



SPEC[®] CFP2006 Result

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Oracle Corporation

SPECfp[®]2006 = **60.5**

Sun Blade X6270 M2 (Intel Xeon X5680 3.33GHz)

SPECfp_base2006 = **56.5**

CPU2006 license: 6

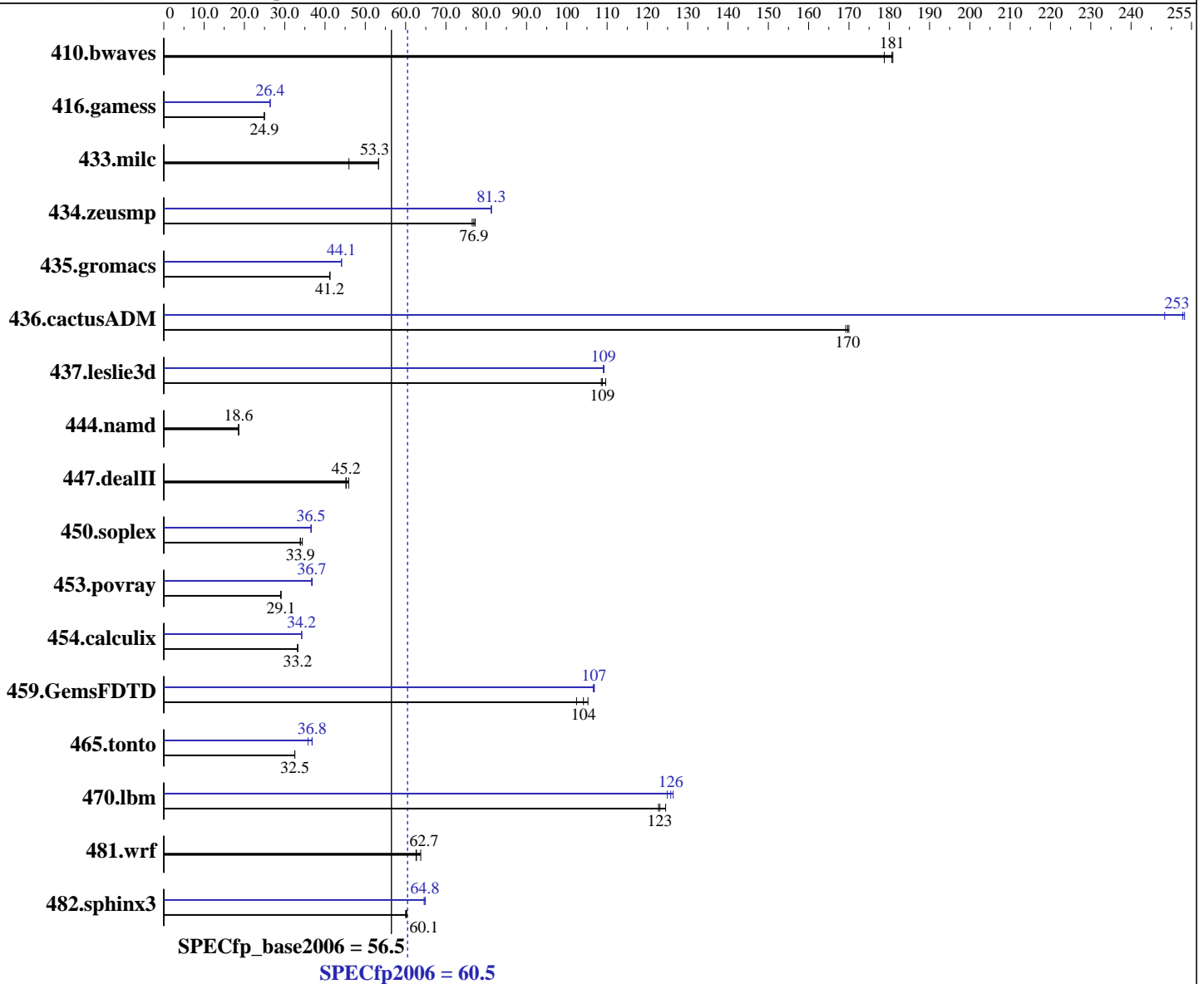
Test date: May-2010

Test sponsor: Oracle Corporation

Hardware Availability: Jun-2010

Tested by: Oracle Corporation

Software Availability: Jun-2010



Hardware

CPU Name: Intel Xeon X5680
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 3333
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1 or 2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: Oracle Solaris 10 10/09
 Compiler: Oracle Solaris Studio Express 6/10
 Auto Parallel: Yes
 File System: zfs
 System State: Default
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: Apache C++ Standard Library V4.2.1



