SPEC® CINT2006 Result

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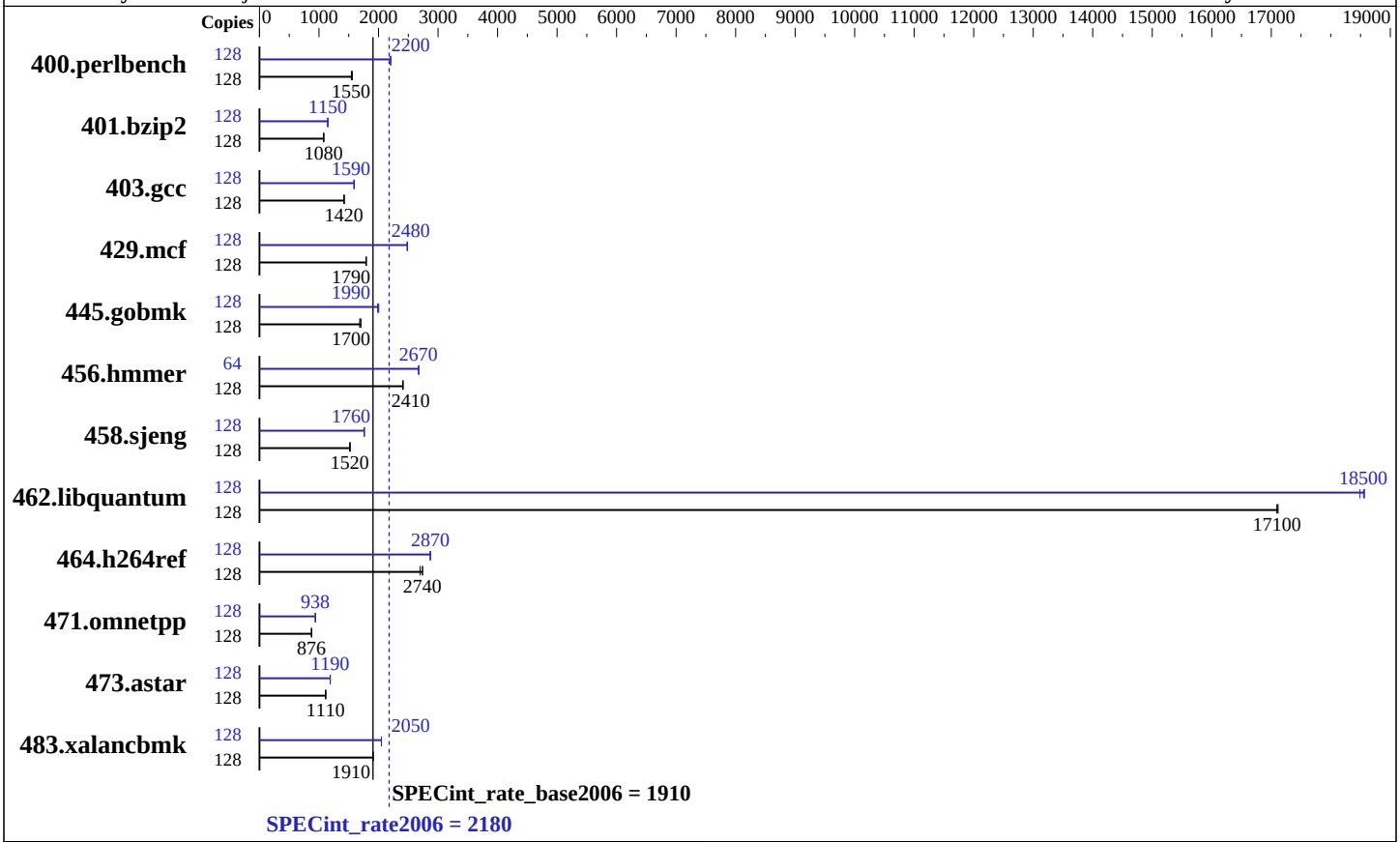
Fujitsu
Fujitsu SPARC M10-4S

SPECint®_rate2006 = 2180

SPECint_rate_base2006 = 1910

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

Test date: Feb-2015
Hardware Availability: Apr-2014
Software Availability: Jan-2015



Hardware

CPU Name:	SPARC64 X+
CPU Characteristics:	
CPU MHz:	3700
FPU:	Integrated
CPU(s) enabled:	64 cores, 4 chips, 16 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 16 BBs; each BB contains 2 or 4 CPU chips; each CPU chip contains 0, 1, 2, .. 32 active threads; the number of orderable total cores is 4, 6, 8, .. 1024
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:	512 GB (32 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	tmpfs 600 GB 10,025 RPM Toshiba MBF2600RC SAS (for system disk)
Other Hardware:	None

