SPEC® CINT2006 Result

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Oracle Corporation

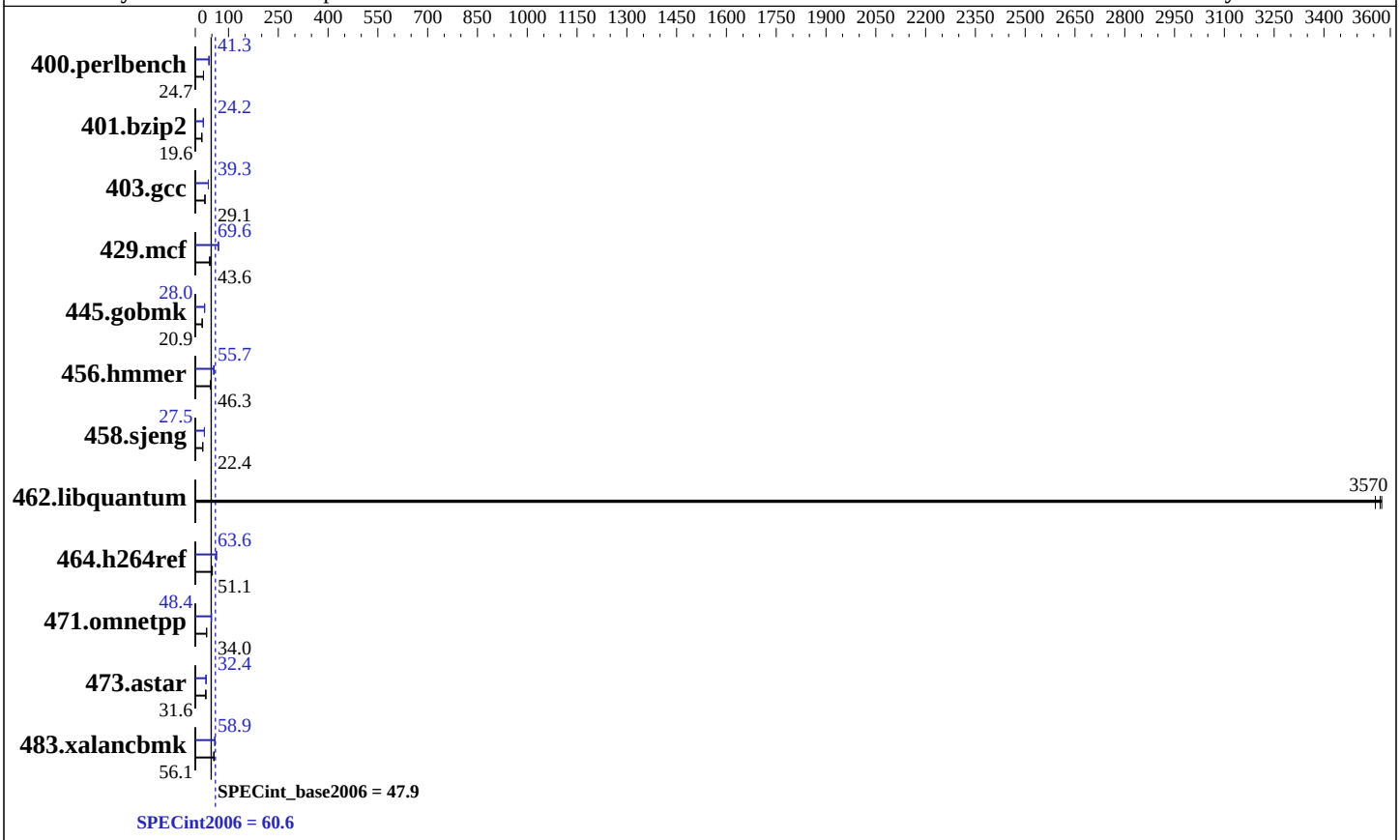
Sun Blade X4-2B (Intel Xeon E5-2697 v2 2.7GHz)

SPECint®2006 = 60.6

SPECint_base2006 = 47.9

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
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 300 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:	Yes
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	396	24.7	396	24.7	**396**	**24.7**	237	41.3	237	41.3	**237**	**41.3**
401.bzip2	493	19.6	**493**	**19.6**	493	19.6	399	24.2	398	24.2	**398**	**24.2**
403.gcc	277	29.1	**276**	**29.1**	276	29.1	205	39.3	**205**	**39.3**	205	39.3
429.mcf	210	43.4	208	43.9	**209**	**43.6**	**131**	**69.6**	131	69.6	131	69.6
445.gobmk	**502**	**20.9**	501	20.9	502	20.9	375	28.0	374	28.1	**374**	**28.0**
456.hmmer	**202**	**46.3**	202	46.2	202	46.3	167	55.7	168	55.7	**167**	**55.7**
458.sjeng	**541**	**22.4**	541	22.4	540	22.4	**440**	**27.5**	440	27.5	440	27.5
462.libquantum	5.83	3550	5.80	3570	**5.81**	**3570**	5.83	3550	5.80	3570	**5.81**	**3570**
464.h264ref	433	51.1	**433**	**51.1**	432	51.2	**348**	**63.6**	348	63.6	349	63.4
471.omnetpp	184	33.9	184	34.0	**184**	**34.0**	**129**	**48.4**	129	48.6	129	48.4
473.astar	222	31.6	**222**	**31.6**	222	31.7	**217**	**32.4**	217	32.4	217	32.4
483.xalancbmk	123	56.1	123	56.0	**123**	**56.1**	117	58.9	117	58.9	**117**	**58.9**

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 except:
    Hyper-Threading (HT) Technology was Disabled


Sysinfo program /export/home/cpu2006v1.2/Docs/sysinfo
: 6775  2011-08-16 #f7622badcf24e01c368b1db4377c
running on bur408-94 Mon Sep  2 21:28:41 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
```

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Platform Notes (Continued)

```
 Intel(r) Xeon(r) CPU E5-2697 v2 @ 2.70GHz
 x86 (GenuineIntel 306E4 family 6 model 62 step 4 clock 2693 MHz)

/usr/sbin/psrinfo -p:   2 chips
/usr/sbin/psrinfo | wc -l: 24 threads

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

/etc/release:
                            Oracle Solaris 11.1 X86
uname -a:
SunOS bur408-94 5.11 11.1 i86pc i386 i86pc

disk: df -h
Filesystem             Size   Used  Available Capacity  Mounted on
rpool/export/home      274G    34G       164G    18%    /export/home

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
MTEXCLUSIVE = "Y"
OMP_NUM_THREADS = "24"
SUNW_MP_PROCBIND = "scatter"
SUNW_MP_THR_IDLE = "spin"
```

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

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Base Portability Flags (Continued)

464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_SOLARIS -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-g -fast -xtarget=ivybridge -xipo=2 -m64 -xpagesize=2M -xautopar -xreduction

C++ benchmarks:
-g -fast -xtarget=ivybridge -xipo=2 -m64 -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 -DSPEC_CPU_LP64
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=ivybridge -xipo=2 -m64 -xpagesize=2M -xalias_level=std -lbsdmalloc -xprefetch=no%auto

401.bzip2: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge -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 -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=4K -xalias_level=std -W2,-Asac`

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=2M -xalias_level=strong -xprefetch=no%auto`

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

462.libquantum: `basepeak = yes`

464.h264ref: `Same as 401.bzip2`

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 -lfast`

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 -m64 -xpagesize=2M -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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