SPEC® CINT2006 Result

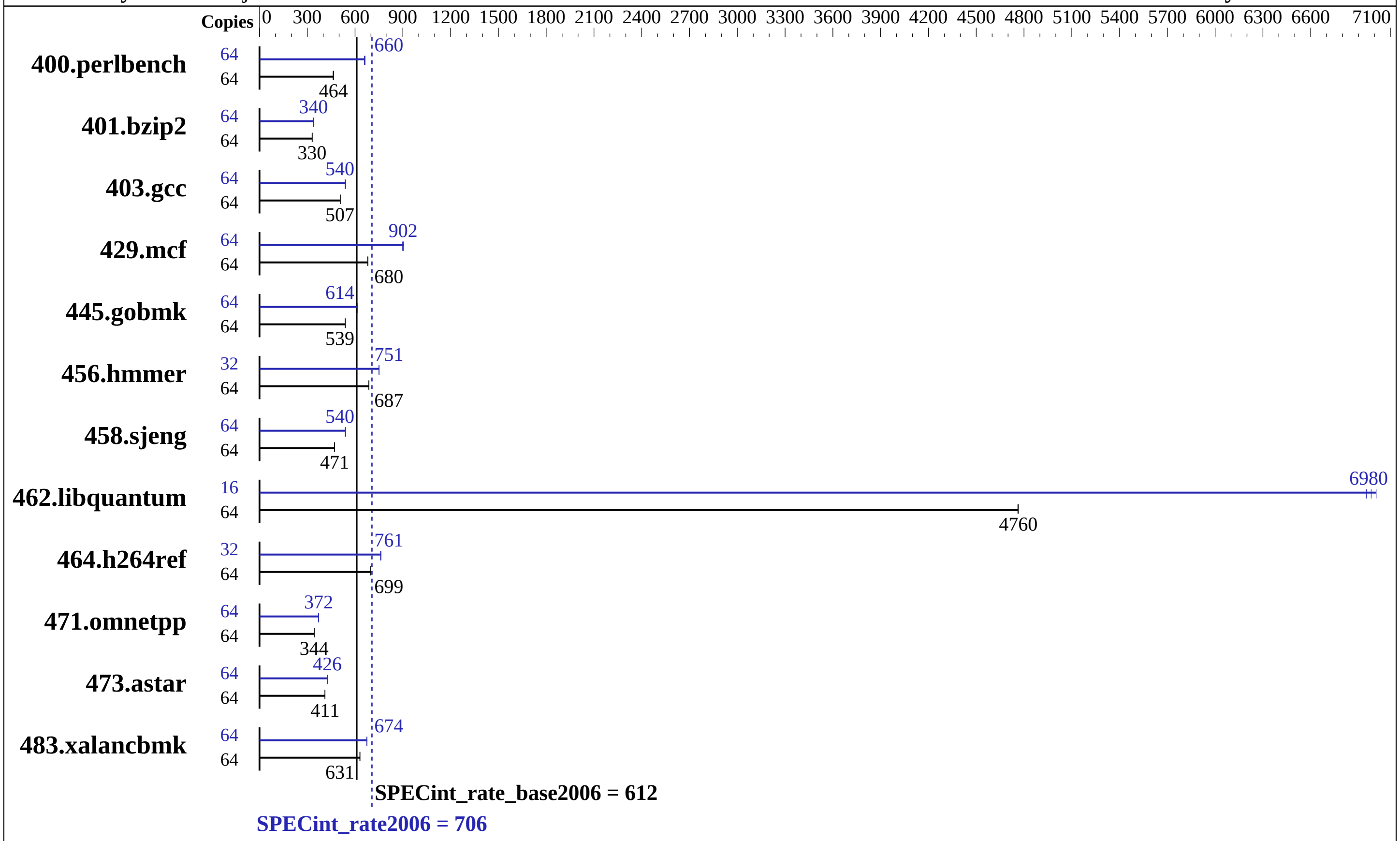
Fujitsu
Fujitsu SPARC M12-2S

SPECint®_rate2006 = 706

SPECint_rate_base2006 = 612

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

Test date: Mar-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017



Hardware

CPU Name:	SPARC64 XII
CPU Characteristics:	High Speed Mode up to 4.35 GHz
CPU MHz:	4250
FPU:	Integrated
CPU(s) enabled:	8 cores, 1 chip, 8 cores/chip, 8 threads/core
CPU(s) orderable:	1 to 16 BBs; each BB contains 1 or 2 CPU chips; the number of orderable total cores is 2, 3, 4, .. 384
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	32 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	1 x 600 GB 10K RPM SAS (for system disk)
Other Hardware:	None

Software

Operating System:	Oracle Solaris 11.3 (with June 2017 SRU)
Compiler:	C/C++: Version 12.6 of Oracle Developer 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

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	**1346**	**464**	1345	465	1354	462	64	**948**	**660**	949	659	943	663
401.bzip2	64	**1870**	**330**	1870	330	1864	331	64	1820	339	**1819**	**340**	1817	340
403.gcc	64	1016	507	1017	507	**1016**	**507**	64	**954**	**540**	959	537	953	541
429.mcf	64	859	679	**859**	**680**	857	681	64	**647**	**902**	649	899	645	905
445.gobmk	64	1245	539	**1246**	**539**	1248	538	64	**1094**	**614**	1094	613	1093	615
456.hmmer	64	**869**	**687**	870	687	868	688	32	397	751	398	750	**398**	**751**
458.sjeng	64	1639	473	**1643**	**471**	1645	471	64	**1435**	**540**	1433	540	1439	538
462.libquantum	64	278	4760	**278**	**4760**	279	4760	16	47.3	7010	**47.5**	**6980**	47.7	6950
464.h264ref	64	2025	699	2027	699	**2027**	**699**	32	932	760	928	763	**931**	**761**
