SPEC® CINT2006 Result

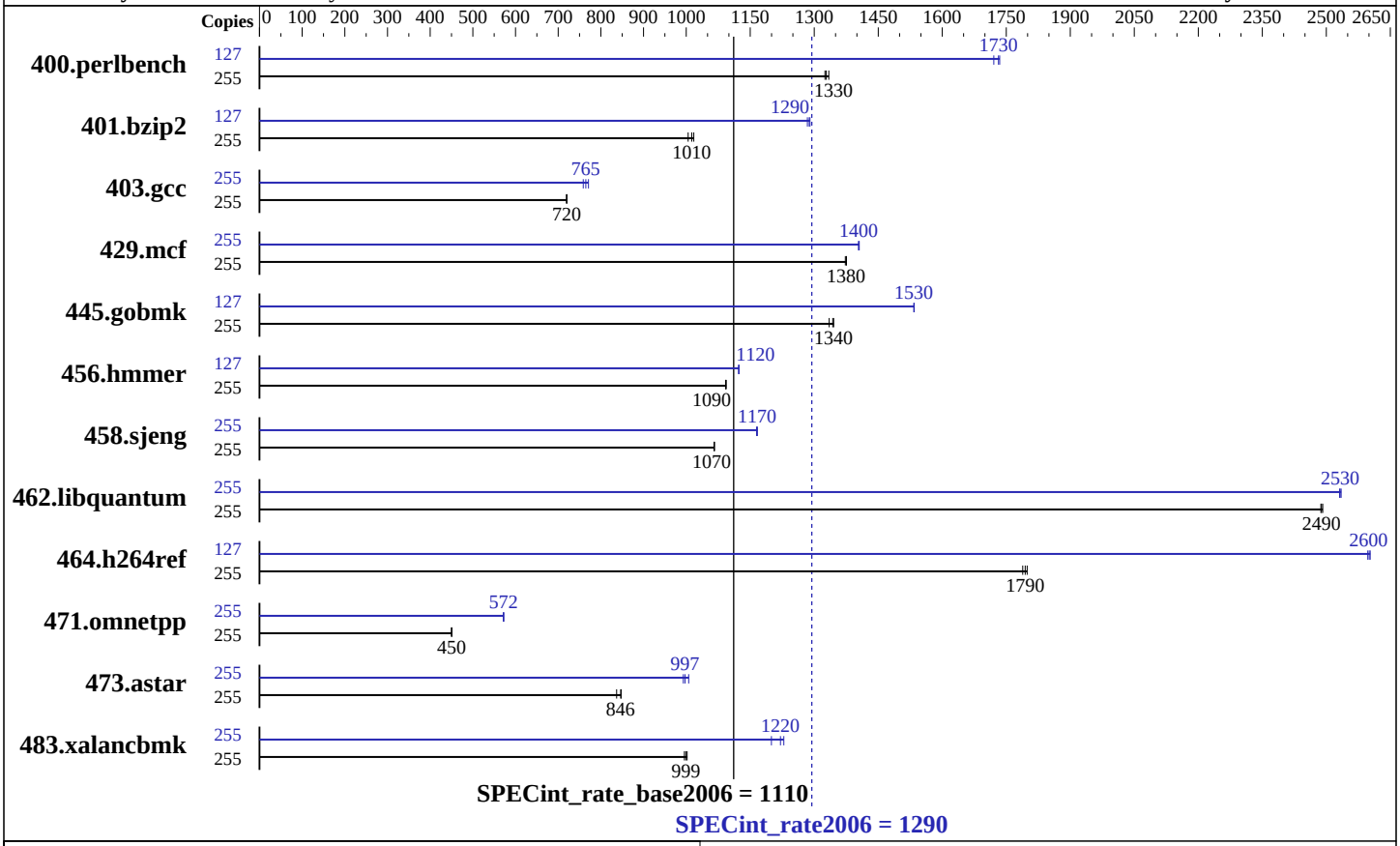
Sun Microsystems
Sun SPARC Enterprise M9000

SPECint®_rate2006 = 1290

SPECint_rate_base2006 = 1110

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Apr-2007
Hardware Availability: Apr-2007
Software Availability: Jul-2007



Hardware

CPU Name:	SPARC64 VI
CPU Characteristics:	
CPU MHz:	2400
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:	6 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	1 TB (512 x 2 GB)
Disk Subsystem:	792 GB RAID 1+0 created by Solaris Volume Manager with 24 x 73 GB 10,000 RPM Fujitsu MAY2073RC SAS
Other Hardware:	None

Software

Operating System:	Solaris 10 7/07 (build s10s_u4wos_03)
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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	255	1880	1330	1867	1330	**1876**	**1330**	127	721	1720	**716**	**1730**	715	1730
401.bzip2	255	2450	1000	**2429**	**1010**	2418	1020	127	955	1280	950	1290	**951**	**1290**
403.gcc	255	**2851**	**720**	2852	720	2850	720	255	2706	759	**2684**	**765**	2663	771
429.mcf	255	1691	1380	**1691**	**1380**	1694	1370	255	**1656**	**1400**	1655	1410	1657	1400
445.gobmk	255	1988	1350	**1991**	**1340**	2004	1330	127	**869**	**1530**	869	1530	868	1530
456.hmmer	255	2175	1090	2178	1090	**2177**	**1090**	127	1055	1120	1055	1120	**1055**	**1120**
458.sjeng	255	2895	1070	**2895**	**1070**	2896	1070	255	2645	1170	**2646**	**1170**	2649	1160
462.libquantum	255	2121	2490	**2123**	**2490**	2124	2490	255	2084	2530	**2086**	**2530**	2088	2530
464.h264ref	255	3155	1790	**3145**	**1790**	3137	1800	127	**1081**	**2600**	1080	2600	1082	2600
471.omnetpp	255	3537	451	**3538**	**450**	3541	450	255	2785	572	**2785**	**572**	2790	571
473.astar	255	**2115**	**846**	2139	837	2112	848	255	**1795**	**997**	1802	993	1780	1010
483.xalancbmk	255	**1761**	**999**	1756	1000	1767	996	255	1432	1230	1467	1200	**1441**	**1220**

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=128/64/2:6144/256/12 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -lbsdmalloc
```

C++ benchmarks:
```
-xdepend -library=stlport4 -fast -fma=fused
-xcache=128/64/2:6144/256/12 -xipo=2 -xpagesize=4M -xprefetch_level=2
-lbsdmalloc
```

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=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -xpagesize=4M`
`-xalias_level=strong -fma=fused -xprefetch=latx:5`

403.gcc: `-xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast`
`-xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2`
`-xalias_level=std -xprefetch_level=2 -xarch=v8plusb`
`-fma=fused -ll2amm`

429.mcf: `-fast -xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2`
`-xprefetch_level=2 -xrestrict -xalias_level=std`
`-W2,-Apf:llist=3 -W2,-Apf:noinnerllist -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=128/64/2:6144/256/12 -xpagesize=4M
-xalias_level=std -xrestrict -fma=fused

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-fma=fused

458.sjeng: Same as 456.hmmer

462.libquantum: -fast -xcache=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-xalias_level=std -xarch=v8plusb -ll2amm

C++ benchmarks:

471.omnetpp: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fma=fused -xprefetch=latx:5 -lfast

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

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

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