SPEC® CINT2006 Result

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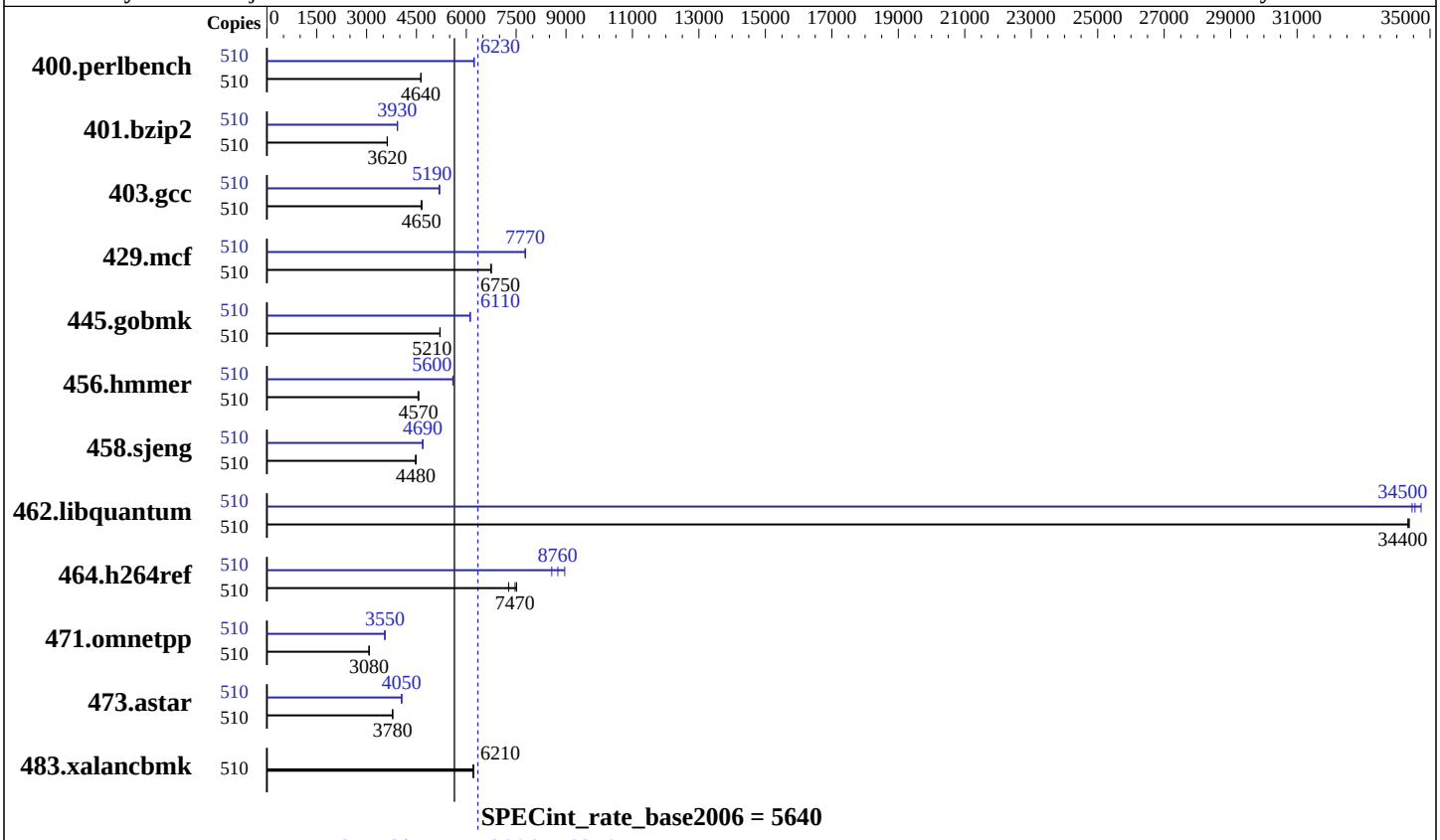
Fujitsu
Fujitsu SPARC M10-4S

SPECint®_rate2006 = 6350

SPECint_rate_base2006 = 5640

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

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



Hardware

CPU Name:	SPARC64 X
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	256 cores, 16 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:	2 TB (128 x 16 GB 2Rx4 PC3L-12800R-11, ECC, running at 1600 MHz)
Disk Subsystem:	1 x 600 GB SAS, 10025 RPM Toshiba MBF2600RC
Other Hardware:	None

Software

Operating System:	Oracle 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	510	1074	4640	**1075**	**4640**	1075	4630	510	798	6240	800	6230	**800**	**6230**
401.bzip2	510	1359	3620	**1359**	**3620**	1358	3620	510	1254	3930	**1253**	**3930**	1253	3930
403.gcc	510	880	4660	**882**	**4650**	884	4650	510	790	5200	**790**	**5190**	792	5180
429.mcf	510	**689**	**6750**	689	6750	690	6750	510	598	7770	**598**	**7770**	598	7780
445.gobmk	510	**1027**	**5210**	1026	5210	1028	5200	510	**875**	**6110**	873	6120	876	6110
456.hmmer	510	1042	4570	**1042**	**4570**	1046	4550	510	850	5600	**850**	**5600**	849	5600
458.sjeng	510	1378	4480	**1378**	**4480**	1376	4490	510	1316	4690	**1316**	**4690**	1316	4690
462.libquantum	510	**307**	**34400**	308	34300	307	34400	510	304	34700	307	34500	**306**	**34500**
464.h264ref	510	1502	7520	1552	7270	**1511**	**7470**	510	**1289**	**8760**	1317	8570	1259	8960
471.omnetpp	510	**1036**	**3080**	1036	3080	1036	3080	510	898	3550	**898**	**3550**	898	3550
473.astar	510	**947**	**3780**	947	3780	945	3790	510	883	4050	**883**	**4050**	883	4050
483.xalancbmk	510	567	6210	**567**	**6210**	566	6210	510	567	6210	**567**	**6210**	566	6210

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 4S-710-D0 Sat Dec 22 09:14:40 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 2, clock 3000 MHz)
       SPARC64-X (chipid 3, 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)
       16 chips
       512 threads
       3000 MHz

    From kstat:      256 cores

    From prtconf: 2091520 Megabytes

    /etc/release:
         Oracle Solaris 11.1 SPARC
    uname -a:
       SunOS 4S-710-D0 5.11 11.1 sun4v sparc sun4v

    disk: df -h  $SPEC
    Filesystem             Size   Used  Available Capacity  Mounted on
    rpool/export           547G   5.5G       466G     2%    /export

    (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 -xtarget=sparc64vii -xipo=1
-xalias_level=std -xrestrict -xprefetch=no%auto -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

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

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%auto

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 -xtarget=sparc64vii -xipo=1
-xalias_level=any -xprefetch=no%auto

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Peak Optimization Flags (Continued)

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.20130409.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.20130409.xml

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

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