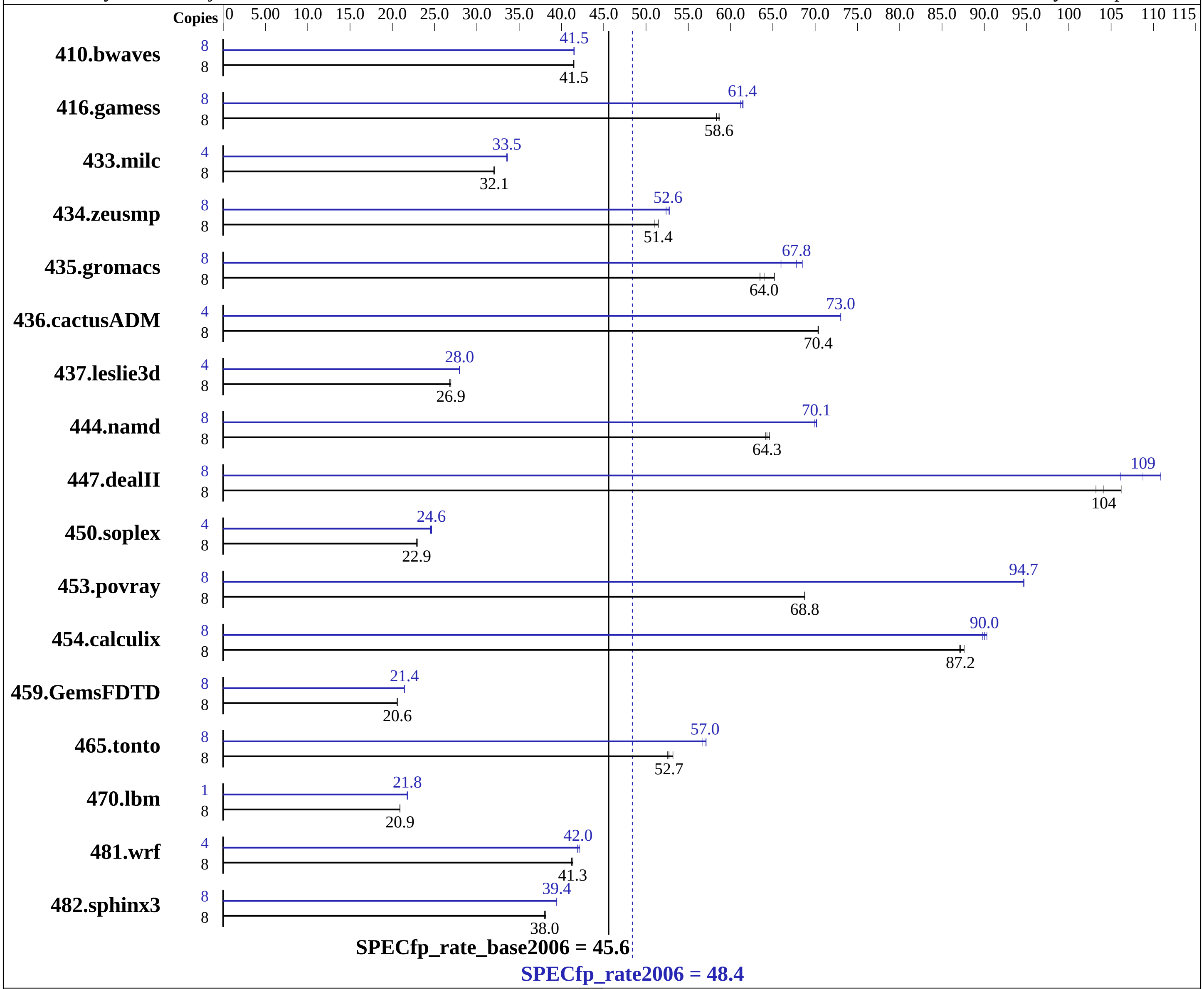
SPEC® CFP2006 Result

Oracle Corporation
SPARC Enterprise M3000

SPECfp®_rate2006 = 48.4

SPECfp_rate_base2006 = 45.6

CPU2006 license:	6	**Test date:**	Mar-2011
Test sponsor:	Oracle Corporation	**Hardware Availability:**	Apr-2011
Tested by:	Fujitsu	**Software Availability:**	Sep-2010



