SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

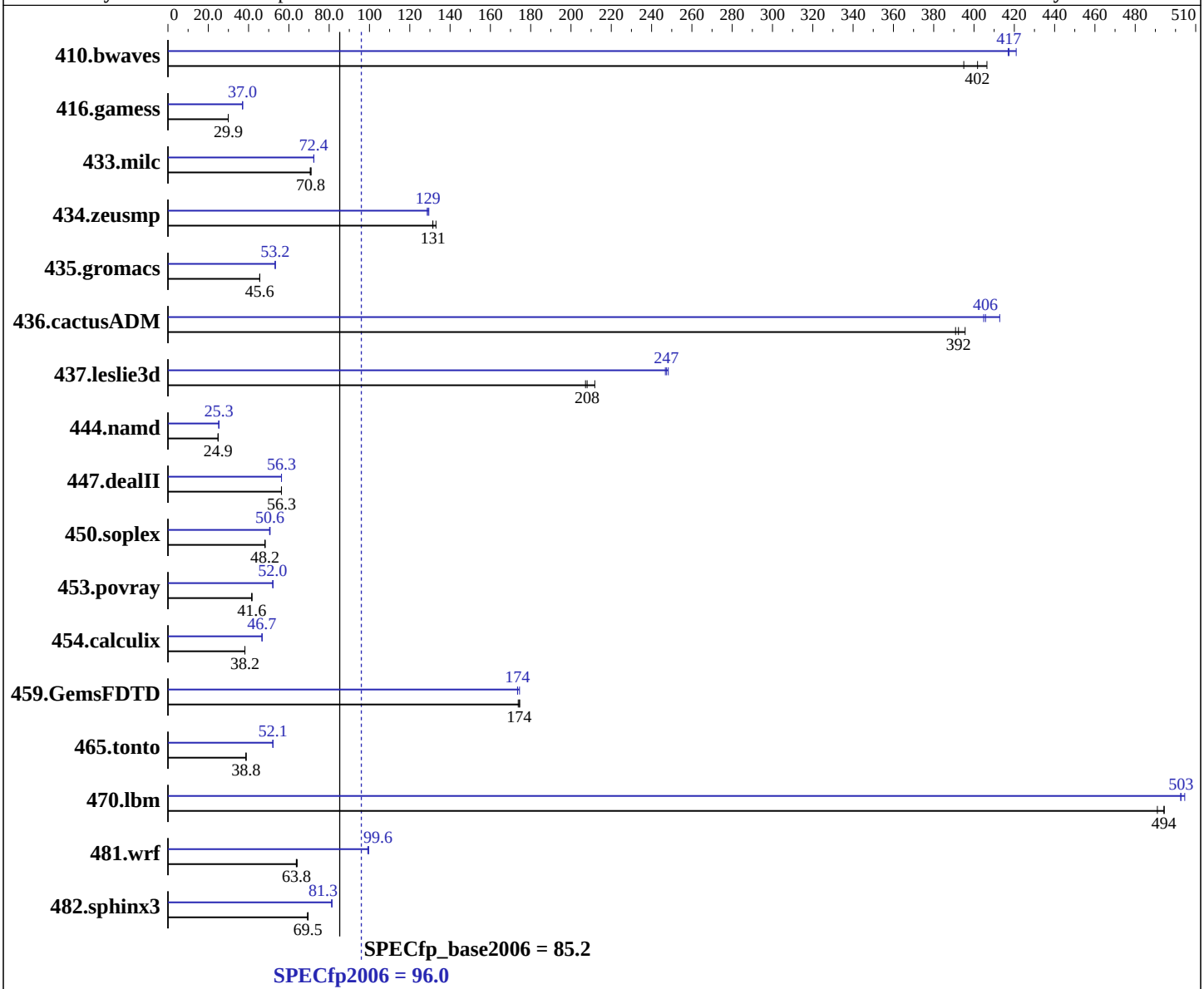
Sun Blade X3-2B (Intel Xeon E5-2690 2.9GHz)

SPECfp®2006 = 96.0

SPECfp_base2006 = 85.2

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

Continued on next page

Software

Operating System:	Oracle Solaris 11 11/11 (SRU 02)
Compiler:	C/C++/Fortran: Version 12.3 of Oracle Solaris Studio (patch update 1, tested with nightly build 20120313)
Auto Parallel:	Yes
File System:	zfs (with raidz)
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

Sun Blade X3-2B (Intel Xeon E5-2690 2.9GHz)

