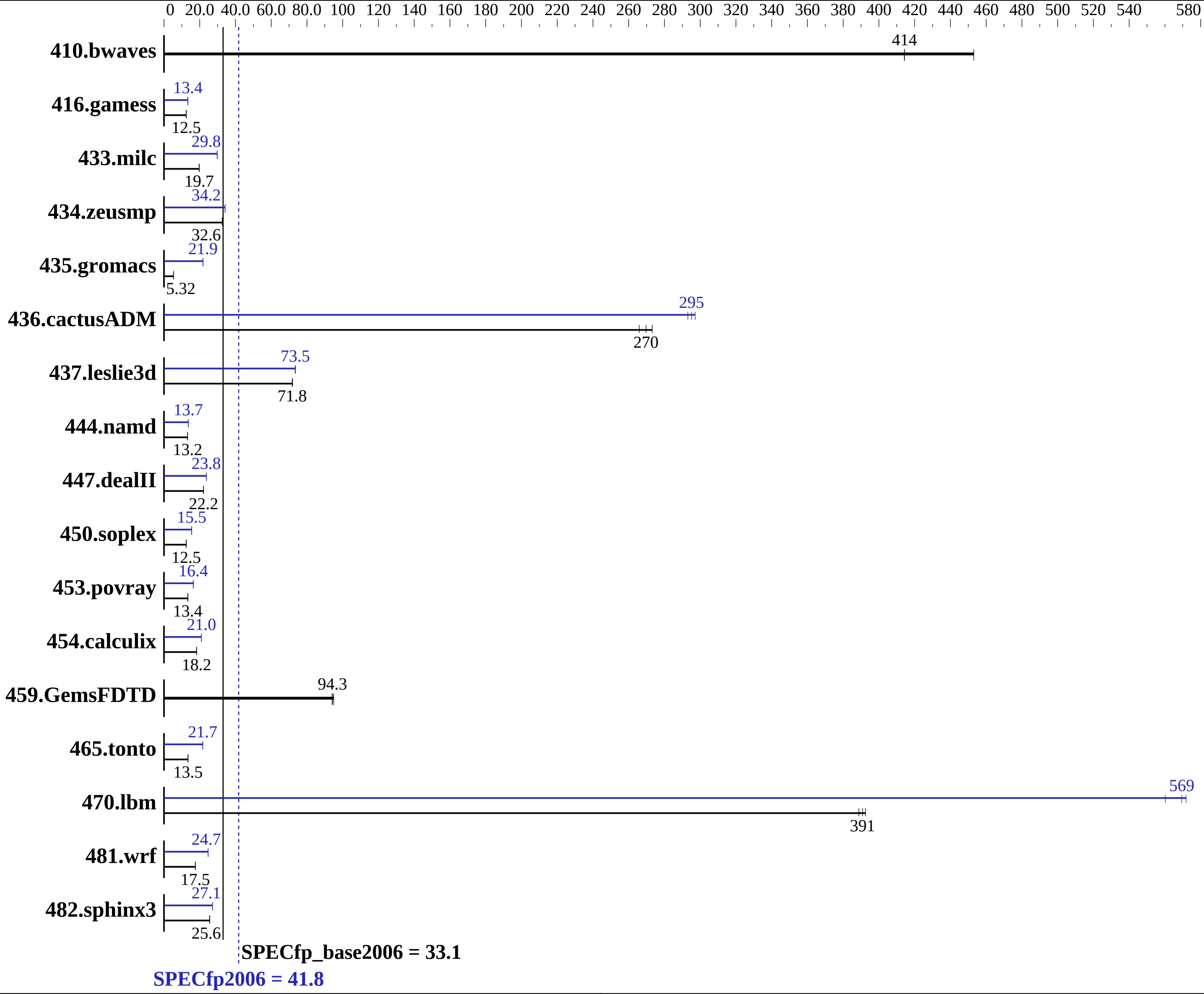
SPEC® CFP2006 Result

Oracle Corporation
SPARC Enterprise M8000

SPECfp®2006 = 41.8

SPECfp_base2006 = 33.1

CPU2006 license: 6		**Test date:**	Oct-2010
Test sponsor:	Oracle Corporation	**Hardware Availability:**	Dec-2010
Tested by:	Oracle Corporation	**Software Availability:**	Sep-2010



