



SPEC[®] CFP2006 Result

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Oracle Corporation

SPECfp[®]_rate2006 = 519

Sun Fire X4470 (Intel Xeon X7550 2.00 GHz)

SPECfp_rate_base2006 = 501

CPU2006 license: 6

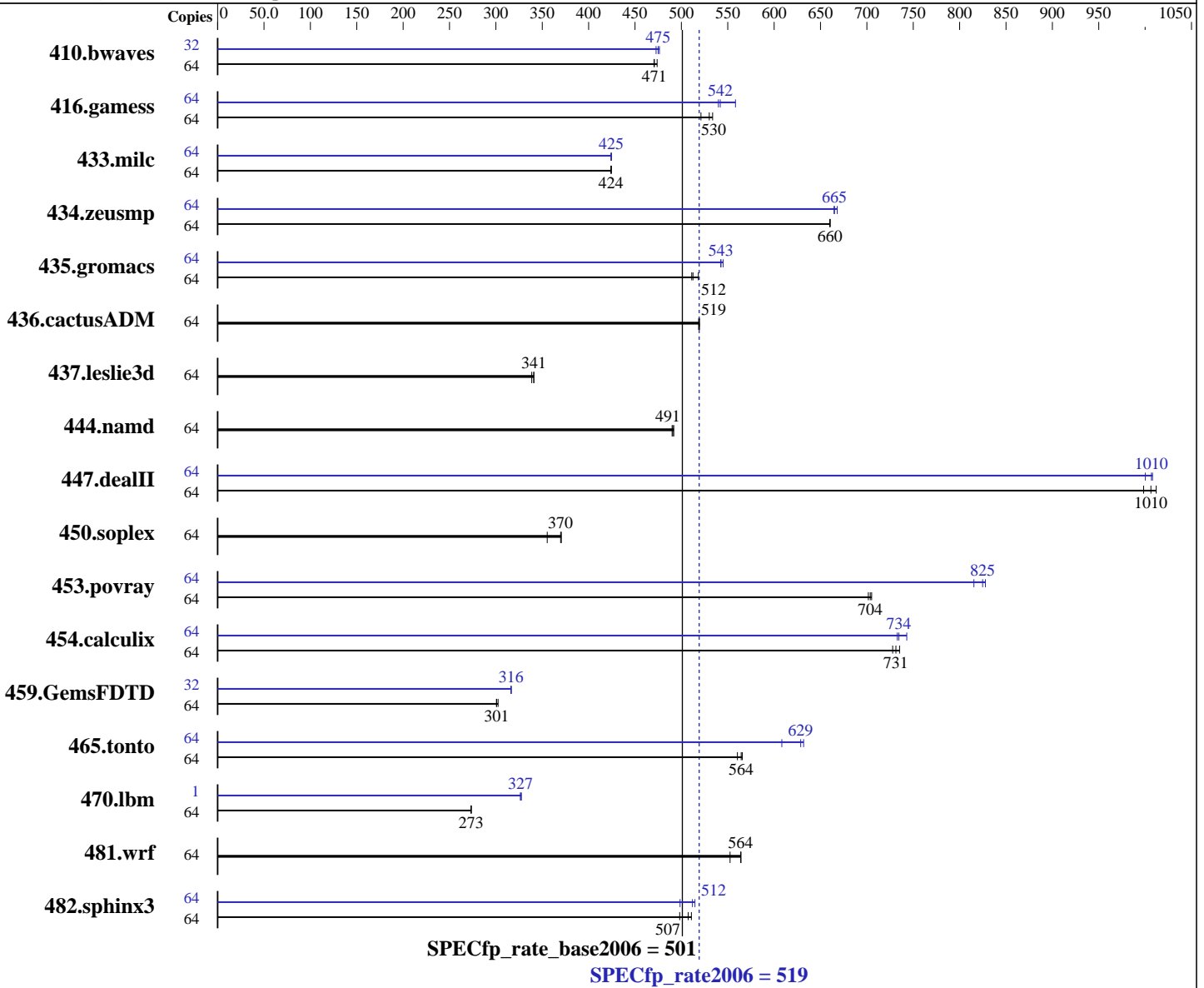
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Nov-2010

Hardware Availability: Jun-2010

Software Availability: Jun-2010



Hardware

CPU Name: Intel Xeon X7550
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1-4 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 9/10
 Compiler: Oracle Solaris Studio Express 6/10
 Auto Parallel: Yes
 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: 18 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (64 x 4 GB 2Rx4 PC3-10600R-9, ECC, see add'l detail in notes)
 Disk Subsystem: 1 x 500 GB, 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	64	1849	471	1847	471	1836	474	32	916	475	920	473	913	476
416.gamess	64	2348	534	2405	521	2364	530	64	2321	540	2312	542	2244	558
433.milc	64	1385	424	1385	424	1384	424	64	1384	425	1386	424	1383	425
434.zeusmp	64	882	660	882	660	883	660	64	872	668	876	665	876	665
435.gromacs	64	894	511	882	518	892	512	64	842	542	842	543	838	545
436.cactusADM	64	1474	519	1472	520	1474	519	64	1474	519	1472	520	1474	519
437.leslie3d	64	1765	341	1765	341	1776	339	64	1765	341	1765	341	1776	339
444.namd	64	1048	490	1044	492	1046	491	64	1048	490	1044	492	1046	491
447.dealII	64	728	1010	724	1010	733	998	64	732	1000	727	1010	726	1010
450.soplex	64	1443	370	1440	371	1502	355	64	1443	370	1440	371	1502	355
453.povray	64	485	702	483	705	484	704	64	418	815	413	825	411	828
454.calculix	64	725	728	718	735	722	731	64	719	734	721	733	711	743
459.GemsFDTD	64	2246	302	2259	301	2257	301	32	1073	316	1072	317	1073	316
465.tonto	64	1113	566	1116	564	1124	560	64	997	632	1035	608	1002	629
470.lbm	64	3218	273	3217	273	3217	273	1	42.0	328	42.1	327	42.1	327
481.wrf	64	1294	552	1267	564	1268	564	64	1294	552	1267	564	1268	564
482.sphinx3	64	2504	498	2442	511	2459	507	64	2502	499	2424	515	2437	512

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
lpg_alloc_prefer=1
```

Platform Notes

The system automatically configures the memory to run at 1066 MHz.
Default BIOS settings used.

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_stdccx_4_2_1" src.alt was used.

447.dealII (base): "apache_stdccx_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=64
```

C++ benchmarks:

```
-verbose=diags,version -xjobs=64
```

Fortran benchmarks:

```
-V -v -xjobs=64
```

Benchmarks using both Fortran and C:

```
-V -# -xjobs=64 -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
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_WORDS_LITTLEENDIAN
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -fast -xipo=2 -m64 -xpagesize=2M -xalias_level=std
```

```
470.lbm: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xautopar -xreduction
-W2,-Aparallel:nthreads=64
```

```
482.sphinx3: -fast -xipo=2 -m64 -xpagesize=2M -xalias_level=std
-xunroll=3 -xprefetch=no%auto
```

C++ benchmarks:

```
444.namd: basepeak = yes
```

```
447.dealIII: -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
```

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Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

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: basepeak = yes

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: basepeak = yes

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=64

C++ benchmarks:

-verbose=diags,version -xjobs=64

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Peak Other Flags (Continued)

Fortran benchmarks:

-V -v -xjobs=64

Benchmarks using both Fortran and C:

-V -# -xjobs=64 -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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Tested with SPEC CPU2006 v1.1.

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