



SPEC® CINT2006 Result

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Fujitsu Limited

SPECint®_rate2006 = 83.2

SPARC Enterprise T5220 (gccfss)

SPECint_rate_base2006 = 75.6

CPU2006 license: 19

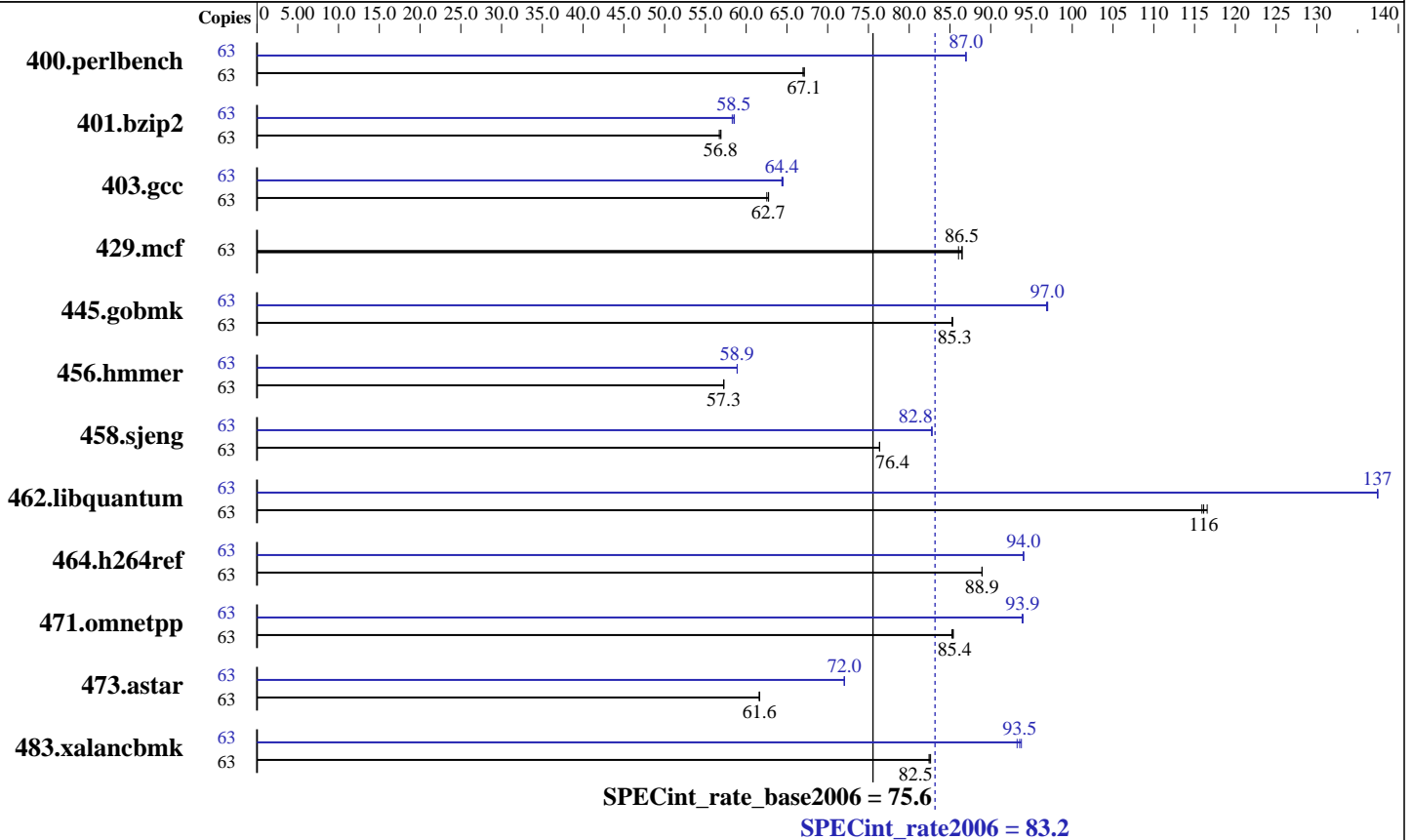
Test sponsor: Fujitsu Limited

Tested by: Sun Microsystems

Test date: Dec-2007

Hardware Availability: Oct-2007

Software Availability: Jan-2008



Hardware

CPU Name: UltraSPARC T2
 CPU Characteristics:
 CPU MHz: 1417
 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
 Disk Subsystem: 100 GB Solaris Volume Manager
 RAID 0+1, interlace 384KB, on
 2 pairs of 2 x SUN72G 10K RPM SAS
 ufs fragment size 8192 bytes
 Other Hardware: None

