



# SPEC® CINT2006 Result

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## Sun Microsystems

SPECint®\_rate2006 = 83.9

## Sun SPARC Enterprise T5120 (gccfss)

SPECint\_rate\_base2006 = 76.2

CPU2006 license: 6

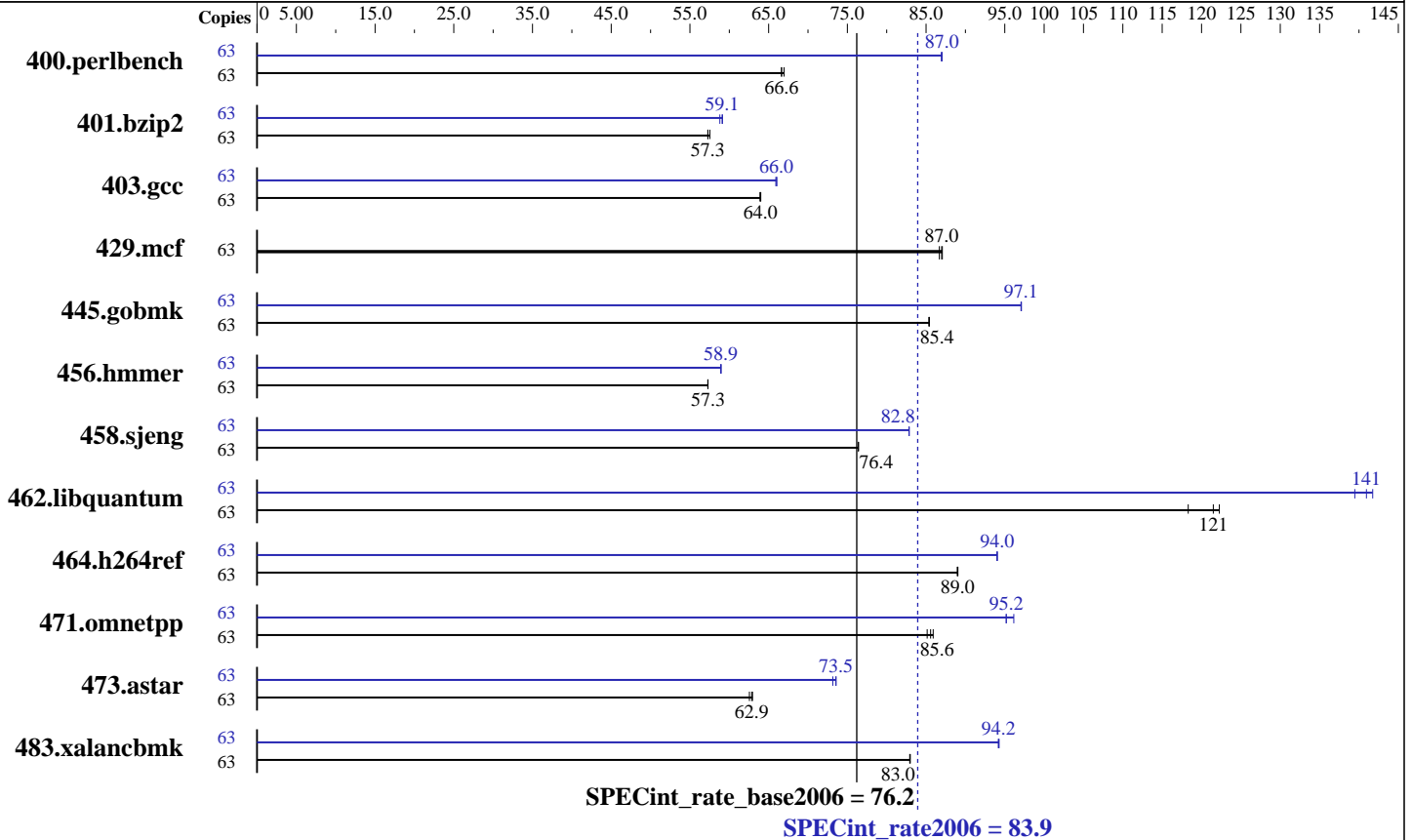
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Jan-2008

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: 384 GB Solaris Volume Manager  
 RAID 0, interlace 384KB, on  
 4x SUN146G 10K RPM SAS drives  
 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	9193	67.0	9237	66.6	<b><u>9236</u></b>	<b><u>66.6</u></b>	63	7079	86.9	7073	87.0	<b><u>7075</u></b>	<b><u>87.0</u></b>
401.bzip2	63	10615	57.3	10565	57.5	<b><u>10612</u></b>	<b><u>57.3</u></b>	63	<b><u>10288</u></b>	<b><u>59.1</u></b>	10281	59.1	10339	58.8
403.gcc	63	7924	64.0	7936	63.9	<b><u>7930</u></b>	<b><u>64.0</u></b>	63	<b><u>7683</u></b>	<b><u>66.0</u></b>	7694	65.9	7680	66.0
429.mcf	63	6599	87.1	<b><u>6606</u></b>	<b><u>87.0</u></b>	6628	86.7	63	6599	87.1	<b><u>6606</u></b>	<b><u>87.0</u></b>	6628	86.7
445.gobmk	63	7737	85.4	<b><u>7740</u></b>	<b><u>85.4</u></b>	7741	85.4	63	6809	97.1	6805	97.1	<b><u>6807</u></b>	<b><u>97.1</u></b>
456.hammer	63	10263	57.3	<b><u>10260</u></b>	<b><u>57.3</u></b>	10259	57.3	63	9973	58.9	9973	58.9	<b><u>9973</u></b>	<b><u>58.9</u></b>
458.sjeng	63	9980	76.4	<b><u>9978</u></b>	<b><u>76.4</u></b>	9975	76.4	63	<b><u>9202</u></b>	<b><u>82.8</u></b>	9201	82.8	9202	82.8
462.libquantum	63	<b><u>10744</u></b>	<b><u>121</u></b>	11034	118	10677	122	63	9359	139	9209	142	<b><u>9261</u></b>	<b><u>141</u></b>
464.h264ref	63	15657	89.0	15668	89.0	<b><u>15667</u></b>	<b><u>89.0</u></b>	63	<b><u>14826</u></b>	<b><u>94.0</u></b>	14829	94.0	14825	94.0
471.omnetpp	63	<b><u>4601</u></b>	<b><u>85.6</u></b>	4584	85.9	4625	85.1	63	4095	96.1	<b><u>4136</u></b>	<b><u>95.2</u></b>	4137	95.2
473.astar	63	<b><u>7037</u></b>	<b><u>62.9</u></b>	7025	63.0	7070	62.6	63	6045	73.2	6012	73.6	<b><u>6013</u></b>	<b><u>73.5</u></b>
483.xalancbmk	63	5242	82.9	5238	83.0	<b><u>5240</u></b>	<b><u>83.0</u></b>	63	4611	94.3	4616	94.2	<b><u>4613</u></b>	<b><u>94.2</u></b>

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

## Platform Notes

This result was measured on a Sun SPARC Enterprise T5120. These models are electronically equivalent:

- Sun SPARC Enterprise T5120
- Fujitsu SPARC Enterprise T5120

## 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-gccfss4.2.20090714.01.html>

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

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090714.01.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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