SPEC® CINT2006 Result

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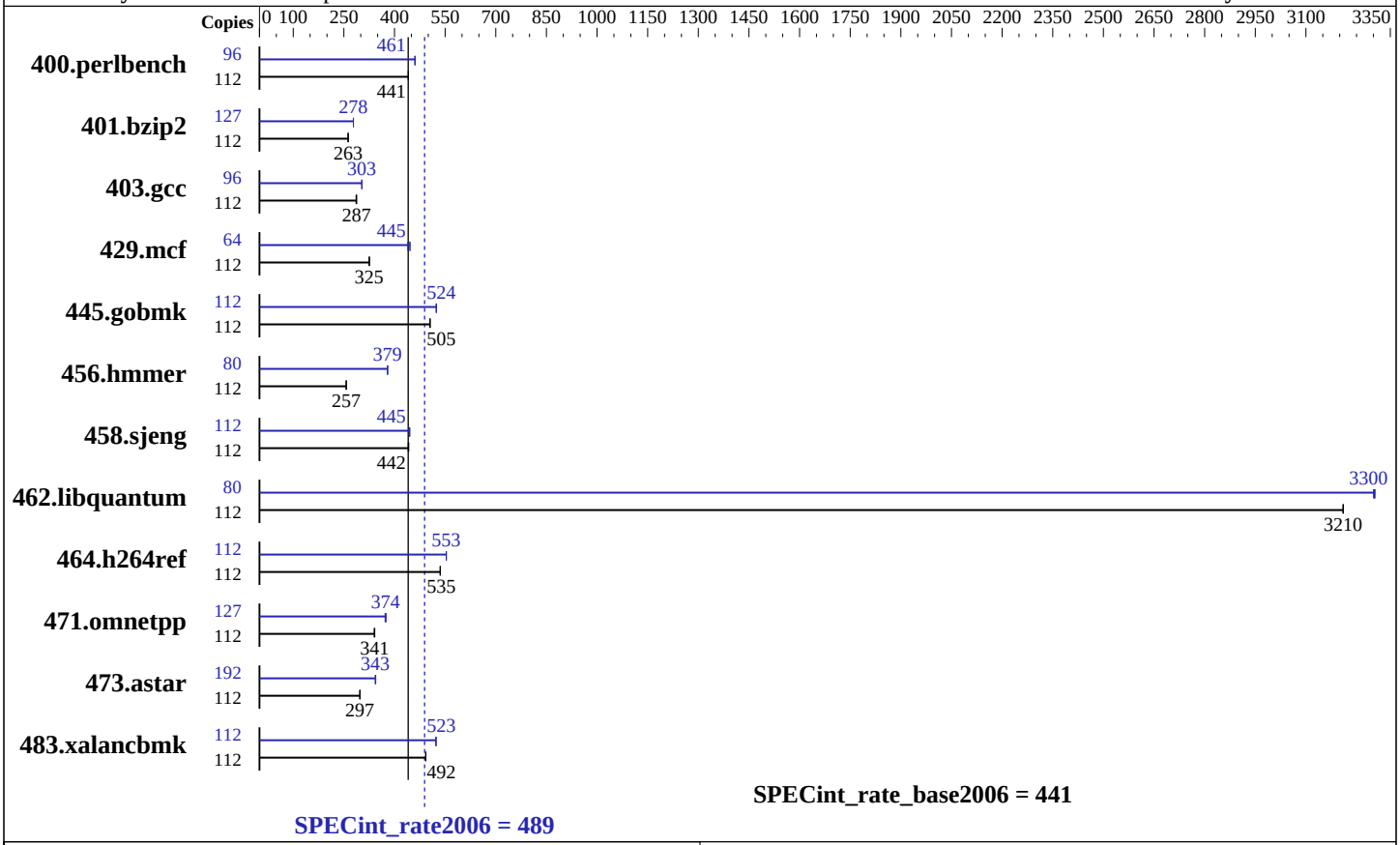
Oracle Corporation
SPARC T5-1B

SPECint®_rate2006 = 489

SPECint_rate_base2006 = 441

CPU2006 license: 6
Test sponsor: Oracle Corporation
Tested by: Oracle Corporation

Test date: Sep-2013
Hardware Availability: Mar-2013
Software Availability: Nov-2013



