SPEC® CINT2006 Result

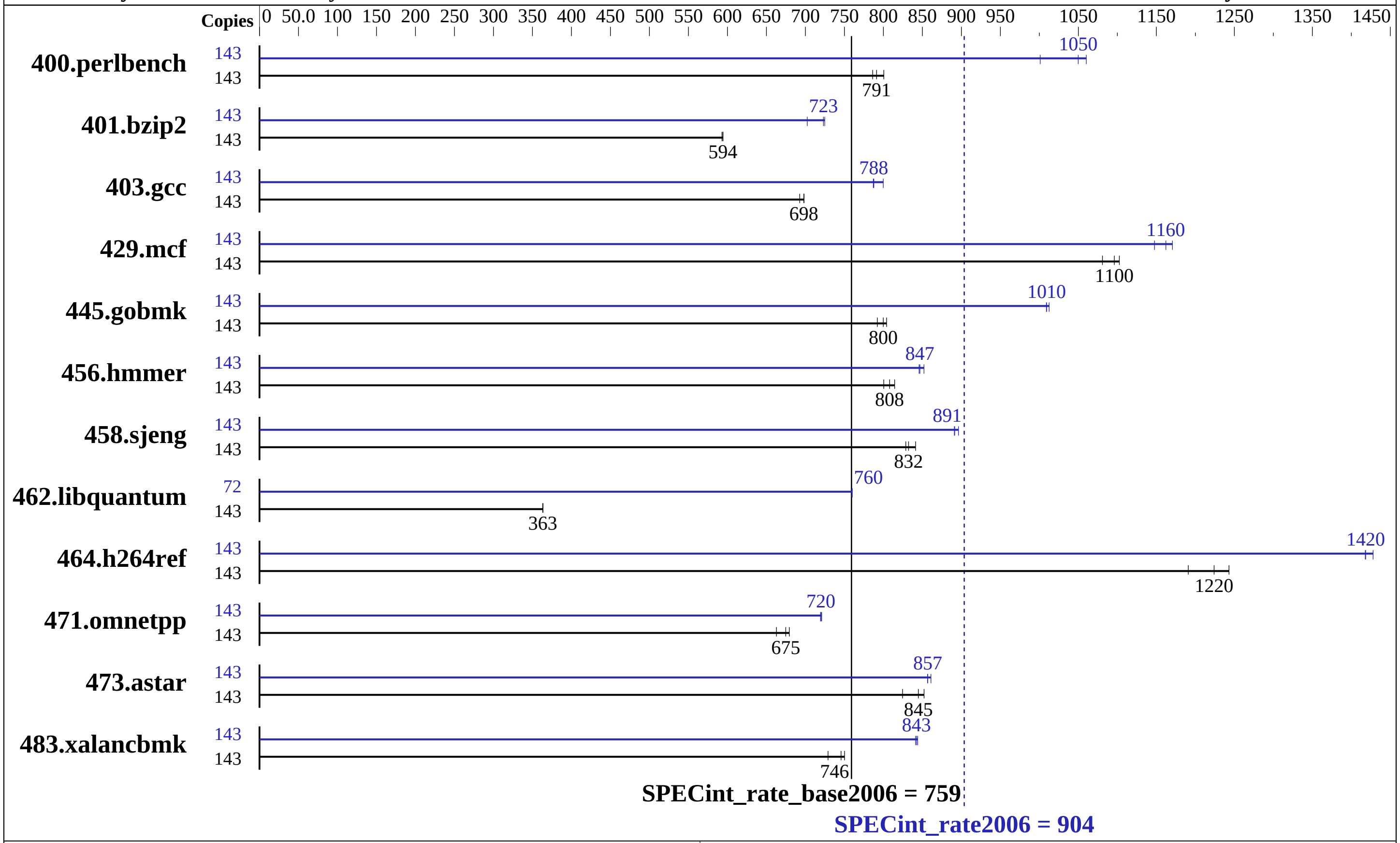
Sun Microsystems
Sun Fire E25K

SPECint®_rate2006 = 904

SPECint_rate_base2006 = 759

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

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Jun-2006



Hardware

CPU Name:	UltraSPARC IV+
CPU Characteristics:	
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	144 cores, 72 chips, 2 cores/chip
CPU(s) orderable:	4-72 chips (groups of 4)
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	2 MB I+D on chip per chip
L3 Cache:	32 MB I+D off chip per chip
Other Cache:	None
Memory:	304 GB, 16-way interleaved
Disk Subsystem:	System: Sun StorEdge D240 Media Tray (2x73GB) SPEC: StorEdge 6120 (14x73GB 10K FC-AL RAID5)
Other Hardware:	None

Software

Operating System:	Solaris 10 6/06
Compiler:	Sun Studio 11 with patch 120760-03
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

