SPEC® CINT2006 Result

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Oracle Corporation

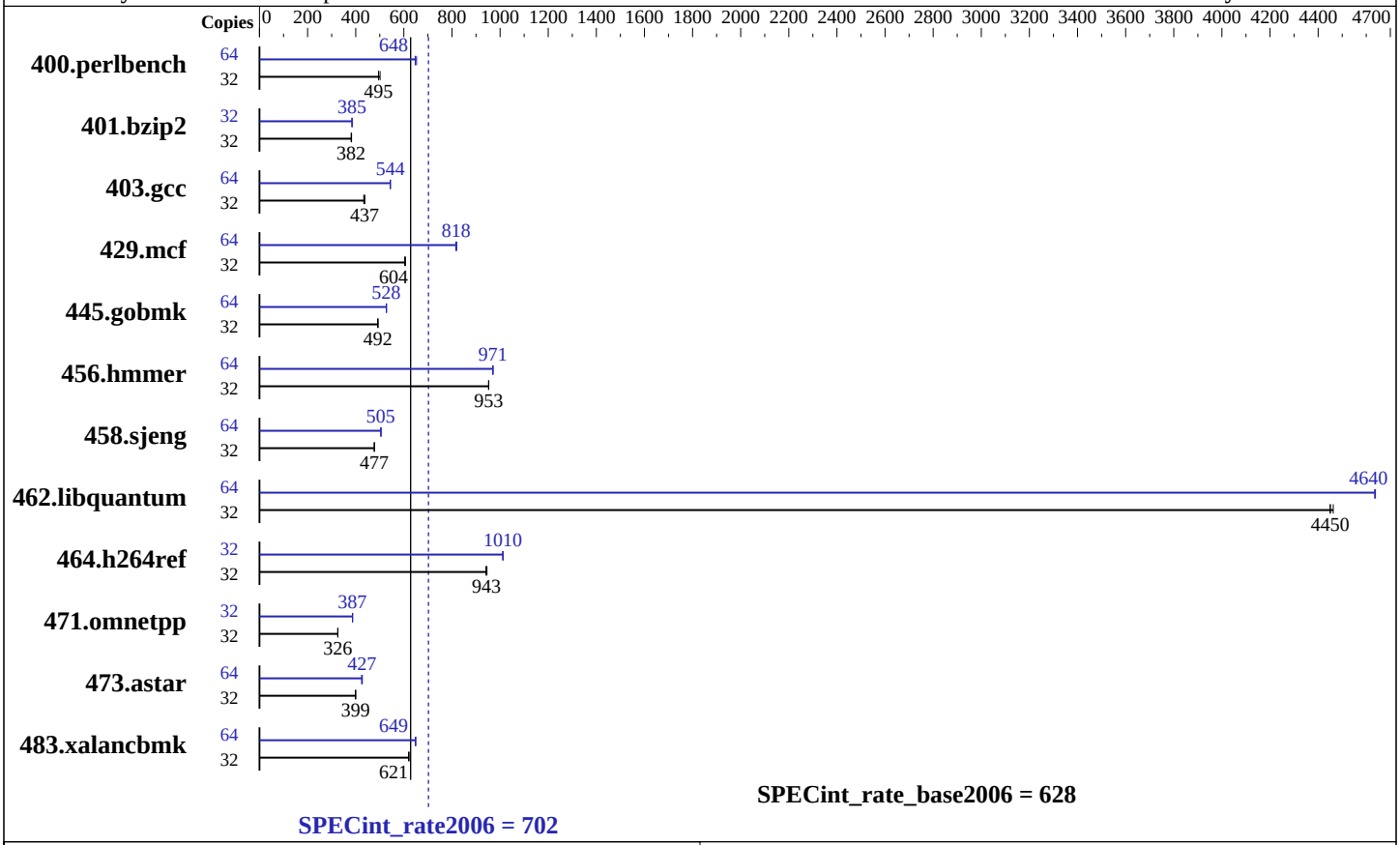
Sun Fire X4170 M3 (Intel Xeon E5-2690 2.9GHz)

SPECint®_rate2006 = 702

SPECint_rate_base2006 = 628

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

Test date: Mar-2012
Hardware Availability: Apr-2012
Software Availability: Jun-2012



Hardware

CPU Name:	Intel Xeon E5-2690
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	3 x 300 GB 10K RPM SAS
Other Hardware:	None