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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB DDR3-1333 CL9, 2 Rank, ECC)
 Disk Subsystem: 1 x 300 GB, SAS, 10000 RPM
 Other Hardware: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	76.0	179	<u>75.2</u>	<u>181</u>	75.1	181	76.0	179	<u>75.2</u>	<u>181</u>	75.1	181
416.gamess	785	24.9	<u>785</u>	<u>24.9</u>	785	24.9	<u>742</u>	<u>26.4</u>	742	26.4	742	26.4
433.milc	<u>172</u>	<u>53.3</u>	172	53.3	200	45.9	<u>172</u>	<u>53.3</u>	172	53.3	200	45.9
434.zeusmp	119	76.5	118	77.3	<u>118</u>	<u>76.9</u>	112	81.3	112	81.2	<u>112</u>	<u>81.3</u>
435.gromacs	<u>173</u>	<u>41.2</u>	173	41.2	173	41.2	162	44.1	<u>162</u>	<u>44.1</u>	162	44.1
436.cactusADM	70.3	170	70.6	169	<u>70.4</u>	<u>170</u>	47.2	253	<u>47.3</u>	<u>253</u>	48.1	248
437.leslie3d	86.6	109	<u>86.4</u>	<u>109</u>	85.7	110	86.2	109	<u>86.2</u>	<u>109</u>	86.1	109
444.namd	432	18.6	<u>432</u>	<u>18.6</u>	432	18.6	432	18.6	<u>432</u>	<u>18.6</u>	432	18.6
447.dealII	<u>253</u>	<u>45.2</u>	249	45.9	253	45.2	<u>253</u>	<u>45.2</u>	249	45.9	253	45.2
450.soplex	246	33.9	243	34.4	<u>246</u>	<u>33.9</u>	228	36.5	<u>228</u>	<u>36.5</u>	228	36.6
453.povray	<u>183</u>	<u>29.1</u>	183	29.1	183	29.1	145	36.7	144	36.8	<u>145</u>	<u>36.7</u>
454.calculix	248	33.2	249	33.2	<u>249</u>	<u>33.2</u>	241	34.2	<u>241</u>	<u>34.2</u>	241	34.2
459.GemsFDTD	101	105	<u>102</u>	<u>104</u>	104	102	99.3	107	<u>99.4</u>	<u>107</u>	99.6	107
465.tonto	<u>303</u>	<u>32.5</u>	303	32.5	303	32.5	275	35.8	<u>267</u>	<u>36.8</u>	267	36.8
470.lbm	<u>112</u>	<u>123</u>	110	125	112	123	110	125	<u>109</u>	<u>126</u>	109	126
481.wrf	175	63.8	<u>178</u>	<u>62.7</u>	178	62.6	175	63.8	<u>178</u>	<u>62.7</u>	178	62.6
482.sphinx3	325	60.0	323	60.3	<u>324</u>	<u>60.1</u>	<u>301</u>	<u>64.8</u>	302	64.6	300	64.9

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

Operating System Notes

```
ulimit -s unlimited (shell)

/etc/system parameters
tune_t_fsflushr=10
autoup=900
zfs:zfs_arc_max = 0x10000000
lpg_alloc_prefer=1
```



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Platform Notes

Default BIOS settings used except:
C-State : Disabled
Data Reuse Optimization : Disabled

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.dealIII (base): "apache_stdcxx_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  
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.dealIII: -DSPEC_CPU_LP64  
450.soplex: -DSPEC_CPU_LP64  
453.povray: -DSPEC_CPU_LP64  
454.calculix: -DSPEC_CPU_LP64  
459.GemsFDTD: -DSPEC_CPU_LP64
```

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Base Portability Flags (Continued)

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

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

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Peak Compiler Invocation (Continued)

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
447.dealII: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -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.dealII: basepeak = yes
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

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Peak Optimization Flags (Continued)

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 -xipo=2 -m64
-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
-xpagesize=2M -xautopar -xreduction -xprefetch=no%auto
-stackvar -xalias -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) -m64 -fast(cc) -fast(f90)
-xipo=0 -xpagesize=2M -xprefetch_level=2
-W2,-Aparallel:nthreads=24
-Qoption iropt -Aparallel:nthreads=24 -xautopar -xreduction
-lumem -lmvec

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

481.wrf: basepeak = yes

Peak Other Flags

C benchmarks:

-V -# -xjobs=24

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Peak Other Flags (Continued)

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 file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.20100901.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.20100901.xml

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For other inquiries, please contact webmaster@spec.org.

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