SPEC® CINT2006 Result

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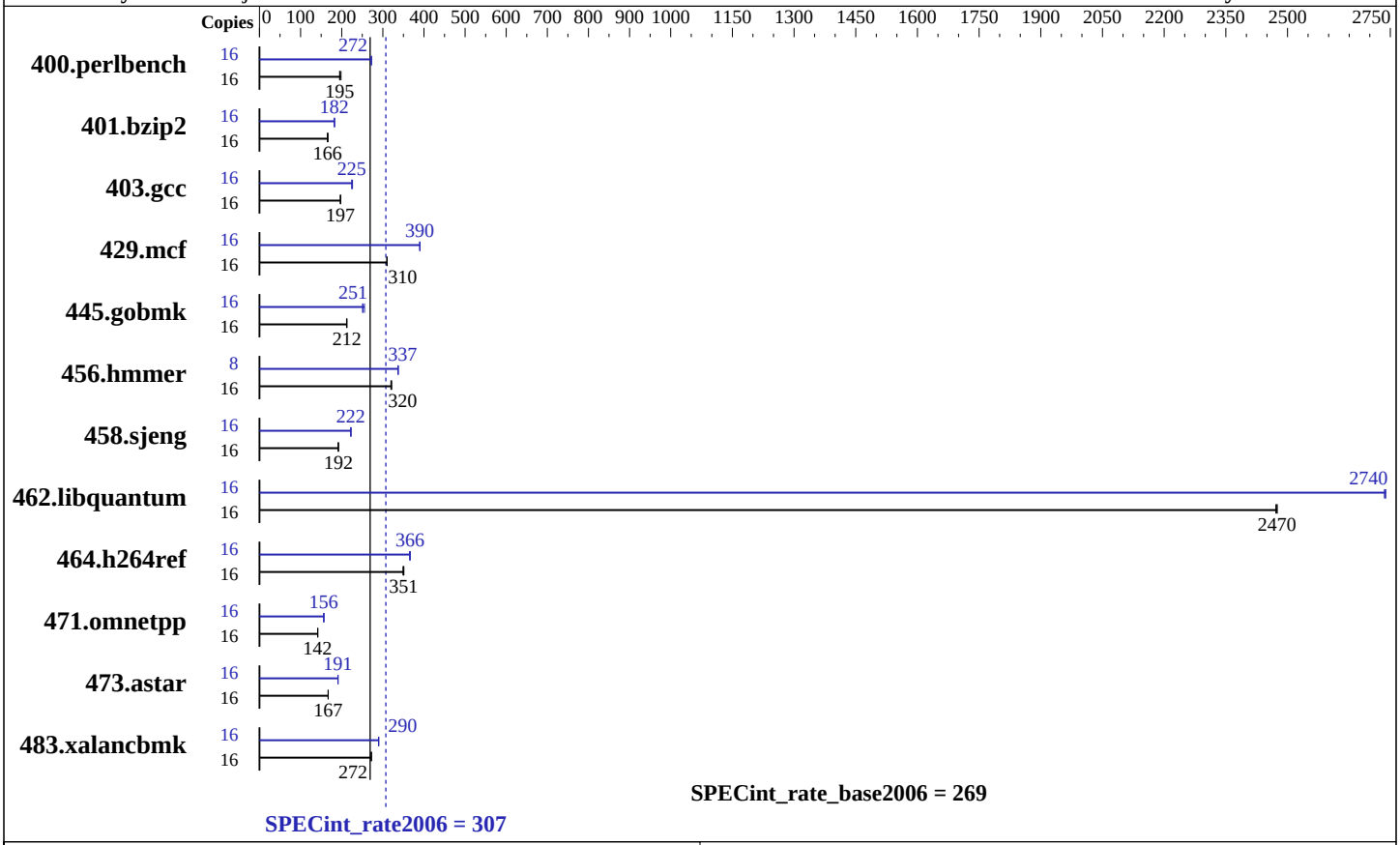
Fujitsu
Fujitsu SPARC M10-1

SPECint®_rate2006 = 307

SPECint_rate_base2006 = 269

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

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



Hardware

CPU Name:	SPARC64 X+
CPU Characteristics:	
CPU MHz:	3700
FPU:	Integrated
CPU(s) enabled:	8 cores, 1 chip, 8 cores/chip, 2 threads/core
CPU(s) orderable:	1 CPU; CPU chip contains 0, 1, 2, .. 32 active threads; the number of orderable total cores is 2, 4, 6, .. 16
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	16	**800**	**195**	788	198	802	195	16	574	272	**575**	**272**	575	272
401.bzip2	16	**932**	**166**	927	167	935	165	16	849	182	846	183	**847**	**182**
403.gcc	16	651	198	**654**	**197**	655	197	16	574	225	**573**	**225**	569	226
429.mcf	16	471	310	**471**	**310**	470	310	16	374	390	**374**	**390**	374	390
445.gobmk	16	**790**	**212**	789	213	793	212	16	**668**	**251**	669	251	657	255
456.hmmer	16	**466**	**320**	464	322	467	320	8	221	337	221	337	**221**	**337**
458.sjeng	16	1008	192	1013	191	**1009**	**192**	16	871	222	**871**	**222**	870	222
462.libquantum	16	134	2470	134	2470	**134**	**2470**	16	121	2740	121	2740	**121**	**2740**
464.h264ref	16	1015	349	**1010**	**351**	1008	351	16	970	365	**967**	**366**	966	367
471.omnetpp	16	707	142	**706**	**142**	706	142	16	639	156	**639**	**156**	639	157
473.astar	16	**672**	**167**	673	167	672	167	16	**588**	**191**	588	191	588	191
483.xalancbmk	16	**406**	**272**	406	272	406	272	16	**381**	**290**	381	290	381	290

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 1S-1205-D0 Thu Feb  5 13:44:04 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
   16 threads
   3700 MHz

From kstat:        8 cores

From prtconf: 129280 Megabytes

/etc/release:
     Oracle Solaris 11.2 SPARC
uname -a:
   SunOS 1S-1205-D0 5.11 11.2 sun4v sparc sun4v

disk: df -h  $SPEC
Filesystem             Size   Used  Available Capacity  Mounted on
rpool/export           547G    14G       390G     4%    /export

(End of data from sysinfo program)
```

General Notes

```
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`

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Peak Optimization Flags (Continued)

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

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

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Peak Optimization Flags (Continued)

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

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