SPEC® CINT2006 Result

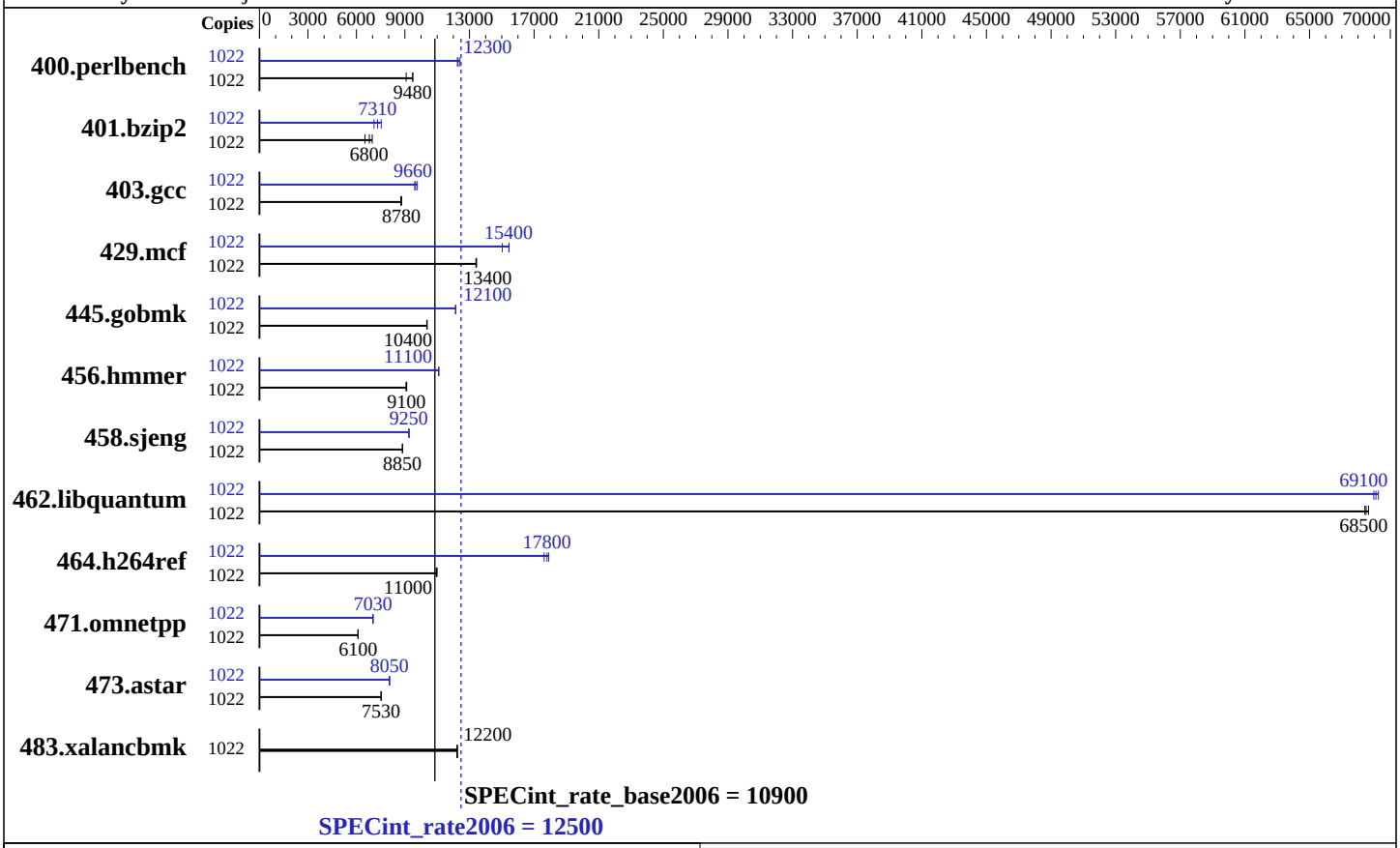
Fujitsu
Fujitsu SPARC M10-4S

SPECint®_rate2006 = 12500

SPECint_rate_base2006 = 10900

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Dec-2012
Hardware Availability: Feb-2013
Software Availability: Mar-2013



Hardware

CPU Name:	SPARC64 X
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	512 cores, 32 chips, 16 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 16 BBs; each BB contains 2 or 4 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	24 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	4 TB (256 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 x 600 GB SAS, 10025 RPM Toshiba MBF2600RC
Other Hardware:	None

Software

Operating System:	Solaris 11.1
Compiler:	C/C++: Version 12.3 of Oracle Solaris Studio, 1/13 Platform Specific Enhancement
Auto Parallel:	No
File System:	zfs and tmpfs
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	1022	1100	9080	**1053**	**9480**	1052	9490	1022	815	12200	**812**	**12300**	805	12400
401.bzip2	1022	**1450**	**6800**	1511	6530	1413	6980	1022	1308	7540	1391	7090	**1350**	**7310**
403.gcc	1022	**937**	**8780**	935	8790	940	8750	1022	842	9770	856	9610	**851**	**9660**
429.mcf	1022	**695**	**13400**	696	13400	694	13400	1022	603	15400	**604**	**15400**	620	15000
445.gobmk	1022	1033	10400	**1034**	**10400**	1035	10400	1022	883	12100	883	12100	**883**	**12100**
456.hmmer	1022	1046	9120	**1048**	**9100**	1051	9070	1022	**859**	**11100**	860	11100	859	11100
458.sjeng	1022	1396	8860	**1397**	**8850**	1398	8850	1022	1336	9260	**1336**	**9250**	1338	9240
462.libquantum	1022	**309**	**68500**	309	68400	308	68700	1022	306	69300	307	69000	**306**	**69100**
464.h264ref	1022	2057	11000	2069	10900	**2063**	**11000**	1022	1263	17900	1283	17600	**1270**	**17800**
471.omnetpp	1022	1047	6100	**1047**	**6100**	1047	6100	1022	909	7030	**909**	**7030**	909	7020
473.astar	1022	952	7540	**952**	**7530**	953	7530	1022	892	8050	891	8050	**891**	**8050**
483.xalancbmk	1022	**576**	**12200**	577	12200	575	12300	1022	**576**	**12200**	577	12200	575	12300