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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	143	**1766**	**791**	1745	801	1777	786	143	1396	1000	1318	1060	**1331**	**1050**
401.bzip2	143	**2322**	**594**	2322	594	2327	593	143	1965	702	**1908**	**723**	1904	725
403.gcc	143	1649	698	1662	693	**1649**	**698**	143	1463	787	**1461**	**788**	1439	800
429.mcf	143	1207	1080	1183	1100	**1190**	**1100**	143	1136	1150	**1122**	**1160**	1114	1170
445.gobmk	143	**1875**	**800**	1866	804	1893	792	143	1482	1010	**1486**	**1010**	1487	1010
456.hmmer	143	1638	814	**1651**	**808**	1667	800	143	1566	852	1577	846	**1575**	**847**
458.sjeng	143	2057	841	**2079**	**832**	2088	829	143	1931	896	**1941**	**891**	1942	891
462.libquantum	143	8153	363	8155	363	**8154**	**363**	72	1963	760	**1964**	**760**	1965	759
464.h264ref	143	2546	1240	2657	1190	**2585**	**1220**	143	2216	1430	**2231**	**1420**	2232	1420
471.omnetpp	143	1316	679	1348	663	**1324**	**675**	143	**1242**	**720**	1240	721	1242	719
473.astar	143	1178	852	1217	825	**1188**	**845**	143	1166	861	**1172**	**857**	1172	857
483.xalancbmk	143	1315	750	1353	729	**1323**	**746**	143	1169	844	**1171**	**843**	1173	841

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

Operating System Notes

```
Processes were bound to all but one core using "submit" and
"pbind".  The SPEC toolset was bound to the remaining core
(namely, processor 0 of the last system board).

ulimit -s 131072  (shell): increases stack

These shell commands request use of 4MB pages:
     export LD_PRELOAD=mpss.so.1:$LD_PRELOAD
     export MPSSHEAP=4MB
     export MPSSSTACK=4MB

/etc/system parameters
   maxphys=4194304
      Defines the maximum size of I/O requests, in bytes.
   maxpgio=1024
      Defines the maximum number of page I/O requests that can
      be queued by the paging system.
   tune_t_fsflushr=1
      Controls how many seconds elapse between runs of the
      page flush daemon, fsflush.
   autoup=60
      Causes pages older than the listed number of seconds to
      be written by fsflush.
   bufhwm=3000
      Memory byte limit for caching I/O buffers
   segmap_percent=1
      Set maximum percent memory for file system cache
```

Platform Notes

```
The tested system had 18 system boards.  The first 17
system boards were equipped with 16GB of memory; the last
system board had 32GB.  All memory was 16-way interleaved.
```

Base Compiler Invocation

C benchmarks:
`cc`

C++ benchmarks:
`CC`

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
`-g -fast -xipo=2 -xpagesize=4M -xprefetch_level=2 -ll2amm`

C++ benchmarks:
`-g0 -library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch_level=1 -xdepend -xalias_level=compatible -ll2amm -lfast`

Base Other Flags

C benchmarks:
`-xjobs=14 -V -#`

C++ benchmarks:
`-xjobs=14 -verbose=diags,version`

Peak Compiler Invocation

C benchmarks:
`cc`

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Peak Compiler Invocation (Continued)

C++ benchmarks:
CC

Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

400.perlbench: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xalias_level=std -Xc -xipo=2 -lfast

401.bzip2: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xalias_level=strong

403.gcc: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xipo=2 -xalias_level=std -xprefetch_level=2 -ll2amm

429.mcf: -g -fast -xpagesize=4M -xprefetch_level=2 -xrestrict -xalias_level=std -lfast

445.gobmk: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xalias_level=std -xrestrict

456.hmmer: -g -fast -xpagesize=4M -xipo=2 -xalias_level=strong

458.sjeng: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xipo=2

462.libquantum: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xprefetch_level=2

464.h264ref: -g -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xipo=2 -xalias_level=std -ll2amm

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -g0 -library=stlport4 -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xdepend -xalias_level=compatible -xipo=2 -Qoption cg -Qlp-av=0 -xprefetch_level=2 -lfast

473.astar: -g0 -library=stlport4 -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xdepend -xalias_level=compatible -xipo=2 -xprefetch_level=2 -xprefetch_auto_type=indirect_array_access -lfast

483.xalancbmk: -g0 -library=stlport4 -xprofile=collect:./fb(pass 1) -xprofile=use:./fb(pass 2) -fast -xpagesize=4M -xdepend -xalias_level=compatible -xprefetch_level=2

Peak Other Flags

C benchmarks:
-xjobs=14 -V -#

C++ benchmarks:
-xjobs=14 -verbose=diags,version

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/sun-studio.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/sun-studio.xml

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

Tested with SPEC CPU2006 v90.
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