SPECfp2006 = 96.0

SPECfp_base2006 = 85.2

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

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

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

Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**33.8**	**402**	33.4	406	34.4	395	32.6	417	32.3	421	**32.6**	**417**
416.gamess	**654**	**29.9**	654	29.9	655	29.9	529	37.0	**529**	**37.0**	529	37.0
433.milc	130	70.6	129	71.0	**130**	**70.8**	127	72.4	**127**	**72.4**	127	72.4
434.zeusmp	68.4	133	69.3	131	**69.2**	**131**	**70.5**	**129**	70.3	129	70.7	129
435.gromacs	157	45.6	157	45.5	**157**	**45.6**	134	53.2	**134**	**53.2**	134	53.2
436.cactusADM	**30.5**	**392**	30.6	391	30.2	396	29.0	413	**29.5**	**406**	29.5	405
437.leslie3d	45.4	207	**45.2**	**208**	44.4	212	38.1	247	**38.0**	**247**	37.9	248
444.namd	**322**	**24.9**	322	24.9	322	24.9	318	25.3	**318**	**25.3**	318	25.3
447.dealII	203	56.3	**203**	**56.3**	203	56.3	203	56.3	203	56.3	**203**	**56.3**
450.soplex	**173**	**48.2**	173	48.2	173	48.1	**165**	**50.6**	165	50.7	165	50.4
453.povray	**128**	**41.6**	128	41.6	128	41.6	102	52.0	**102**	**52.0**	102	52.1
454.calculix	**216**	**38.2**	216	38.2	216	38.2	177	46.7	**177**	**46.7**	177	46.7
459.GemsFDTD	61.0	174	60.8	175	**60.9**	**174**	60.8	174	**61.2**	**174**	61.2	173
465.tonto	254	38.8	254	38.7	**254**	**38.8**	189	52.1	**189**	**52.1**	189	52.1
470.lbm	28.0	491	**27.8**	**494**	27.8	494	**27.3**	**503**	27.2	505	27.3	503
481.wrf	174	64.1	175	63.7	**175**	**63.8**	**112**	**99.6**	113	99.2	112	99.6
482.sphinx3	282	69.2	280	69.6	**280**	**69.5**	240	81.3	240	81.3	**240**	**81.3**

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 Blade X3-2B was formerly known as the Sun Blade X6270 M3

Sysinfo program /benchpool/data1/cpu2006v1.2/Docs/sysinfo
: 6775  2011-08-16 #f7622badcf24e01c368b1db4377c
running on bur398-85 Wed Mar 28 17:23:53 2012

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 E5-2690 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:": 131038 Megabytes

/etc/release:
                            Oracle Solaris 11 11/11 X86
uname -a:
SunOS bur398-85 5.11 11.0 i86pc i386 i86pc

disk: df -h
Filesystem             Size   Used  Available Capacity  Mounted on
benchpool/data1        545G    15G       530G     3%    /benchpool/data1

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
MTEXCLUSIVE = "Y"
OMP_NUM_THREADS = "16"
SUNW_MP_PROCBIND = "true"
SUNW_MP_THR_IDLE = "spin"
```

Base Compiler Invocation

C benchmarks:
cc

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
CC

Fortran benchmarks:
f90

Benchmarks using both Fortran and C:
cc f90

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_WORDS_LITTLEENDIAN
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-g -fast -xipo=2 -m64 -xautopar -xreduction -xalias_level=std

C++ benchmarks:
-fast -xipo=2 -m64 -xpagesize=2M -xalias_level=compatible
-library=stdcxx4

Fortran benchmarks:
-fast -xipo=2 -m64 -xautopar -xreduction -xpagesize=2M

Benchmarks using both Fortran and C:
-g -fast(cc) -xipo=2 -m64 -xautopar -xreduction -xalias_level=std
-fast(f90) -xpagesize=2M

Peak Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Fortran benchmarks:
f90

Benchmarks using both Fortran and C:
cc f90

Peak Portability Flags

436.cactusADM: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_WORDS_LITTLEENDIAN

Peak Optimization Flags

C benchmarks:

433.milc: -g -fast -xipo=2 -m64 -xpagesize=2M -xalias_level=std
-xautopar -xreduction -lmtmalloc

470.lbm: -g -fast -Wu,-nontemporal -xprefetch_level=3 -xipo=2 -m64
-xautopar -xreduction -xpagesize=4K -lmtmalloc

482.sphinx3: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=std -xrestrict
-xprefetch=no%auto -xautopar -xreduction
-W2,-Aparallel:nthreads=8

C++ benchmarks:

444.namd: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xO3
-xprefetch=no%auto -m64 -xpagesize=2M
-xalias_level=compatible -library=stlport4

447.dealII: -fast -xipo=2 -m64 -xpagesize=2M -xalias_level=compatible
-library=stdcxx4

450.soplex: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xalias_level=compatible -library=stlport4
-m64 -Qoption iropt -Rtile

Continued on next page

Peak Optimization Flags (Continued)

453.povray: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xprefetch=no%auto
-xipo=2 -m64 -xpagesize=2M -xalias_level=compatible
-qoption iropt -Atile:skew=on -qoption iropt -Ainline:cs=700
-library=stlport4

Fortran benchmarks:

410.bwaves: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=4K -xautopar -xreduction

416.gamess: -fast -xipo=2 -m64 -xpagesize=2M -xunroll=1
-xvector=no%simd -xprefetch=no%auto

434.zeusmp: -fast -xipo=2 -m64 -xpagesize=2M -xautopar -xreduction

437.leslie3d: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xautopar -xreduction -lmtmalloc

459.GemsFDTD: Same as 434.zeusmp

465.tonto: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=2M -O3
-m64 -stackvar -xprefetch=no%auto -xalias -xautopar
-xreduction -Qoption iropt -Aparallel:nthreads=8 -lfast_r

Benchmarks using both Fortran and C:

435.gromacs: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xipo=2 -m64 -xpagesize=2M -fsimple=2
-Qoption ube -fsimple=3 -xautopar -xreduction
-Qoption iropt -Aparallel:nthreads=8 -lmtmalloc

436.cactusADM: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -m64
-xautopar -xreduction -xpagesize=2M -lumem -lmvec

454.calculix: -g -fast(cc) -fast(f90) -xipo=0 -m64 -xpagesize=2M
-xprefetch_level=2 -xprefetch_auto_type=indirect_array_access
-Qoption ube -xprefetch_mult=24 -xunroll=2

481.wrf: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -O4
-xchip=nehalem -xarch=sse4_2 -xipo=2 -m64 -xpagesize=2M
-xprefetch=no%auto -xautopar -xreduction
-Qoption iropt -Aparallel:nthreads=8

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

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 11:20:21 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 31 July 2012.