



# SPEC® CINT2006 Result

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## Sun Microsystems

## SPECint®\_rate2006 = 1450

## Sun SPARC Enterprise M9000

## SPECint\_rate\_base2006 = 1370

CPU2006 license: 6

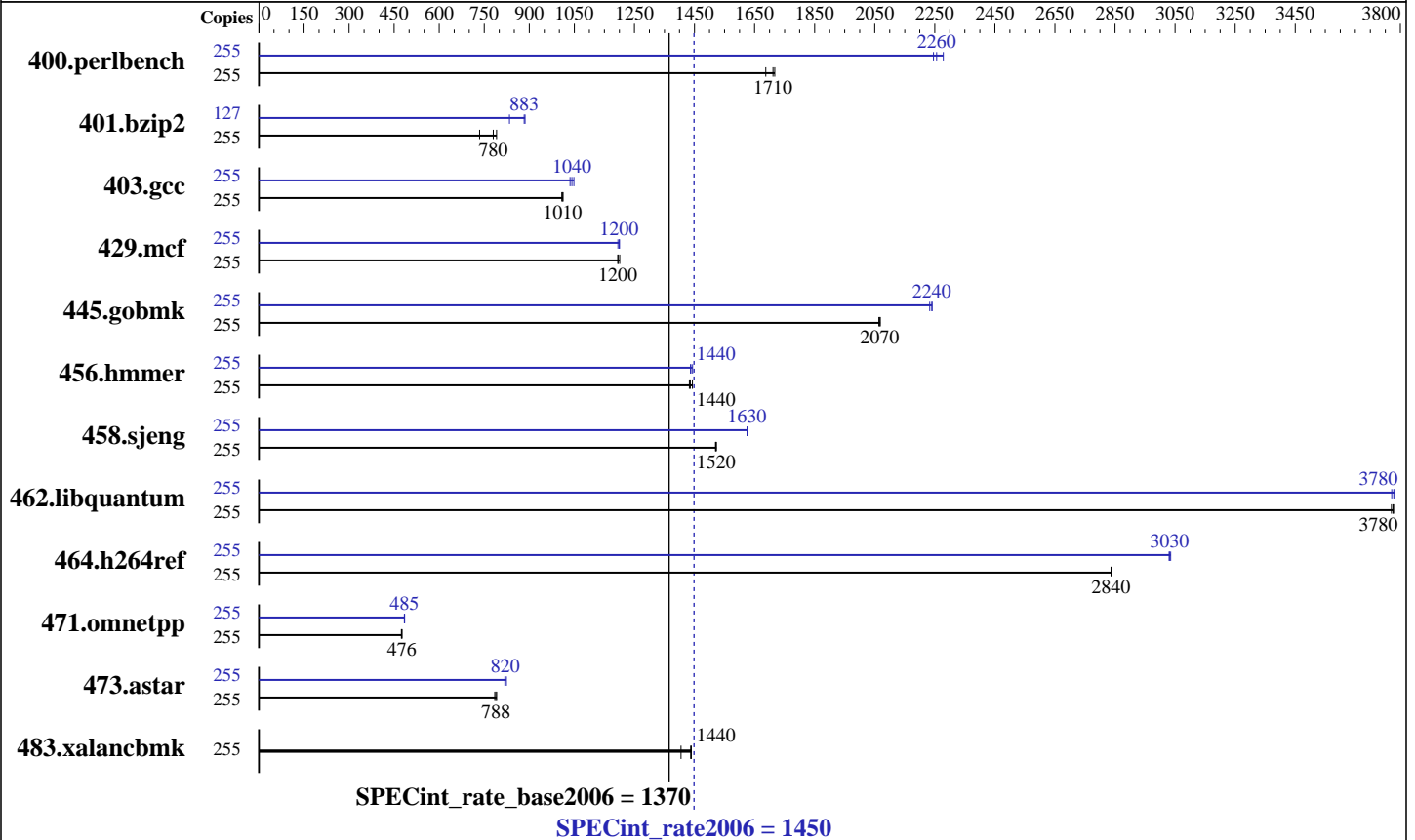
Test date: Aug-2009

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: 128 cores, 32 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 to 8 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: 704 GB (160 x 2 GB + 96 x 4 GB), 8-way interleaved  
 Disk Subsystem: 1 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS)  
 1700 GB RAID 0 Solaris Volume  
 12 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	255	1476	1690	<b>1456</b>	<b>1710</b>	1451	1720	255	1109	2250	<b>1104</b>	<b>2260</b>	1093	2280
401.bzip2	255	3350	735	3111	791	<b>3155</b>	<b>780</b>	127	1469	834	1383	886	<b>1388</b>	<b>883</b>
403.gcc	255	2036	1010	<b>2030</b>	<b>1010</b>	2028	1010	255	<b>1970</b>	<b>1040</b>	1982	1040	1958	1050
429.mcf	255	1936	1200	1946	1190	<b>1946</b>	<b>1200</b>	255	1938	1200	<b>1939</b>	<b>1200</b>	1946	1200
445.gobmk	255	1296	2060	1293	2070	<b>1295</b>	<b>2070</b>	255	1198	2230	1194	2240	<b>1194</b>	<b>2240</b>
456.hammer	255	1660	1430	1649	1440	<b>1657</b>	<b>1440</b>	255	<b>1655</b>	<b>1440</b>	1656	1440	1648	1440
458.sjeng	255	2030	1520	2026	1520	<b>2029</b>	<b>1520</b>	255	1899	1630	<b>1898</b>	<b>1630</b>	1898	1630
462.libquantum	255	<b>1399</b>	<b>3780</b>	1399	3780	1401	3770	255	1401	3770	1397	3780	<b>1398</b>	<b>3780</b>
464.h264ref	255	1989	2840	<b>1989</b>	<b>2840</b>	1987	2840	255	1862	3030	<b>1862</b>	<b>3030</b>	1859	3040
471.omnetpp	255	<b>3350</b>	<b>476</b>	3361	474	3348	476	255	<b>3289</b>	<b>485</b>	3293	484	3287	485
473.astar	255	2262	791	2280	785	<b>2271</b>	<b>788</b>	255	2186	819	2173	824	<b>2182</b>	<b>820</b>
483.xalancbmk	255	1252	1410	<b>1224</b>	<b>1440</b>	1222	1440	255	1252	1410	<b>1224</b>	<b>1440</b>	1222	1440

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.

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## Operating System Notes (Continued)

bufhwm=40000000

Memory byte limit for caching I/O buffers.

lpg\_alloc\_prefer=1

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 1-255

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 -l12amm

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Page 3



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## Base Optimization Flags (Continued)

C++ benchmarks:

-xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M  
-xprefetch\_level=1 -xalias\_level=compatible -l12amm -lfast

## 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 -lfast -l12amm  
401.bzp2: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-fma=fused -xalias\_level=strong

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## Peak Optimization Flags (Continued)

403.gcc: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=std -l12amm

429.mcf: -fast -xipo=2 -xpagesize=4M -xprefetch=no  
-xalias\_level=std -fma=fused -lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=std -xrestrict -l12amm

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

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

462.libquantum: -fast -xpagesize=4M -xipo=2 -xprefetch\_level=1

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: basepeak = yes

## Peak Other Flags

C benchmarks:

-xjobs=16 -V -#

C++ benchmarks:

-xjobs=16 -verbose=diags,version



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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 questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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