Hardware

CPU Name:	SPARC64 VII+
CPU Characteristics:	
CPU MHz:	2860
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	5632 KB I+D on chip per chip

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Software

Operating System:	Oracle Solaris 10 9/10
Compiler:	Oracle Solaris Studio 12.2
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	Apache C++ Standard Library V4.2.1

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L3 Cache: None
Other Cache: None
Memory: 32 GB (8 x 4 GB, 2-way interleaved)
Disk Subsystem: 1 x 300 GB 10,000 RPM SAS
Other Hardware: None

Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	8	2623	41.4	**2622**	**41.5**	2620	41.5	8	2622	41.5	**2619**	**41.5**	2619	41.5
416.gamess	8	2685	58.3	**2672**	**58.6**	2667	58.7	8	**2551**	**61.4**	2560	61.2	2547	61.5
433.milc	8	2295	32.0	**2291**	**32.1**	2290	32.1	4	1095	33.5	**1095**	**33.5**	1093	33.6
434.zeusmp	8	**1415**	**51.4**	1426	51.0	1415	51.5	8	**1384**	**52.6**	1380	52.8	1390	52.4
435.gromacs	8	900	63.5	876	65.2	**893**	**64.0**	8	**842**	**67.8**	834	68.5	866	66.0
436.cactusADM	8	**1359**	**70.4**	1358	70.4	1359	70.3	4	655	73.0	654	73.0	**655**	**73.0**
437.leslie3d	8	2807	26.8	2793	26.9	**2793**	**26.9**	4	**1345**	**28.0**	1346	27.9	1345	28.0
444.namd	8	1001	64.1	993	64.6	**998**	**64.3**	8	917	70.0	**915**	**70.1**	914	70.2
447.dealII	8	862	106	**879**	**104**	887	103	8	**841**	**109**	863	106	825	111
450.soplex	8	2925	22.8	**2916**	**22.9**	2905	23.0	4	1361	24.5	**1355**	**24.6**	1353	24.7
453.povray	8	619	68.8	619	68.8	**619**	**68.8**	8	450	94.7	449	94.7	**450**	**94.7**
454.calculix	8	758	87.0	753	87.6	**757**	**87.2**	8	735	89.8	**733**	**90.0**	731	90.3
459.GemsFDTD	8	4120	20.6	4127	20.6	**4121**	**20.6**	8	3959	21.4	3961	21.4	**3961**	**21.4**
465.tonto	8	1498	52.6	**1493**	**52.7**	1480	53.2	8	**1381**	**57.0**	1378	57.1	1390	56.6
470.lbm	8	5256	20.9	**5256**	**20.9**	5258	20.9	1	632	21.7	630	21.8	**631**	**21.8**
481.wrf	8	2161	41.4	2170	41.2	**2162**	**41.3**	4	**1065**	**42.0**	1060	42.2	1066	41.9
482.sphinx3	8	4089	38.1	**4100**	**38.0**	4102	38.0	8	3951	39.5	3960	39.4	**3953**	**39.4**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Invocation Notes

```
Oracle Solaris Studio 12.2 is distributed with mandatory OS patches
 118683-05  119963-20  120753-08
Oracle Solaris Studio 12.2 and patches are available at
 http://oracle.com/goto/solarisstudio

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

```
    Processes were assigned to specific processors using 'pbind'
    commands.  The config file option 'submit' was used, along
    with a list of processors in the 'BIND' variable, to generate
    the pbind commands.  (For details, please see the config file.)
```

Operating System Notes

```
    ulimit -s 131072 was used to limit the space
    consumed by the stack (and therefore make more
    space available to the heap).

  System Tunables:
  (/etc/system parameters)

      tune_t_fsflushr=10
         Controls how many seconds elapse between runs of the
         page flush daemon, fsflush.
      autoup=600
         Causes pages older than the listed number of seconds to
         be written by fsflush.
      bufhwm=3000
         Memory byte limit for caching I/O buffers.
      segmap_percent=1
         Set maximum percent memory for file system cache.

  Other System Settings:

      The "webconsole" service was turned off using
          svcadm disable webconsole
```

Platform Notes

```
    Memory is 2-way interleaved by filling all slots with
    the same capacity DIMMs.

