SPEC® CINT2006 Result

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Oracle Corporation

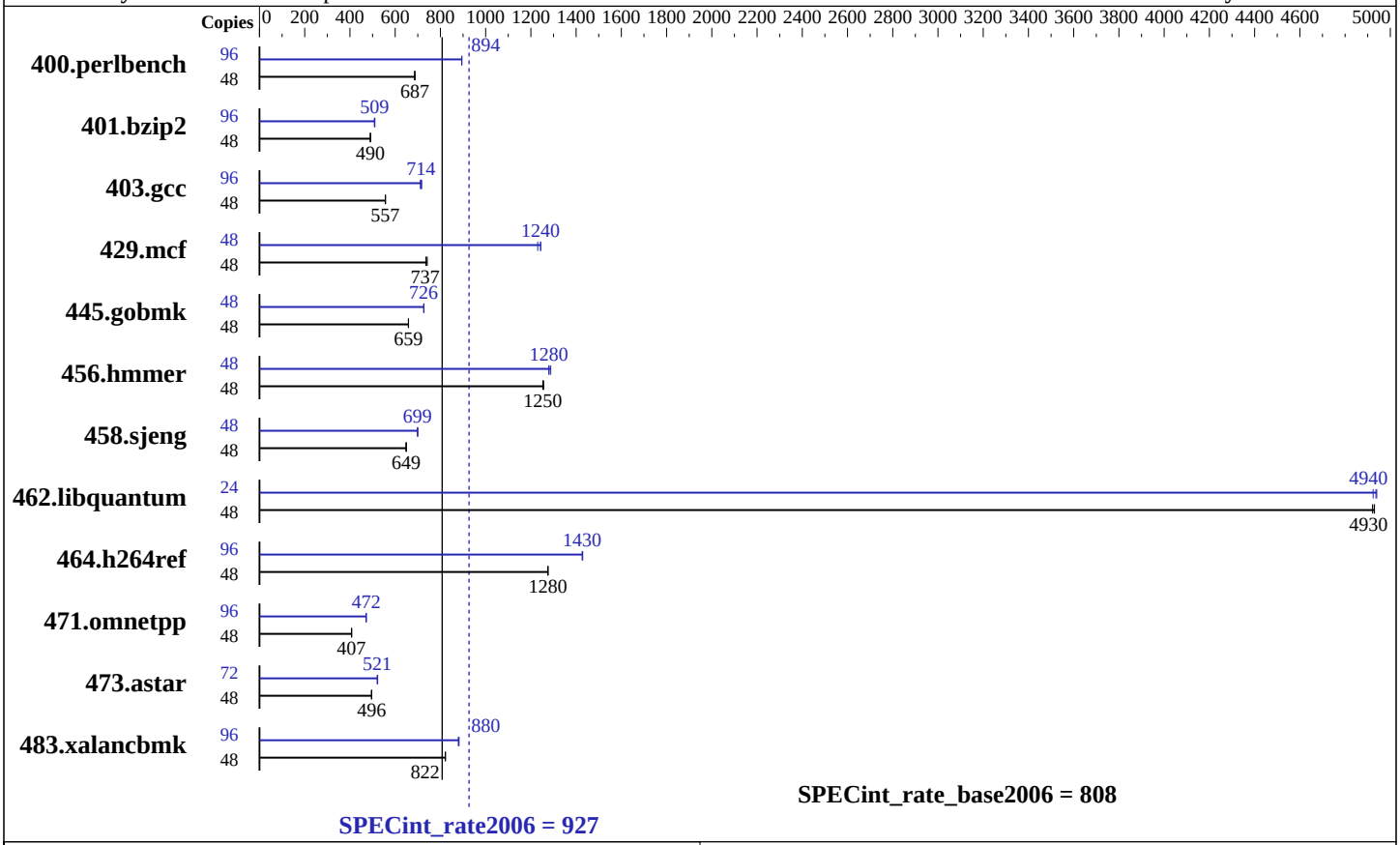
Sun Fire X4-2 (Intel Xeon E5-2697 v2 2.7GHz)

SPECint®_rate2006 = 927

SPECint_rate_base2006 = 808

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

Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Nov-2013



Hardware

CPU Name:	Intel Xeon E5-2697 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 600 GB SAS, 10K RPM
Other Hardware:	None

