



SPEC[®] CINT2006 Result

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Oracle Corporation SPARC T3-4

SPECint[®]_rate2006 = 666

SPECint_rate_base2006 = 614

CPU2006 license: 6

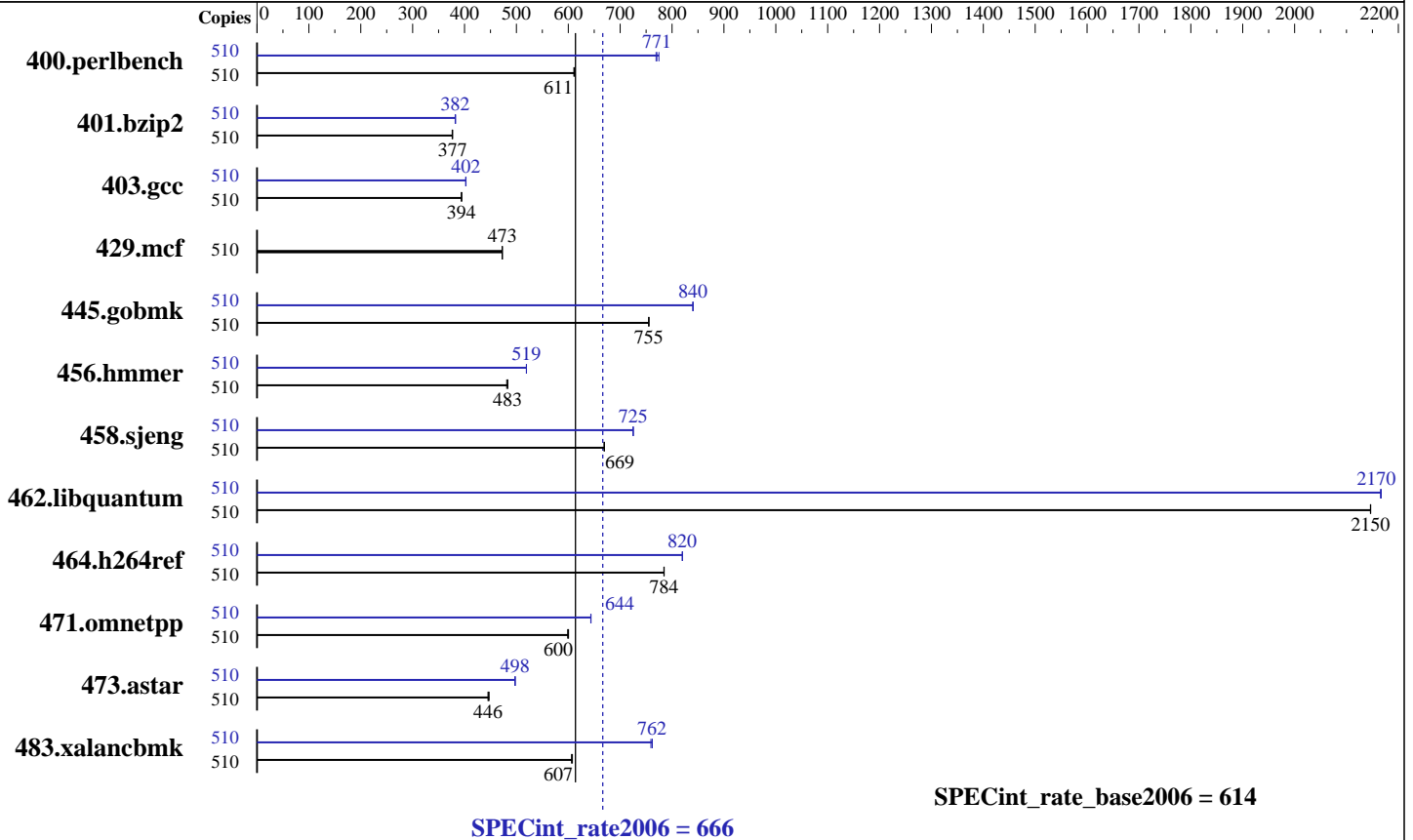
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Sep-2010

Hardware Availability: Dec-2010

Software Availability: Sep-2010



Hardware

CPU Name: SPARC T3
 CPU Characteristics:
 CPU MHz: 1649
 FPU: Integrated
 CPU(s) enabled: 64 cores, 4 chips, 16 cores/chip, 8 threads/core
 CPU(s) orderable: 1 to 4 chips
 Primary Cache: 16 KB I + 8 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 512 GB (64 x 8 GB)
 Disk Subsystem: 821 GB (zfs 3 x 2-way mirrors on 6x SAS 300G 10000 RPM)
 Other Hardware: None

