SPEC® CINT2006 Result

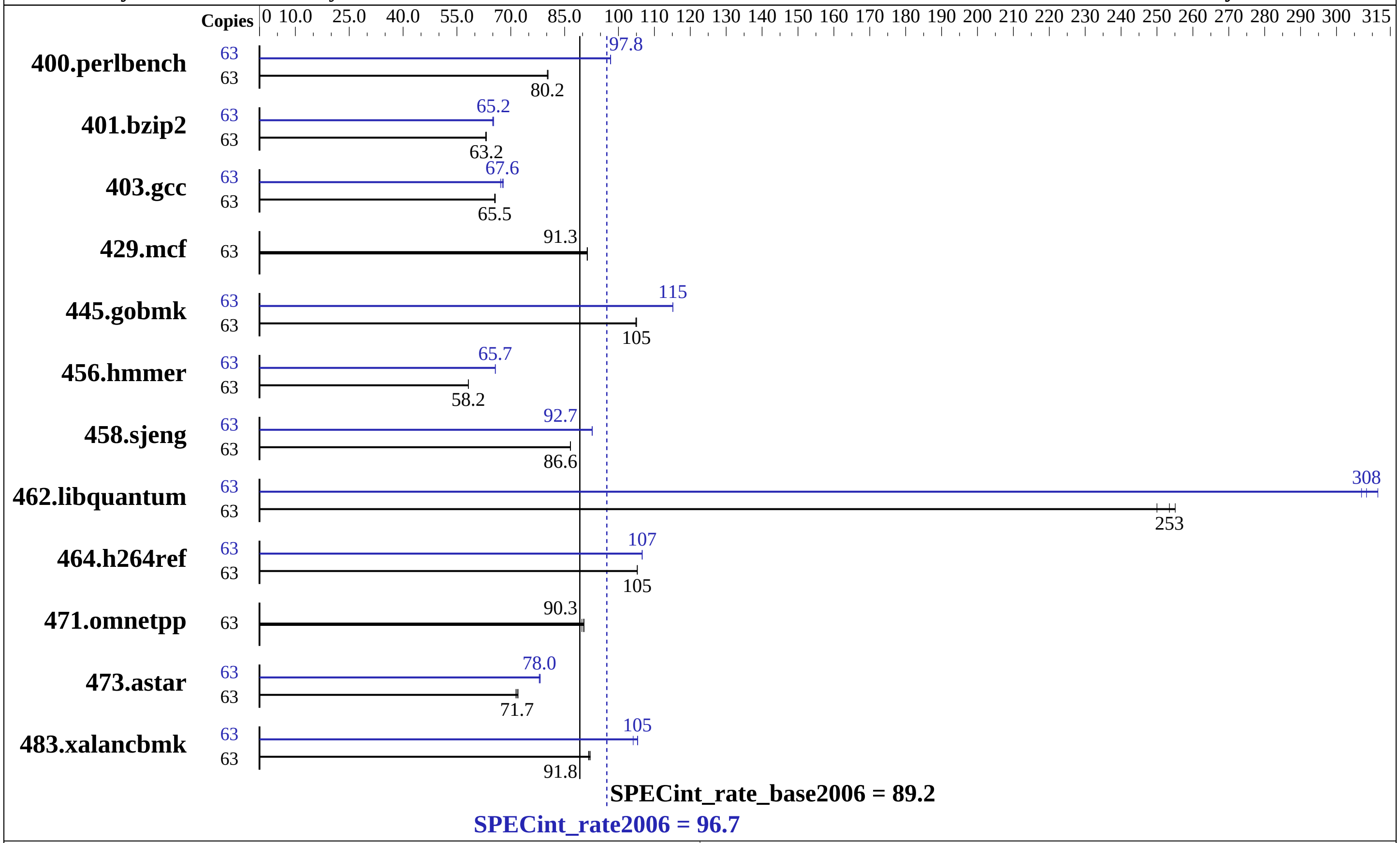
Sun Microsystems
Sun Blade T6320

SPECint®_rate2006 = 96.7

SPECint_rate_base2006 = 89.2

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

Test date: Mar-2009
Hardware Availability: Jul-2009
Software Availability: Jun-2009



Hardware

CPU Name:	UltraSPARC T2
CPU Characteristics:	
CPU MHz:	1582
FPU:	Integrated
CPU(s) enabled:	8 cores, 1 chip, 8 cores/chip, 8 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	16 KB I + 8 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	64 GB (16 x 4 GB)
Disk Subsystem:	1 x 146 GB Sun 10K RPM SAS
Other Hardware:	None

Software

Operating System:	Solaris 10 10/08
Compiler:	Sun Studio 12 Update 1 and gccfss V4.2.1 (see additional detail below)
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