Hardware

CPU Name:	SPARC T5
CPU Characteristics:	
CPU MHz:	3600
FPU:	Integrated
CPU(s) enabled:	16 cores, 1 chip, 16 cores/chip, 8 threads/core
CPU(s) orderable:	1 chip
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:	256 GB (16 x 16 GB), 4-way interleaved
Disk Subsystem:	166 GB on 2x 300 GB 10K RPM SAS disks (mirrored)
Other Hardware:	None

Software

Operating System:	Oracle Solaris 11.1 with SRU 10.5
Compiler:	C/C++: Version 12.3 of Oracle Solaris Studio 10/13 Patch Set
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	112	2480	441	**2481**	**441**	2481	441	96	2038	460	2032	462	**2036**	**461**
401.bzip2	112	4115	263	**4115**	**263**	4114	263	127	4406	278	**4404**	**278**	4404	278
403.gcc	112	**3136**	**287**	3151	286	3135	288	96	2550	303	**2549**	**303**	2544	304
429.mcf	112	3142	325	3138	325	**3140**	**325**	64	1328	439	1309	446	**1311**	**445**
445.gobmk	112	**2326**	**505**	2324	506	2327	505	112	2242	524	**2243**	**524**	2243	524
456.hmmer	112	4064	257	4068	257	**4064**	**257**	80	**1968**	**379**	1966	380	1968	379
458.sjeng	112	3075	441	**3067**	**442**	3066	442	112	3050	444	**3046**	**445**	3045	445
462.libquantum	112	**723**	**3210**	723	3210	723	3210	80	502	3300	502	3300	**502**	**3300**
464.h264ref	112	4629	535	**4629**	**535**	4628	536	112	**4480**	**553**	4477	554	4480	553
471.omnetpp	112	**2051**	**341**	2050	341	2061	340	127	2118	375	2133	372	**2122**	**374**
473.astar	112	**2643**	**297**	2642	298	2644	297	192	3927	343	**3926**	**343**	3914	344
483.xalancbmk	112	1568	493	1569	492	**1569**	**492**	112	**1478**	**523**	1479	523	1478	523

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.
   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 =  4294967296
       Limits the consumption of memory by the zfs file system
       cache to the range 1 GB to 4 GB.

 pkg update disabled with  svcadm disable pkg/update
```

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Operating System Notes (Continued)

```
218 GB of swap was configured
```

Platform Notes

```
Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ 5569a0425e2ad530534e4c79a46e4d28
running on bur408-179.us.oracle.com Mon Sep  9 18:49:39 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)
   1 chips
   128 threads
   3600 MHz

From kstat:       16 cores

From prtconf: 261120 Megabytes

/etc/release:
     Oracle Solaris 11.1 SPARC
uname -a:
   SunOS bur408-179.us.oracle.com 5.11 11.1 sun4v sparc sun4v

disk: df -h  $SPEC
Filesystem             Size   Used  Available Capacity  Mounted on
rpool/cpu2006          166G   4.1G       140G     3%    /cpu2006

(End of data from sysinfo program)
```

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

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Base Portability Flags (Continued)

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 -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`

464.h264ref: `cc`

C++ benchmarks (except as noted below):
`CC`

471.omnetpp: `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=256M
-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 -W2,-Asac

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 -Wc,-Qiselect-funcalign=64

456.hmmer: -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 -Wc,-Qpeep-Ex:minmax_use_cmov=2
-Wc,-Qms_pipe+ulmscc=1

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 -fma=fused -lbsdmalloc

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Peak Optimization Flags (Continued)

464.h264ref: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=256M`
`-M map.64K.align -xprefetch=no%auto -xalias_level=strong`
`-xipo=2 -Wc,-Qiselect-funcalign=64`

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`
`-library=stdcxx4 -Wc,-Qiselect-funcalign=64 -lfast`

473.astar: `-g -fast -xpagesize=256M -xalias_level=compatible`
`-M map.64K.align -xipo=2 -Wc,-xthroughput`
`-W2,-xthroughput=yes -library=stdcxx4`
`-Wc,-Qiselect-funcalign=64 -lfast`

483.xalancbmk: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=256M`
`-xalias_level=compatible -M map.64K.align -fma=fused`
`-Wc,-Qiselect-funcalign=64 -xipo=2 -staticlib=%all`
`-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.20131009.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.20131009.xml
http://www.spec.org/cpu2006/flags/Oracle-Tseries.xml

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

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