



# SPEC® CINT2006 Result

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## Fujitsu SPARC Enterprise M3000

SPECint®\_rate2006 = 56.2

SPECint\_rate\_base2006 = 50.3

CPU2006 license: 19

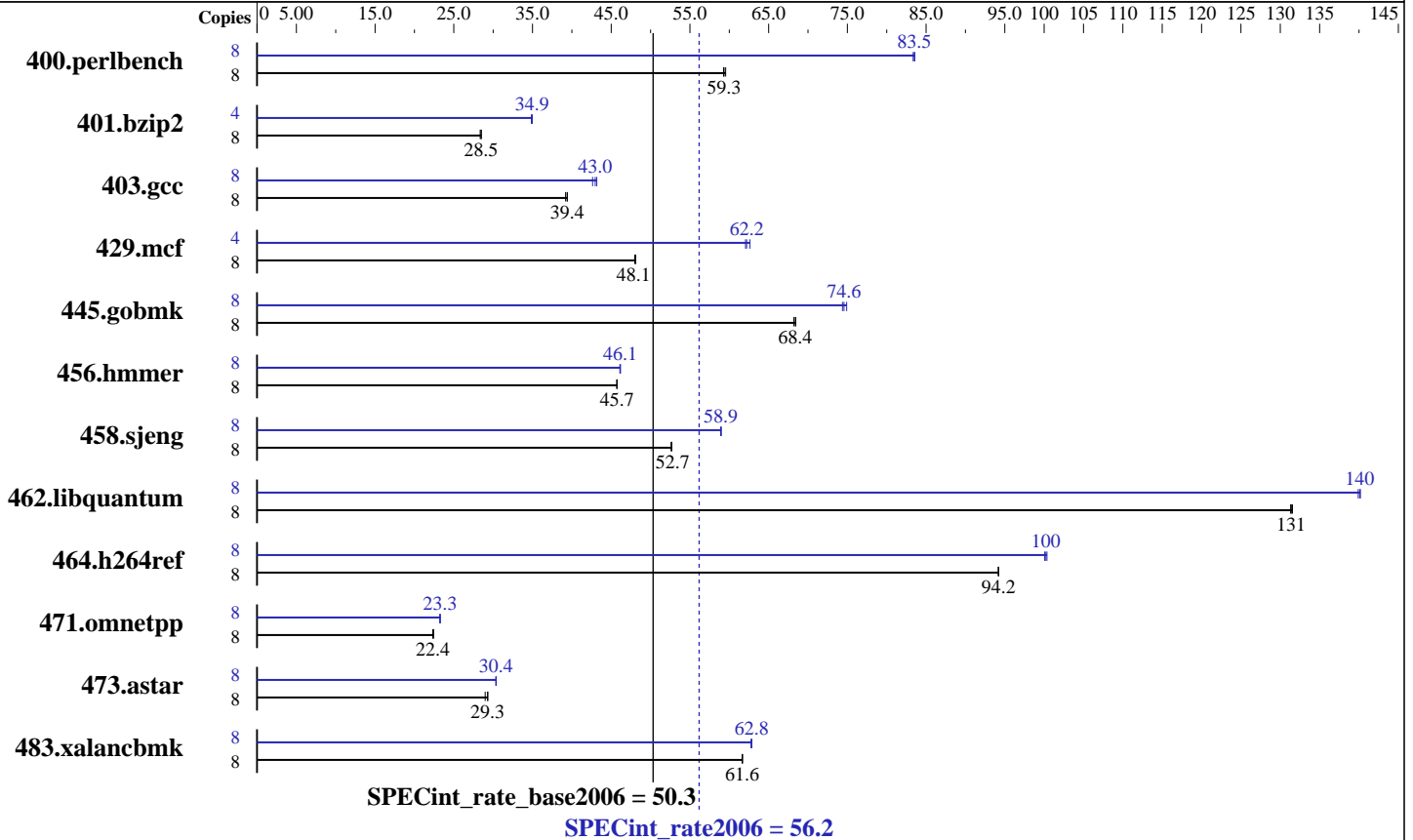
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Feb-2011

Hardware Availability: Apr-2011

Software Availability: Sep-2010



### Hardware

CPU Name: SPARC64 VII+  
 CPU Characteristics:  
 CPU MHz: 2860  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 chip  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 5632 KB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 32 GB (8 x 4 GB, 2-way interleaved)  
 Disk Subsystem: 1 x 300 GB 10,000 RPM SAS  
 Other Hardware: None