Hardware

CPU Name:	SPARC64 VII+
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	64 cores, 16 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 4 CMUs; each CMU contains 2 or 4 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	12 MB 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:	Yes
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

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L3 Cache:	None
Other Cache:	None
Memory:	512 GB (128 x 4 GB, 8-way interleaved)
Disk Subsystem:	698 GB mirrored partition on 12 x 146 GB 15K RPM SAS disks in each of 2 StorageTek 2530 Array (24 total disk, 12 in each array)
Other Hardware:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	30.0	453	32.8	414	**32.8**	**414**	30.0	453	32.8	414	**32.8**	**414**
416.gamess	1570	12.5	**1571**	**12.5**	1571	12.5	1462	13.4	**1462**	**13.4**	1462	13.4
433.milc	**465**	**19.7**	464	19.8	466	19.7	308	29.8	**308**	**29.8**	308	29.8
434.zeusmp	279	32.6	**279**	**32.6**	279	32.6	266	34.2	**266**	**34.2**	266	34.1
435.gromacs	1343	5.31	**1342**	**5.32**	1340	5.33	327	21.9	327	21.9	**327**	**21.9**
436.cactusADM	**44.3**	**270**	44.9	266	43.7	273	40.2	297	**40.5**	**295**	40.8	293
437.leslie3d	131	71.8	**131**	**71.8**	131	71.9	128	73.6	**128**	**73.5**	128	73.4
444.namd	**606**	**13.2**	606	13.2	606	13.2	587	13.7	**587**	**13.7**	587	13.7
447.dealII	516	22.2	**516**	**22.2**	517	22.1	481	23.8	**481**	**23.8**	481	23.8
450.soplex	667	12.5	668	12.5	**667**	**12.5**	538	15.5	538	15.5	**538**	**15.5**
453.povray	398	13.4	**398**	**13.4**	399	13.3	323	16.5	324	16.4	**324**	**16.4**
454.calculix	453	18.2	452	18.2	**453**	**18.2**	393	21.0	**394**	**21.0**	394	21.0
459.GemsFDTD	**113**	**94.3**	112	95.0	113	94.1	**113**	**94.3**	112	95.0	113	94.1
465.tonto	**729**	**13.5**	731	13.5	729	13.5	**453**	**21.7**	453	21.7	454	21.7
470.lbm	**35.2**	**391**	35.0	392	35.3	389	24.0	572	24.5	560	**24.1**	**569**
481.wrf	**636**	**17.5**	637	17.5	636	17.6	452	24.7	**452**	**24.7**	451	24.7
482.sphinx3	762	25.6	**762**	**25.6**	763	25.6	719	27.1	719	27.1	**719**	**27.1**

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).

 /etc/system parameters
    autoup=600
       Causes pages older than the listed number of seconds to
       be written by fsflush.
    tune_t_fsflushr=10
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.
    lpg_alloc_prefer=1
        Indicates that extra effort should be taken to ensure
        that pages are created in the nearby lgroup (NUMA location).
 The "webconsole" service was turned off using
     svcadm disable webconsole
 The system had 75 GB of swap space.
```

Platform Notes

```
Memory is 8-way interleaved by filling all slots with
the same capacity DIMMs.

