



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp®2006 = 64.2

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = 59.2

CPU2006 license: 6

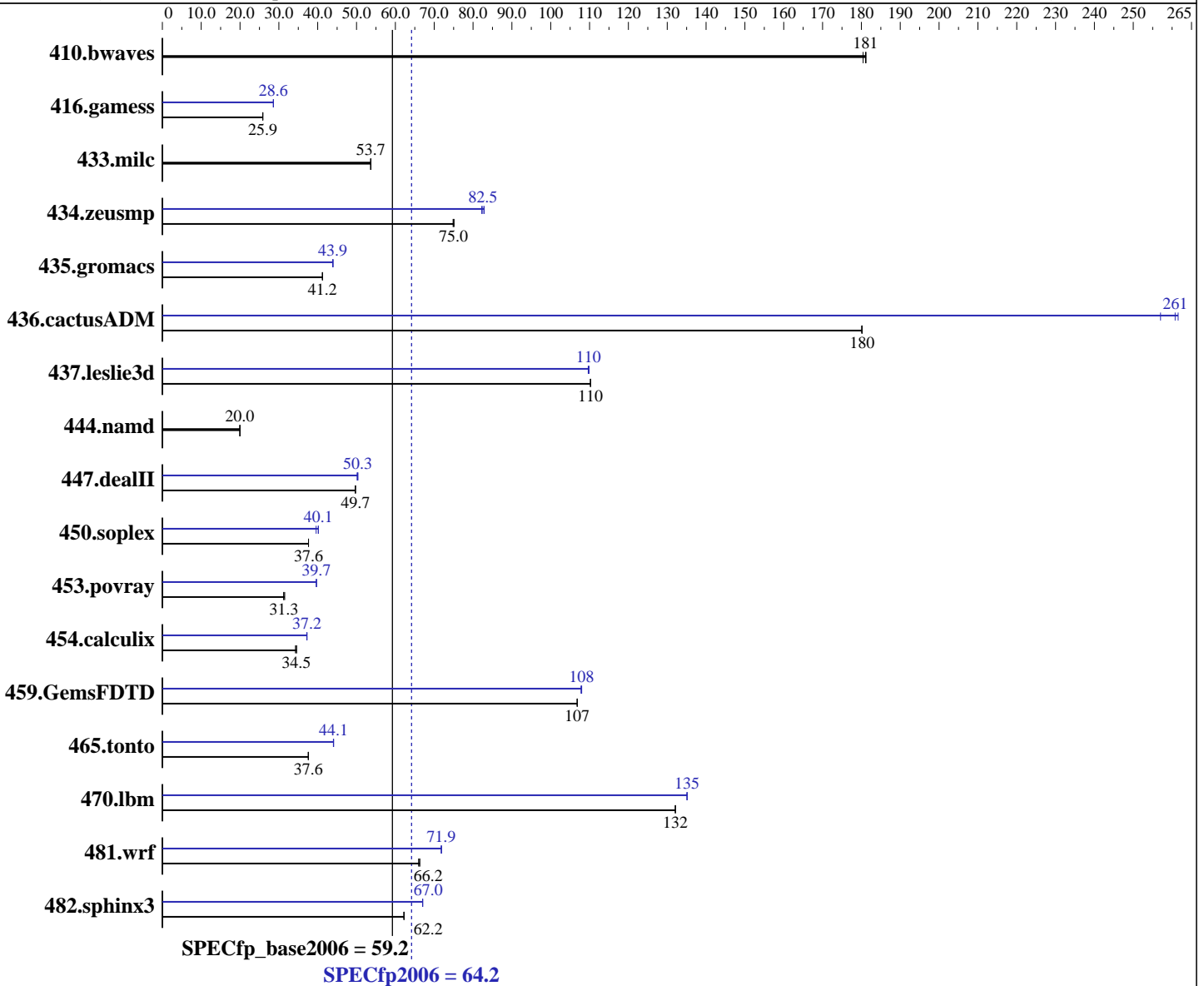
Test date: Feb-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010



Hardware

CPU Name: Intel Xeon X5690
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz
 CPU MHz: 3467
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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 10 9/10
 Compiler: Oracle Solaris Studio 12.2
 Auto Parallel: Yes
 File System: ufs
 System State: Default
 Base Pointers: 64-bit
 Peak Pointers: 64-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp2006 = **64.2**