Software

Operating System:	Solaris 11.1 (SRU 11)
Compiler:	C/C++: Version 12.3 of Oracle Solaris Studio 10/13 Patch Set (tested with nightly build 20130822)
Auto Parallel:	No
File System:	zfs
System State:	Default
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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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	48	684	686	682	688	**683**	**687**	96	1048	895	**1049**	**894**	1049	894
401.bzip2	48	**945**	**490**	944	491	945	490	96	1816	510	**1820**	**509**	1824	508
403.gcc	48	695	556	**694**	**557**	693	557	96	**1082**	**714**	1077	717	1086	711
429.mcf	48	**594**	**737**	595	736	590	742	48	**352**	**1240**	352	1240	356	1230
445.gobmk	48	764	659	**764**	**659**	765	658	48	693	726	692	727	**693**	**726**
456.hmmer	48	357	1250	**357**	**1250**	356	1260	48	350	1280	348	1290	**350**	**1280**
458.sjeng	48	**896**	**649**	895	649	896	648	48	**831**	**699**	831	699	830	699
462.libquantum	48	202	4930	202	4920	**202**	**4930**	24	101	4920	**101**	**4940**	101	4940
464.h264ref	48	833	1270	832	1280	**833**	**1280**	96	**1488**	**1430**	1486	1430	1489	1430
471.omnetpp	48	736	407	**737**	**407**	737	407	96	1271	472	1273	471	**1272**	**472**
473.astar	48	680	496	**680**	**496**	680	495	72	**970**	**521**	971	521	967	523
483.xalancbmk	48	403	821	403	822	**403**	**822**	96	751	883	**753**	**880**	753	880

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 unlimited  (shell): increases stack
/etc/system parameters
   autoup=1000
   tune_t_fsflushr=10

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

Platform Notes

```
Default BIOS Settings were used.

Sysinfo program /export/home/cpu2006v1.2/Docs/sysinfo
: 6775  2011-08-16 #f7622badcf24e01c368b1db4377c
running on bur398-85 Sun Sep  1 16:52:31 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 -pv
 Intel(r) Xeon(r) CPU E5-2697 v2 @ 2.70GHz
 x86 (GenuineIntel 306E4 family 6 model 62 step 4 clock 2693 MHz)
```

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Platform Notes (Continued)

```
 /usr/sbin/psrinfo -p:   2 chips
 /usr/sbin/psrinfo -pv | grep "core has" | wc -l:  24 cores
 /usr/sbin/psrinfo | wc -l: 48 threads

 /usr/sbin/prtconf | grep "Memory size:": 262087 Megabytes

 /etc/release:
                              Oracle Solaris 11.1 X86
 uname -a:
 SunOS bur398-85 5.11 11.1 i86pc i386 i86pc

 disk: df -h
 Filesystem             Size   Used  Available Capacity  Mounted on
 rpool/export/home      547G    50G       419G    11%    /export/home

 (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
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 -xtarget=ivybridge -xipo=2 -m64 -xaddr32 -xpagesize=2M
```

C++ benchmarks:
```
-g -fast -xtarget=ivybridge -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 -xtarget=nehalem`
`-xprefetch=no%auto -xipo=1 -m64 -xpagesize=2M`
`-xalias_level=std -lbsdmalloc`

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

403.gcc: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xtarget=ivybridge`
`-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 -xtarget=ivybridge`
`-xipo=2 -m32 -xpagesize_heap=2M -xpagesize_stack=4k`
`-xalias_level=std -W2,-Asac`

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Peak Optimization Flags (Continued)

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

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

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

462.libquantum: `-g -fast -xtarget=ivybridge -xipo=2 -m64 -xpagesize=2M -xalias_level=std`

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

C++ benchmarks:

471.omnetpp: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xtarget=ivybridge -xipo=2 -m32 -xpagesize=2M -xalias_level=compatible -library=stlport4 -L/export/home/SmartHeap_9/lib/ -R/export/home/SmartHeap_9/lib/ -lsmartheap`

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

483.xalancbmk: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xtarget=ivybridge -xipo=2 -m32 -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_64.20130924.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_64.20130924.xml
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.xml

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