SPEC® CINT2006 Result

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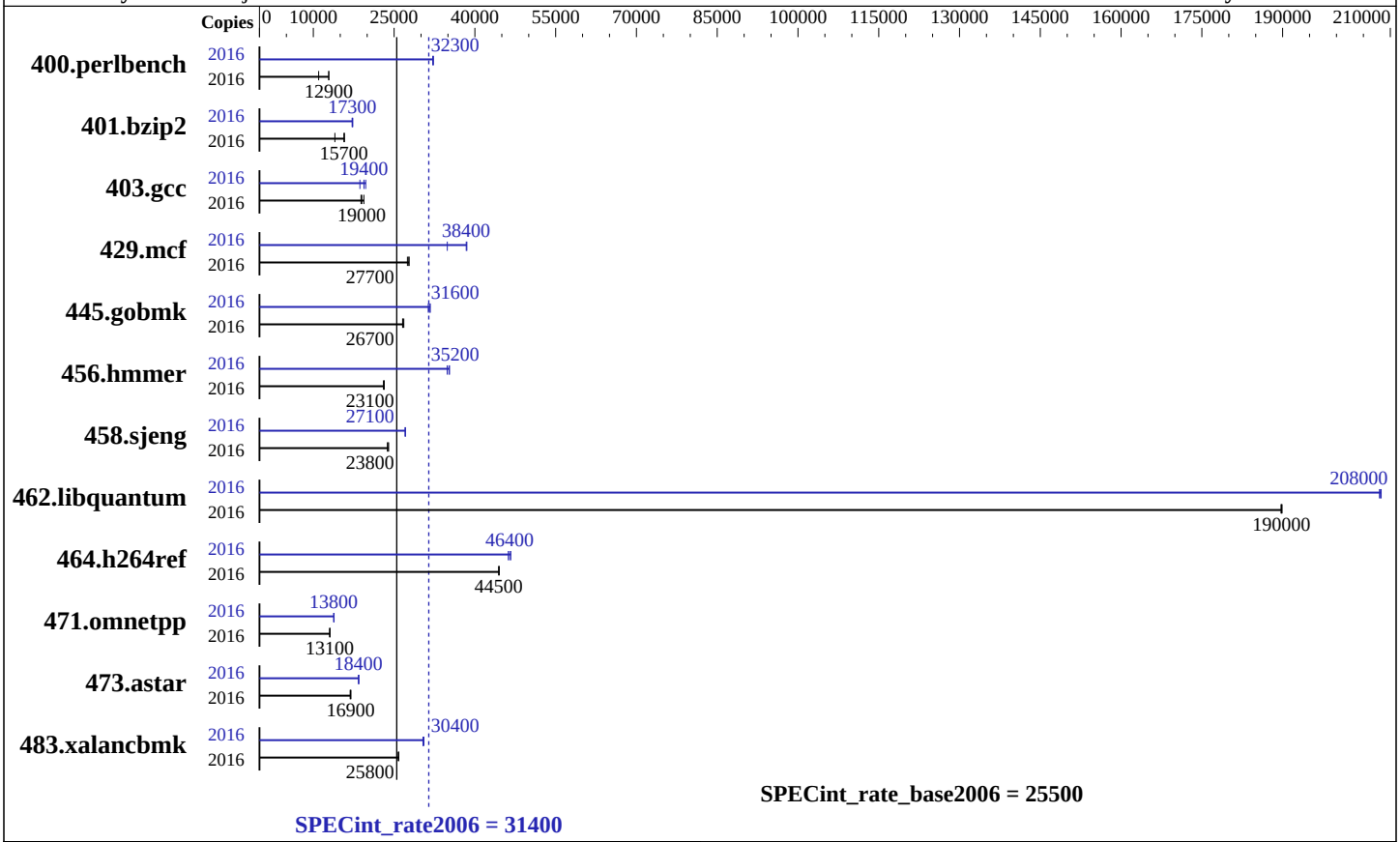
Fujitsu
Fujitsu SPARC M10-4S

SPECint®_rate2006 = 31400

SPECint_rate_base2006 = 25500

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

Test date: Mar-2014
Hardware Availability: Apr-2014
Software Availability: Feb-2014