Software

Operating System: Oracle Solaris 10 9/10
 Compiler: Oracle Solaris Studio 12.2
 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	510	8127	613	<u>8151</u>	<u>611</u>	8156	611	510	6432	775	<u>6465</u>	<u>771</u>	6478	769
401.bzip2	510	13084	376	<u>13063</u>	<u>377</u>	13054	377	510	12853	383	<u>12882</u>	<u>382</u>	12885	382
403.gcc	510	10405	395	10419	394	<u>10418</u>	<u>394</u>	510	10191	403	10204	402	<u>10202</u>	<u>402</u>
429.mcf	510	9840	473	9838	473	<u>9839</u>	<u>473</u>	510	9840	473	9838	473	<u>9839</u>	<u>473</u>
445.gobmk	510	7086	755	7082	755	<u>7084</u>	<u>755</u>	510	<u>6367</u>	<u>840</u>	6367	840	6366	840
456.hammer	510	9887	481	<u>9847</u>	<u>483</u>	9847	483	510	9162	519	<u>9163</u>	<u>519</u>	9165	519
458.sjeng	510	<u>9218</u>	<u>669</u>	9222	669	9217	670	510	<u>8510</u>	<u>725</u>	8509	725	8513	725
462.libquantum	510	4924	2150	<u>4923</u>	<u>2150</u>	4923	2150	510	<u>4878</u>	<u>2170</u>	4876	2170	4879	2170
464.h264ref	510	14380	785	<u>14388</u>	<u>784</u>	14389	784	510	<u>13766</u>	<u>820</u>	13761	820	13767	820
471.omnetpp	510	5323	599	<u>5315</u>	<u>600</u>	5308	600	510	4952	644	4954	643	<u>4952</u>	<u>644</u>
473.astar	510	<u>8035</u>	<u>446</u>	8002	447	8036	446	510	7199	497	<u>7196</u>	<u>498</u>	7195	498
483.xalancbmk	510	5803	606	<u>5800</u>	<u>607</u>	5788	608	510	4618	762	4635	759	<u>4621</u>	<u>762</u>

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

Compiler Invocation Notes

Oracle Solaris Studio 12.2 is distributed with mandatory OS patches
118683-05 119963-20 120753-08

Oracle Solaris Studio 12.2 and patches are available at
<http://oracle.com/goto/solarisstudio>

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 (and therefore make more space available to the heap).

```
/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).

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Operating System Notes (Continued)

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_max=0x10000000
zfs:zfs_arc_min=0x10000000
Limits the consumption of memory by the zfs file system cache to 256 MB. (The arc_max sets the maximum cache size; arc_min sets the minimum.)

zfs:zfs_prefetch_disable = 1
Indicates that prefetching is not desired. This setting may be desirable when the file system cache is small.

USB devices were turned off with ILOM command
set /SYS/MB/USB component_state=disabled
The "webconsole" service was turned off using
svcadm disable webconsole
The system had 437 GB of swap space.

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
483.xalancbmk: -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
-g -fast -fma=fused -xipo=2 -xprefetch=no%auto -xpagesize=4M
-xalias_level=std -M /usr/lib/ld/map.bssalign

C++ benchmarks:
-g0 -library=stlport4 -fast -fma=fused -xipo=2 -xprefetch=no%auto
-xpagesize=4M -xdepend -xalias_level=compatible
-M /usr/lib/ld/map.bssalign



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Base Other Flags

C benchmarks:
-xjobs=64 -V -#

C++ benchmarks:
-xjobs=64 -verbose=diags,version

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:

400.perlbench: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xalias_level=std
-xipo=2 -Xc -xrestrict -lfast

401.bzip2: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=strong

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

429.mcf: basepeak = yes

445.gobmk: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xalias_level=std
-xrestrict -xprefetch=no%auto

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Peak Optimization Flags (Continued)

456.hmmr: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused -xipo=2
-xpagesize=4M -xunroll=14 -xalias_level=std

458.sjeng: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xprefetch=no%auto

462.libquantum: -g -fast -fma=fused -xpagesize=4M
-M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch_level=3
-xalias_level=std

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

C++ benchmarks:

471.omnetpp: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused -xipo=2
-xprefetch=no%auto -xpagesize=4M -xdepend
-xalias_level=compatible -M /usr/lib/ld/map.bssalign

473.astar: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xdepend -xalias_level=compatible -xipo=2
-xprefetch=no%auto -lfast

483.xalancbmk: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xdepend -xalias_level=compatible
-M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch=no%auto
-lfast

Peak Other Flags

C benchmarks:

-xjobs=64 -V -#

C++ benchmarks:

-xjobs=64 -verbose=diags,version

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110110.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110110.xml>



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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 15:14:48 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 February 2011.