SPEC® CINT2006 Result

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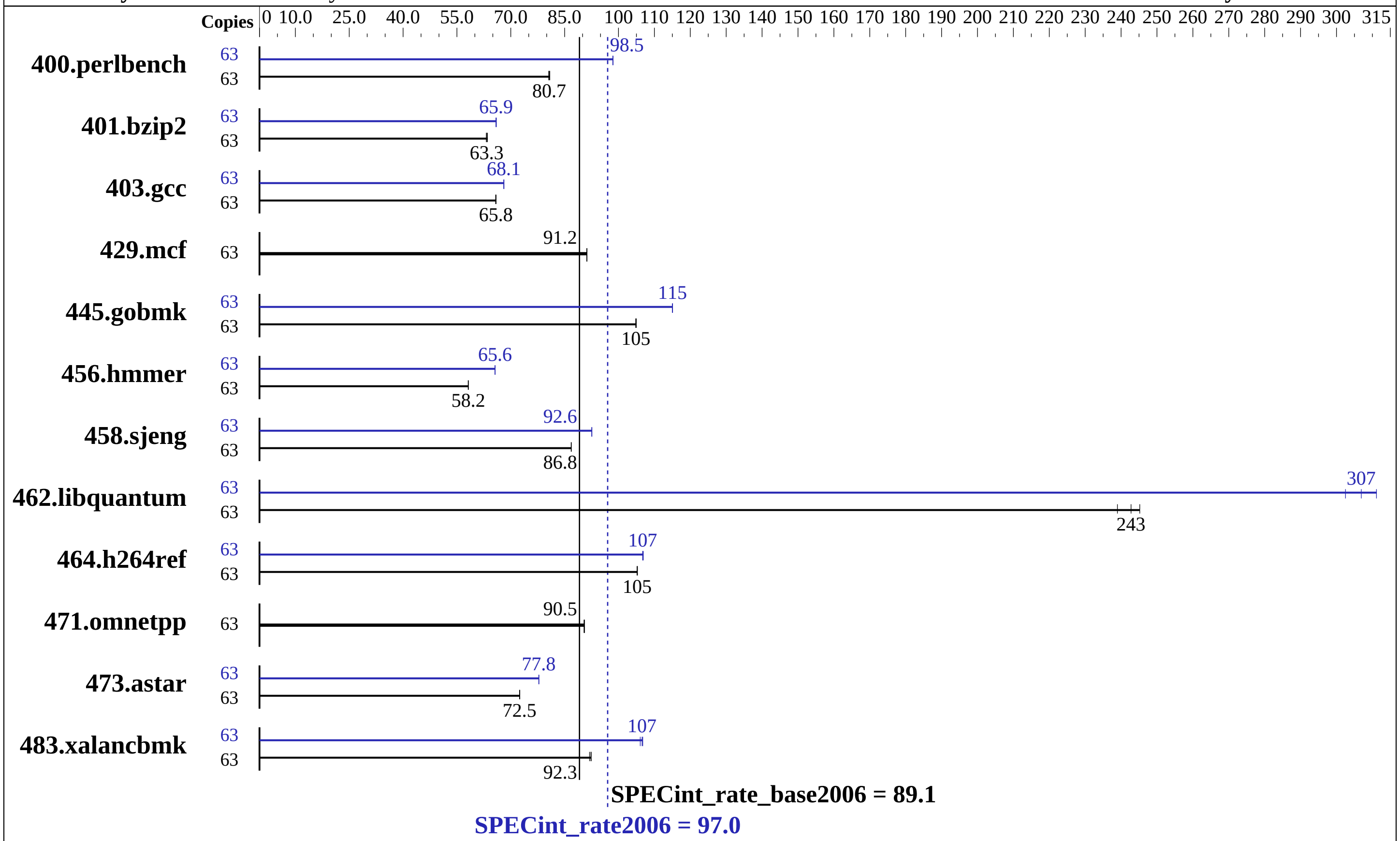
Fujitsu

Fujitsu SPARC Enterprise T5220

SPECint®_rate2006 = 97.0

SPECint_rate_base2006 = 89.1

CPU2006 license:	19	**Test date:**	Mar-2009
Test sponsor:	Fujitsu	**Hardware Availability:**	Jul-2009
Tested by:	Sun Microsystems	**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:	393 GB RAID 0 using Solaris Volume Manager on 4x 146 GB Sun 10K RPM SAS blocksize 384 KB
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

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	63	**7626**	**80.7**	7611	80.9	7641	80.6	63	**6251**	**98.5**	6250	98.5	6255	98.4
401.bzip2	63	9574	63.5	9622	63.2	**9602**	**63.3**	63	9229	65.9	**9227**	**65.9**	9213	66.0
403.gcc	63	7710	65.8	**7703**	**65.8**	7695	65.9	63	**7451**	**68.1**	7446	68.1	7453	68.0
429.mcf	63	6301	91.2	**6299**	**91.2**	6299	91.2	63	6301	91.2	**6299**	**91.2**	6299	91.2
445.gobmk	63	6296	105	**6301**	**105**	6306	105	63	5747	115	5743	115	**5743**	**115**
456.hmmer	63	**10103**	**58.2**	10103	58.2	10112	58.1	63	**8956**	**65.6**	8954	65.6	8961	65.6
458.sjeng	63	**8779**	**86.8**	8777	86.8	8780	86.8	63	8231	92.6	8236	92.6	**8234**	**92.6**
462.libquantum	63	**5377**	**243**	5324	245	5462	239	63	4315	303	4195	311	**4253**	**307**
464.h264ref	63	13242	105	**13251**	**105**	13256	105	63	13062	107	**13060**	**107**	13040	107
471.omnetpp	63	4350	90.5	**4350**	**90.5**	4356	90.4	63	4350	90.5	**4350**	**90.5**	4356	90.4
473.astar	63	6105	72.4	**6102**	**72.5**	6100	72.5	63	**5684**	**77.8**	5682	77.8	5685	77.8
483.xalancbmk	63	4704	92.4	4728	91.9	**4709**	**92.3**	63	**4079**	**107**	4099	106	4072	107

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 111 GB of swap space.
The ufs fragment size was set to 8192
```

Platform Notes

```
This result was measured on a Sun SPARC Enterprise
T5220.  All of these are electronically equivalent:
  - Sun SPARC Enterprise T5120
  - Sun SPARC Enterprise T5220
  - Fujitsu SPARC Enterprise T5120
  - Fujitsu SPARC Enterprise T5220
A SPARC Enterprise 5120 can hold up to 4 disks, and a
5220 can hold up to 8.  This system was tested with 4
disks; therefore, this result applies to both the 5120
and the 5220.
```

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

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

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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

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

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Peak Optimization Flags (Continued)

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 -#

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

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 03:24:17 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 August 2009.