SPEC® CINT2006 Result

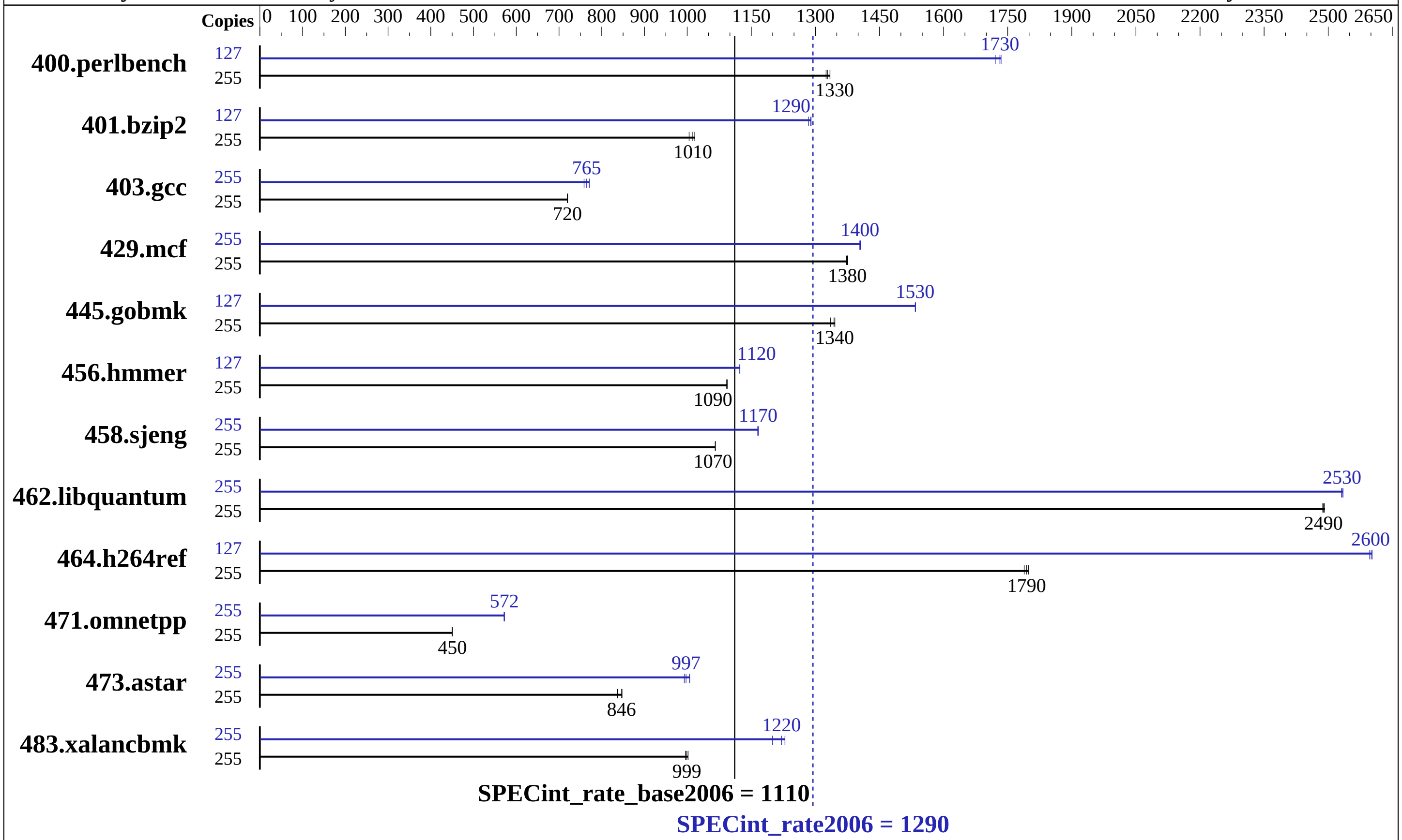
Fujitsu Limited

Fujitsu SPARC Enterprise M9000

SPECint®_rate2006 = 1290

SPECint_rate_base2006 = 1110

CPU2006 license:	19	**Test date:**	Apr-2007
Test sponsor:	Fujitsu Limited	**Hardware Availability:**	Apr-2007
Tested by:	Sun Microsystems	**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

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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	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 was 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

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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=128/64/2:6144/256/12 -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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