SPEC® CINT2006 Result

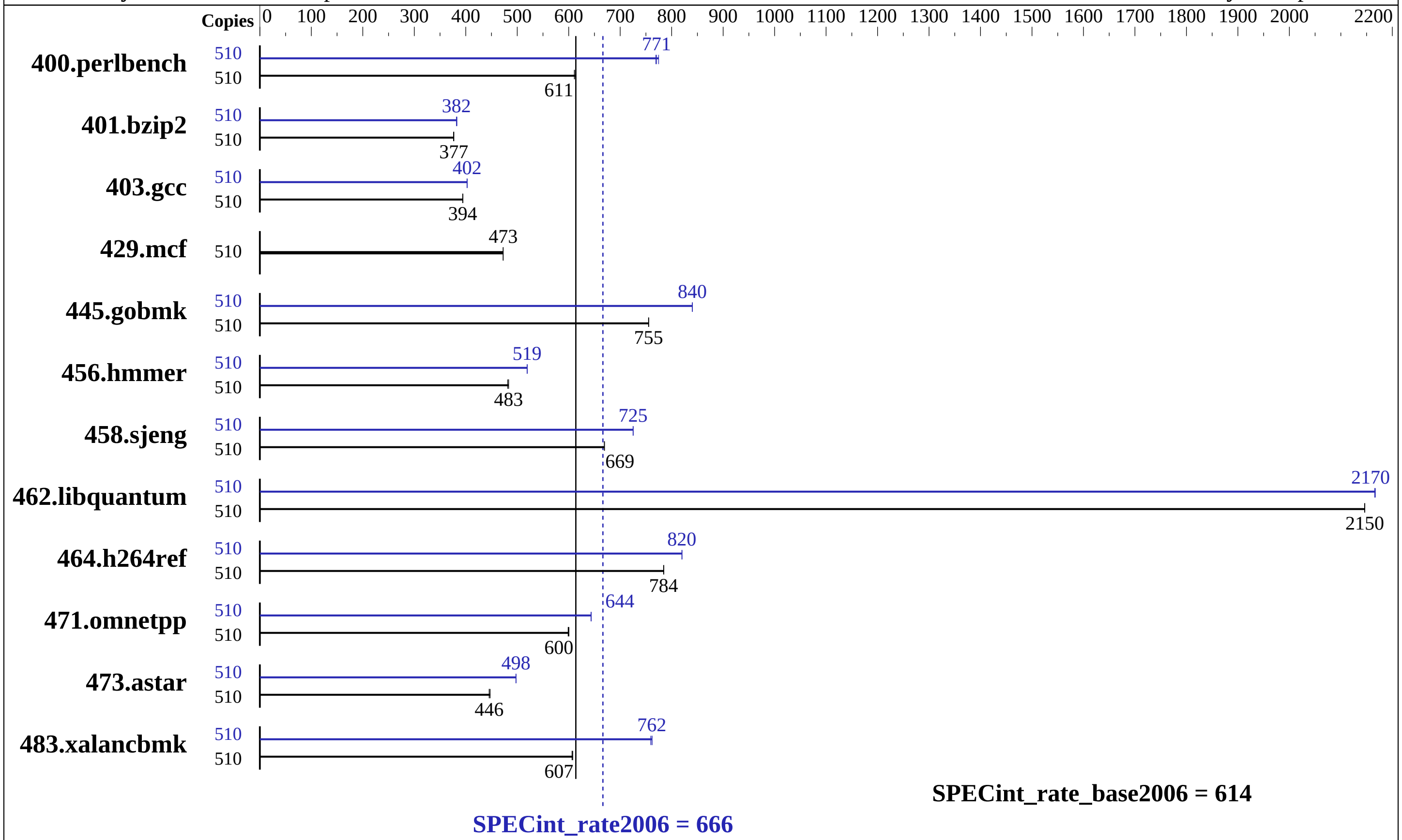
Oracle Corporation
SPARC T3-4

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

Results Table

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

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.hmmer: -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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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