Software

Operating System:	Oracle Solaris 11 11/11 (SRU 02)
Compiler:	C/C++: Version 12.3 of Oracle Solaris Studio (patch update 1, tested with nightly build 20120313)
Auto Parallel:	No
File System:	zfs (with raidz)
System State:	Default
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	624	501	**632**	**495**	632	495	64	958	653	966	647	**965**	**648**
401.bzip2	32	807	383	810	381	**809**	**382**	32	**802**	**385**	801	385	804	384
403.gcc	32	**589**	**437**	589	437	594	433	64	949	543	**947**	**544**	946	544
429.mcf	32	483	604	481	607	**483**	**604**	64	**714**	**818**	715	816	712	820
445.gobmk	32	682	492	**682**	**492**	683	492	64	1272	528	1273	527	**1273**	**528**
456.hmmer	32	314	952	313	953	**313**	**953**	64	**615**	**971**	616	969	615	971
458.sjeng	32	811	477	810	478	**811**	**477**	64	1535	504	**1534**	**505**	1532	505
462.libquantum	32	**149**	**4450**	149	4460	149	4450	64	**286**	**4640**	286	4640	286	4640
464.h264ref	32	749	945	**751**	**943**	752	942	32	701	1010	699	1010	**700**	**1010**
471.omnetpp	32	**614**	**326**	614	326	614	326	32	**517**	**387**	517	387	517	387
473.astar	32	563	399	562	399	**563**	**399**	64	1059	424	1052	427	**1053**	**427**
483.xalancbmk	32	356	620	356	621	**356**	**621**	64	680	649	682	648	**680**	**649**

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

Submit Notes

```
The config file option 'submit' was used to bind processes to CPU threads with pbind(1)
```

Operating System Notes

```
ulimit -s 10000  (shell): increases stack

/etc/system parameters
   autoup=1000
   zfs:zfs_arc_max=0x400000000
   zfs:zfs_arc_min=0x400000000
   ncsize=0x10000
   lpg_alloc_prefer=1

gzip compression set using "zfs set compression=gzip <zfs-filesystem>"
```

Platform Notes

```
Default BIOS Settings were used, except:
  Energy Performance set to Performance

Oracle's Sun Fire X4170 M3 is now known as the Sun Server X3-2.

Sysinfo program /benchpool/data1/cpu2006v1.2/Docs/sysinfo
: 6775  2011-08-16 #f7622badcf24e01c368b1db4377c
running on bur407-122 Fri Mar 30 15:47:43 2012

This section contains SUT (System Under Test) info as seen by
```

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Platform Notes (Continued)

```
some common utilities.  To remove or add to this section, see:
  http://www.spec.org/cpu2006/Docs/config.html#sysinfo


From /usr/sbin/psrinfo -pv
 Intel(r) Xeon(r) CPU E5-2690 0 @ 2.90GHz
 x86 (GenuineIntel 206D7 family 6 model 45 step 7 clock 2893 MHz)

/usr/sbin/psrinfo -p:   2 chips
/usr/sbin/psrinfo -pv | grep "core has" | wc -l:  16 cores
/usr/sbin/psrinfo | wc -l: 32 threads

/usr/sbin/prtconf | grep "Memory size:": 131062 Megabytes

/etc/release:
                            Oracle Solaris 11 11/11 X86
uname -a:
SunOS bur407-122 5.11 11.0 i86pc i386 i86pc

disk: df -h
Filesystem             Size   Used  Available Capacity  Mounted on
benchpool/data1        545G    12G       533G     3%    /benchpool/data1

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
OMP_NUM_THREADS = "1"
```

Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Base Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_X64 -DSPEC_CPU_LP64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_SOLARIS -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64

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Base Portability Flags (Continued)

456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_SOLARIS -DSPEC_CPU_LP64
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
-g -fast -xipo=2 -m64 -xaddr32 -xpagesize=2M -xalias_level=std

C++ benchmarks:
-fast -xipo=2 -m32 -xpagesize=2M -xalias_level=compatible
-library=stlport4 -lfast

Peak Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_X64 -DSPEC_CPU_LP64
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 -xprefetch=no%auto
-xtarget=nehalem -xipo=1 -m64 -xpagesize=2M
-xalias_level=std -lbsdmalloc

401.bzip2: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=strong

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Peak Optimization Flags (Continued)

403.gcc: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m32
-xpagesize=2M -xalias_level=std
-W2,-Abuiltin_opt:calloc_no_support=on

429.mcf: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m32
-xpagesize_heap=2M -xpagesize_stack=4k -xalias_level=std

445.gobmk: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -m64 -xpagesize=2M
-xrestrict -xalias_level=strong

456.hmmer: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=4k -xalias_level=strong

458.sjeng: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=nehalem
-xipo=2 -m64 -xpagesize=2M -xalias_level=std

462.libquantum: -g -fast -xtarget=nehalem -xipo=2 -m64 -xpagesize=2M
-xalias_level=std -xunroll=8

464.h264ref: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m32
-xpagesize=2M -xalias_level=strong

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xalias_level=compatible -library=stlport4
-L/export_compress/home/gnana/cpu2006v1.2/SmartHeap_9/lib/ -R/export_compress/home/gnana/cpu2006v1.2/SmartHeap_9/lib/ -lsmart

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=compatible -xrestrict
-library=stlport4 -lfast

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xunroll=8 -library=stlport4 -lfast

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-x86_64.html
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-x86_64.xml
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.xml

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