SPEC® CINT2006 Result

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SGI

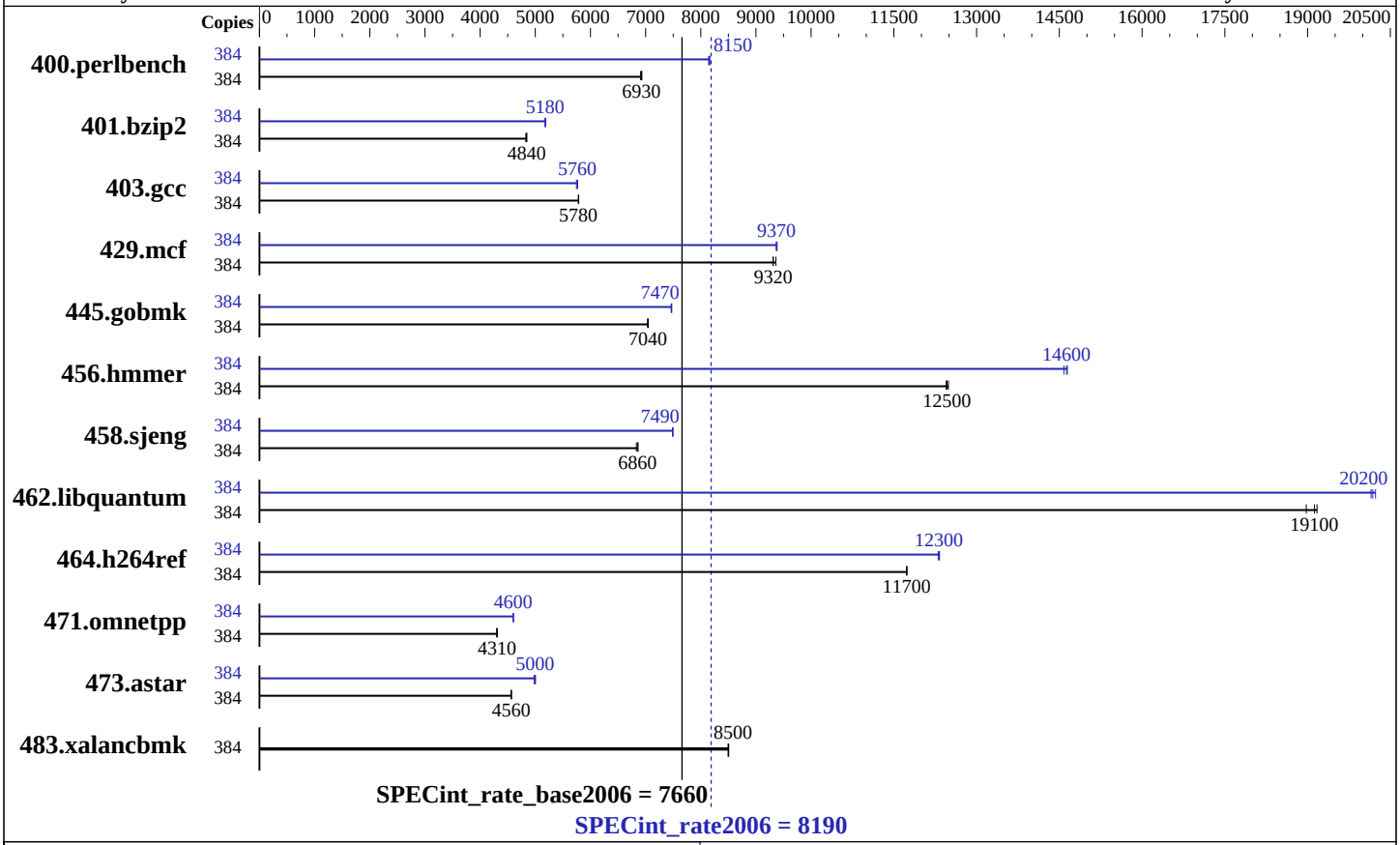
SGI Altix UV 1000 (Intel Xeon X7542, 2.66 GHz)

SPECint®_rate2006 = 8190

SPECint_rate_base2006 = 7660

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Aug-2010
Hardware Availability: Jun-2010
Software Availability: Jun-2010



Hardware

CPU Name:	Intel Xeon X7542
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2667
FPU:	Integrated
CPU(s) enabled:	384 cores, 64 chips, 6 cores/chip
CPU(s) orderable:	2-256 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:	18 MB I+D on chip per chip
Other Cache:	None
Memory:	2 TB (512 x 4GB dual-rank DDR3-1066 CL7 RDIMMs)
Disk Subsystem:	None
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7.1.1381.0.PTF-default
Compiler:	Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064
Auto Parallel:	No
File System:	tmpfs
System State:	Run Level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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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	384	541	6930	**542**	**6930**	543	6910	384	**460**	**8150**	460	8160	461	8140
401.bzip2	384	767	4830	**765**	**4840**	765	4850	384	716	5180	714	5190	**715**	**5180**
403.gcc	384	**535**	**5780**	534	5790	535	5780	384	536	5770	538	5750	**536**	**5760**
429.mcf	384	376	9310	**376**	**9320**	374	9360	384	374	9370	373	9380	**374**	**9370**
445.gobmk	384	573	7040	**572**	**7040**	572	7050	384	**540**	**7470**	539	7470	540	7470
456.hmmer	384	287	12500	288	12400	**287**	**12500**	384	246	14600	245	14600	**245**	**14600**
458.sjeng	384	677	6860	680	6830	**678**	**6860**	384	620	7490	**620**	**7490**	620	7490
462.libquantum	384	415	19200	**416**	**19100**	419	19000	384	395	20200	**394**	**20200**	393	20200
464.h264ref	384	**724**	**11700**	724	11700	724	11700	384	689	12300	**690**	**12300**	691	12300
471.omnetpp	384	**557**	**4310**	557	4310	558	4300	384	521	4600	**522**	**4600**	522	4600
473.astar	384	591	4560	590	4570	**591**	**4560**	384	**539**	**5000**	539	5000	542	4980
483.xalancbmk	384	**312**	**8500**	311	8510	312	8500	384	**312**	**8500**	311	8510	312	8500

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
```

Operating System Notes

```
Tmpfs filesystem set up with:
  mkdir -p /mnt/shm
  mount -t tmpfs -o size=2048g,rw,mpol=interleave tmpfs /mnt/shm/
  The mpol=interleave option sets the NUMA memory allocation
  policy for all files to allocate from each node in turn.
```

Platform Notes

```
OS on 300 GB SAS disk
```

General Notes

```
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
```

Base Compiler Invocation

C benchmarks:

```
icc  -m32
```

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m32

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 -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

462.libquantum: icc -m64

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64

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_LP64 -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

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

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -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 -auto-ilp32 -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: -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=block -Wl,-z,muldefs -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

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Peak Optimization Flags (Continued)

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 -Wl,-z,muldefs -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64`

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-ic11.1-linux64-revE.20100316.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.xml`

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