SPEC® CINT2006 Result
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SGI

SGI Altix ICE 8200
(Intel Xeon E5440, 2.83 GHz)

$SPECint^{®}2006 =$ 25.5

$SPECint\_base2006 =$ 22.2

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Jan-2007

Hardware Availability: Jan-2008

Software Availability: Nov-2007

Benchmark	base	peak
400.perlbench	18.5	23.0
401.bzip2	15.5	16.7
403.gcc	14.3	19.2
429.mcf	21.2	23.2
445.gobmk	18.7	20.7
456.hmmer	14.9	25.7
458.sjeng	17.1	18.9
462.libquantum	225	216
464.h264ref	29.2	31.5
471.omnetpp	15.1	16.3
473.astar	14.3	15.7
483.xalancbmk		24.8

SPECint_base2006 = 22.2

SPECint2006 = 25.5

Hardware

CPU Name:	Intel Xeon E5440
CPU Characteristics:	Quad Core, 2.83GHz
CPU MHz:	2833
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 PC2-5300 FB-DIMMs)
Disk Subsystem:	16 TB RAID 5+1
	32 x 500 GB SATA (Seagate Barracuda 7200 rpm)
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 for Linux Version 10.1, Build 20070913
Auto Parallel:	Yes
File System:	NFSv3 IPoIB
System State:	Multi-user, run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap library V8.1
	SGI ProPack 5 for Linux Service Pack 3
	Binutils 2.17