471.omnetpp	64	1164	344	1165	343	**1164**	**344**	64	1075	372	1078	371	**1076**	**372**
473.astar	64	1093	411	**1092**	**411**	1091	412	64	1056	426	1055	426	**1056**	**426**
483.xalancbmk	64	**700**	**631**	701	630	700	631	64	**655**	**674**	655	675	655	674

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 = 86400
      Causes pages older than the listed number of seconds to be written by fsflush.
   doiflush = 0
      Controls whether file system metadata syncs will be executed during fsflush invocations.
   dopageflush = 0
      Controls whether memory is examined for modified pages during fsflush invocations.
   zfs:zfs_arc_max=1073741824
      Determines the maximum size of the ZFS Adaptive Replacement Cache (ARC).
```

Platform Notes

```
Firmware Settings:
(XSCF operations)
   Set High Speed Mode via XSCF command "sethsmode -s on".

 Sysinfo program /export/cpu2006/config/sysinfo
 Revision 6993 of 2015-11-06 (5bc7c140478f0d042f37127effc8c1a9)
 running on H2S-258-D0 Wed Mar  1 18:45:20 2017

 This section contains SUT (System Under Test) info as seen by
 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-XII (chipid 0, clock 4250 MHz)
    1 chips
    64 threads
    4250 MHz

 From kstat:        8 cores

 From prtconf: 521728 Megabytes

 /etc/release:
      Oracle Solaris 11.3 SPARC
 uname -a:
    SunOS H2S-258-D0 5.11 11.3 sun4v sparc sun4v

 SPEC is set to: /export/cpu2006

 disk: df -h  /export/cpu2006
 Filesystem             Size   Used  Available Capacity  Mounted on
 rpool/export           547G   6.2G       265G     3%    /export

 (End of data from sysinfo program)
```

General Notes

```
 The Building Block (BB) is just a Fujitsu SPARC M12-2S 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

