



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®_rate2006 = 1220

Sun SPARC Enterprise M9000

SPECint_rate_base2006 = 1060

CPU2006 license: 6

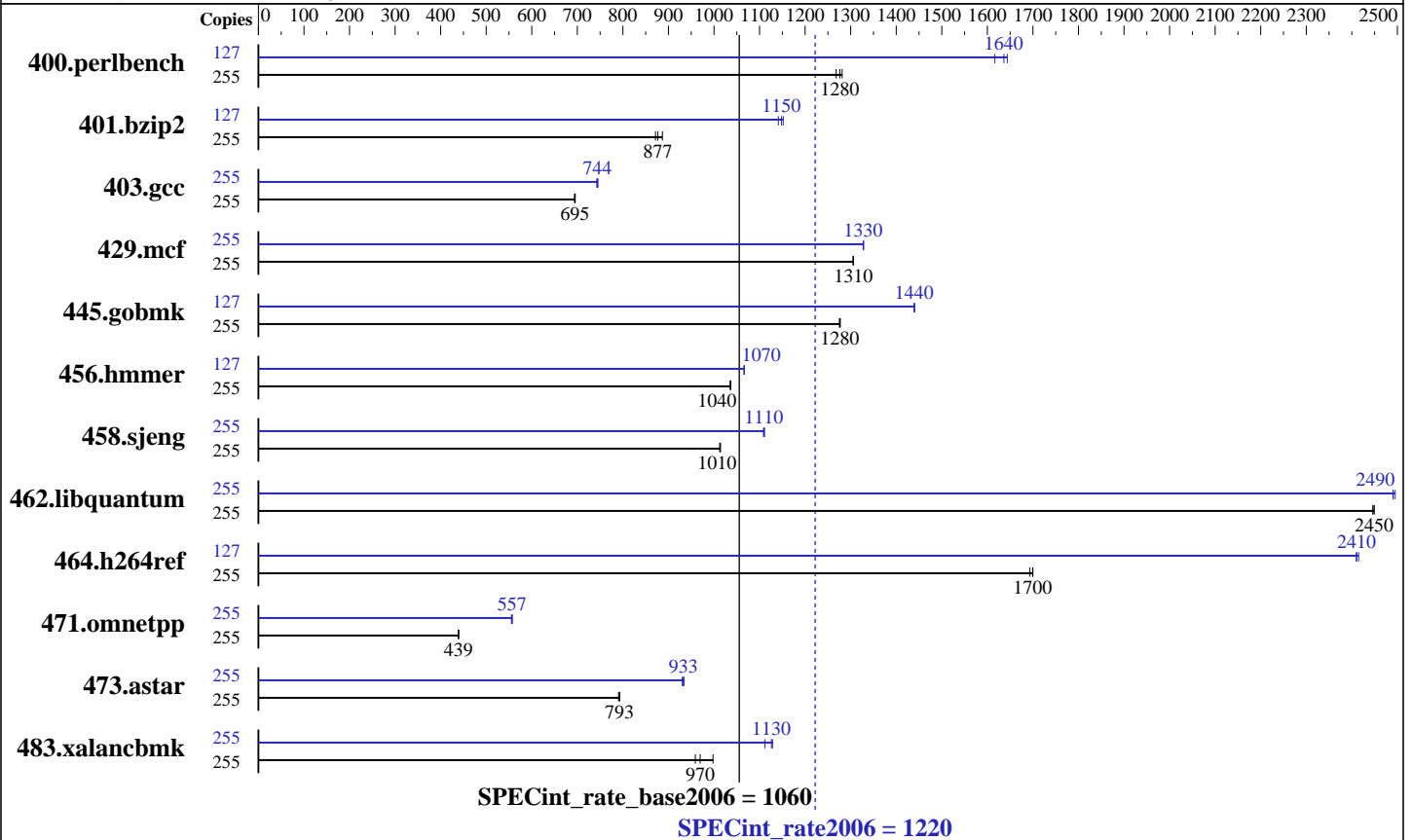
Test date: Mar-2007

Test sponsor: Sun Microsystems

Hardware Availability: Apr-2007

Tested by: Sun Microsystems

Software Availability: Jul-2007



Hardware

CPU Name: SPARC64 VI
 CPU Characteristics:
 CPU MHz: 2280
 FPU: Integrated
 CPU(s) enabled: 128 cores, 64 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 to 16 CMUs; each CMU contains 2 or 4 chips
 Primary Cache: 128 KB I + 128 KB D on chip per core
 Secondary Cache: 5 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 1 TB (512 x 2 GB)
 Disk Subsystem: 673 GB RAID 1+0 created by Solaris Volume Manager with 20 x 73 GB 10,000 RPM Fujitsu MAY2073RC SAS
 Other Hardware: None

