



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation SPARC T5-8

SPECint®_rate2006 = 3750

SPECint_rate_base2006 = 3490

CPU2006 license: 6

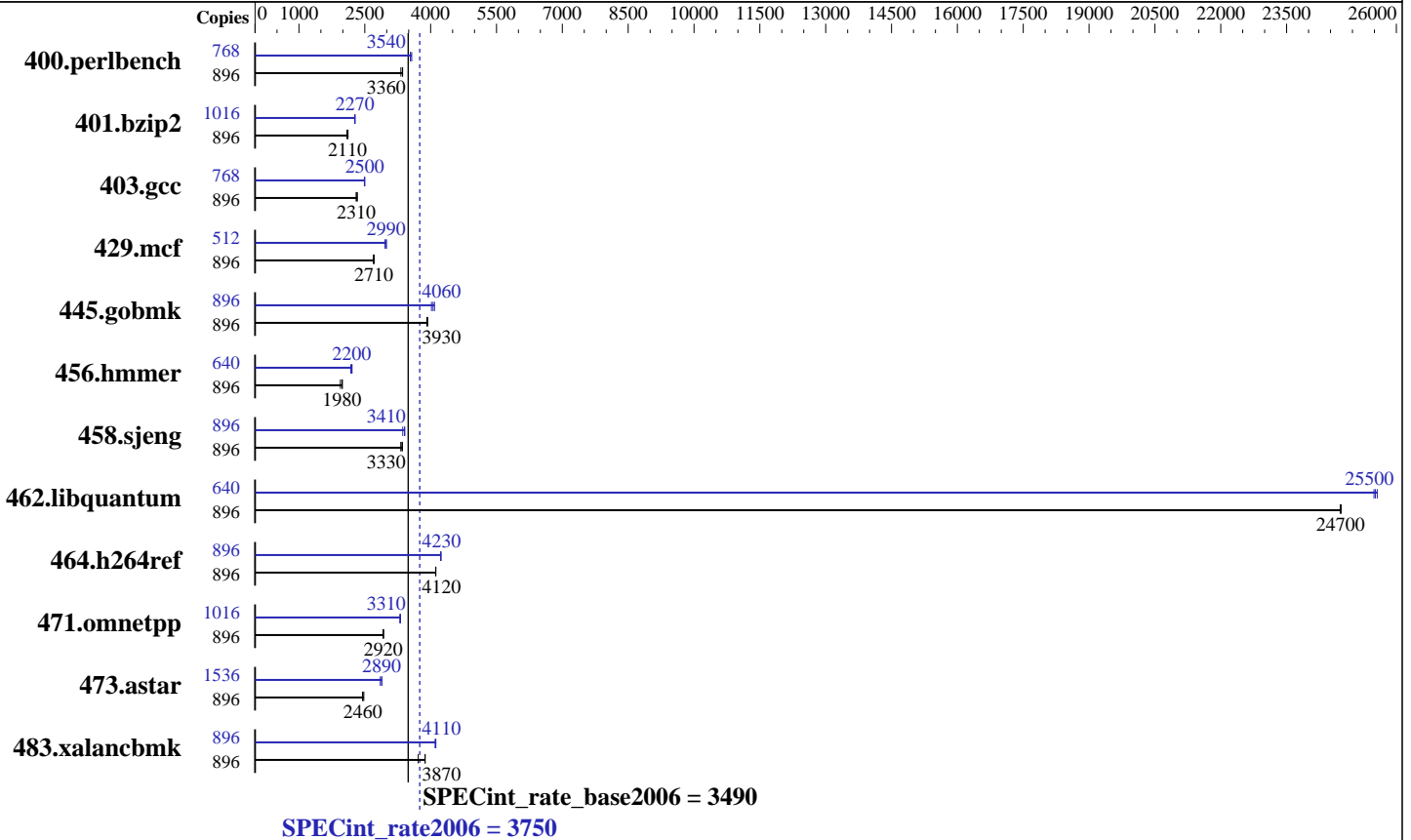
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Mar-2013