 SPEC CPU2006 benchmark:
  Updated with runspec --update
```

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:
`-std=c99 -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M -xsegment_align=4M -xthroughput -xalias_level=std`

C++ benchmarks:
`-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M -xsegment_align=4M -xthroughput -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: -std=c99 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -m32 -fast -xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M -xthroughput -xtarget=sparc64xplus -xipo=1 -xalias_level=std -xrestrict -xprefetch=no%auto -xO4 -Wc,-Qiselect-funcalign=4 -xthroughput=no -lfast

401.bzip2: -std=c99 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -m32 -fast -xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M -xthroughput -xalias_level=strong -xprefetch=no%auto -Wc,-Qiselect-funcalign=4 -Wc,-Qicache-chbab=1 -xinline_param=max_inst_hard:1000,max_inst_soft:500,max_growth:60 -lfast

403.gcc: -std=c99 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -m32 -fast -xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M -xthroughput -xO4 -xipo=2 -xprefetch=no%auto -Wc,-Qiselect-funcalign=64 -xcache=32/128/4/4:256/128/8/4:8192/128/16/24 -xalias_level=layout

429.mcf: -std=c99 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -m32 -fast -xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M -xthroughput -xipo=2 -xalias_level=std -xprefetch=latx:0.2 -W2,-Asac -Wc,-Qiselect-funcalign=64

445.gobmk: -std=c99 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -m32 -fast -xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M -xthroughput -xO4 -xalias_level=std -xrestrict -xprefetch=no%auto -Wc,-Qiselect-funcalign=64 -Wc,-Qgsched-T=4

456.hmmer: -std=c99 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -m32 -fast -xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M -xthroughput -xipo=1 -xunroll=8 -Wc,-Qms_pipe-pref

Continued on next page

Peak Optimization Flags (Continued)

456.hmmer (continued):
-Wc,-Qiselect-funcalign=4
-xcache=32/128/4/4:256/128/8/4:8192/128/16/48

458.sjeng: -std=c99 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -m32 -fast
-xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M
-xthroughput -xO4 -xipo=2 -xalias_level=std -xunroll=4
-Wc,-Qiselect-funcalign=4 -W2,-Afully_unroll:always=on
-xprefetch=latx:0.6 -xcheck=%none

462.libquantum: -std=c99 -m32 -fast -xtarget=sparc64xii -xpagesize=256M
-xsegment_align=256M -xthroughput -m64
-xtarget=sparc64xplus -xipo=2
-xcache=32/128/4/4:256/128/8/4:8192/128/16/24
-xinline_param=level:1 -Wc,-Qiselect-funcalign=4
-xalias_level=layout -xprefetch=latx:0.2

464.h264ref: -std=c99 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -m32 -fast
-xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M
-xthroughput -xtarget=sparc64xplus -xipo=1
-Wc,-Qiselect-funcalign=4 -xthroughput=no
-xalias_level=layout -xprefetch=latx:0.2 -xcheck=%none

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -m32 -fast
-xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M
-xthroughput -xipo=1 -xalias_level=compatible -xunroll=2
-xprefetch_level=3 -W2,-Asac -xthroughput=no -lfast

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -m32 -fast
-xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M
-xthroughput -xtarget=sparc64xplus -xalias_level=compatible
-xipo=2 -xunroll=6 -xrestrict=%source
-Wc,-Qiselect-funcalign=64 -Wc,-Qgsched-T=4
-xprefetch=latx:0.3 -lfast

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -m32 -fast
-xtarget=sparc64xii -xpagesize=256M -xsegment_align=256M
-xthroughput -xipo=2 -xalias_level=compatible -xdepend
-xprefetch_level=3 -xprefetch=latx:0.4 -library=stlport4
-W2,-Asac -Wc,-Qiselect-funcalign=64 -features=no%except
-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-Developer-Studio12.6.html
http://www.spec.org/cpu2006/flags/Fujitsu-M12-2S.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Oracle-Developer-Studio12.6.xml
http://www.spec.org/cpu2006/flags/Fujitsu-M12-2S.xml

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

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