



# SPEC® CINT2006 Result

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## Sun Microsystems

SPECint®\_rate2006 = 1240

## Sun SPARC Enterprise M9000

SPECint\_rate\_base2006 = 1140

CPU2006 license: 6

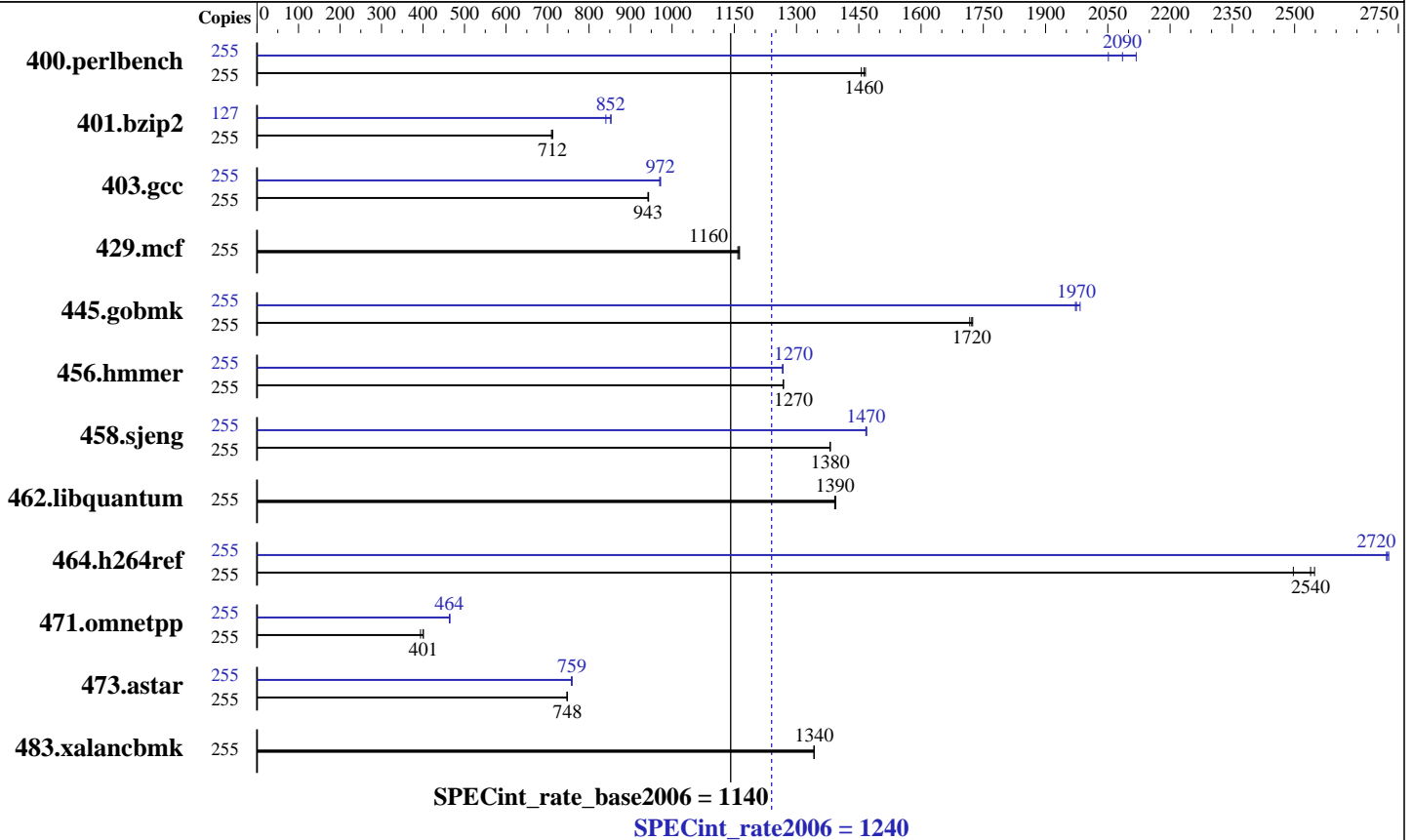
Test date: Jul-2008

Test sponsor: Sun Microsystems

Hardware Availability: Jul-2008

Tested by: Fujitsu Limited

Software Availability: Jul-2008



### Hardware

CPU Name: SPARC64 VII  
 CPU Characteristics:  
 CPU MHz: 2520  
 FPU: Integrated  
 CPU(s) enabled: 128 cores, 32 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 to 16 CMUs; each CMU contains 2 or 4 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: 512 GB (256 x 2 GB)  
 Disk Subsystem: OS disk: 1 x 72 GB 10000 RPM disk Seagate Savvio  
 EX.disk: 864 GB RAID 0 Solaris Volume  
 12 x 72 GB 10000 RPM disk  
 Stripe interlace size 786 blocks  
 Other Hardware: None

