



# SPEC® CFP2006 Result

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## Oracle Corporation

SPECfp®\_rate2006 = 255

Sun Blade X6270 M2 (Intel Xeon X5680 3.33GHz)

SPECfp\_rate\_base2006 = 247

CPU2006 license: 6

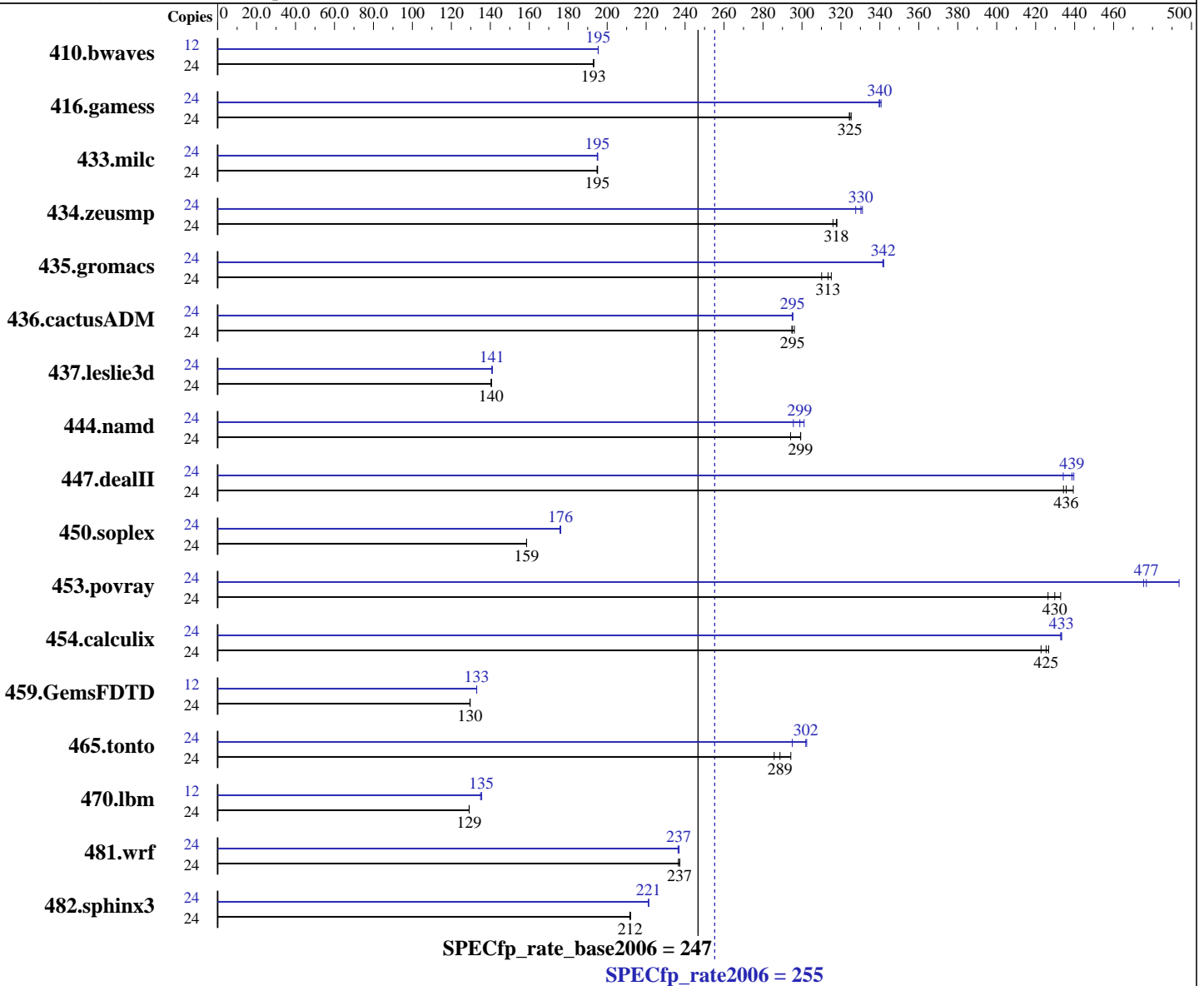
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: May-2010

