



# SPEC® CINT2006 Result

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## Sun Microsystems

### SPECint®\_rate2006 = 2590

## Sun SPARC Enterprise M9000

### SPECint\_rate\_base2006 = 2400

CPU2006 license: 6

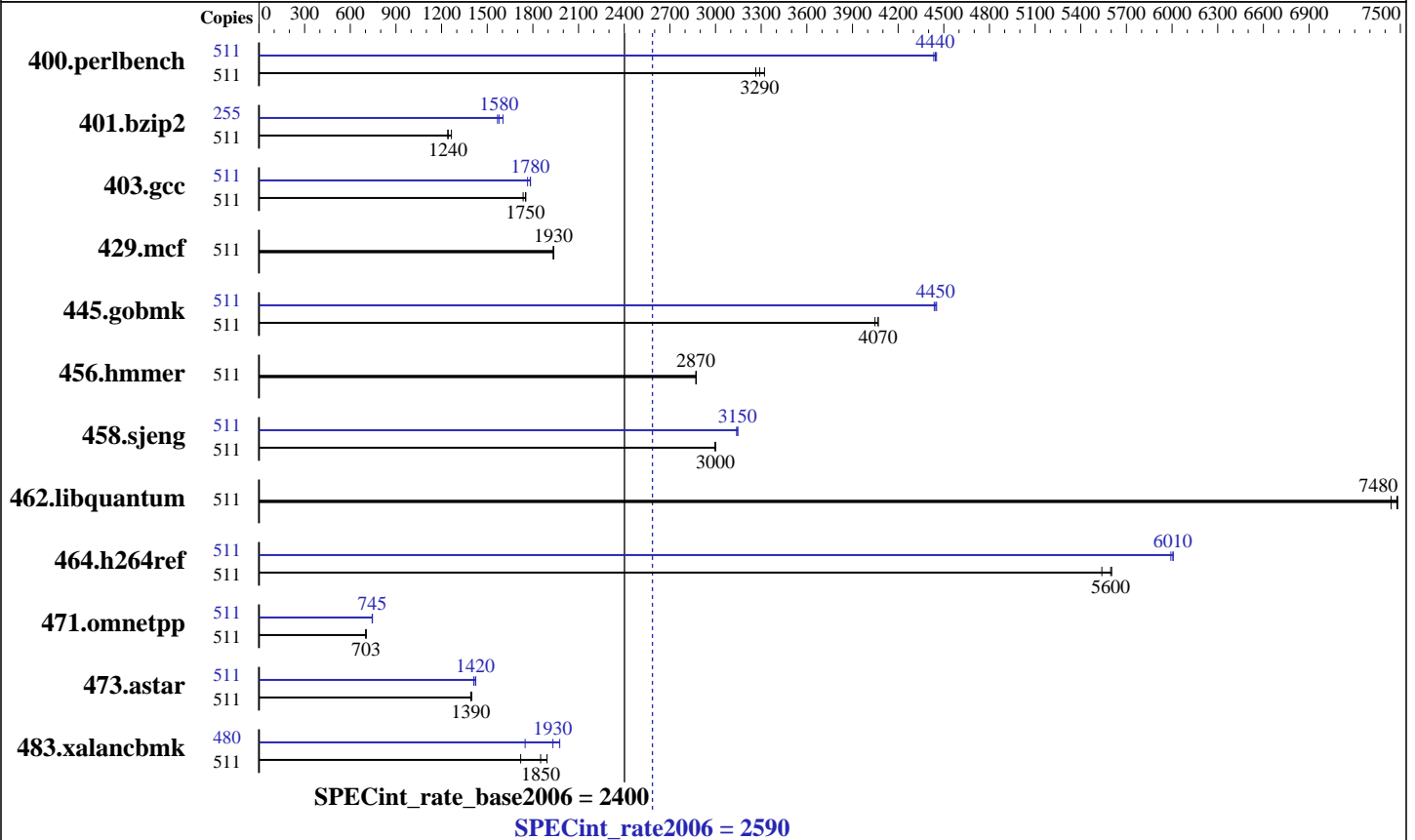
Test date: Aug-2009

Test sponsor: Sun Microsystems

Hardware Availability: Nov-2009

Tested by: Fujitsu Limited

Software Availability: Jun-2009



### Hardware

CPU Name: SPARC64 VII  
 CPU Characteristics:  
 CPU MHz: 2880  
 FPU: Integrated  
 CPU(s) enabled: 256 cores, 64 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 to 16 CMUs; each CMU contains 2 or 4 CPU chips  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 1152 GB (448 x 2 GB + 64 x 4 GB), 8-way interleaved  
 Disk Subsystem: 1 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS)  
 3400 GB RAID 0 Solaris Volume  
 24 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS)  
 Stripe interlace 2048 Kbytes  
 Other Hardware: None