Hardware Availability: Mar-2013

Software Availability: Feb-2013



Hardware

CPU Name: SPARC T5
 CPU Characteristics: 3600
 CPU MHz: Integrated
 FPU: Integrated
 CPU(s) enabled: 128 cores, 8 chips, 16 cores/chip, 8 threads/core
 CPU(s) orderable: 8 chips
 Primary Cache: 16 KB I + 16 KB D on chip per core
 Secondary Cache: 128 KB I+D on chip per core
 L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 4 TB (128 x 32 GB), 4-way interleaved
 Disk Subsystem: 2 TB on 8x 600 GB 10K RPM SAS disks, arranged as 4x 2-way mirrors
 Other Hardware: None

Software

Operating System: Oracle Solaris 11.1, SRU 4.6
 Compiler: C/C++: Version 12.3 of Oracle Solaris Studio, 1/13 Platform Specific Enhancement
 Auto Parallel: No
 File System: zfs with gzip compression
 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	896	2634	3320	2604	3360	2607	3360	768	2122	3540	2118	3540	2102	3570
401.bzip2	896	4101	2110	4083	2120	4133	2090	1016	4305	2280	4315	2270	4310	2270
403.gcc	896	3127	2310	3125	2310	3094	2330	768	2482	2490	2477	2500	2474	2500
429.mcf	896	3014	2710	3019	2710	3031	2700	512	1562	2990	1579	2960	1561	2990
445.gobmk	896	2393	3930	2401	3910	2393	3930	896	2299	4090	2317	4060	2339	4020
456.hammer	896	4299	1940	4212	1980	4206	1990	640	2739	2180	2702	2210	2709	2200
458.sjeng	896	3258	3330	3262	3320	3227	3360	896	3180	3410	3222	3360	3182	3410
462.libquantum	896	750	24700	751	24700	751	24700	640	520	25500	520	25500	519	25600
464.h264ref	896	4817	4120	4815	4120	4818	4120	896	4685	4230	4685	4230	4684	4230
471.omnetpp	896	1914	2930	1917	2920	1917	2920	1016	1918	3310	1925	3300	1916	3310
473.astar	896	2561	2460	2568	2450	2538	2480	1536	3780	2850	3734	2890	3736	2890
483.xalancbmk	896	1663	3720	1596	3870	1596	3870	896	1507	4100	1501	4120	1503	4110

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

Processes were bound to cores using "submit" and "pbind". The config file option 'submit' was used in order to accomplish this.

Operating System Notes

ulimit -s 131072 was used to limit the space consumed by the stack

```
/etc/system parameters
autoup=600
```

Causes pages older than the listed number of seconds to be written by fsflush.

```
tune_t_fsflushr=10
```

Controls how many seconds elapse between runs of the page flush daemon, fsflush.

```
lpg_alloc_prefer=1
```

Indicates that extra effort should be taken to ensure that pages are created in the nearby lgroup (NUMA location).

```
tsb_rss_factor=128
```

Suggests that the the size of the TSB (Translation Storage Buffer) may be increased if it is more than 25% (128/512) full. Doing so may reduce TSB traps, at the cost of additional kernel memory.

```
zfs:zfs_arc_min = 1073741824
```

```
zfs:zfs_arc_max = 0x10000000000
```

Limits the consumption of memory by the zfs file system

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Operating System Notes (Continued)

cache to the range 1 GB to 1 TB.
plat_disable_mempm=1
Do not attempt to allocate kernel memory in a power-aware fashion

poweradm set administrative-authority=none
Disables Solaris power management

A swapfile of 4 TB was connected via Fibre Channel
on a Sun Storage 2540-M2 with 12x SAS 600 GB
disks, Raid-5

Platform Notes

Power policy set to 'disabled' at ILOM Power Managment menu
Sysinfo program /cpu2006/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ 5569a0425e2ad530534e4c79a46e4d28
running on bur407-139.us.oracle.com Fri Mar 22 11:22:47 2013