Hardware Availability: Jun-2010

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

Continued on next page

### Software

Operating System: Oracle Solaris 10 10/09  
 Compiler: Oracle Solaris Studio Express 6/10  
 Auto Parallel: No  
 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1691	193	<b>1689</b>	<b>193</b>	1689	193	12	834	195	835	195	<b>835</b>	<b>195</b>
416.gamess	24	1449	324	<b>1448</b>	<b>325</b>	1445	325	24	1384	340	1380	341	<b>1382</b>	<b>340</b>
433.milc	24	1129	195	<b>1130</b>	<b>195</b>	1131	195	24	1130	195	1129	195	<b>1130</b>	<b>195</b>
434.zeusmp	24	687	318	<b>688</b>	<b>318</b>	691	316	24	<b>661</b>	<b>330</b>	660	331	667	328
435.gromacs	24	544	315	553	310	<b>547</b>	<b>313</b>	24	501	342	502	342	<b>501</b>	<b>342</b>
436.cactusADM	24	969	296	<b>972</b>	<b>295</b>	973	295	24	972	295	971	295	<b>972</b>	<b>295</b>
437.leslie3d	24	1606	140	<b>1606</b>	<b>140</b>	1604	141	24	<b>1601</b>	<b>141</b>	1599	141	1602	141
444.namd	24	643	299	<b>643</b>	<b>299</b>	654	294	24	651	296	639	301	<b>644</b>	<b>299</b>
447.dealII	24	<b>630</b>	<b>436</b>	632	434	625	439	24	632	434	625	440	<b>626</b>	<b>439</b>
450.soplex	24	<b>1262</b>	<b>159</b>	1262	159	1262	159	24	1139	176	1136	176	<b>1137</b>	<b>176</b>
453.povray	24	<b>297</b>	<b>430</b>	299	426	295	433	24	269	475	<b>268</b>	<b>477</b>	259	494
454.calculix	24	<b>465</b>	<b>425</b>	464	427	468	423	24	457	433	457	433	<b>457</b>	<b>433</b>
459.GemsFDTD	24	1964	130	1966	130	<b>1964</b>	<b>130</b>	12	<b>957</b>	<b>133</b>	957	133	957	133
465.tonto	24	803	294	<b>818</b>	<b>289</b>	826	286	24	<b>782</b>	<b>302</b>	781	302	801	295
470.lbm	24	2554	129	<b>2553</b>	<b>129</b>	2553	129	12	1221	135	<b>1217</b>	<b>135</b>	1216	136
481.wrf	24	1133	237	<b>1130</b>	<b>237</b>	1130	237	24	1131	237	1134	236	<b>1132</b>	<b>237</b>
482.sphinx3	24	2210	212	<b>2209</b>	<b>212</b>	2206	212	24	2113	221	2115	221	<b>2115</b>	<b>221</b>

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.



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## 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
```

## Platform Notes

Default BIOS settings used except:

C-State : Disabled

Data Reuse Optimization : Disabled

## General Notes

447.dealIII (peak): "apache\_stdccxx\_4\_2\_1" src.alt was used.

447.dealIII (base): "apache\_stdccxx\_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
```

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## Base Portability Flags (Continued)

```
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deall: -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 -xpagesize=2M -xalias_level=std
```

C++ benchmarks:

```
-fast -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
```

Fortran benchmarks:

```
-fast -xipo=2 -m64 -xpagesize=2M
```

Benchmarks using both Fortran and C:

```
-fast(cc) -xipo=2 -m64 -xpagesize=2M -xalias_level=std -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
```



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## 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: -fast -xipo=2 -m64 -xpagesize=2M -xalias\_level=std

470.lbm: -fast -xipo=2 -m64 -lbsdmalloc

482.sphinx3: -fast -xipo=2 -m64 -xpagesize=2M -xalias\_level=std  
-xunroll=3 -xprefetch=no%auto

C++ benchmarks:

444.namd: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64  
-xpagesize=2M -xalias\_level=compatible -library=stlport4

447.dealII: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -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

450.soplex: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=2M -xalias\_level=compatible -library=stlport4  
-m32 -qoption iropt -Rujam -qoption iropt -Rtile

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## Peak Optimization Flags (Continued)

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

Fortran benchmarks:

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

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

434.zeusmp: Same as 410.bwaves

437.leslie3d: -fast -xipo=2 -m64 -Qoption ube -xprefetch\_mult=2

459.GemsFDTD: Same as 410.bwaves

465.tonto: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64  
-xvector=lib -xalias -lbsdmalloc

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

436.cactusADM: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -m64 -fast(cc) -fast(f90)  
-xipo=0 -xpagesize=2M -xprefetch\_level=2 -lumem

454.calculix: -fast(cc) -fast(f90) -xipo=2 -m64 -xpagesize=2M  
-xunroll=3 -xprefetch\_level=2  
-xprefetch\_auto\_type=indirect\_array\_access

481.wrf: -fast(cc) -fast(f90) -xipo=2 -m64 -xpagesize=2M

## Peak Other Flags

C benchmarks:

-V -# -xjobs=24

C++ benchmarks:

-verbose=diags,version -xjobs=24

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## Peak Other Flags (Continued)

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.html](http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.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.xml](http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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