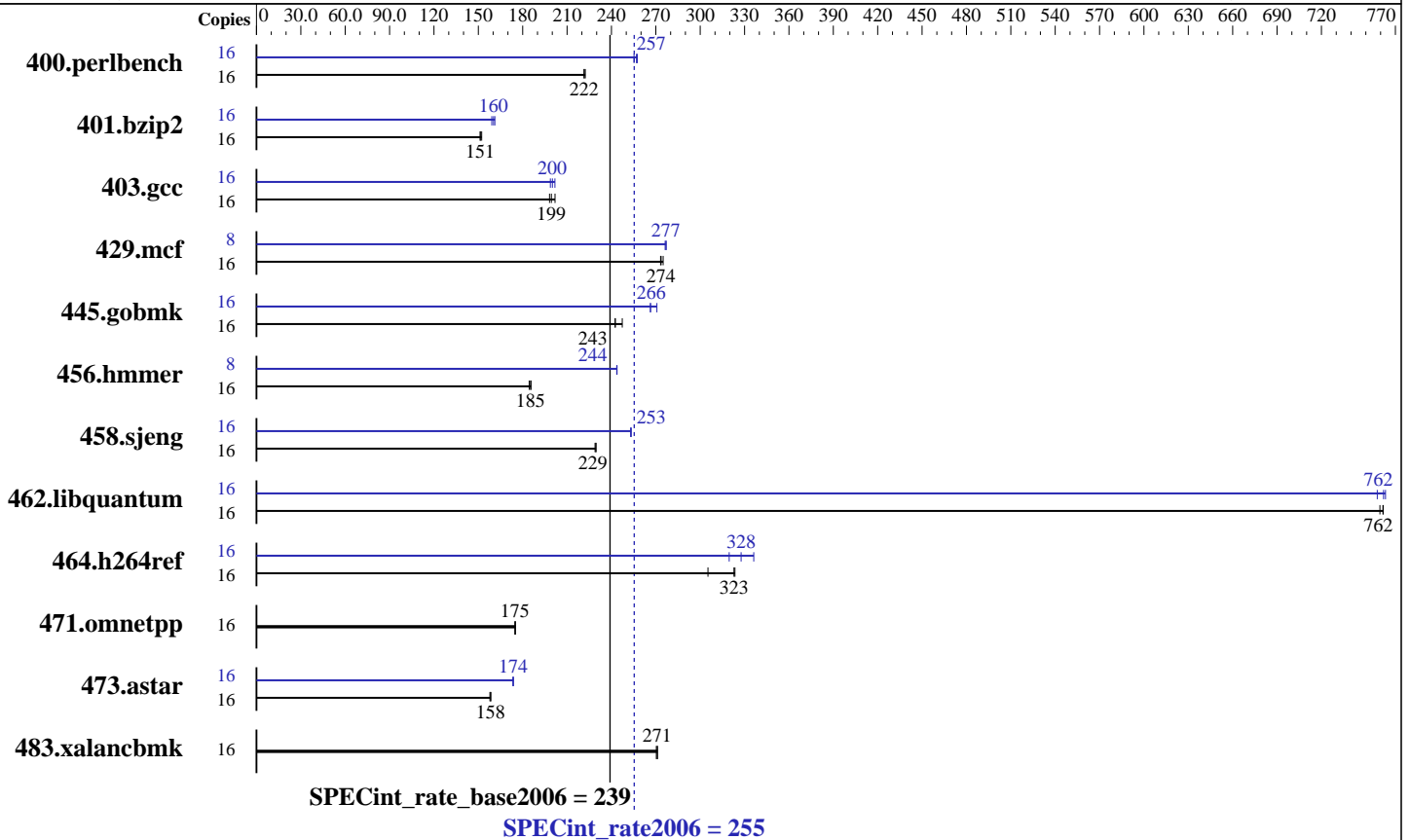SPECint_rate_base2006 = 239

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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	706	222	703	222	**705**	**222**	16	**608**	**257**	612	255	607	257
401.bzip2	16	**1020**	**151**	1021	151	1014	152	16	970	159	**963**	**160**	958	161
403.gcc	16	638	202	**646**	**199**	650	198	16	638	202	**644**	**200**	648	199
429.mcf	16	531	275	**533**	**274**	534	273	8	264	276	263	277	**264**	**277**
445.gobmk	16	679	247	**692**	**243**	692	243	16	620	271	630	266	**630**	**266**
456.hmmer	16	804	186	810	184	**806**	**185**	8	**306**	**244**	306	244	306	244
458.sjeng	16	844	230	846	229	**844**	**229**	16	764	253	765	253	**765**	**253**
462.libquantum	16	436	760	**435**	**762**	435	762	16	438	758	**435**	**762**	434	763
464.h264ref	16	**1097**	**323**	1095	323	1160	305	16	1053	336	**1081**	**328**	1108	320
471.omnetpp	16	**572**	**175**	571	175	572	175	16	**572**	**175**	571	175	572	175
473.astar	16	712	158	709	158	**709**	**158**	16	648	173	**647**	**174**	647	174
483.xalancbmk	16	407	271	**407**	**271**	408	270	16	407	271	**407**	**271**	408	270

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
```

General Notes

```
 SGI ProPack 6 for Linux Service Pack 2 installed
 Adjacent cacheline prefetch enabled
```

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:

```
-xSSE4.2 -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
   458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
   473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX
```

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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`

    483.xalancbmk: `basepeak = yes`

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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.20090710.02.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.20090710.02.xml

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

Tested with SPEC CPU2006 v1.1.
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