SPEC® CINT2006 Result

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Sun Microsystems

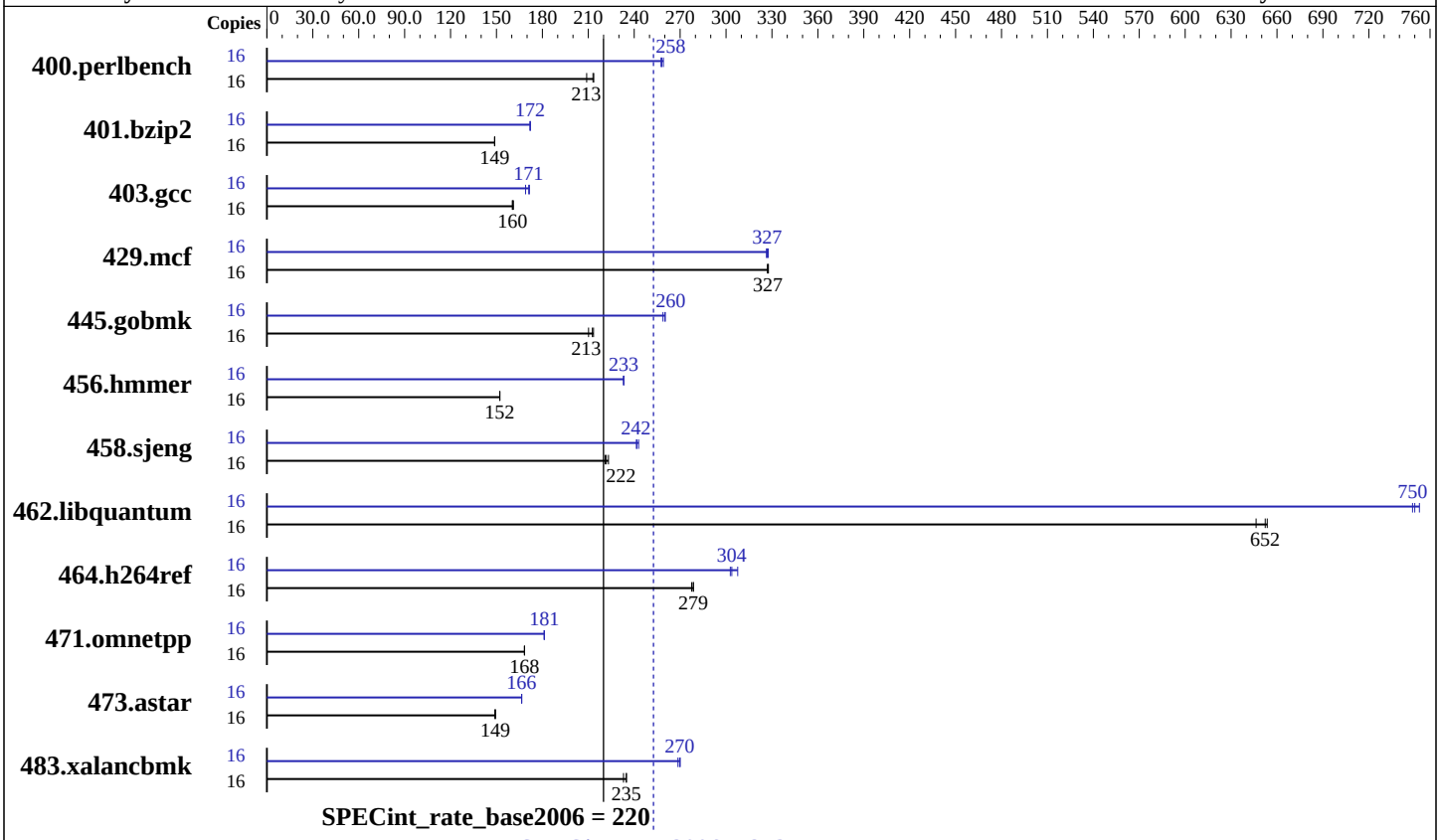
Sun Fire X4170 (Intel Xeon X5570 2.93GHz)

SPECint®_rate2006 = 253

SPECint_rate_base2006 = 220

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Apr-2009
Hardware Availability: Apr-2009
Software Availability: Jun-2009



