SPEC® CINT2006 Result

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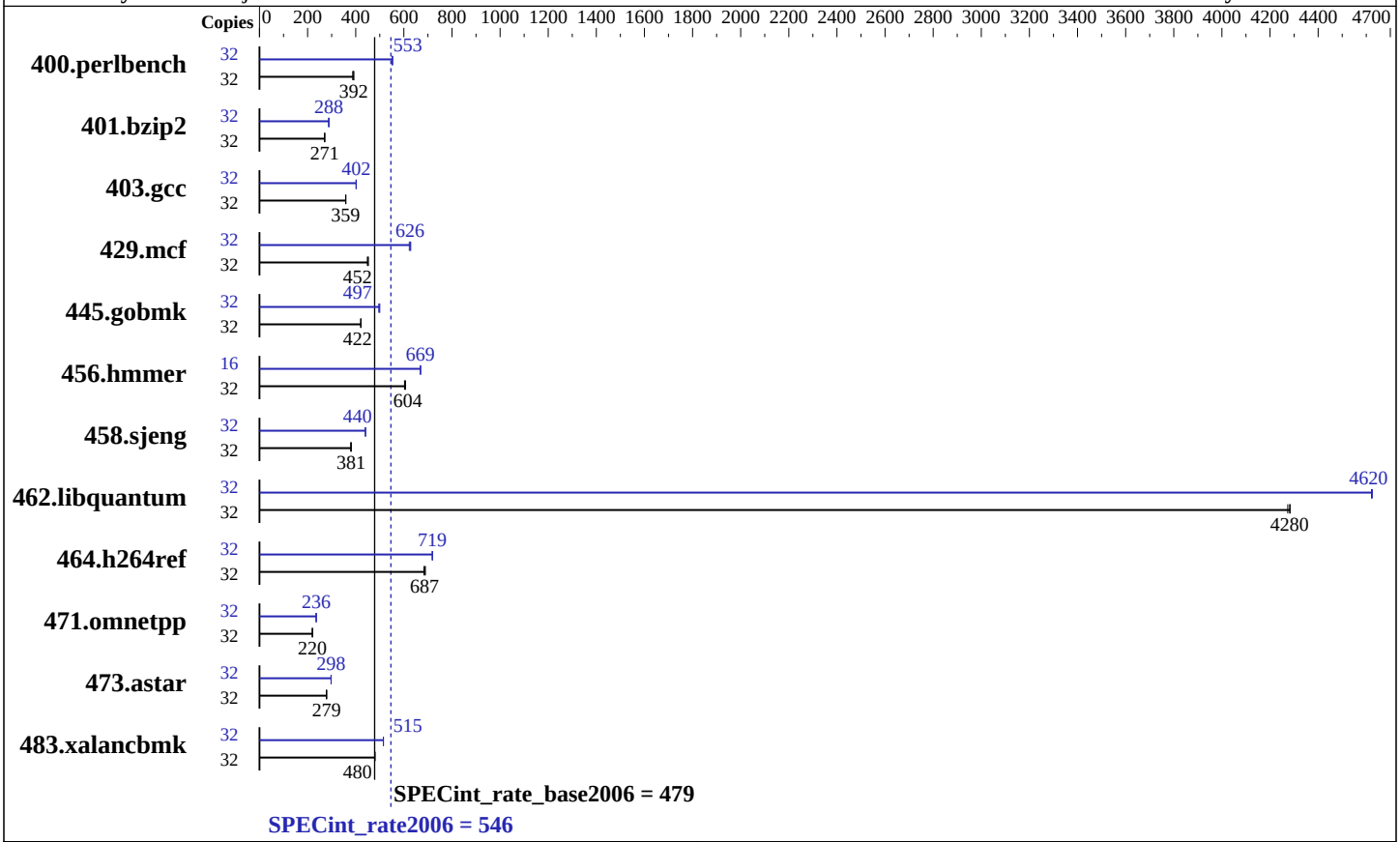
Fujitsu
Fujitsu SPARC M10-4S

SPECint®_rate2006 = 546

SPECint_rate_base2006 = 479

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:	16 cores, 1 chip, 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:	128 GB (8 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	32	807	387	**798**	**392**	798	392	32	566	552	565	553	**566**	**553**
401.bzip2	32	**1138**	**271**	1138	271	1143	270	32	1070	289	1074	288	**1072**	**288**
403.gcc	32	**718**	**359**	718	359	720	358	32	640	403	642	401	**641**	**402**
429.mcf	32	651	448	**646**	**452**	646	452	32	469	623	**466**	**626**	464	629
445.gobmk	32	798	421	**796**	**422**	796	422	32	**675**	**497**	671	500	676	496
456.hmmer	32	**494**	**604**	492	607	495	603	16	223	669	223	669	**223**	**669**
458.sjeng	32	1021	379	**1016**	**381**	1016	381	32	880	440	**880**	**440**	879	441
462.libquantum	32	155	4270	155	4280	**155**	**4280**	32	143	4630	143	4620	**143**	**4620**
464.h264ref	32	1036	684	1027	690	**1031**	**687**	32	986	718	**986**	**719**	985	719
471.omnetpp	32	910	220	909	220	**910**	**220**	32	**848**	**236**	848	236	848	236
473.astar	32	**806**	**279**	805	279	807	278	32	755	298	755	298	**755**	**298**
483.xalancbmk	32	461	479	460	480	**460**	**480**	32	**429**	**515**	429	515	429	515

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 Tue Feb 10 22:21:48 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)
   1 chips
   32 threads
   3700 MHz

From kstat:       16 cores

From prtconf: 129280 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   2.8G       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

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Base Portability Flags (Continued)

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:

Continued on next page

Peak Optimization Flags (Continued)

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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