



SPEC® CINT2006 Result

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Fujitsu Fujitsu SPARC M10-4S

SPECint®_rate2006 = 8290

SPECint_rate_base2006 = 7050

CPU2006 license: 19

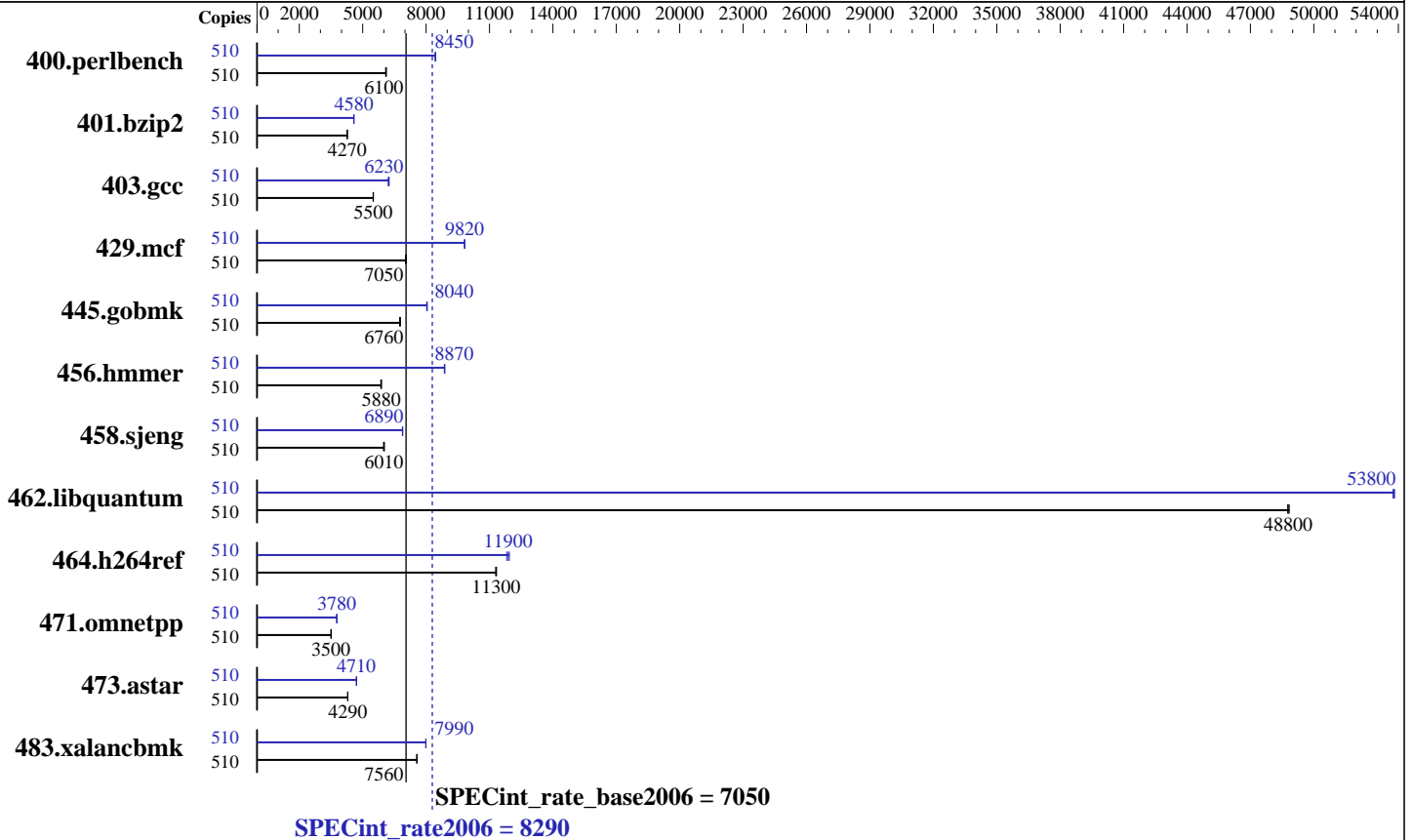
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Feb-2014

Hardware Availability: Apr-2014

Software Availability: Feb-2014



Hardware

CPU Name: SPARC64 X+

CPU Characteristics: 3700

CPU MHz: Integrated

FPU: 256 cores, 16 chips, 16 cores/chip, 2 threads/core

CPU(s) enabled: 1 to 16 BBs; each BB contains 2 or 4 CPU chips; each CPU chip contains 4, 8, 12, 16 cores

CPU(s) orderable: 64 KB I + 64 KB D on chip per core

Primary Cache: 24 MB I+D on chip per chip

Secondary Cache: None

L3 Cache: None

Other Cache: None

Memory: 2 TB (128 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)

System State: zfs

Base Pointers: Default

Peak Pointers: 32-bit

Other Software: 32-bit
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	510	817	6100	819	6090	814	6120	510	589	8460	590	8450	592	8420
401.bzip2	510	1151	4270	1154	4270	1153	4270	510	1073	4590	1075	4580	1074	4580
403.gcc	510	747	5500	745	5510	747	5490	510	657	6250	659	6230	661	6210
429.mcf	510	660	7050	661	7030	659	7050	510	473	9830	474	9820	473	9820
445.gobmk	510	792	6750	792	6760	788	6790	510	665	8040	666	8030	664	8060
456.hammer	510	810	5880	812	5860	808	5890	510	536	8870	537	8860	535	8890
458.sjeng	510	1031	5990	1026	6010	1024	6030	510	897	6880	896	6890	895	6900
462.libquantum	510	216	48800	217	48800	217	48800	510	196	53800	196	53800	197	53700
464.h264ref	510	1000	11300	997	11300	996	11300	510	949	11900	955	11800	946	11900
471.omnetpp	510	909	3500	910	3500	909	3510	510	845	3770	844	3780	844	3780
473.astar	510	834	4290	834	4290	834	4290	510	760	4710	761	4710	761	4700
483.xalancbmk	510	465	7570	465	7560	465	7560	510	441	7980	441	7990	440	7990

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 #\$ 748963af01bf08f8f30d41159527dd6d

running on 4S-1044-D0 Fri Feb 28 23:25:41 2014

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

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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 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 2, clock 3700 MHz)
SPARC64-X+ (chipid 3, clock 3700 MHz)
SPARC64-X+ (chipid 4, clock 3700 MHz)
SPARC64-X+ (chipid 5, clock 3700 MHz)
SPARC64-X+ (chipid 6, clock 3700 MHz)
SPARC64-X+ (chipid 7, clock 3700 MHz)
SPARC64-X+ (chipid 8, clock 3700 MHz)
SPARC64-X+ (chipid 9, clock 3700 MHz)
16 chips
512 threads
3700 MHz
```

From kstat: 256 cores

From prtconf: 2091264 Megabytes

```
/etc/release:
Oracle Solaris 11.1 SPARC
uname -a:
SunOS 4S-1044-D0 5.11 11.1 sun4v sparc sun4v
```

```
disk: df -h $SPEC
Filesystem      Size  Used  Available Capacity  Mounted on
rpool/export    547G  121G    350G      26%    /export
```

(End of data from sysinfo program)

Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC



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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=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



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Peak Optimization Flags

C benchmarks:

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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