### Software

Operating System: Oracle Solaris 10 9/10  
 Compiler: Oracle Solaris Studio 12.2  
 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	8	1313	59.5	1319	59.3	<u>1317</u>	<u>59.3</u>	8	935	83.6	938	83.4	<u>936</u>	<u>83.5</u>
401.bzip2	8	2723	28.4	<u>2711</u>	<u>28.5</u>	2710	28.5	4	1107	34.9	<u>1105</u>	<u>34.9</u>	1104	35.0
403.gcc	8	1634	39.4	<u>1634</u>	<u>39.4</u>	1643	39.2	8	<u>1499</u>	<u>43.0</u>	1511	42.6	1492	43.2
429.mcf	8	1517	48.1	<u>1517</u>	<u>48.1</u>	1520	48.0	4	588	62.1	582	62.6	<u>586</u>	<u>62.2</u>
445.gobmk	8	1230	68.2	<u>1227</u>	<u>68.4</u>	1226	68.4	8	1120	74.9	<u>1125</u>	<u>74.6</u>	1128	74.4
456.hammer	8	1632	45.7	1633	45.7	<u>1632</u>	<u>45.7</u>	8	<u>1617</u>	<u>46.1</u>	1617	46.2	1619	46.1
458.sjeng	8	1837	52.7	1840	52.6	<u>1838</u>	<u>52.7</u>	8	1641	59.0	<u>1642</u>	<u>58.9</u>	1643	58.9
462.libquantum	8	<u>1261</u>	<u>131</u>	1262	131	1260	132	8	1183	140	1185	140	<u>1183</u>	<u>140</u>
464.h264ref	8	<u>1879</u>	<u>94.2</u>	1880	94.2	1879	94.2	8	<u>1767</u>	<u>100</u>	1764	100	1769	100
471.omnetpp	8	2230	22.4	<u>2235</u>	<u>22.4</u>	2238	22.3	8	2153	23.2	<u>2149</u>	<u>23.3</u>	2148	23.3
473.astar	8	1915	29.3	<u>1917</u>	<u>29.3</u>	1937	29.0	8	1851	30.3	1848	30.4	<u>1849</u>	<u>30.4</u>
483.xalancbmk	8	895	61.7	896	61.6	<u>895</u>	<u>61.6</u>	8	<u>878</u>	<u>62.8</u>	878	62.9	879	62.8

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

## Compiler Invocation Notes

Oracle Solaris Studio 12.2 is distributed with mandatory OS patches  
118683-05 119963-20 120753-08  
Oracle Solaris Studio 12.2 and patches are available at  
<http://oracle.com/goto/solarisstudio>

## Submit Notes

Processes were assigned to specific processors using 'pbind' commands. The config file option 'submit' was used, along with a list of processors in the 'BIND' variable, to generate the pbind commands. (For details, please see the config file.)

## Operating System Notes

ulimit -s 131072 was used to limit the space consumed by the stack (and therefore make more space available to the heap).

System Tunables:  
(/etc/system parameters)

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)

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.

### Other System Settings:

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

## Platform Notes

Memory is 2-way interleaved by filling all slots with the same capacity DIMMs.

This result is measured on a SPARC Enterprise M3000 server from Fujitsu. The SPARC Enterprise M3000 server from Oracle and from Fujitsu are electrically equivalent.

## 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:

-fast -xO4 -fma=fused -xipo=2 -xpagesize=4M -xcache=generic  
-xalias\_level=std -xunroll=12 -xprefetch=latx:0.5 -l12amm

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## Base Optimization Flags (Continued)

C++ benchmarks:

```
-library=stlport4 -M /usr/lib/ld/map.bssalign -fast -xO4 -fma=fused  
-xipo=2 -xpagesize=4M -xcache=generic -xdepend  
-xalias_level=compatible -xprefetch=latx:0.1 -lfast
```

## Base Other Flags

C benchmarks:

```
-xjobs=2 -V -#
```

C++ benchmarks:

```
-xjobs=2 -verbose=diags,version
```

## Peak Compiler Invocation

C benchmarks:

```
cc
```

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: -xprofile=tcov:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xO4  
-xalias_level=std -xrestrict -Xc -xprefetch=no%auto  
-xunroll=6 -lfast -l12amm -lbsdmalloc  
  
401.bzip2: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xalias_level=strong -xchip=generic  
-xprefetch=latx:1.5 -xunroll=4 -l12amm
```

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## Peak Optimization Flags (Continued)

403.gcc: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xipo=2 -xalias\_level=std -xO4  
-xchip=generic -xprefetch\_auto\_type=indirect\_array\_access  
-xprefetch\_level=2 -xunroll=8 -l12amm

429.mcf: -fast -fma=fused -xpagesize=4M -xipo=2  
-xprefetch\_auto\_type=indirect\_array\_access  
-xprefetch=latx:0.1 -W2,-Apf:l1list=3 -W2,-Apf:notinl1list  
-Wc,-Qlp-prt=1 -Wc,-Qlp-prwt=3 -xunroll=5 -l12amm

445.gobmk: -xprofile=tcov:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xalias\_level=std -xrestrict  
-xprefetch\_auto\_type=indirect\_array\_access -xunroll=2  
-l12amm

456.hmmer: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xipo=2 -xalias\_level=std -xprefetch\_level=2  
-xprefetch=latx:0.1 -xunroll=12

458.sjeng: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xO4  
-xinline= -xprefetch=latx:0.1 -xunroll=8 -l12amm

462.libquantum: -fast -fma=fused -xpagesize=4M -xalias\_level=std -xipo=2  
-xchip=generic -xprefetch\_level=3 -xunroll=6 -lbsdmalloc  
-l12amm

464.h264ref: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xipo=2 -xalias\_level=std -xlinkopt -l12amm

C++ benchmarks:

471.omnetpp: -library=stlport4 -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xalias\_level=compatible  
-M /usr/lib/ld/map.bssalign -xipo=1 -xO4  
-Qoption cg -Qlp-av=0 -xprefetch=latx:1.2 -xunroll=5  
-lfast

473.astar: -library=stlport4 -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xpagesize=4M -xalias\_level=compatible  
-M /usr/lib/ld/map.bssalign -xipo=2 -xcache=generic  
-xlinkopt -xprefetch=latx:0.1 -lfast

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## Peak Optimization Flags (Continued)

```
483.xalanbmk: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -xipo=2 -xO4
-xcache=generic -xunroll=9 -lfast -lbsdmalloc
```

## Peak Other Flags

C benchmarks:  
-xjobs=2 -V -#

C++ benchmarks:  
-xjobs=2 -verbose=diags,version

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

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110413.html>

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

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110413.xml>

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

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