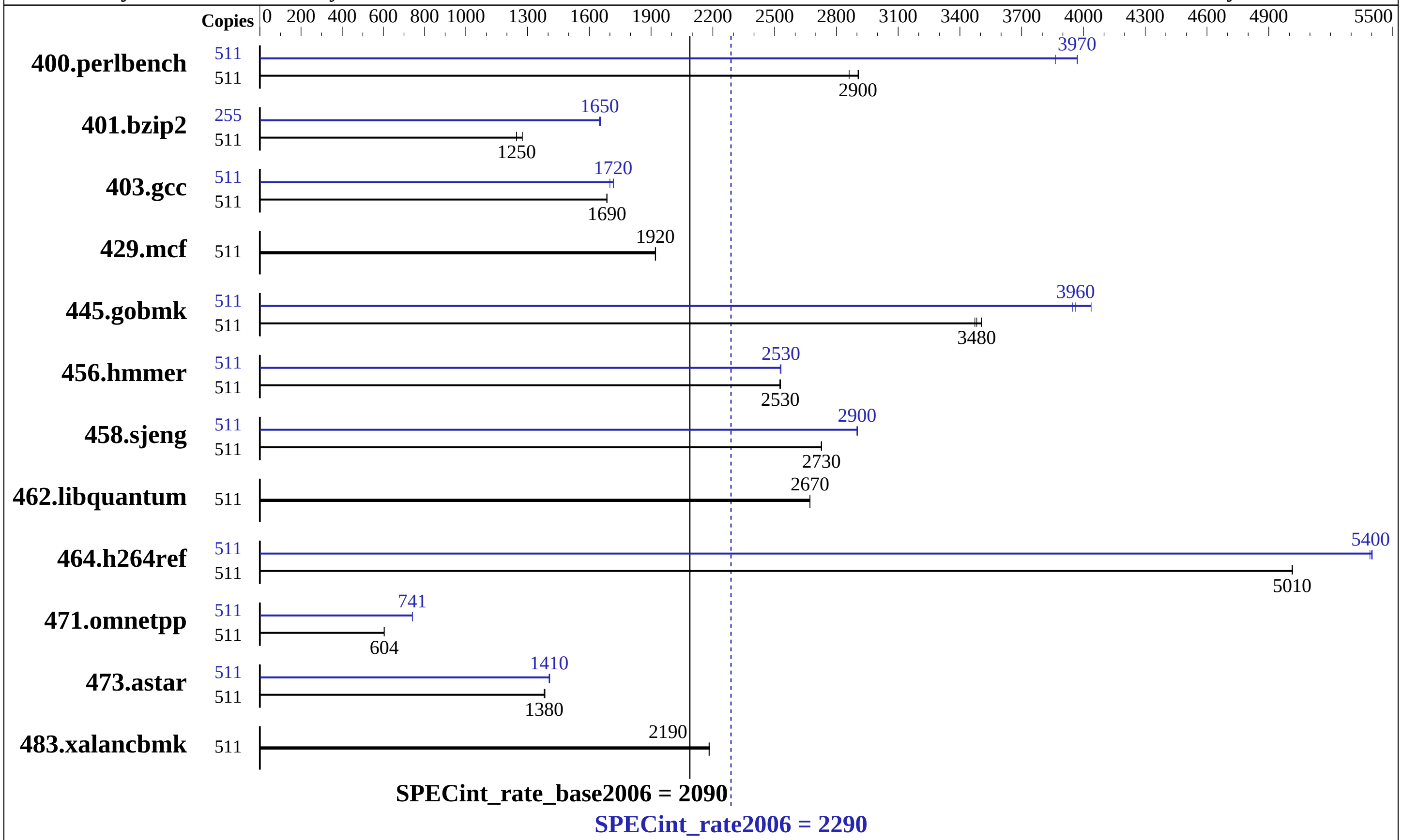
SPEC® CINT2006 Result

Sun Microsystems
Sun SPARC Enterprise M9000

SPECint®_rate2006 = 2290

SPECint_rate_base2006 = 2090

CPU2006 license: 6		**Test date:**	Jun-2008
Test sponsor:	Sun Microsystems	**Hardware Availability:**	Jul-2008
Tested by:	Sun Microsystems	**Software Availability:**	Jul-2008



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2520
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 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:	1 TB (512 x 2 GB)
Disk Subsystem:	12 TB RAID 0 Solaris Volume 24 x 500 GB 15000 RPM disk Stripe interlace size 128Kbytes
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 Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	511	1744	2860	1717	2910	**1719**	**2900**	511	1292	3860	1257	3970	**1258**	**3970**
401.bzip2	511	3867	1280	**3955**	**1250**	3956	1250	255	**1491**	**1650**	1488	1650	1492	1650
403.gcc	511	2442	1680	**2440**	**1690**	2439	1690	511	2420	1700	**2397**	**1720**	2395	1720
429.mcf	511	2424	1920	**2426**	**1920**	2427	1920	511	2424	1920	**2426**	**1920**	2427	1920
445.gobmk	511	1529	3500	1544	3470	**1540**	**3480**	511	**1353**	**3960**	1358	3950	1328	4040
456.hmmer	511	**1886**	**2530**	1890	2520	1885	2530	511	1887	2530	1883	2530	**1884**	**2530**
458.sjeng	511	**2267**	**2730**	2266	2730	2268	2730	511	**2131**	**2900**	2132	2900	2130	2900
462.libquantum	511	3962	2670	3963	2670	**3963**	**2670**	511	3962	2670	3963	2670	**3963**	**2670**
464.h264ref	511	2254	5020	2256	5010	**2255**	**5010**	511	**2095**	**5400**	2093	5400	2098	5390
471.omnetpp	511	5285	604	5296	603	**5287**	**604**	511	4315	740	**4312**	**741**	4312	741
473.astar	511	2590	1380	**2597**	**1380**	2598	1380	511	**2552**	**1410**	2548	1410	2554	1400
483.xalancbmk	511	1614	2190	**1614**	**2190**	1617	2180	511	1614	2190	**1614**	**2190**	1617	2180

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
```

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)
```

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Operating System Notes (Continued)

```
System Tunables (/etc/system parameters):

autoup=200
    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

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 all slots with
the same capacity DIMMs.

This result is measured on a Sun 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 -fma=fused -xprefetch_level=1
-xalias_level=std -ll2amm
```

C++ benchmarks:
```
-library=stlport4 -fast -xipo=2 -xpagesize=4M -fma=fused
-xprefetch_level=2 -xalias_level=compatible -ll2amm -lfast
```

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 -xprefetch=no -lfast -ll2amm

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 -ll2amm

403.gcc: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xpagesize=4M -fma=fused -xalias_level=std -ll2amm

429.mcf: basepeak = yes

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Peak Optimization Flags (Continued)

445.gobmk: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xpagesize=4M -fma=fused -xalias_level=std -xrestrict -ll2amm

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 -ll2amm

462.libquantum: basepeak = yes

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 -fma=fused -xalias_level=compatible -ll2amm

473.astar: -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xpagesize=4M -fma=fused -xalias_level=compatible -xprefetch=latx:3 -lfast -ll2amm

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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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