### Software

Operating System: Solaris 10 5/08 with Patch 137111-03  
 Compiler: Sun Studio 12 with patches  
 124867-06, 124861-07, 124863-05  
 (see patch information 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	255	1711	1460	<b><u>1704</u></b>	<b><u>1460</u></b>	1699	1470	255	1215	2050	<b><u>1195</u></b>	<b><u>2090</u></b>	1176	2120
401.bzip2	255	3468	710	<b><u>3458</u></b>	<b><u>712</u></b>	3454	712	127	1458	841	<b><u>1438</u></b>	<b><u>852</u></b>	1437	853
403.gcc	255	2179	942	2175	944	<b><u>2178</u></b>	<b><u>943</u></b>	255	2116	970	2111	972	<b><u>2112</u></b>	<b><u>972</u></b>
429.mcf	255	2007	1160	2000	1160	<b><u>2003</u></b>	<b><u>1160</u></b>	255	2007	1160	2000	1160	<b><u>2003</u></b>	<b><u>1160</u></b>
445.gobmk	255	1558	1720	<b><u>1553</u></b>	<b><u>1720</u></b>	1551	1720	255	1356	1970	1349	1980	<b><u>1355</u></b>	<b><u>1970</u></b>
456.hammer	255	<b><u>1876</u></b>	<b><u>1270</u></b>	1875	1270	1877	1270	255	1877	1270	<b><u>1878</u></b>	<b><u>1270</u></b>	1879	1270
458.sjeng	255	<b><u>2234</u></b>	<b><u>1380</u></b>	2234	1380	2235	1380	255	2100	1470	2103	1470	<b><u>2102</u></b>	<b><u>1470</u></b>
462.libquantum	255	3789	1390	3796	1390	<b><u>3793</u></b>	<b><u>1390</u></b>	255	3789	1390	3796	1390	<b><u>3793</u></b>	<b><u>1390</u></b>
464.h264ref	255	2215	2550	<b><u>2223</u></b>	<b><u>2540</u></b>	2260	2500	255	2074	2720	<b><u>2072</u></b>	<b><u>2720</u></b>	2070	2730
471.omnetpp	255	4045	394	<b><u>3979</u></b>	<b><u>401</u></b>	3978	401	255	3429	465	3438	464	<b><u>3436</u></b>	<b><u>464</u></b>
473.astar	255	2393	748	2398	747	<b><u>2394</u></b>	<b><u>748</u></b>	255	2363	758	2359	759	<b><u>2360</u></b>	<b><u>759</u></b>
483.xalancbmk	255	1310	1340	1312	1340	<b><u>1310</u></b>	<b><u>1340</u></b>	255	1310	1340	1312	1340	<b><u>1310</u></b>	<b><u>1340</u></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/ss12\\_patches.jsp](http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp)

### 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

Environment Variable Settings:

```
export LD_PRELOAD=mpss.so.1:madv.so.1
export MPSSHEAP=4MB
export MPSSSTACK=4MB
```

Requests system to use 4 MB pages when possible.

```
export MADV access_lwp
access_lwp requests that the next light weight process to touch
the specified address range will access it most heavily.
```

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):

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## Operating System Notes (Continued)

tune\_t\_fsflushr=4

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

autoup=1920

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

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

## Platform Notes

Memory is 8-way interleaved by filling all slots with the same capacity DIMMs.

This result is measured on a Fujitsu SPARC Enterprise M9000 Server. Note that the Sun SPARC Enterprise M9000 and Fujitsu 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 -xipo=2 -xpagesize=4M -xprefetch\_level=1 -xalias\_level=std  
-fma=fused -l12amm

C++ benchmarks:

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



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## 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 -xipo=2  
-xpagesize=4M -fma=fused -xalias\_level=std -xrestrict  
-lfast -l12amm

401.bzip2: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=4M -fma=fused -xalias\_level=strong  
-xprefetch=latx:5 -l12amm

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

429.mcf: basepeak = yes

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

456.hmmer: Same as 403.gcc

458.sjeng: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=4M -fma=fused -l12amm

462.libquantum: basepeak = yes

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## Peak Optimization Flags (Continued)

464.h264ref: Same as 403.gcc

C++ benchmarks:

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

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

483.xalancbmk: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.html>

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

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.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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