SPEC® CFP2006 Result

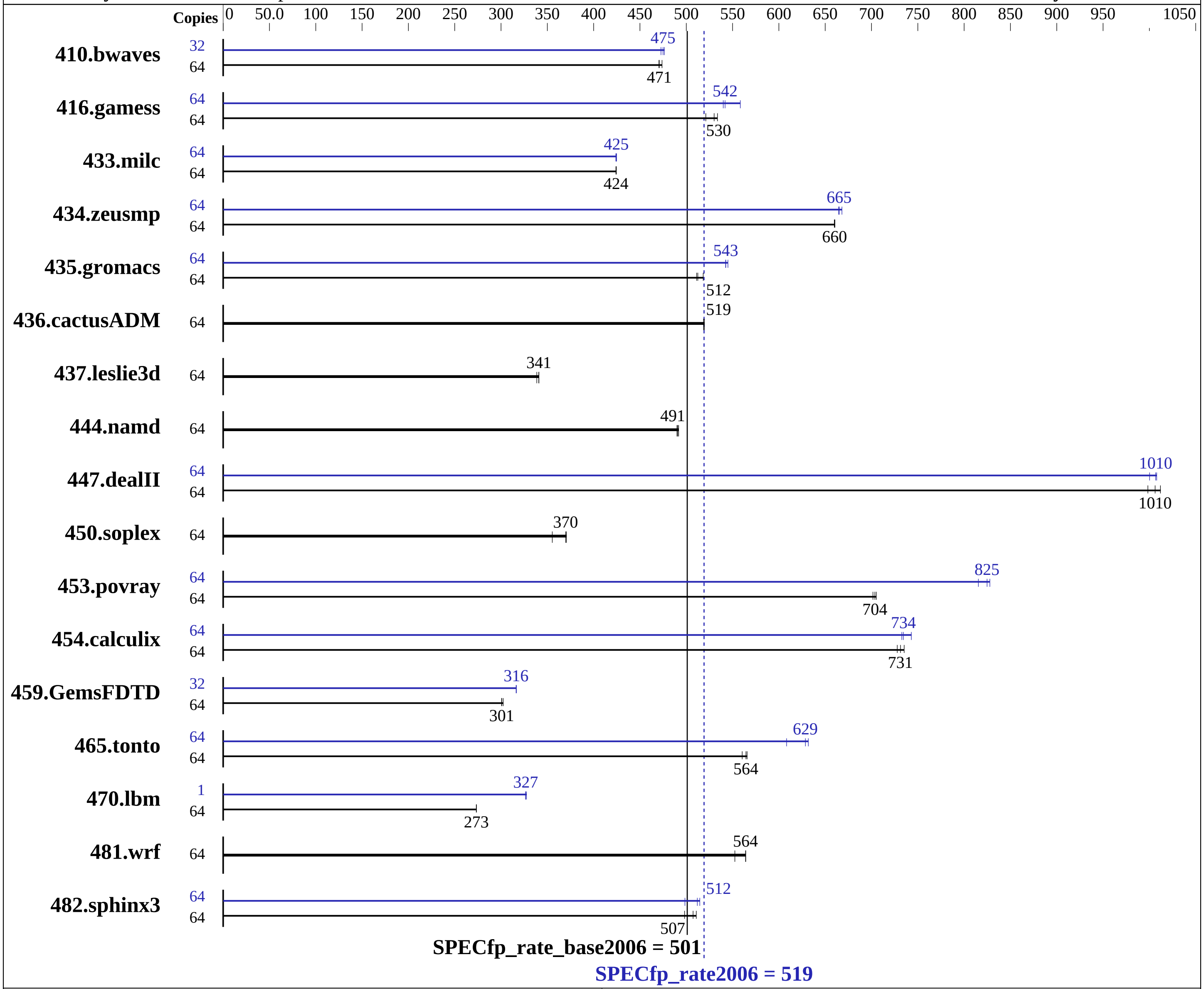
Oracle Corporation

Sun Fire X4470 (Intel Xeon X7550 2.00 GHz)

SPECfp®_rate2006 = 519

SPECfp_rate_base2006 = 501

CPU2006 license:	6	**Test date:**	Nov-2010
Test sponsor:	Oracle Corporation	**Hardware Availability:**	Jun-2010
Tested by:	Oracle Corporation	**Software Availability:**	Jun-2010



Hardware		**Software**	
CPU Name:	Intel Xeon X7550	Operating System:	Oracle Solaris 10 9/10
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz	Compiler:	Oracle Solaris Studio Express 6/10
CPU MHz:	2000	Auto Parallel:	Yes
FPU:	Integrated	File System:	ufs
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core	System State:	Default
CPU(s) orderable:	1-4 chips	Base Pointers:	64-bit
Primary Cache:	32 KB I + 32 KB D on chip per core	Peak Pointers:	32/64-bit
Secondary Cache:	256 KB I+D on chip per core	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_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
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.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=64`

C++ benchmarks:
`-verbose=diags,version -xjobs=64`

Fortran benchmarks:
`-V -v -xjobs=64`

Benchmarks using both Fortran and C:
`-V -# -xjobs=64 -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
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.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

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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`

Continued on next page

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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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