Software

Operating System:	Solaris 11.2 SRU 6.4
Compiler:	C/C++: Version 12.4 of Oracle Solaris Studio
Auto Parallel:	No
File System:	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	128	810	1540	802	1560	**806**	**1550**	128	568	2200	568	2200	**568**	**2200**
401.bzip2	128	**1144**	**1080**	1143	1080	1147	1080	128	1079	1140	1074	1150	**1074**	**1150**
403.gcc	128	724	1420	**725**	**1420**	725	1420	128	647	1590	649	1590	**648**	**1590**
429.mcf	128	652	1790	**651**	**1790**	650	1800	128	469	2490	470	2480	**470**	**2480**
445.gobmk	128	**789**	**1700**	789	1700	798	1680	128	**675**	**1990**	670	2000	676	1990
456.hmmer	128	496	2410	**495**	**2410**	495	2410	64	223	2670	223	2670	**223**	**2670**
458.sjeng	128	**1018**	**1520**	1020	1520	1018	1520	128	880	1760	879	1760	**880**	**1760**
462.libquantum	128	155	17100	**155**	**17100**	155	17100	128	**143**	**18500**	143	18600	143	18500
464.h264ref	128	1050	2700	**1035**	**2740**	1034	2740	128	**986**	**2870**	988	2870	986	2870
471.omnetpp	128	**914**	**876**	913	876	915	875	128	852	938	852	938	**852**	**938**
473.astar	128	**807**	**1110**	808	1110	807	1110	128	756	1190	756	1190	**756**	**1190**
483.xalancbmk	128	463	1910	**463**	**1910**	463	1910	128	431	2050	431	2050	**431**	**2050**

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 "Logical Domains Manager" service was turned off using the command "svcadm disable ldmd".

System Tunables:
(/etc/system parameters)
   autoup = 1555200
      Causes pages older than the listed number of seconds to be written by fsflush.
   tune_t_fsflushr = 259200
      Controls how many seconds elapse between runs of the page flush daemon, fsflush.
```

Platform Notes

```
Sysinfo program /export/cpu2006-v1.2/config/sysinfo
$Rev: 6874 $ $Date:: 2013-11-20 #$ 5ec117938769af2bf59ae0ed87ea9ccd
running on 4S-1049-D0 Mon Feb  9 15:36:41 2015

This section contains SUT (System Under Test) info as seen by
```

Continued on next page

Platform Notes (Continued)

```
some common utilities.  To remove or add to this section, see:
  http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /usr/sbin/psrinfo
   SPARC64-X+ (chipid 0, clock 3700 MHz)
   SPARC64-X+ (chipid 1, clock 3700 MHz)
   SPARC64-X+ (chipid 2, clock 3700 MHz)
   SPARC64-X+ (chipid 3, clock 3700 MHz)
   4 chips
   128 threads
   3700 MHz

From kstat:       64 cores

From prtconf: 522496 Megabytes

/etc/release:
     Oracle Solaris 11.2 SPARC
uname -a:
   SunOS 4S-1049-D0 5.11 11.2 sun4v sparc sun4v

disk: df -h  $SPEC
Filesystem             Size   Used  Available Capacity  Mounted on
rpool/export           547G   2.9G       401G     1%    /export

(End of data from sysinfo program)
```

General Notes

```
The Building Block (BB) is just a Fujitsu SPARC M10-4S that is the basic
unit to be expanded as if stacking up children’s blocks.

File System:
 tmpfs: output_root was used to put run directories in /tmp/cpu2006
 zfs: operating system
```

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=sparc64xplus -xipo=2 -xpagesize=4M -xsegment_align=4M
-xalias_level=std

C++ benchmarks:
-fast -xtarget=sparc64xplus -xipo=2 -xpagesize=4M -xsegment_align=4M
-xalias_level=compatible -library=stlport4 -lfast

Base Other Flags

C benchmarks:
-xjobs=8

C++ benchmarks:
-xjobs=8

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=sparc64xplus -xpagesize=4M -xsegment_align=256M
-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=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xalias_level=strong -xprefetch=no%auto
-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=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xO4 -xipo=2 -xprefetch=no%auto

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64vii
-xipo=2 -xpagesize=4M -xalias_level=std -xprefetch_level=1
-xprefetch=latx:0.2 -W2,-Asac

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xO4 -xalias_level=std -xrestrict -xprefetch=no%auto
-Wc,-Qiselect-funcalign=64

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xipo=1 -xalias_level=std -xunroll=8 -Wc,-Qms_pipe-pref

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xO4 -xipo=2 -xalias_level=std -xprefetch=no%auto
-Wc,-Qlu-en=1-t=4

462.libquantum: -fast -xtarget=sparc64xplus -xpagesize=4M
-xsegment_align=256M -m64 -xipo=2 -xprefetch=no%auto
-lbsdmalloc

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xalias_level=strong -xipo=1 -Wc,-Qiselect-funcalign=64

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xipo=1 -xalias_level=compatible -xunroll=2
-xprefetch_level=3 -W2,-Asac -library=stlport4 -lfast

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xipo=2 -xalias_level=compatible -xunroll=6
-xrestrict=%source
-xprefetch_auto_type=indirect_array_access -library=stlport4
-lfast

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xtarget=sparc64xplus -xpagesize=4M -xsegment_align=256M
-xipo=2 -xalias_level=compatible -xdepend
-xprefetch_level=3 -xprefetch=latx:0.4 -library=stlport4
-W2,-Asac -lfast

Peak Other Flags

C benchmarks:
-xjobs=8

C++ benchmarks:
-xjobs=8

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.4.html
http://www.spec.org/cpu2006/flags/Fujitsu-Mseries.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.4.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Mseries.xml

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