



SPEC® CINT2006 Result

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Fujitsu Fujitsu SPARC M10-4

SPECint®_rate2006 = 1970

SPECint_rate_base2006 = 1670

CPU2006 license: 19

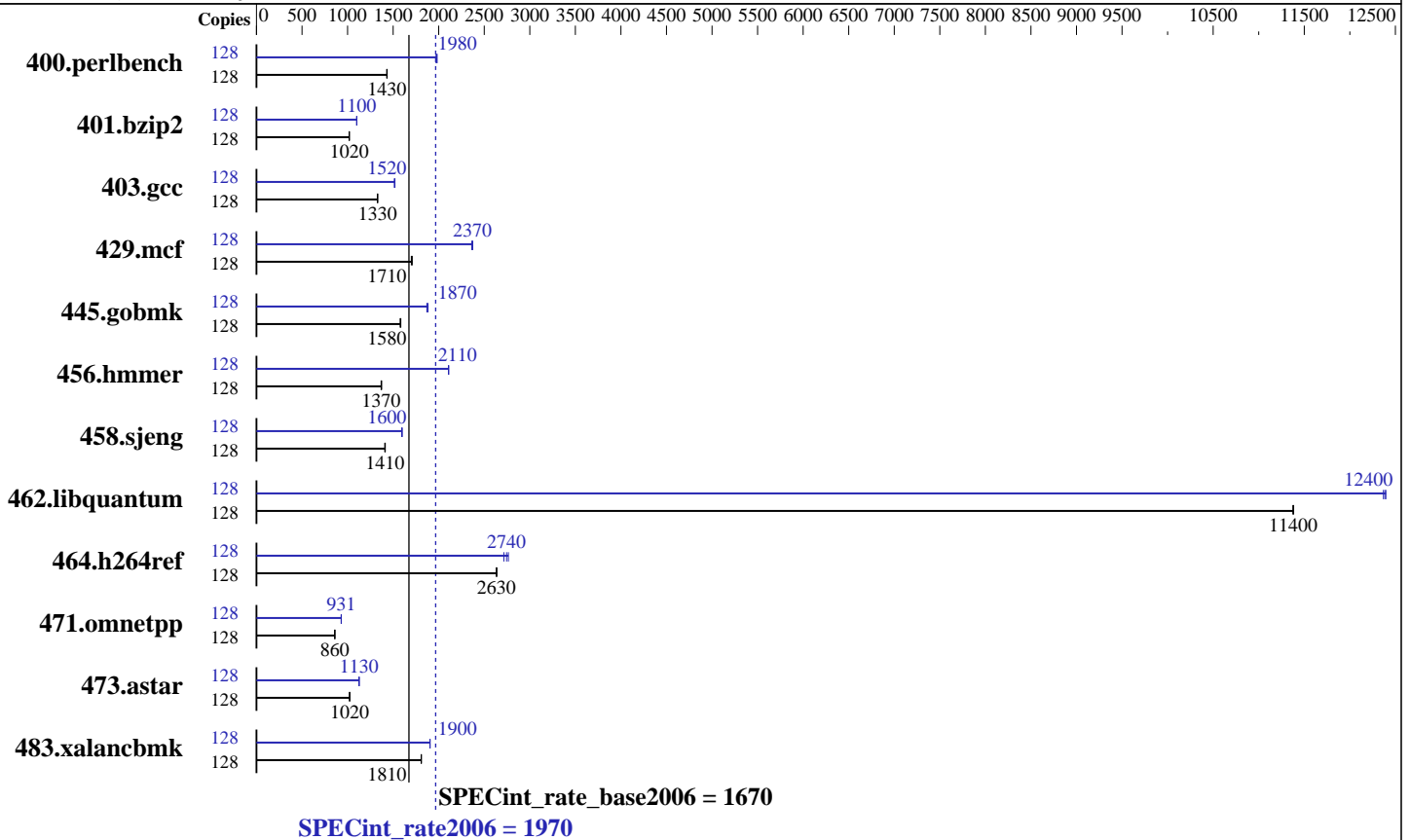
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2014

Hardware Availability: Apr-2014

Software Availability: Feb-2014



Hardware

CPU Name: SPARC64 X+
 CPU Characteristics:
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 64 cores, 4 chips, 16 cores/chip, 2 threads/core
 CPU(s) orderable: 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: 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 11.1 SRU 15.4
 Compiler: C/C++: Version 12.3 of Oracle Solaris Studio 10/13 Patch Set
 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	875	1430	872	1430	<u>872</u>	<u>1430</u>	128	631	1980	635	1970	<u>632</u>	<u>1980</u>
401.bzip2	128	1211	1020	1214	1020	<u>1213</u>	<u>1020</u>	128	<u>1122</u>	<u>1100</u>	1122	1100	1122	1100
403.gcc	128	<u>776</u>	<u>1330</u>	774	1330	776	1330	128	681	1510	<u>679</u>	<u>1520</u>	678	1520
429.mcf	128	<u>684</u>	<u>1710</u>	687	1700	683	1710	128	494	2360	<u>493</u>	<u>2370</u>	492	2370
445.gobmk	128	<u>850</u>	<u>1580</u>	848	1580	851	1580	128	<u>716</u>	<u>1870</u>	713	1880	718	1870
456.hammer	128	<u>872</u>	<u>1370</u>	869	1370	873	1370	128	566	2110	<u>566</u>	<u>2110</u>	567	2110
458.sjeng	128	1095	1410	1100	1410	<u>1097</u>	<u>1410</u>	128	968	1600	<u>970</u>	<u>1600</u>	971	1590
462.libquantum	128	233	11400	233	11400	<u>233</u>	<u>11400</u>	128	214	12400	<u>214</u>	<u>12400</u>	214	12400
464.h264ref	128	<u>1076</u>	<u>2630</u>	1076	2630	1074	2640	128	1043	2720	<u>1032</u>	<u>2740</u>	1025	2760
471.omnetpp	128	932	859	929	861	<u>930</u>	<u>860</u>	128	861	929	859	931	<u>859</u>	<u>931</u>
473.astar	128	880	1020	877	1020	<u>878</u>	<u>1020</u>	128	<u>798</u>	<u>1130</u>	797	1130	798	1130
483.xalancbmk	128	<u>488</u>	<u>1810</u>	489	1810	488	1810	128	<u>464</u>	<u>1900</u>	464	1900	464	1910

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 solaris Tue Apr 15 21:51:08 2014

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

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info@spec.org

http://www.spec.org/



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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 3400 MHz)
SPARC64-X+ (chipid 1, clock 3400 MHz)
SPARC64-X+ (chipid 2, clock 3400 MHz)
SPARC64-X+ (chipid 3, clock 3400 MHz)
4 chips
128 threads
3400 MHz
```

From kstat: 64 cores

From prtconf: 522240 Megabytes

```
/etc/release:
Oracle Solaris 11.1 SPARC
uname -a:
SunOS solaris 5.11 11.1 sun4v sparcsun4v
```

```
disk: df -h $SPEC
Filesystem      Size  Used  Available Capacity  Mounted on
rpool/export    547G   27G   442G         6%    /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

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Base Portability Flags (Continued)

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:

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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 files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-SPARC64X.20140423.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-Studio12.3-SPARC64X.20140423.xml>
<http://www.spec.org/cpu2006/flags/Fujitsu-Mseries.xml>



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