Software

Operating System: Solaris 10 7/07 (build s10s_u4wos_04)
 Compiler: Sun Studio 12 (Build 44.0)
 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	1965	1270	1944	1280	<u>1952</u>	<u>1280</u>	127	768	1620	<u>758</u>	<u>1640</u>	755	1640
401.bzip2	255	<u>2807</u>	<u>877</u>	2823	872	2775	887	127	1074	1140	<u>1068</u>	<u>1150</u>	1064	1150
403.gcc	255	2952	695	<u>2955</u>	<u>695</u>	2959	694	255	2764	743	<u>2758</u>	<u>744</u>	2755	745
429.mcf	255	1781	1310	<u>1781</u>	<u>1310</u>	1782	1310	255	1750	1330	<u>1752</u>	<u>1330</u>	1752	1330
445.gobmk	255	<u>2096</u>	<u>1280</u>	2094	1280	2097	1280	127	<u>926</u>	<u>1440</u>	926	1440	925	1440
456.hammer	255	2295	1040	2298	1040	<u>2295</u>	<u>1040</u>	127	1111	1070	<u>1111</u>	<u>1070</u>	1111	1070
458.sjeng	255	<u>3046</u>	<u>1010</u>	3042	1010	3047	1010	255	2778	1110	<u>2780</u>	<u>1110</u>	2783	1110
462.libquantum	255	<u>2158</u>	<u>2450</u>	2157	2450	2160	2450	255	2118	2500	<u>2121</u>	<u>2490</u>	2121	2490
464.h264ref	255	<u>3320</u>	<u>1700</u>	3320	1700	3332	1690	127	<u>1166</u>	<u>2410</u>	1166	2410	1164	2410
471.omnetpp	255	3630	439	<u>3629</u>	<u>439</u>	3626	439	255	2860	557	<u>2863</u>	<u>557</u>	2870	555
473.astar	255	<u>2258</u>	<u>793</u>	2258	793	2265	790	255	<u>1919</u>	<u>933</u>	1916	934	1924	930
483.xalancbmk	255	1763	998	<u>1815</u>	<u>970</u>	1835	959	255	1582	1110	<u>1563</u>	<u>1130</u>	1559	1130

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

Operating System Notes

Processes were bound to cores using "submit" and "pbind".
The SPEC toolset was bound to processor 0.

These shell commands request use of local 4MB pages:

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

'access_lwp' means that the next light weight process to touch the specified address range will access it the most heavily.

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

/etc/system parameters

autoup=300

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

tune_t_fsflushr=3

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

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Operating System Notes (Continued)

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

Platform Notes

"CMU" = CPU/Memory Unit; each holds 2 or 4 CPU chips.

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

This result was measured using a Sun 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 -xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -lbsdmalloc

C++ benchmarks:

-xdepend -library=stlport4 -fast -fma=fused
-xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M -xprefetch_level=2
-lbsdmalloc



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Base Other Flags

C benchmarks:
-xjobs=24 -V -#
C++ benchmarks:
-xjobs=24 -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
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=std -Xc -xipo=2 -xrestrict -fma=fused
-xprefetch=latx:5 -lfast
401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=strong -fma=fused -xprefetch=latx:5
403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xalias_level=std -xprefetch_level=2 -xarch=v8plusb
-fma=fused -l12amm
429.mcf: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch_level=2 -xrestrict -xalias_level=std
-W2,-Apf:l1list=3 -W2,-Apf:noninnerl1list -xprefetch=latx:5

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Peak Optimization Flags (Continued)

429.mcf (continued):
-lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=std -xrestrict -fma=fused

456.hmmcr: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-fma=fused

458.sjeng: Same as 456.hmmcr

462.libquantum: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch_level=2 -fma=fused -xprefetch=latx:3
-lbsdmalloc

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xalias_level=std -xarch=v8plusb -l12amm

C++ benchmarks:

471.omnetpp: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-Qoption cg -Qlp-av=0 -fma=fused -lfast

473.astar: -xdepend -library=stlport4 -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fma=fused -xprefetch=latx:5 -lfast

483.xalancbmk: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fma=fused -xprefetch=latx:5 -lfast



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Peak Other Flags

C benchmarks:

-xjobs=24 -V -#

C++ benchmarks:

-xjobs=24 -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-Studio12.20090714.02.html>

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

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.xml>

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For other inquiries, please contact webmaster@spec.org.

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