SPEC® CINT2006 Result

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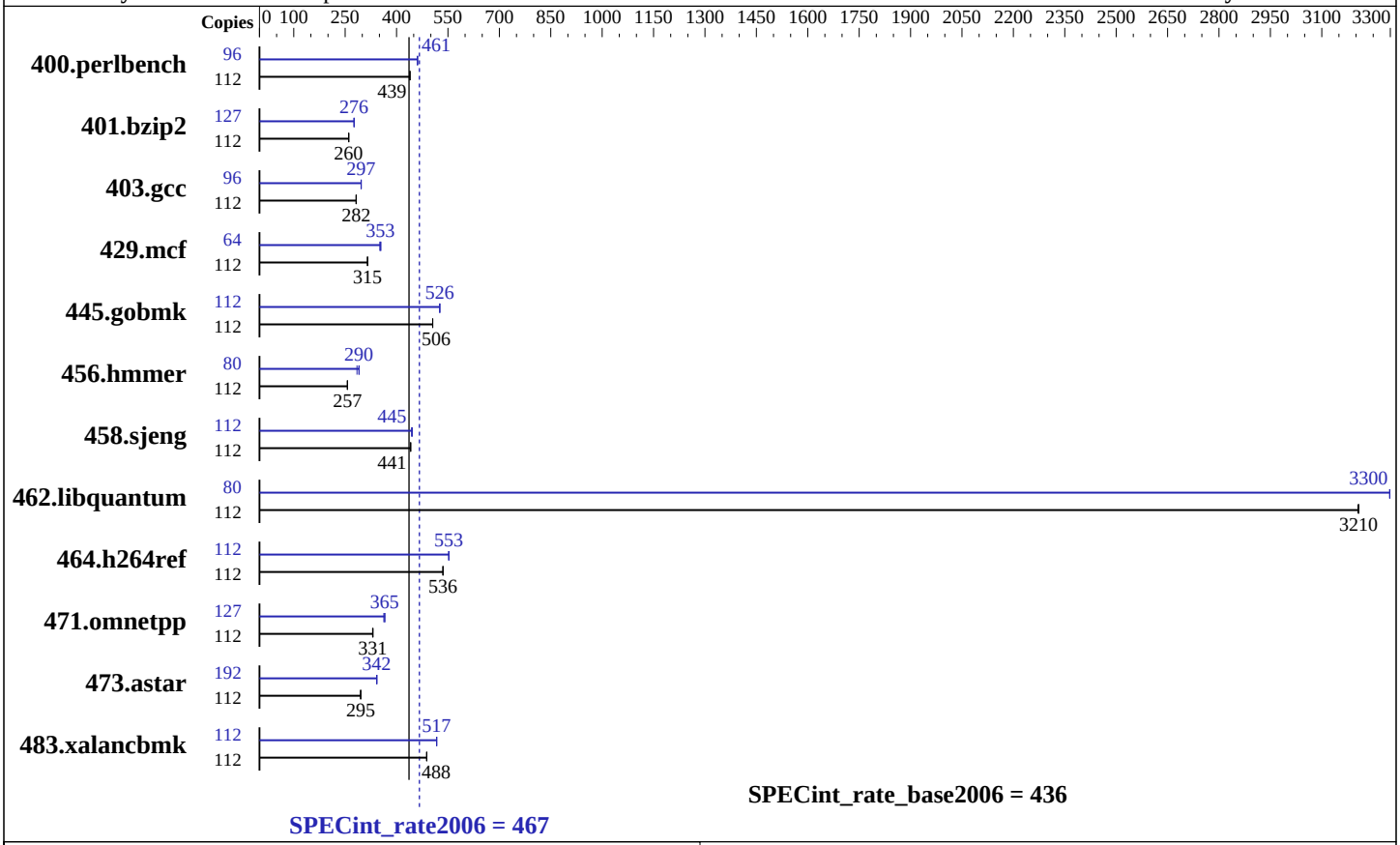
Oracle Corporation
SPARC T5-1B

SPECint®_rate2006 = 467

SPECint_rate_base2006 = 436

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:	
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:	157 GB on 2x 300 GB 10K RPM SAS disks (mirrored)
Other Hardware:	None

Software

Operating System:	Oracle Solaris 11.1, SRU 3.4
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	112	2493	439	**2493**	**439**	2490	439	96	2032	462	**2034**	**461**	2036	461
401.bzip2	112	**4151**	**260**	4147	261	4152	260	127	4439	276	**4439**	**276**	4438	276
403.gcc	112	3189	283	**3194**	**282**	3201	282	96	2601	297	2607	296	**2605**	**297**
429.mcf	112	3238	315	3240	315	**3239**	**315**	64	1647	354	1662	351	**1652**	**353**
445.gobmk	112	**2324**	**506**	2324	506	2326	505	112	**2234**	**526**	2234	526	2232	526
456.hmmer	112	4074	256	**4072**	**257**	4069	257	80	2624	284	**2571**	**290**	2569	291
458.sjeng	112	**3073**	**441**	3071	441	3073	441	112	3052	444	**3047**	**445**	3039	446
462.libquantum	112	**723**	**3210**	724	3210	723	3210	80	503	3300	**503**	**3300**	502	3300
464.h264ref	112	4629	535	4628	536	**4628**	**536**	112	4488	552	4485	553	**4485**	**553**
471.omnetpp	112	2113	331	**2116**	**331**	2121	330	127	**2175**	**365**	2187	363	2168	366
473.astar	112	2661	296	2663	295	**2663**	**295**	192	3933	343	3941	342	**3939**	**342**
483.xalancbmk	112	1583	488	**1584**	**488**	1584	488	112	1496	517	1494	517	**1495**	**517**

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 =  3221225472
       Limits the consumption of memory by the zfs file system
       cache to the range 1 GB to 3 GB.

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

Platform Notes

```
Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ 5569a0425e2ad530534e4c79a46e4d28
running on bur408-181.us.oracle.com Fri Mar 15 16:18:06 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 bur408-181.us.oracle.com 5.11 11.1 sun4v sparc sun4v

disk: df -h  $SPEC
Filesystem             Size   Used  Available Capacity  Mounted on
rpool/cpu2006          166G   1.5G       156G     1%    /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
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`

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.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 -W2,-Rloop_dist -Wc,-Qpeep-Ex1:minmax_use_cmov=2`

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`

Continued on next page

Peak Optimization Flags (Continued)

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
http://www.spec.org/cpu2006/flags/Oracle-Tseries.xml

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