SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

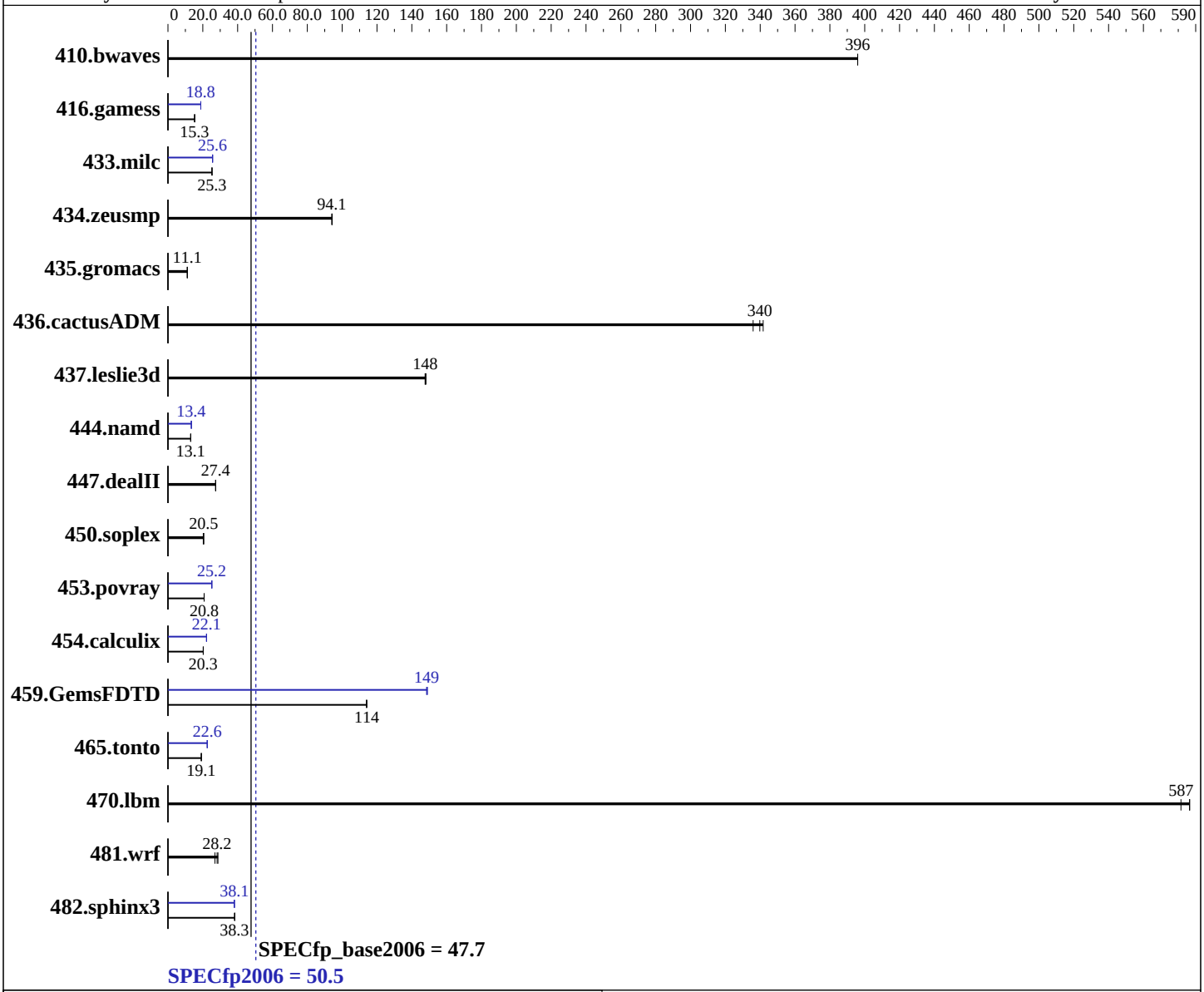
Sun Fire X4470 M2 (Intel Xeon E7-4820 2.0 GHz)

SPECfp®2006 = 50.5

SPECfp_base2006 = 47.7

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

Test date: Dec-2011
Hardware Availability: Jun-2011
Software Availability: Oct-2011



Hardware

CPU Name:	Intel Xeon E7-4820
CPU Characteristics:	Intel Turbo Boost Technology up to 2.27 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip
CPU(s) orderable:	2,4 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 Linux 6.1 kernel 2.6.32-100.34.1.el6uek.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 5 (multi-user)

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

Sun Fire X4470 M2 (Intel Xeon E7-4820 2.0 GHz)

SPECfp2006 = 50.5

SPECfp_base2006 = 47.7

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

Test date: Dec-2011
Hardware Availability: Jun-2011
Software Availability: Oct-2011

L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (64 x 4 GB 2Rx8 PC3L-10600R-9, ECC)
Disk Subsystem: 1 x 300 GB, SATA, 7200 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	34.3	396	**34.3**	**396**	34.3	396	34.3	396	**34.3**	**396**	34.3	396
416.gamess	1274	15.4	**1279**	**15.3**	1282	15.3	1038	18.9	**1039**	**18.8**	1039	18.8
433.milc	363	25.3	363	25.3	**363**	**25.3**	**359**	**25.6**	358	25.7	359	25.6
434.zeusmp	**96.7**	**94.1**	96.5	94.3	96.7	94.1	**96.7**	**94.1**	96.5	94.3	96.7	94.1
435.gromacs	644	11.1	640	11.1	**642**	**11.1**	644	11.1	640	11.1	**642**	**11.1**
436.cactusADM	**35.2**	**340**	35.6	336	35.0	342	**35.2**	**340**	35.6	336	35.0	342
437.leslie3d	63.5	148	**63.7**	**148**	63.7	148	63.5	148	**63.7**	**148**	63.7	148
444.namd	614	13.1	**614**	**13.1**	613	13.1	597	13.4	597	13.4	**597**	**13.4**
447.dealII	**418**	**27.4**	418	27.4	418	27.4	**418**	**27.4**	418	27.4	418	27.4
450.soplex	406	20.5	**407**	**20.5**	412	20.3	406	20.5	**407**	**20.5**	412	20.3
453.povray	256	20.7	256	20.8	**256**	**20.8**	212	25.1	**211**	**25.2**	211	25.2
454.calculix	406	20.3	408	20.2	**407**	**20.3**	372	22.2	**373**	**22.1**	373	22.1
459.GemsFDTD	93.2	114	93.0	114	**93.0**	**114**	71.2	149	**71.4**	**149**	71.4	149
465.tonto	513	19.2	**514**	**19.1**	514	19.1	436	22.6	437	22.5	**436**	**22.6**
470.lbm	23.6	582	23.4	587	**23.4**	**587**	23.6	582	23.4	587	**23.4**	**587**
481.wrf	**396**	**28.2**	414	27.0	389	28.7	**396**	**28.2**	414	27.0	389	28.7
482.sphinx3	**509**	**38.3**	510	38.2	507	38.4	**511**	**38.1**	511	38.1	511	38.1

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
Load Default BIOS Settings and then change the following
  Intel Hyperthreading Option Disabled

Oracle's Sun Fire X4470 M2 is now known as the Sun Server X2-4.
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64"
OMP_NUM_THREADS = "32"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
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 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias`

Peak Compiler Invocation

C benchmarks:
`icc -m64`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2) `-static -auto-ilp32 -ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

Continued on next page

Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.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 01:53:02 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 January 2012.