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
SPARC-T5 (chipid 0, clock 3600 MHz)
SPARC-T5 (chipid 1, clock 3600 MHz)
SPARC-T5 (chipid 2, clock 3600 MHz)
SPARC-T5 (chipid 3, clock 3600 MHz)
SPARC-T5 (chipid 4, clock 3600 MHz)
SPARC-T5 (chipid 5, clock 3600 MHz)
SPARC-T5 (chipid 6, clock 3600 MHz)
SPARC-T5 (chipid 7, clock 3600 MHz)
8 chips
1024 threads
3600 MHz
```

From kstat: 128 cores

From prtconf: 4 Terabytes

```
/etc/release:
Oracle Solaris 11.1 SPARC
uname -a:
SunOS bur407-139.us.oracle.com 5.11 11.1 sun4v sparc sun4v
```

```
disk: df -h $SPEC
Filesystem      Size  Used  Available Capacity  Mounted on
rpool/export/cpu2006  98G  973M      86G      2%  /cpu2006
```

(End of data from sysinfo program)



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Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

(*) Indicates a compiler flag that was found in a non-compiler variable.

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:
-g -fast -xipo=2 -xpagesize=256M -xprefetch=no%auto
-xalias_level=std -M map.64K.align -lfast

C++ benchmarks:
-g -fast -xipo=2 -xpagesize=256M -xprefetch=no%auto -xdepend
-xalias_level=compatible -library=stlport4 -M map.256M.align -lfast

Base Other Flags

C benchmarks:
-xjobs=32 -V -#

C++ benchmarks:
-xjobs=32 -verbose=diags,version

Peak Compiler Invocation

C benchmarks (except as noted below):
cc

401.bzip2: cc

403.gcc: cc

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Peak Compiler Invocation (Continued)

464.h264ref: cc

C++ benchmarks:
cc

(*) Indicates a compiler flag that was found in a non-compiler variable.

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: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-M map.256M.align -xipo=2 -xalias_level=std -xrestrict
-xprefetch=no%auto -Wc,-Qiselect-funcalign=64 -lfast

401.bzip2: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-M map.4M.align -xalias_level=strong -xprefetch=no%auto

403.gcc: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-M map.4M.align -xalias_level=std -xprefetch_level=2

429.mcf: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-M map.256M.align -xipo=2 -xprefetch=no%auto
-Wc,-Qiselect-funcalign=64

445.gobmk: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-M map.256M.align -xalias_level=std -xrestrict
-xprefetch=no%auto

456.hmmcr: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-M map.256M.align -xipo=2 -Wc,-xthroughput
-W2,-xthroughput=yes -W2,-Rloop_dist
-Wc,-Qpeep-Ex1:minmax_use_cmov=2

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Peak Optimization Flags (Continued)

458.sjeng: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-M map.256M.align -xipo=2 -xprefetch=no%auto
-Wc,-xthroughput -W2,-xthroughput=yes

462.libquantum: -g -fast -xpagesize=256M -M map.256M.align -xipo=2
-xalias_level=std -xprefetch_level=2 -Wc,-Qlu-en=1-t=4
-Wc,-Qiselect-funcalign=64 -lbsdmalloc

464.h264ref: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-M map.64K.align -xipo=2 -xalias_level=std

C++ benchmarks:

471.omnetpp: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-xalias_level=compatible -M map.256M.align -xipo=2
-xprefetch_level=2 -library=stdcxx4 -lfast

473.astar: -g -fast -xpagesize=256M -xalias_level=compatible
-M map.256M.align -xipo=2 -Wc,-xthroughput
-W2,-xthroughput=yes -library=stdcxx4 -lfast

483.xalancbmk: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M
-xalias_level=compatible -xdepend -M map.256M.align
-xipo=2 -library=stlport4 -lfast

Peak Other Flags

C benchmarks:
-xjobs=32 -V -#

C++ benchmarks:
-xjobs=32 -verbose=diags,version

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

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-SPARC.html>
<http://www.spec.org/cpu2006/flags/Oracle-Tseries.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-SPARC.xml>
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