Software

Operating System: Solaris 10 8/07 (build s10s_u4wos_12b)
 Compiler: gccfss V4.2.0 (build 20071213)
 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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	63	9191	67.0	<u>9173</u>	<u>67.1</u>	9170	67.1	63	<u>7077</u>	<u>87.0</u>	7077	87.0	7080	86.9
401.bzip2	63	10682	56.9	<u>10695</u>	<u>56.8</u>	10722	56.7	63	10429	58.3	<u>10394</u>	<u>58.5</u>	10383	58.6
403.gcc	63	8081	62.8	<u>8085</u>	<u>62.7</u>	8111	62.5	63	7877	64.4	<u>7874</u>	<u>64.4</u>	7860	64.5
429.mcf	63	6677	86.0	<u>6645</u>	<u>86.5</u>	6642	86.5	63	6677	86.0	<u>6645</u>	<u>86.5</u>	6642	86.5
445.gobmk	63	<u>7747</u>	<u>85.3</u>	7747	85.3	7751	85.3	63	6814	97.0	<u>6817</u>	<u>97.0</u>	6824	96.9
456.hammer	63	10270	57.2	10264	57.3	<u>10267</u>	<u>57.3</u>	63	9981	58.9	9979	58.9	<u>9979</u>	<u>58.9</u>
458.sjeng	63	9983	76.4	9981	76.4	<u>9982</u>	<u>76.4</u>	63	9207	82.8	<u>9210</u>	<u>82.8</u>	9210	82.8
462.libquantum	63	11200	117	11262	116	<u>11241</u>	<u>116</u>	63	9493	138	9498	137	<u>9498</u>	<u>137</u>
464.h264ref	63	<u>15677</u>	<u>88.9</u>	15673	89.0	15678	88.9	63	14834	94.0	14825	94.0	<u>14828</u>	<u>94.0</u>
471.omnetpp	63	<u>4613</u>	<u>85.4</u>	4610	85.4	4619	85.2	63	4195	93.9	<u>4193</u>	<u>93.9</u>	4191	94.0
473.astar	63	7179	61.6	7172	61.7	<u>7177</u>	<u>61.6</u>	63	6138	72.1	<u>6139</u>	<u>72.0</u>	6139	72.0
483.xalancbmk	63	5261	82.6	5274	82.4	<u>5266</u>	<u>82.5</u>	63	4636	93.8	<u>4647</u>	<u>93.5</u>	4662	93.2

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

Compiler Invocation Notes

The compiler is gccfss, "GCC for SPARC Systems", 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/>

Operating System Notes

Processes were bound to cores using "submit" and "pbind".

A processor set was created using

```
psrset -c 1-63
```

and the runspec process was placed into the set using

```
psrset -e 1
```

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 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.

```
tune_t_fsflushr=10
```

Controls how many seconds elapse between runs of the page flush daemon, fsflush.

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Operating System Notes (Continued)

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

General Notes

This result was measured on a Sun SPARC Enterprise T5220.
Sun SPARC Enterprise T5220 and Fujitsu SPARC Enterprise T5220
are electronically equivalent.

Base Compiler Invocation

C benchmarks:

gcc

C++ benchmarks:

g++

Base Portability Flags

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

Base Optimization Flags

C benchmarks:

-fast -xipo=2 -xpagesize=4M -xprefetch=no%auto

C++ benchmarks:

-fast -xipo=2 -xpagesize=4M -xprefetch=no%auto

Peak Compiler Invocation

C benchmarks:

gcc

C++ benchmarks:

g++



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Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_SPARC
462.libquantum: -DSPEC_CPU_SOLARIS -DSPEC_CPU_NEED_COMPLEX_I
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=4M -xprefetch=no%auto -xalias_level=std
-xrestrict -lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -xprefetch=no%auto -xalias_level=strong

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -xprefetch=no%auto -xalias_level=std

429.mcf: basepeak = yes

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

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -xalias_level=std

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

462.libquantum: -fast -xipo=2

464.h264ref: Same as 403.gcc

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -xalias_level=std

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -xprefetch=no%auto -xalias_level=std -lfast

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Peak Optimization Flags (Continued)

```
483.xalancbmk: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -xipo=2
               -xpagesize=4M -xprefetch=no%auto -lfast
```

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090714.00.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090714.00.xml>

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

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