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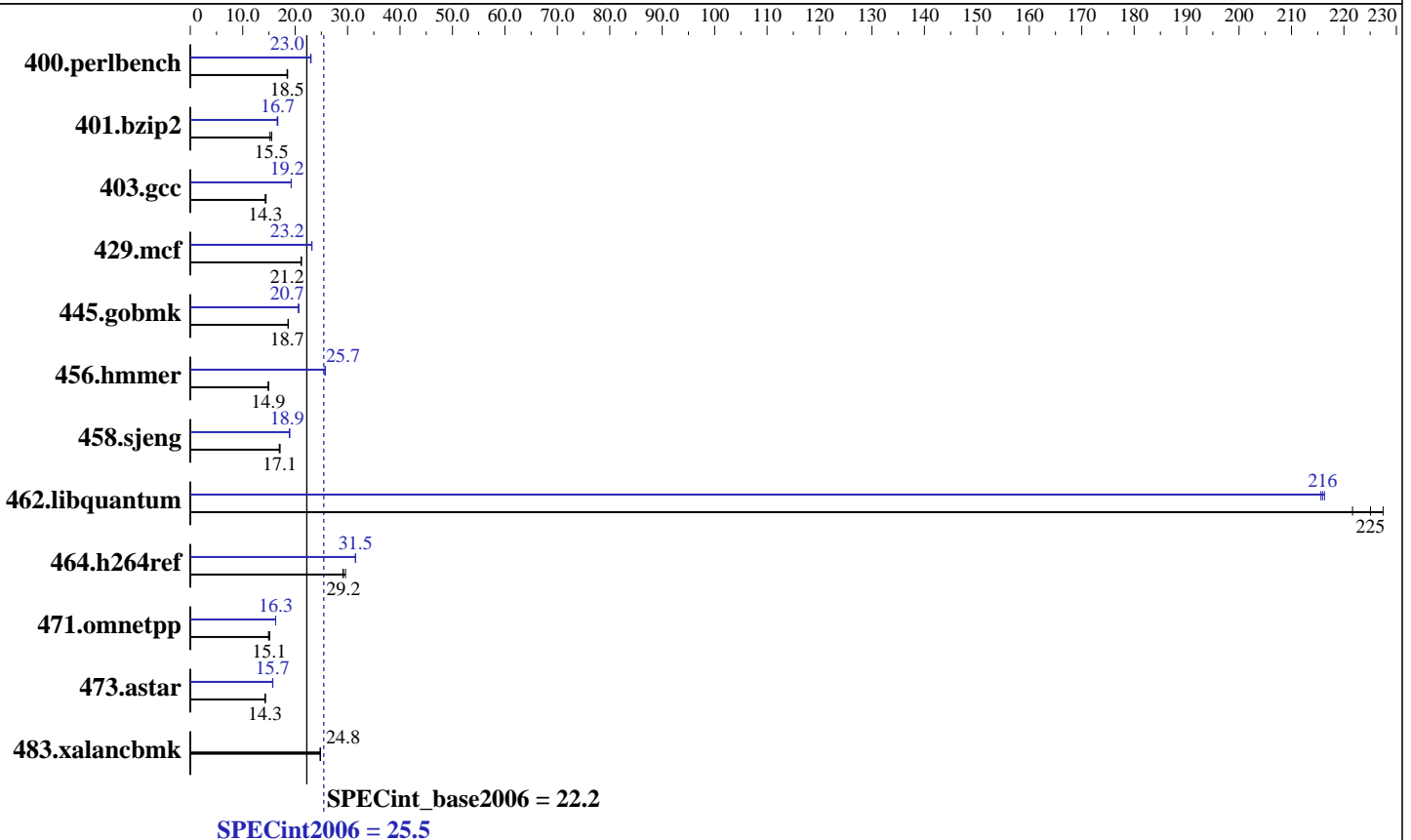
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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	526	18.6	529	18.5	**528**	**18.5**	424	23.0	**425**	**23.0**	426	22.9
401.bzip2	621	15.5	**623**	**15.5**	635	15.2	**579**	**16.7**	582	16.6	578	16.7
403.gcc	563	14.3	**562**	**14.3**	557	14.5	418	19.3	418	19.2	**418**	**19.2**
429.mcf	**431**	**21.2**	431	21.2	431	21.1	393	23.2	**393**	**23.2**	394	23.2
445.gobmk	562	18.7	**562**	**18.7**	562	18.7	508	20.7	508	20.7	**508**	**20.7**
456.hmmer	**626**	**14.9**	626	14.9	626	14.9	362	25.8	363	25.7	**363**	**25.7**
458.sjeng	713	17.0	708	17.1	**708**	**17.1**	**640**	**18.9**	638	19.0	641	18.9
462.libquantum	91.1	227	93.5	222	**92.1**	**225**	96.1	216	**96.0**	**216**	95.8	216
464.h264ref	**758**	**29.2**	760	29.1	748	29.6	702	31.5	**702**	**31.5**	702	31.5
471.omnetpp	**414**	**15.1**	414	15.1	419	14.9	**384**	**16.3**	384	16.3	384	16.3
473.astar	490	14.3	492	14.3	**492**	**14.3**	**447**	**15.7**	447	15.7	446	15.7
483.xalancbmk	278	24.8	**278**	**24.8**	278	24.8	278	24.8	**278**	**24.8**	278	24.8

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

General Notes

```
BIOS settings:
  Snoop Filter:          Disabled
  Hardware Prefetcher:   Enabled
  Adjacent Sector Prefetch: Enabled
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
Benchmarks compiled with automatic parallelization use
the following environment settings:
  OMP_NUM_THREADS = 8
  KMP_AFFINITY = physical,0
  KMP_STACKSIZE = 64M
```

Base Compiler Invocation

C benchmarks:
    `icc`

C++ benchmarks:
    `icpc`

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`

Continued on next page

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Base Portability Flags (Continued)

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

Base Optimization Flags

C benchmarks:

```
-fast -vec-guard-write -parallel -par-runtime-control
```

C++ benchmarks:

```
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap
```

Base Other Flags

C benchmarks:

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

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

```
401.bzip2: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/bin/icc
          -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/lib
          -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/include
```

```
456.hmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/bin/icc
          -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/lib
          -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/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
```

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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`
> `-auto-ilp32`

> 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`
> `-auto-ilp32`

> 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`
> `-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -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`
> `-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap`

> 483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

> 403.gcc: `-Dalloca=_alloca`

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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.20090714.05.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.20090714.05.xml

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

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