



SPEC® CINT2006 Result

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Oracle Corporation SPARC T3-1

SPECint®_rate2006 = 166

SPECint_rate_base2006 = 153

CPU2006 license: 6

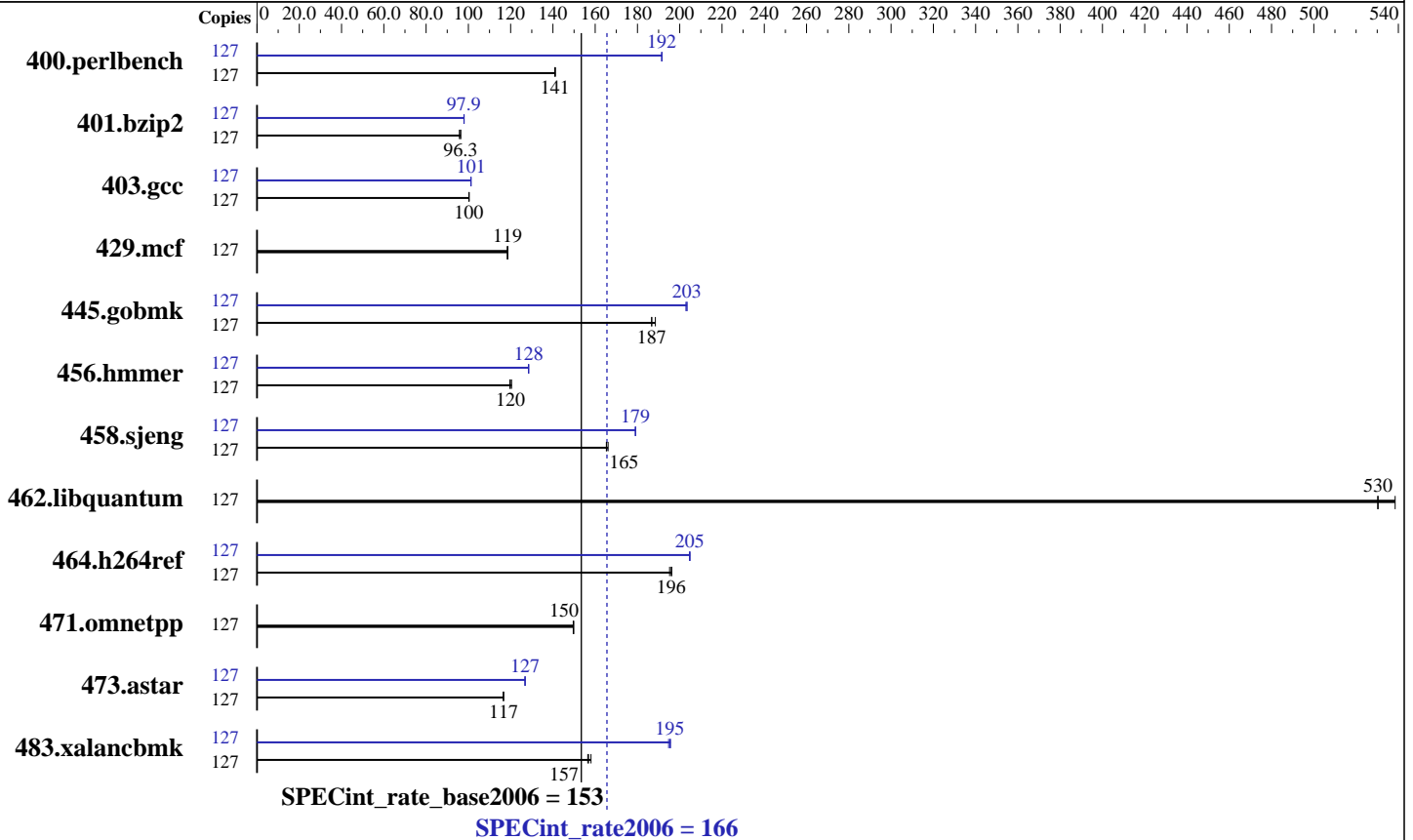
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Aug-2010

Hardware Availability: Oct-2010

Software Availability: Sep-2010



Hardware

CPU Name: SPARC T3
 CPU Characteristics:
 CPU MHz: 1649
 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 + 8 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 128 GB (16 x 8 GB)
 Disk Subsystem: 750 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	127	8800	141	8804	141	8791	141	127	6479	192	6481	191	6474	192
401.bzip2	127	12724	96.3	12720	96.3	12800	95.7	127	12504	98.0	12517	97.9	12516	97.9
403.gcc	127	10192	100	10198	100	10188	100	127	10105	101	10097	101	10096	101
429.mcf	127	9763	119	9781	118	9768	119	127	9763	119	9781	118	9768	119
445.gobmk	127	7069	188	7136	187	7133	187	127	6548	203	6551	203	6565	203
456.hammer	127	9838	120	9904	120	9884	120	127	9222	128	9223	128	9219	129
458.sjeng	127	9251	166	9291	165	9298	165	127	8582	179	8582	179	8583	179
462.libquantum	127	4887	538	4963	530	4961	530	127	4887	538	4963	530	4961	530
464.h264ref	127	14323	196	14342	196	14398	195	127	13719	205	13729	205	13733	205
471.omnetpp	127	5297	150	5305	150	5301	150	127	5297	150	5305	150	5301	150
473.astar	127	7642	117	7644	117	7653	116	127	7031	127	7025	127	7032	127
483.xalancbmk	127	5546	158	5586	157	5599	156	127	4479	196	4486	195	4500	195

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 (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).

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

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Operating System Notes (Continued)

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 296 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

Base Other Flags

C benchmarks:
-xjobs=32 -V -#

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Base Other Flags (Continued)

C++ benchmarks:
-xjobs=32 -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 -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=2

429.mcf: basepeak = yes

445.gobmk: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=std -xrestrict

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

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Peak Optimization Flags (Continued)

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: basepeak = yes

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: basepeak = yes

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: Same as 473.astar

Peak Other Flags

C benchmarks:
-xjobs=32 -V -#

C++ benchmarks:
-xjobs=32 -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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For other inquiries, please contact webmaster@spec.org.

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