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

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

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

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

System Tunables:
(/etc/system parameters)
   lpg_alloc_prefer=1
     Indicates that extra effort should be taken to ensure that pages are
     created in the nearby lgroup (NUMA location).
```

Platform Notes

```
Sysinfo program /export/cpu2006-v1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on TPCC-BB00 Fri Dec  7 02:20:20 2012

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

Continued on next page

Platform Notes (Continued)

```
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /usr/sbin/psrinfo
       SPARC64-X (chipid 0, clock 3000 MHz)
       SPARC64-X (chipid 1, clock 3000 MHz)
       SPARC64-X (chipid 10, clock 3000 MHz)
       SPARC64-X (chipid 11, clock 3000 MHz)
       SPARC64-X (chipid 12, clock 3000 MHz)
       SPARC64-X (chipid 13, clock 3000 MHz)
       SPARC64-X (chipid 14, clock 3000 MHz)
       SPARC64-X (chipid 15, clock 3000 MHz)
       SPARC64-X (chipid 16, clock 3000 MHz)
       SPARC64-X (chipid 17, clock 3000 MHz)
       SPARC64-X (chipid 18, clock 3000 MHz)
       SPARC64-X (chipid 19, clock 3000 MHz)
       SPARC64-X (chipid 2, clock 3000 MHz)
       SPARC64-X (chipid 20, clock 3000 MHz)
       SPARC64-X (chipid 21, clock 3000 MHz)
       SPARC64-X (chipid 22, clock 3000 MHz)
       SPARC64-X (chipid 23, clock 3000 MHz)
       SPARC64-X (chipid 24, clock 3000 MHz)
       SPARC64-X (chipid 25, clock 3000 MHz)
       SPARC64-X (chipid 26, clock 3000 MHz)
       SPARC64-X (chipid 27, clock 3000 MHz)
       SPARC64-X (chipid 28, clock 3000 MHz)
       SPARC64-X (chipid 29, clock 3000 MHz)
       SPARC64-X (chipid 3, clock 3000 MHz)
       SPARC64-X (chipid 30, clock 3000 MHz)
       SPARC64-X (chipid 31, clock 3000 MHz)
       SPARC64-X (chipid 4, clock 3000 MHz)
       SPARC64-X (chipid 5, clock 3000 MHz)
       SPARC64-X (chipid 6, clock 3000 MHz)
       SPARC64-X (chipid 7, clock 3000 MHz)
       SPARC64-X (chipid 8, clock 3000 MHz)
       SPARC64-X (chipid 9, clock 3000 MHz)
       32 chips
       1024 threads
       3000 MHz

    From kstat:      512 cores

    From prtconf: 4183552 Megabytes

    /etc/release:
         Oracle Solaris 11.1 SPARC
    uname -a:
       SunOS TPCC-BB00 5.11 11.1 sun4v sparc sun4v

    disk: df -h  $SPEC
    Filesystem             Size   Used  Available Capacity  Mounted on
    rpool/export           547G    91G       347G    21%    /export
```

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Platform Notes (Continued)

```
(End of data from sysinfo program)
```

General Notes

```
output_root was used to put run directories in /tmp/cpu2006 (tmpfs).
```

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 -xtarget=sparc64x -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_auto_type=indirect_array_access -xalias_level=std
-M /usr/lib/ld/map.bssalign
```

C++ benchmarks:
```
-fast -xtarget=sparc64x -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_auto_type=indirect_array_access -xalias_level=compatible
-library=stlport4 -lfast -M /usr/lib/ld/map.bssalign
```

Base Other Flags

C benchmarks:
```
-xjobs=16
```

C++ benchmarks:
```
-xjobs=16
```

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 -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=1 -xalias_level=std
-xrestrict -xprefetch=no -xO4 -lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xalias_level=strong
-xprefetch_auto_type=indirect_array_access
-xprefetch=latx:0.2 -W2,-Ainline:rs=1000
-W2,-Ainline:cs=500 -W2,-Ainline:inc=60 -lfast

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xO4 -xipo=2 -xprefetch_level=2
-xprefetch=latx:0.2

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=2 -xalias_level=std
-xprefetch_level=1
-xprefetch_auto_type=indirect_array_access
-xprefetch=latx:0.2

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xalias_level=std -xrestrict
-xprefetch=latx:0.2

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Peak Optimization Flags (Continued)

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=0 -xalias_level=std
-xprefetch=latx:1.6

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=2 -xalias_level=std
-xprefetch=no

462.libquantum: -fast -xtarget=sparc64x -fma=fused -xpagesize=4M -xipo=2
-xalias_level=std -xprefetch_level=2 -xprefetch=latx:0.2
-M /usr/lib/ld/map.bssalign

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=1 -xalias_level=std
-xprefetch=no -xarch=generic

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=1 -xalias_level=compatible
-xunroll=2 -xchip=generic -library=stlport4 -lfast

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=0 -xalias_level=compatible
-xunroll=6 -xprefetch_auto_type=indirect_array_access
-xprefetch=latx:0.8 -library=stlport4 -lfast

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:
-xjobs=16

C++ benchmarks:
-xjobs=16

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-SPARC64X.20130522.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-SPARC64X.20130522.xml

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

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