Hardware

CPU Name:	SPARC64 X+
CPU Characteristics:	
CPU MHz:	3700
FPU:	Integrated
CPU(s) enabled:	1024 cores, 64 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 4, 8, 12, 16 cores
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:	8576 GB (16 x 32 GB + 504 x 16 GB) chip#0: 512 GB (16 x 32 GB 4Rx4 PC3-10600R-9, ECC) chip#1-#63: 8064 GB (504 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 11.1 SRU 15.4
Compiler:	C/C++: Version 12.3 of Oracle Solaris Studio 10/13 Patch Set
Auto Parallel:	No
File System:	tmpfs (output_root was used to put run directories in /tmp/cpu2006) zfs
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	2016	1792	11000	**1531**	**12900**	1531	12900	2016	612	32200	**610**	**32300**	610	32300
401.bzip2	2016	1389	14000	1232	15800	**1241**	**15700**	2016	1131	17200	**1126**	**17300**	1124	17300
403.gcc	2016	861	18900	837	19400	**854**	**19000**	2016	823	19700	870	18600	**836**	**19400**
429.mcf	2016	662	27800	**663**	**27700**	669	27500	2016	527	34900	**479**	**38400**	477	38500
445.gobmk	2016	**793**	**26700**	796	26600	789	26800	2016	675	31300	**670**	**31600**	667	31700
456.hmmer	2016	813	23100	**813**	**23100**	817	23000	2016	540	34900	**535**	**35200**	533	35300
458.sjeng	2016	1027	23800	1017	24000	**1023**	**23800**	2016	901	27100	900	27100	**901**	**27100**
462.libquantum	2016	220	190000	220	190000	**220**	**190000**	2016	**201**	**208000**	201	208000	201	208000
464.h264ref	2016	1004	44400	1002	44500	**1004**	**44500**	2016	**960**	**46400**	956	46700	965	46200
471.omnetpp	2016	966	13000	963	13100	**965**	**13100**	2016	913	13800	910	13900	**913**	**13800**
473.astar	2016	840	16800	**836**	**16900**	834	17000	2016	768	18400	769	18400	**768**	**18400**
483.xalancbmk	2016	538	25900	539	25800	**539**	**25800**	2016	458	30400	**458**	**30400**	456	30500

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 spec-bb03 Tue Mar 25 00:29:30 2014

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 10, clock 3700 MHz)
   SPARC64-X+ (chipid 11, clock 3700 MHz)
   SPARC64-X+ (chipid 12, clock 3700 MHz)
   SPARC64-X+ (chipid 13, clock 3700 MHz)
   SPARC64-X+ (chipid 14, clock 3700 MHz)
   SPARC64-X+ (chipid 15, clock 3700 MHz)
   SPARC64-X+ (chipid 16, clock 3700 MHz)
   SPARC64-X+ (chipid 17, clock 3700 MHz)
   SPARC64-X+ (chipid 18, clock 3700 MHz)
   SPARC64-X+ (chipid 19, clock 3700 MHz)
   SPARC64-X+ (chipid 2, clock 3700 MHz)
   SPARC64-X+ (chipid 20, clock 3700 MHz)
   SPARC64-X+ (chipid 21, clock 3700 MHz)
   SPARC64-X+ (chipid 22, clock 3700 MHz)
   SPARC64-X+ (chipid 23, clock 3700 MHz)
   SPARC64-X+ (chipid 24, clock 3700 MHz)
   SPARC64-X+ (chipid 25, clock 3700 MHz)
   SPARC64-X+ (chipid 26, clock 3700 MHz)
   SPARC64-X+ (chipid 27, clock 3700 MHz)
   SPARC64-X+ (chipid 28, clock 3700 MHz)
   SPARC64-X+ (chipid 29, clock 3700 MHz)
   SPARC64-X+ (chipid 3, clock 3700 MHz)
   SPARC64-X+ (chipid 30, clock 3700 MHz)
   SPARC64-X+ (chipid 31, clock 3700 MHz)
   SPARC64-X+ (chipid 32, clock 3700 MHz)
   SPARC64-X+ (chipid 33, clock 3700 MHz)
   SPARC64-X+ (chipid 34, clock 3700 MHz)
   SPARC64-X+ (chipid 35, clock 3700 MHz)
   SPARC64-X+ (chipid 36, clock 3700 MHz)
   SPARC64-X+ (chipid 37, clock 3700 MHz)
   SPARC64-X+ (chipid 38, clock 3700 MHz)
   SPARC64-X+ (chipid 39, clock 3700 MHz)
   SPARC64-X+ (chipid 4, clock 3700 MHz)
   SPARC64-X+ (chipid 40, clock 3700 MHz)
   SPARC64-X+ (chipid 41, clock 3700 MHz)
   SPARC64-X+ (chipid 42, clock 3700 MHz)
   SPARC64-X+ (chipid 43, clock 3700 MHz)
   SPARC64-X+ (chipid 44, clock 3700 MHz)
   SPARC64-X+ (chipid 45, clock 3700 MHz)
   SPARC64-X+ (chipid 46, clock 3700 MHz)
   SPARC64-X+ (chipid 47, clock 3700 MHz)
   SPARC64-X+ (chipid 48, clock 3700 MHz)
   SPARC64-X+ (chipid 49, clock 3700 MHz)
   SPARC64-X+ (chipid 5, clock 3700 MHz)
   SPARC64-X+ (chipid 50, clock 3700 MHz)
   SPARC64-X+ (chipid 51, clock 3700 MHz)
```

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Platform Notes (Continued)