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = **59.2**

CPU2006 license: 6

Test date: Feb-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010

L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 300 GB 10000 RPM SAS2
 Other Hardware: None

Other Software: Microquill SmartHeap V9.01
 Apache C++ Standard Library V4.2.1

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	75.3	180	<u>75.1</u>	<u>181</u>	75.0	181	75.3	180	<u>75.1</u>	<u>181</u>	75.0	181
416.gamess	<u>757</u>	<u>25.9</u>	757	25.9	757	25.9	<u>685</u>	<u>28.6</u>	685	28.6	685	28.6
433.milc	171	53.7	171	53.6	<u>171</u>	<u>53.7</u>	171	53.7	171	53.6	<u>171</u>	<u>53.7</u>
434.zeusmp	122	74.9	<u>121</u>	<u>75.0</u>	121	75.1	111	82.2	<u>110</u>	<u>82.5</u>	110	82.9
435.gromacs	<u>173</u>	<u>41.2</u>	173	41.3	173	41.2	162	44.0	163	43.8	<u>163</u>	<u>43.9</u>
436.cactusADM	<u>66.3</u>	<u>180</u>	66.3	180	66.4	180	45.7	262	46.5	257	<u>45.8</u>	<u>261</u>
437.leslie3d	85.3	110	85.2	110	<u>85.3</u>	<u>110</u>	<u>85.6</u>	<u>110</u>	85.7	110	85.5	110
444.namd	402	20.0	402	20.0	<u>402</u>	<u>20.0</u>	402	20.0	402	20.0	<u>402</u>	<u>20.0</u>
447.dealII	<u>230</u>	<u>49.7</u>	230	49.7	230	49.7	228	50.1	<u>228</u>	<u>50.3</u>	227	50.4
450.soplex	222	37.6	222	37.6	<u>222</u>	<u>37.6</u>	<u>208</u>	<u>40.1</u>	208	40.2	211	39.6
453.povray	170	31.2	169	31.5	<u>170</u>	<u>31.3</u>	134	39.7	<u>134</u>	<u>39.7</u>	134	39.6
454.calculix	241	34.3	<u>239</u>	<u>34.5</u>	239	34.5	221	37.2	<u>222</u>	<u>37.2</u>	222	37.2
459.GemsFDTD	99.3	107	<u>99.3</u>	<u>107</u>	99.3	107	98.4	108	<u>98.3</u>	<u>108</u>	98.3	108
465.tonto	262	37.6	<u>262</u>	<u>37.6</u>	261	37.6	<u>223</u>	<u>44.1</u>	223	44.1	223	44.0
470.lbm	104	132	<u>104</u>	<u>132</u>	104	132	102	135	<u>102</u>	<u>135</u>	102	135
481.wrf	169	66.3	169	66.0	<u>169</u>	<u>66.2</u>	<u>155</u>	<u>71.9</u>	155	71.9	156	71.8
482.sphinx3	314	62.2	313	62.3	<u>313</u>	<u>62.2</u>	<u>291</u>	<u>67.0</u>	291	67.0	291	67.0

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

Compiler Invocation Notes

The Apache C++ Standard Library V4.2.1 was installed from
<http://stdcxx.apache.org/download.html> using:
 alias gmake=specmake
 gmake BUILDTYPE=8D CONFIG=sunpro.config

Submit Notes

The config file option 'submit' was used.
 pbind was used to bind the process to a thread



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp2006 = 64.2

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = 59.2

CPU2006 license: 6

Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Feb-2011

Hardware Availability: Mar-2011

Software Availability: Nov-2010

Operating System Notes

```
ulimit -s unlimited (shell)
```

```
/etc/system parameters
tune_t_fsflushr=10
autoup=900
lpg_alloc_prefer=1
```

Platform Notes

Load Default BIOS Settings and then change the following
Hardware Prefetch Enabled
Adjacent Cache Line Prefetch Enabled
L1 Data Prefetch Enabled

General Notes

Environment variables set by runspec before the start of the run:

```
OMP_NUM_THREADS = "12"
```

```
SUNW_MP_PROCBIND = "23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0"
```

```
SUNW_MP_THR_IDLE = "SPIN"
```

```
447.dealII (peak): "apache_stdclx_4_2_1" src.alt was used.
```

```
447.dealII (base): "apache_stdclx_4_2_1" src.alt was used.
```