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	63	7655	80.4	7676	80.2	**7672**	**80.2**	63	6292	97.8	6294	97.8	**6293**	**97.8**
401.bzip2	63	**9621**	**63.2**	9652	63.0	9618	63.2	63	**9327**	**65.2**	9323	65.2	9363	64.9
403.gcc	63	7719	65.7	**7738**	**65.5**	7743	65.5	63	7465	67.9	**7497**	**67.6**	7552	67.2
429.mcf	63	6296	91.3	6288	91.4	**6294**	**91.3**	63	6296	91.3	6288	91.4	**6294**	**91.3**
445.gobmk	63	**6293**	**105**	6305	105	6292	105	63	**5741**	**115**	5741	115	5740	115
456.hmmer	63	10107	58.2	10103	58.2	**10106**	**58.2**	63	8947	65.7	**8948**	**65.7**	8948	65.7
458.sjeng	63	8799	86.6	8802	86.6	**8800**	**86.6**	63	8222	92.7	8226	92.7	**8226**	**92.7**
462.libquantum	63	5117	255	5221	250	**5150**	**253**	63	**4233**	**308**	4252	307	4190	312
464.h264ref	63	13250	105	13242	105	**13247**	**105**	63	13081	107	**13077**	**107**	13076	107
471.omnetpp	63	4355	90.4	**4360**	**90.3**	4384	89.8	63	4355	90.4	**4360**	**90.3**	4384	89.8
473.astar	63	6139	72.0	6192	71.4	**6164**	**71.7**	63	**5670**	**78.0**	5655	78.2	5675	77.9
483.xalancbmk	63	**4733**	**91.8**	4717	92.1	4742	91.7	63	**4129**	**105**	4126	105	4176	104

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

Compiler Invocation Notes

```
This result was measured with pre-release build 36.0
of Sun Studio 12 Update 1

Peak also uses "GCC for SPARC Systems 4.2.1", which
combines gcc with the Sun Code Generator for SPARC
systems.  It is invoked as "gcc", and accepts source
code compatible with GCC 4.2.
For more information, including support, see
     http://cooltools.sunsource.net/gcc/
```

Submit Notes

```
A processor set was created using
  psrset -c 1-63
and the runspec process was placed into the set using
  psrset -e 1
The config file option 'submit' was used to select specific
processors within the set, along with the pbind command.
```

Operating System Notes

```
ulimit -s 131072 was used to allow the stack to grow
up to 131072 KB (aka 128 MB).  Note that saying "131072"
is preferable to "unlimited", because there is a tradeoff
```

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Operating System Notes (Continued)

```
between space for the stack vs. space for the heap.


/etc/system parameters
   autoup=600
      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
   tune_t_fsflushr=10
      Controls how many seconds elapse between runs of the
      page flush daemon, fsflush.
   tsb_rss_factor=128
      Suggests that the the size of the TSB (Translation Storage Buffer)
      may be increased if it is more than 25% (128/512) full.  Doing so
      may reduce TSB traps, at the cost of additional kernel memory.

The "webconsole" service was turned off using
    svcadm disable webconsole

The system had 68 GB of swap space.
```

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=no%auto -xalias_level=std
-M /usr/lib/ld/map.bssalign

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Base Optimization Flags (Continued)

C++ benchmarks:
`-g0 -library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch=no%auto -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign`

Base Other Flags

C benchmarks:
`-xjobs=32 -V -#`

C++ benchmarks:
`-xjobs=32 -verbose=diags,version`

Peak Compiler Invocation

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

403.gcc: `gcc`

456.hmmer: `gcc`

C++ benchmarks:
`CC`

Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

400.perlbench: `-g -xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xalias_level=std -xipo=2 -Xc -xrestrict -lfast`

401.bzip2: `-g -xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -M /usr/lib/ld/map.bssalign -xalias_level=strong`

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Peak Optimization Flags (Continued)

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xprefetch=no%auto -Wl,-M,/usr/lib/ld/map.bssalign -xipo=2
-xalias_level=std

429.mcf: basepeak = yes

445.gobmk: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xprefetch=no%auto -M /usr/lib/ld/map.bssalign
-xalias_level=std -xrestrict

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-Wl,-M,/usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std

458.sjeng: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xipo=2

462.libquantum: -g -fast -xpagesize=4M -xprefetch_level=3
-xprefetch_auto_type=indirect_array_access
-M /usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std

464.h264ref: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xipo=2
-xalias_level=std

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize_heap=4M
-xpagesize_stack=64K -xprefetch=no%auto -xdepend
-xalias_level=compatible -M /usr/lib/ld/map.bssalign
-xipo=2 -xarch=v8plusb -lfast -lbsdmalloc

483.xalancbmk: -g0 -library=stlport4 -fast -xpagesize=4M
-xprefetch=no%auto -xdepend -xalias_level=compatible
-M /usr/lib/ld/map.bssalign -xipo=2 -lfast

Peak Other Flags

C benchmarks (except as noted below):
-xjobs=32 -V -#

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Peak Other Flags (Continued)

403.gcc: `-V`

456.hmmer: `-V`

C++ benchmarks:
`-xjobs=32 -verbose=diags,version`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r3.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r3.xml

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

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