SPEC® CINT2006 Result
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SGI

SGI Altix XE 250 (Intel Xeon E5472, 3.00 GHz)

$SPECint^{®}\_rate2006 = \quad 143$

$SPECint\_rate\_base2006 = \quad 119$

CPU2006 license: 4	**Test date:** Dec-2007
Test sponsor: SGI	**Hardware Availability:** Feb-2008
Tested by: SGI	**Software Availability:** Nov-2007

Copies

- 400.perlbench — 8 / 8 — 180 / 149
- 401.bzip2 — 8 / 8 — 116 / 109
- 403.gcc — 8 / 8 — 107 / 108
- 429.mcf — 8 / 8 — 95.6 / 95.0
- 445.gobmk — 8 / 8 — 165 / 152
- 456.hmmer — 8 / 8 — 216 / 126
- 458.sjeng — 8 / 8 — 157 / 143
- 462.libquantum — 1 / 8 — 241 / 76.6
- 464.h264ref — 8 / 8 — 263 / 252
- 471.omnetpp — 8 / 8 — 74.6 / 71.7
- 473.astar — 8 / 8 — 92.5 / 86.5
- 483.xalancbmk — 8 — 142

SPECint_rate_base2006 = 119

SPECint_rate2006 = 143

Hardware

CPU Name:	Intel Xeon E5472
CPU Characteristics:	Quad Core, 3.0 GHz
CPU MHz:	2992
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
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:	16 GB (8*2GB PC2-6400 CL5-5-5 FB-DIMMs)
Disk Subsystem:	1 x 250 GB SATA (Hitachi Deskstar 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
Auto Parallel:	Yes
File System:	xfs
System State:	Multi-user, run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap library V8.1 Binutils 2.17