Base Compiler Invocation

C benchmarks:

```
cc
```

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
```

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 3



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp2006 = 64.2

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = 59.2

CPU2006 license: 6

Test date: Feb-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010

Base Portability Flags (Continued)

```

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.deallI: -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:

-fast -xipo=2 -m64 -xautopar -xreduction

C++ benchmarks:

```

-fast -xipo=2 -m64 -xalias_level=compatible -library=no%Cstd
-I/data1/stdcxx-4.2.1/include -I/data1/stdcxx-4.2.1/build/include
-L/data1/stdcxx-4.2.1/build/lib -R/data1/stdcxx-4.2.1/build/lib -lstl8D

```

Fortran benchmarks:

-fast -xipo=2 -m64 -xautopar -xreduction

Benchmarks using both Fortran and C:

-fast(cc) -xipo=2 -m64 -xautopar -xreduction -fast(f90)

Base Other Flags

C benchmarks:

-V -# -xjobs=24

C++ benchmarks:

-verbose=diags,version -xjobs=24

Fortran benchmarks:

-V -v -xjobs=24

Benchmarks using both Fortran and C:

-V -# -xjobs=24 -v



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp2006 = 64.2

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = 59.2

CPU2006 license: 6

Test date: Feb-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

f90

Benchmarks using both Fortran and C:

cc f90

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_WORDS_LITTLEENDIAN

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xautopar -xreduction
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap_mt64

482.sphinx3: -fast -xipo=2 -m64 -xpagesize=2M -xalias_level=std
-xrestrict -xprefetch=no%auto -xautopar -xreduction

C++ benchmarks:

444.namd: basepeak = yes

447.dealIII: -fast -xtarget=nehalem -xipo=2 -m64 -xpagesize=2M
-xalias_level=compatible -library=no%Cstd
-I/data1/stdcxx-4.2.1/include
-I/data1/stdcxx-4.2.1/build/include
-L/data1/stdcxx-4.2.1/build/lib
-R/data1/stdcxx-4.2.1/build/lib -lstd8D

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp2006 = 64.2

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = 59.2

CPU2006 license: 6

Test date: Feb-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010

Peak Optimization Flags (Continued)

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

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

Fortran benchmarks:

410.bwaves: basepeak = yes

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

434.zeusmp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xtarget=nehalem
-xipo=2 -m64 -xpagesize=2M -xautopar -xreduction

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

459.GemsFDTD: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xautopar -xreduction

465.tonto: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-stackvar -xprefetch=no%auto -xalias -xautopar -xreduction
-Qoption iropt -Aparallel:nthreads=6 -lumem

Benchmarks using both Fortran and C:

435.gromacs: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xvector=no%simd -xipo=2 -m64 -xpagesize=2M
-Qoption ube -fsimple=3 -xautopar -xreduction

436.cactusADM: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xtarget=nehalem -m64 -xautopar -xreduction -lmvec
-xpagesize=2M -W2,-Aparallel:nthreads=24
-Qoption iropt -Aparallel:nthreads=24 -lumem

454.calculix: -fast(cc) -fast(f90) -xipo=2 -m64 -xpagesize=2M
-xunroll=3 -xprefetch_level=2
-xprefetch_auto_type=indirect_array_access

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Oracle Corporation

SPECfp2006 = 64.2

Sun Fire X4270 M2 (Intel Xeon X5690 3.47 GHz)

SPECfp_base2006 = 59.2

CPU2006 license: 6

Test date: Feb-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010

Peak Optimization Flags (Continued)

```
481.wrf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xipo=2 -m64 -xpagesize=4K -xprefetch=no%auto -xautopar
-xreduction -Qoption iropt -Aparallel:nthreads=6
```

Peak Other Flags

C benchmarks:
-V -# -xjobs=24

C++ benchmarks:
-verbose=diags,version -xjobs=24

Fortran benchmarks:
-V -v -xjobs=24

Benchmarks using both Fortran and C:
-V -# -xjobs=24 -v

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.20110303.html
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20101027.html

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

http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.20110303.xml
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20101027.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 v1.1.
Report generated on Wed Jul 23 16:22:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2011.