SPEC® CINT2006 Result

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Sun Microsystems

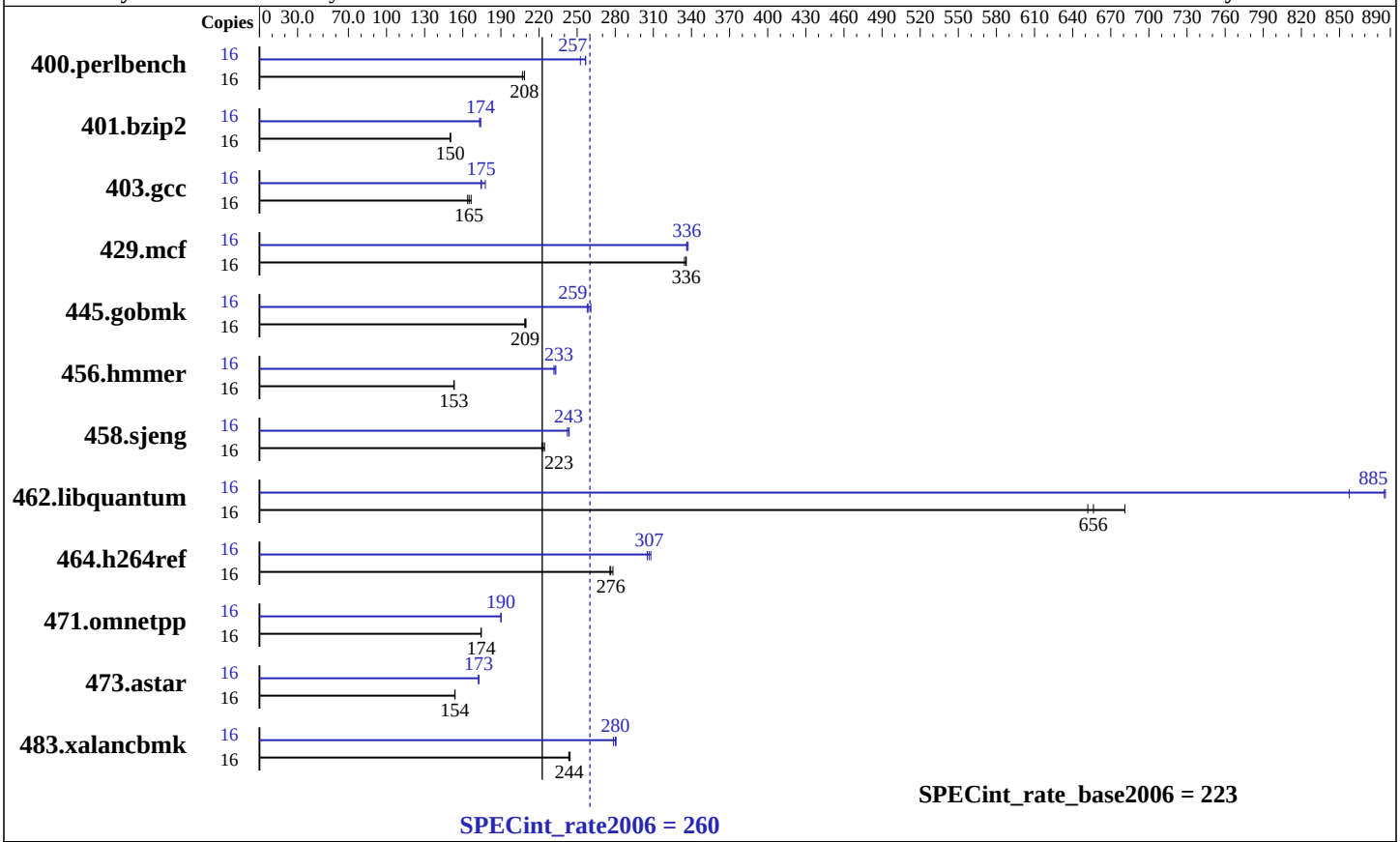
Sun Fire X2270 (Intel Xeon X5570 2.93GHz)

SPECint®_rate2006 = 260

SPECint_rate_base2006 = 223

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

Test date: Mar-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 1 TB, SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	OpenSolaris 2008.11
Compiler:	Sun Studio 12 Update 1 (backend build 20090309)
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	755	207	**750**	**208**	749	209	16	**609**	**257**	609	257	619	253
401.bzip2	16	1027	150	1028	150	**1027**	**150**	16	**887**	**174**	887	174	892	173
403.gcc	16	**781**	**165**	786	164	773	167	16	725	178	739	174	**737**	**175**
429.mcf	16	435	336	436	335	**435**	**336**	16	**434**	**336**	434	336	433	337
445.gobmk	16	800	210	804	209	**802**	**209**	16	643	261	**649**	**259**	651	258
456.hmmer	16	**975**	**153**	974	153	976	153	16	644	232	**642**	**233**	640	233
458.sjeng	16	863	224	871	222	**867**	**223**	16	794	244	**795**	**243**	799	242
462.libquantum	16	**505**	**656**	487	681	509	652	16	387	858	**374**	**885**	374	886
464.h264ref	16	1273	278	**1281**	**276**	1284	276	16	1160	305	1150	308	**1155**	**307**
471.omnetpp	16	574	174	573	175	**573**	**174**	16	**526**	**190**	525	190	526	190
473.astar	16	730	154	**730**	**154**	731	154	16	651	172	651	173	**651**	**173**
483.xalancbmk	16	**453**	**244**	453	243	452	244	16	393	281	**394**	**280**	396	279

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:

```
/data1/20090309_ceres_x86/bin/cc
```

C++ benchmarks:

```
/data1/20090309_ceres_x86/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:
/data1/20090309_ceres_x86/bin/cc

C++ benchmarks:
/data1/20090309_ceres_x86/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: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xvector=simd

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

Continued on next page

Peak Optimization Flags (Continued)

473.astar (continued):
-xalias_level=compatible -library=stlport4

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xunroll=8 -xvector=simd
-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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