SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Oracle Corporation

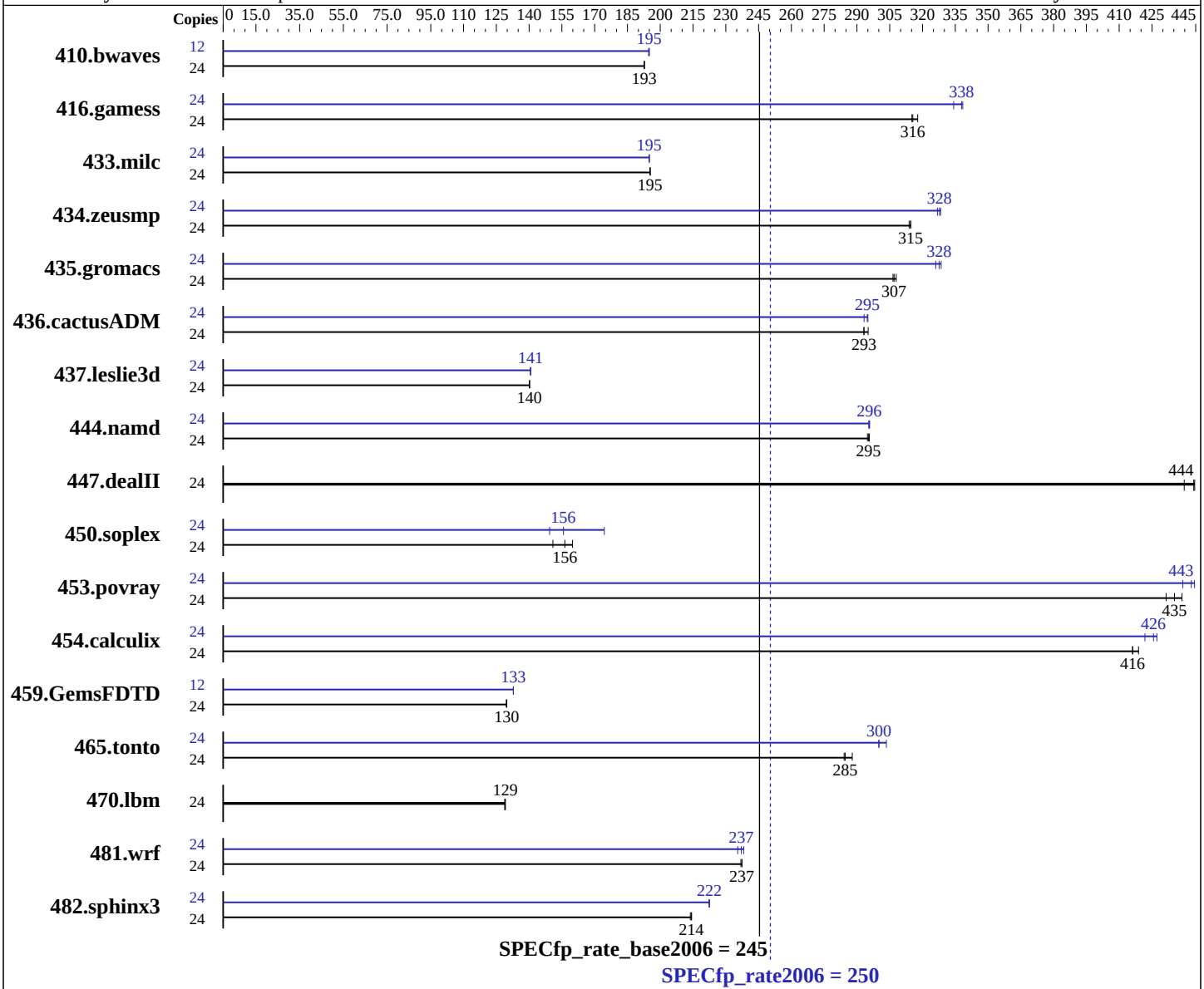
Sun Fire X4270 M2 (Intel Xeon X5680 3.33GHz)

SPECfp®_rate2006 = 250

SPECfp_rate_base2006 = 245

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

Test date: Aug-2010
Hardware Availability: Aug-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

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Software

Operating System:	Oracle Solaris 10 10/09
Compiler:	Oracle Solaris Studio Express 6/10
Auto Parallel:	No
File System:	ufs
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 1 TB, SATA, 7200 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	**1692**	**193**	1692	193	1693	193	12	838	195	836	195	**837**	**195**
416.gamess	24	**1489**	**316**	1479	318	1491	315	24	1389	338	**1391**	**338**	1406	334
433.milc	24	1128	195	**1128**	**195**	1128	195	24	1130	195	1131	195	**1130**	**195**
434.zeusmp	24	**694**	**315**	696	314	694	315	24	665	328	668	327	**666**	**328**
435.gromacs	24	556	308	**558**	**307**	559	307	24	**523**	**328**	526	326	522	329
436.cactusADM	24	**978**	**293**	978	293	972	295	24	**973**	**295**	972	295	978	293
437.leslie3d	24	1609	140	1610	140	**1609**	**140**	24	**1604**	**141**	1603	141	1604	141
444.namd	24	**652**	**295**	651	296	653	295	24	652	295	**651**	**296**	651	296
447.dealII	24	618	445	624	440	**618**	**444**	24	618	445	624	440	**618**	**444**
450.soplex	24	1252	160	**1280**	**156**	1327	151	24	1340	149	**1285**	**156**	1148	174
453.povray	24	296	431	291	439	**293**	**435**	24	**288**	**443**	287	444	291	439
454.calculix	24	**476**	**416**	473	419	476	416	24	**465**	**426**	463	427	469	422
459.GemsFDTD	24	1962	130	**1962**	**130**	1966	130	12	**959**	**133**	959	133	959	133
465.tonto	24	831	284	820	288	**830**	**285**	24	778	303	787	300	**787**	**300**
470.lbm	24	**2554**	**129**	2554	129	2560	129	24	**2554**	**129**	2554	129	2560	129
481.wrf	24	1132	237	**1129**	**237**	1129	237	24	1126	238	1139	235	**1131**	**237**
482.sphinx3	24	2182	214	2188	214	**2184**	**214**	24	2104	222	2102	223	**2103**	**222**

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.
```

Operating System Notes

```
ulimit -s 131072  (shell): increases stack

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

Platform Notes

```
  Default BIOS settings used except:
    Hardware Prefetch            : Enabled
    Adjacent Cache Line Prefetch : Enabled
    Data Reuse Optimization      : Disabled
    Intel C-STATE technology     : Disabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
SUNW_MP_PROCBIND = "TRUE"
SUNW_MP_THR_IDLE = "SPIN"

447.dealII (peak): "apache_stdcxx_4_2_1" src.alt was used.

447.dealII (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`

Continued on next page

Base Portability Flags (Continued)

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:
-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

Continued on next page

Base Other Flags (Continued)

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

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`
447.dealII: `-DSPEC_CPU_LP64`
470.lbm: `-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: `basepeak = yes`

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: `basepeak = yes`

Continued on next page

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
-m32 -qoption iropt -Rujam -qoption iropt -Rtile

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)
-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
```

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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