```
      SPARC64-X+ (chipid 52, clock 3700 MHz)
      SPARC64-X+ (chipid 53, clock 3700 MHz)
      SPARC64-X+ (chipid 54, clock 3700 MHz)
      SPARC64-X+ (chipid 55, clock 3700 MHz)
      SPARC64-X+ (chipid 56, clock 3700 MHz)
      SPARC64-X+ (chipid 57, clock 3700 MHz)
      SPARC64-X+ (chipid 58, clock 3700 MHz)
      SPARC64-X+ (chipid 59, clock 3700 MHz)
      SPARC64-X+ (chipid 6, clock 3700 MHz)
      SPARC64-X+ (chipid 60, clock 3700 MHz)
      SPARC64-X+ (chipid 61, clock 3700 MHz)
      SPARC64-X+ (chipid 62, clock 3700 MHz)
      SPARC64-X+ (chipid 63, clock 3700 MHz)
      SPARC64-X+ (chipid 7, clock 3700 MHz)
      SPARC64-X+ (chipid 8, clock 3700 MHz)
      SPARC64-X+ (chipid 9, clock 3700 MHz)
      64 chips
      2048 threads
      3700 MHz

   From kstat:     1024 cores

   From prtconf: 8760320 Megabytes

   /etc/release:
        Oracle Solaris 11.1 SPARC
   uname -a:
      SunOS spec-bb03 5.11 11.1 sun4v sparc sun4v

   disk: df -h  $SPEC
   Filesystem             Size   Used  Available Capacity  Mounted on
   rpool/export           547G    35G       423G     8%    /export

   (End of data from sysinfo program)
```

Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Base Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_SPARC
403.gcc: -DSPEC_CPU_SOLARIS

Continued on next page

Base Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
-fast -xtarget=sparc64x -fma=fused -xipo=2 -xpagesize=4M
-xalias_level=std -M map.bssalign

C++ benchmarks:
-fast -xtarget=sparc64x -fma=fused -xipo=2 -xpagesize=4M
-xalias_level=compatible -library=stlport4 -M map.bssalign -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=sparc64x
-fma=fused -xpagesize=4M -xipo=1 -xalias_level=std
-xrestrict -xprefetch=no%auto -xO4 -M map.256M.align
-lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xalias_level=strong
-xprefetch=no%auto -W2,-Ainline:rs=1000 -W2,-Ainline:cs=500
-W2,-Ainline:inc=60 -M map.256M.align -lfast

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xO4 -xipo=2 -xprefetch=no%auto
-M map.256M.align

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=latx:0.2 -W2,-Asac
-M map.256M.align

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xO4 -xalias_level=std
-xrestrict -xprefetch=no%auto -Wc,-Qiselect-funcalign=64
-M map.256M.align

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=1 -xalias_level=std
-xunroll=6 -xprefetch=latx:3.0
-Wc,-Qpeep-Ex:minmax_use_cmov=2 -Wc,-Qms_pipe+ulmscc=1
-M map.256M.align

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xO4 -xipo=2 -xalias_level=std
-xprefetch=no%auto -Wc,-Qlu-en=1-t=4 -M map.256M.align

462.libquantum: -fast -xtarget=sparc64x -fma=fused -xpagesize=4M -xipo=2
-xalias_level=std -xunroll=8 -xprefetch=no%auto
-Wc,-Qlu-en=1-t=4 -M map.256M.align -lbsdmalloc

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xalias_level=strong -xipo=1
-Wc,-Qiselect-funcalign=64 -M map.256M.align

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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 -xprefetch_level=3 -W2,-Asac -library=stlport4
-M map.256M.align -lfast

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xalias_level=compatible
-xprefetch=no%auto -library=stlport4 -M map.256M.align
-lfast

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=sparc64x
-fma=fused -xpagesize=4M -xipo=2 -xalias_level=compatible
-xdepend -xprefetch_level=3 -xprefetch=latx:0.4
-library=stlport4 -Wc,-Qpeep-Ex:minmax_use_cmov=2
-Wc,-Qms_pipe+ulmscc=1 -W2,-Asac -M map.256M.align -lfast

Peak Other Flags

C benchmarks:
-xjobs=8

C++ benchmarks:
-xjobs=8

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.20140423.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.20140423.xml

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