   This result is measured on a SPARC Enterprise M3000 server from
   Fujitsu.  The SPARC Enterprise M3000 server from Oracle and from
   Fujitsu are electrically equivalent.
```

General Notes

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

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

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Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Fortran benchmarks:
f90

Benchmarks using both Fortran and C:
cc f90

Base Optimization Flags

C benchmarks:
-fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xunroll=8 -ll2amm

C++ benchmarks:
-xdepend -fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xO4 -xalias_level=compatible -xprefetch=latx:0.5 -library=no%Cstd
-I/mnt/spec//stdcxx-4.2.1/include
-I/mnt/spec//stdcxx-4.2.1/build/include
-L/mnt/spec//stdcxx-4.2.1/build/lib -R/mnt/spec//stdcxx-4.2.1/build/lib
-lstd8d

Fortran benchmarks:
-fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xprefetch_level=2 -ll2amm -lmopt

Benchmarks using both Fortran and C:
-fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M -xlinkopt
-xvector -xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xunroll=8 -xprefetch_level=2 -ll2amm -lmopt

Base Other Flags

C benchmarks:
-xjobs=4 -V -#

C++ benchmarks:
-xjobs=4 -verbose=diags,version

Fortran benchmarks:
-xjobs=4 -V -v

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Base Other Flags (Continued)

Benchmarks using both Fortran and C:
`-xjobs=4 -V -# -v`

Peak Compiler Invocation

C benchmarks:
`cc`

C++ benchmarks:
`CC`

Fortran benchmarks:
`f90`

Benchmarks using both Fortran and C:
`cc f90`

Peak Optimization Flags

C benchmarks:

433.milc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xarch=generic -xcache=generic
-xlinkopt -fsimple=1 -W2,-Ainline:rs=400 -xalias_level=std
-xprefetch_auto_type=indirect_array_access -xprefetch_level=3
-xunroll=2

470.lbm: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2
-xchip=generic -lfast

482.sphinx3: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=1 -xalias_level=strong
-xprefetch=latx:1.5 -xunroll=4 -lbsdmalloc

C++ benchmarks:

444.namd: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -library=stlport4
-xipo=1 -xO3 -xchip=generic -xinline= -xlinkopt
-xprefetch_level=2 -xprefetch=latx:2.5 -ll2amm -lfast

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Peak Optimization Flags (Continued)

447.dealII: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xalias_level=compatible -library=no%Cstd -I/mnt/spec//stdcxx-4.2.1/include -I/mnt/spec//stdcxx-4.2.1/build/include -xipo=2 -xprefetch_auto_type=indirect_array_access -xrestrict -xchip=generic -xunroll=4 -L/mnt/spec//stdcxx-4.2.1/build/lib -R/mnt/spec//stdcxx-4.2.1/build/lib -lstd8d

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xalias_level=compatible -library=stlport4 -xarch=generic -xprefetch=no%auto

453.povray: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xalias_level=compatible -lfast -xO4 -xipo=2 -xunroll=4 -xprefetch=no%auto

Fortran benchmarks:

410.bwaves: -fast -fma=fused -xpagesize=4M -xipo=2 -xlinkopt -xprefetch_level=2 -xprefetch=latx:2

416.gamess: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch=no%auto -xO3 -lfast

434.zeusmp: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xO4 -xprefetch=latx:1 -xunroll=8 -lfast -lbsdmalloc

437.leslie3d: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=1 -xO3 -xcache=generic -xprefetch=latx:2 -xunroll=10 -ll2amm

459.GemsFDTD: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xipo=1 -xarch=sparcvis2 -xprefetch_auto_type=indirect_array_access -xprefetch_level=2 -xprefetch=latx:0.1 -xunroll=7

465.tonto: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch=no%auto -xunroll=4 -lbsdmalloc

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xipo=2 -xvector -xinline= -xchip=generic -fsimple=0 -xunroll=7 -xprefetch=no%auto

436.cactusADM: -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xalias_level=std -xunroll=12 -lfast

454.calculix: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xipo=2 -xcache=generic -xprefetch=latx:3 -xunroll=8 -xalias_level=std -lmopt

481.wrf: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xalias_level=std -xipo=2 -xO4 -xcache=generic -xprefetch_auto_type=indirect_array_access -xprefetch=latx:1

Peak Other Flags

C benchmarks:
-xjobs=4 -V -#

C++ benchmarks:
-xjobs=4 -verbose=diags,version

Fortran benchmarks:
-xjobs=4 -V -v

Benchmarks using both Fortran and C:
-xjobs=4 -V -# -v

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110413.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110413.xml

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

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