### Software

Operating System: Solaris 10 5/09 with patches 119963-13,  
 120753-06, 118683-03  
 Compiler: Sun Studio 12 Update 1  
 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	511	1529	3260	1503	3320	<b>1518</b>	<b>3290</b>	511	<b>1123</b>	<b>4440</b>	1121	4450	1126	4430
401.bzip2	511	3899	1260	3976	1240	<b>3966</b>	<b>1240</b>	255	1535	1600	<b>1560</b>	<b>1580</b>	1570	1570
403.gcc	511	2346	1750	<b>2349</b>	<b>1750</b>	2370	1740	511	2305	1780	2331	1760	<b>2307</b>	<b>1780</b>
429.mcf	511	<b>2409</b>	<b>1930</b>	2410	1930	2406	1940	511	<b>2409</b>	<b>1930</b>	2410	1930	2406	1940
445.gobmk	511	<b>1318</b>	<b>4070</b>	1324	4050	1317	4070	511	<b>1205</b>	<b>4450</b>	1208	4440	1204	4450
456.hammer	511	1661	2870	1659	2870	<b>1660</b>	<b>2870</b>	511	1661	2870	1659	2870	<b>1660</b>	<b>2870</b>
458.sjeng	511	<b>2062</b>	<b>3000</b>	2063	3000	2061	3000	511	1966	3150	<b>1966</b>	<b>3150</b>	1970	3140
462.libquantum	511	<b>1416</b>	<b>7480</b>	1423	7440	1415	7480	511	<b>1416</b>	<b>7480</b>	1423	7440	1415	7480
464.h264ref	511	2042	5540	2018	5600	<b>2020</b>	<b>5600</b>	511	1882	6010	1887	5990	<b>1883</b>	<b>6010</b>
471.omnetpp	511	4554	701	4534	704	<b>4543</b>	<b>703</b>	511	4284	745	4294	744	<b>4286</b>	<b>745</b>
473.astar	511	2565	1400	<b>2576</b>	<b>1390</b>	2578	1390	511	2518	1420	<b>2523</b>	<b>1420</b>	2541	1410
483.xalancbmk	511	<b>1905</b>	<b>1850</b>	1863	1890	2050	1720	480	1676	1980	1894	1750	<b>1715</b>	<b>1930</b>

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

## Compiler Invocation Notes

Sun Studio compiler patches are available at  
[http://developers.sun.com/sunstudio/downloads/patches/ss12u1\\_patches.jsp](http://developers.sun.com/sunstudio/downloads/patches/ss12u1_patches.jsp)

## Submit Notes

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

## Operating System Notes

### Shell Environments:

ulimit -s 131072 was used to limit the space consumed by the stack.(making more space available for the heap)

### System Tunables:

(/etc/system parameters)

autoup=300

Causes pages older than the listed number of seconds to be written by fsflush.

bufhwm=40000000

Memory byte limit for caching I/O buffers.

lpg\_alloc\_prefer=1

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## Operating System Notes (Continued)

Set lgroup page allocation to strongly prefer local pages.

Other System Settings:

The webconsole service was turned off using svcadm disable webconsole.

The SPEC toolset was bound to processors 1-511 using processor sets:

```
psrset -c 1-511
psrset -e 1 ksh
```

## Platform Notes

Memory is 8-way interleaved by filling each CMU's slots with the same capacity DIMMs.

This result is measured on a Fujitsu SPARC Enterprise M9000 Server. Note that the Fujitsu SPARC Enterprise M9000 and Sun SPARC Enterprise M9000 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 -fma=fused -xipo=2 -xpagesize=4M -xprefetch\_level=1

-xalias\_level=std -ll2amm

C++ benchmarks:

-xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M

-xprefetch\_level=1 -xalias\_level=compatible -ll2amm -lfast



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## Base Other Flags

C benchmarks:

-xjobs=16 -V -#

C++ benchmarks:

-xjobs=16 -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=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M

-xalias\_level=std -xrestrict -xprefetch=no -lfast -l12amm

401.bzip2: -xprofile=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M

-fma=fused -xalias\_level=strong

403.gcc: -xprofile=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M

-xalias\_level=std -l12amm

429.mcf: basepeak = yes

445.gobmk: -xprofile=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M

-xalias\_level=std -xrestrict -l12amm

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## Peak Optimization Flags (Continued)

456.hmmr: basepeak = yes

458.sjeng: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2

462.libquantum: basepeak = yes

464.h264ref: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -xalias\_level=std -xprefetch=no -l12amm

C++ benchmarks:

471.omnetpp: -xdepend -library=stlport4  
-xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=compatible -l12amm

473.astar: -xdepend -library=stlport4  
-xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=compatible -xprefetch=latx:3 -lfast -l12amm

483.xalancbmk: -xdepend -library=stlport4  
-xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=compatible -lfast -l12amm

## Peak Other Flags

C benchmarks:

-xjobs=16 -V -#

C++ benchmarks:

-xjobs=16 -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.r4.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.r4.xml>



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

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