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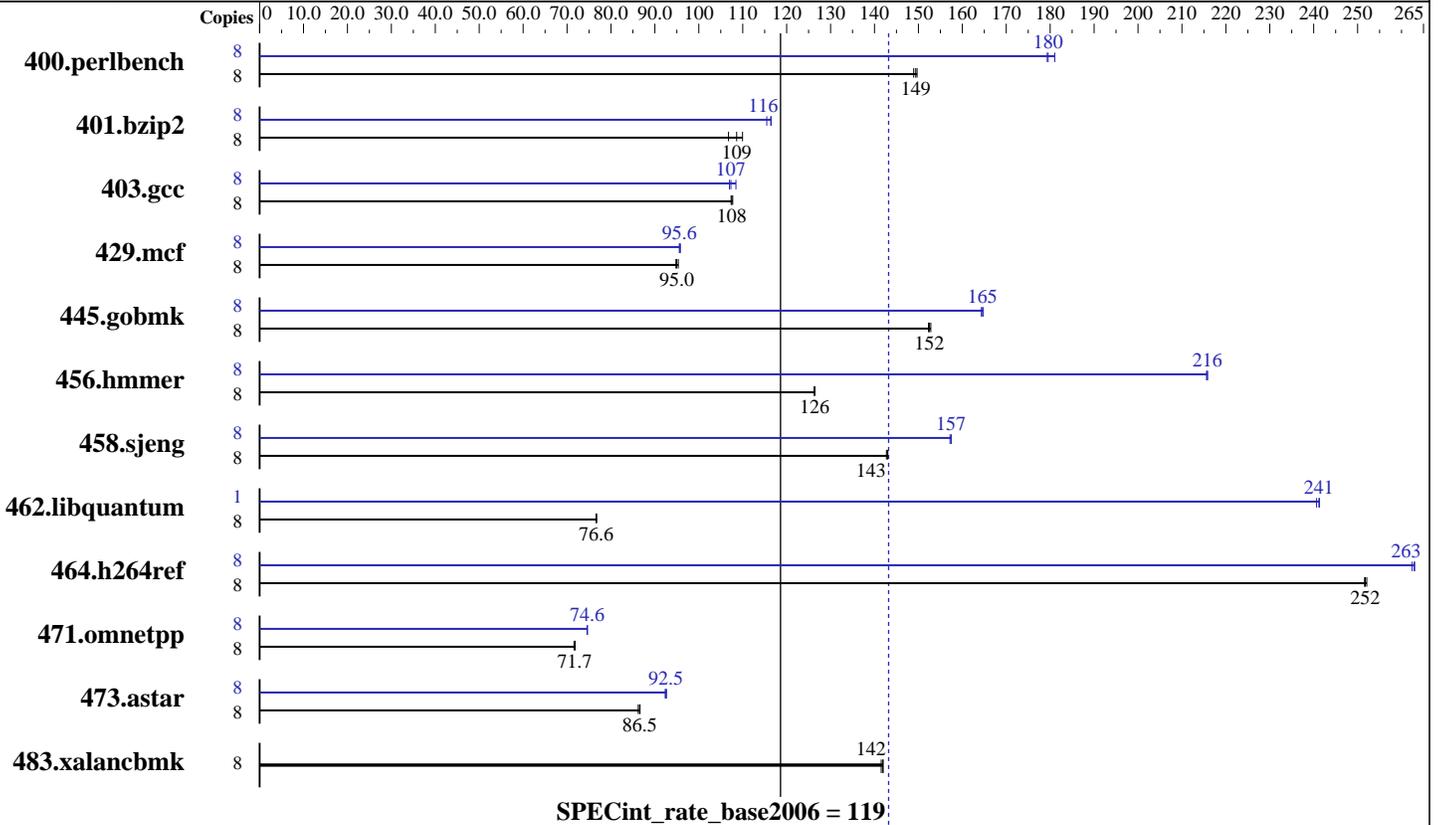
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Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	522	150	525	149	**523**	**149**	8	**435**	**180**	432	181	436	179
401.bzip2	8	**711**	**109**	702	110	723	107	8	**663**	**116**	663	116	669	115
403.gcc	8	600	107	598	108	**599**	**108**	8	**600**	**107**	602	107	594	108
429.mcf	8	770	94.8	765	95.3	**768**	**95.0**	8	761	95.8	**763**	**95.6**	763	95.6
445.gobmk	8	**550**	**152**	551	152	549	153	8	**510**	**165**	509	165	511	164
456.hmmer	8	590	126	**591**	**126**	591	126	8	**346**	**216**	346	216	346	216
458.sjeng	8	677	143	678	143	**677**	**143**	8	616	157	615	157	**615**	**157**
462.libquantum	8	2163	76.6	**2163**	**76.6**	2160	76.7	1	85.9	241	**85.9**	**241**	86.1	241
464.h264ref	8	704	252	702	252	**703**	**252**	8	675	262	**674**	**263**	673	263
471.omnetpp	8	**697**	**71.7**	696	71.8	698	71.6	8	670	74.6	**670**	**74.6**	671	74.6
473.astar	8	648	86.6	**649**	**86.5**	651	86.2	8	606	92.6	**607**	**92.5**	608	92.3
483.xalancbmk	8	389	142	390	142	**389**	**142**	8	389	142	390	142	**389**	**142**

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

General Notes

```
BIOS settings:
  Snoop Filter:           Enabled
  Hardware Prefetcher:    Enabled
  Adjacent Sector Prefetch: Disabled
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
The taskset utility was used to bind processes to cores
Parallel settings for 462.libquantum peak:
  OMP_NUM_THREADS = 8
  KMP_AFFINITY = physical,0
  KMP_STACKSIZE = 64M
```

Base Compiler Invocation

C benchmarks:
```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

C++ benchmarks:
```
/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

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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:
```
-fast -inline-calloc -opt-malloc-options=3
```

C++ benchmarks:
```
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs -lsmartheap
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

```
   401.bzip2: /sw/sdev/intel-cc/x86_64/10.1.008/bin/icc
            -L/sw/sdev/intel-cc/x86_64/10.1.008/lib
            -I/sw/sdev/intel-cc/x86_64/10.1.008/include

   456.hmmer: /sw/sdev/intel-cc/x86_64/10.1.008/bin/icc
            -L/sw/sdev/intel-cc/x86_64/10.1.008/lib
            -I/sw/sdev/intel-cc/x86_64/10.1.008/include
```

C++ benchmarks:
```
/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

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)

462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

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

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

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 -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 -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

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Peak Other Flags (Continued)

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-ia32-intel64-linux-flags.20090714.04.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.04.xml`

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