Hardware

CPU Name:	Intel Xeon X5570
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 or 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 DDR3-1333)
Disk Subsystem:	1 x 146 GB, SAS, 10 K RPM
Other Hardware:	None

Software

Operating System:	OpenSolaris 2008.11
Compiler:	Sun Studio 12 Update 1 (internal build 39.0)
Auto Parallel:	No
File System:	zfs with gzip compression
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 9.01 for x64

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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	**734**	**213**	748	209	732	214	16	607	258	603	259	**606**	**258**
401.bzip2	16	1037	149	1038	149	**1037**	**149**	16	**898**	**172**	898	172	897	172
403.gcc	16	800	161	**803**	**160**	803	160	16	**753**	**171**	762	169	751	172
429.mcf	16	**446**	**327**	445	328	446	327	16	**446**	**327**	445	328	447	326
445.gobmk	16	799	210	786	213	**789**	**213**	16	645	260	**645**	**260**	649	259
456.hmmer	16	981	152	981	152	**981**	**152**	16	**640**	**233**	641	233	640	233
458.sjeng	16	867	223	876	221	**873**	**222**	16	797	243	**801**	**242**	802	241
462.libquantum	16	513	646	**508**	**652**	507	654	16	440	753	443	749	**442**	**750**
464.h264ref	16	1276	278	1270	279	**1271**	**279**	16	1169	303	**1166**	**304**	1151	308
471.omnetpp	16	**594**	**168**	594	168	594	168	16	**552**	**181**	552	181	551	181
473.astar	16	752	149	754	149	**753**	**149**	16	675	166	675	167	**675**	**166**
483.xalancbmk	16	470	235	474	233	**470**	**235**	16	409	270	411	269	**409**	**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, along with 'pbind", to
assign processes to cores.
```

Operating System Notes

```
ulimit -s 131072  (shell): increases stack
/etc/system parameters
   tune_t_fsflushr=10
   autoup=900
   set lpg_alloc_prefer=1
   set zfs:zfs_arc_max = 0x10000000
```

Platform Notes

```
  Default BIOS settings used except:
  Intel VT-d: Disabled.  VT-d, if enabled, supports
  remapping of I/O DMA transfers for virtualization.
```

Base Compiler Invocation

C benchmarks:

```
/data1/SUNWspro.b39/SUNWspro/bin/cc
```

C++ benchmarks:

```
/data1/SUNWspro.b39/SUNWspro/bin/CC
```

Base Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_IA32
403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
-fast -xipo=2 -xpagesize=2M -M /usr/lib/ld/map.bssalign

C++ benchmarks:
-fast -xipo=2 -xpagesize=2M -xvector=simd -xalias_level=compatible
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap
-library=stlport4

Base Other Flags

C benchmarks:
-V -# -xjobs=16

C++ benchmarks:
-verbose=diags,version -xjobs=16

Peak Compiler Invocation

C benchmarks:
/data1/SUNWspro.b39/SUNWspro/bin/cc

C++ benchmarks:
/data1/SUNWspro.b39/SUNWspro/bin/CC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_IA32
403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Peak Optimization Flags

C benchmarks:

400.perlbench: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xvector=simd -xalias_level=std -lbsdmalloc
-lumem

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=strong -lumem

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xalias_level=std

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xalias_level=std -M /usr/lib/ld/map.bssalign

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -m64 -xpagesize=2M
-xrestrict -xalias_level=strong -xdepend -lmvec

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xalias_level=strong -xpagesize=2M

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xvector=simd -xrestrict -xalias_level=std

462.libquantum: -fast -xipo=2 -m64 -xpagesize=2M -xvector=simd

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=strong

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap
-library=stlport4

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap_mt64
-xalias_level=compatible -library=stlport4

Continued on next page

Peak Optimization Flags (Continued)

483.xalancbmk: `-xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xipo=2`
`-xpagesize=2M -xunroll=8`
`-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap`
`-library=stlport4`

Peak Other Flags

C benchmarks:
`-V -# -xjobs=16`

C++ benchmarks:
`-verbose=diags,version -xjobs=16`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.xml`

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