This result is measured on a SPARC Enterprise M8000 server from
Oracle.  The SPARC Enterprise M8000 server from Oracle and from
Fujitsu are electrically equivalent.
```

General Notes

```
Environment variables set by runspec before the start of the run:
OMP_NUM_THREADS = "64"
SUNW_MP_PROCBIND = "127 125 123 121 119 117 115 113 111 109 107 105 103
  101 99 97 95 93 91 89 87 85 83 81 79 77 75 73 71 69 67 65 63 61 59 57 55
  53 51 49 47 45 43 41 39 37 35 33 31 29 27 25 23 21 19 17 15 13 11 9 7 5
  3 1 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46
  48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94
  96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126"
SUNW_MP_THR_IDLE = "SPIN"

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

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General Notes (Continued)

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 Optimization Flags

C benchmarks:
-fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch=latx:2
-xprefetch_level=3 -xprefetch_auto_type=indirect_array_access -xautopar
-xreduction

C++ benchmarks:
-xdepend -fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch=latx:2
-xprefetch_level=2 -xalias_level=compatible -library=no%Cstd
-I/export/bmk2/apache/stdcxx-4.2.1/include
-I/export/bmk2/apache/stdcxx-4.2.1/build/include
-L/export/bmk2/apache/stdcxx-4.2.1/build/lib
-R/export/bmk2/apache/stdcxx-4.2.1/build/lib -lstd8d

Fortran benchmarks:
-fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch=latx:2
-xprefetch_level=2 -xautopar -xreduction

Benchmarks using both Fortran and C:
-fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xipo=2
-xprefetch=latx:2 -xprefetch_level=3
-xprefetch_auto_type=indirect_array_access -xautopar -xreduction
-xprefetch_level=2

Base Other Flags

C benchmarks:
-xjobs=32 -V -#

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Base Other Flags (Continued)

C++ benchmarks:
`-xjobs=32 -verbose=diags,version`

Fortran benchmarks:
`-xjobs=32 -V -v`

Benchmarks using both Fortran and C:
`-xjobs=32 -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: `-fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch_level=2 -W2,-Ainline:rs=400 -xalias_level=std -xautopar -xreduction -W2,-Aparallel:nthreads=8`

470.lbm: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -fma=fused -xpagesize=4M -xipo=2 -xautopar -xreduction -W2,-Aparallel:nthreads=128 -xalias_level=std -xprefetch_level=3 -xprefetch_auto_type=indirect_array_access`

482.sphinx3: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xipo=2 -fma=fused -xautopar -xreduction -xalias_level=std`

C++ benchmarks:

444.namd: `-xdepend -fast -fma=fused -xpagesize=4M -xalias_level=any -library=stlport4`

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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 -xipo=2 -xprefetch_level=2 -xrestrict -xalias_level=compatible -library=no%Cstd -I/export/bmk2/apache/stdcxx-4.2.1/include -I/export/bmk2/apache/stdcxx-4.2.1/build/include -L/export/bmk2/apache/stdcxx-4.2.1/build/lib -R/export/bmk2/apache/stdcxx-4.2.1/build/lib -lstd8d

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xipo=2 -xprefetch_level=2 -xalias_level=compatible -xrestrict -xprefetch_auto_type=indirect_array_access -library=stlport4 -Qoption cg -Qlp-ol=1 -Qoption cg -Qlp-it=3 -Qoption cg -Qlp-imb=1 -Qoption iropt -Apf:pdl=3

453.povray: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xipo=2 -xrestrict -xalias_level=compatible -library=stlport4

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch_level=3

434.zeusmp: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xipo=2 -xautopar -xreduction

437.leslie3d: Same as 434.zeusmp

459.GemsFDTD: basepeak = yes

465.tonto: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xipo=2 -fma=fused -xautopar -xreduction -Qoption iropt -Aparallel:nthreads=4 -lumem

Benchmarks using both Fortran and C:

435.gromacs: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M -xautopar -xreduction -Qoption iropt -Aparallel:nthreads=4

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Peak Optimization Flags (Continued)

436.cactusADM: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xipo=2 -xautopar -xreduction

454.calculix: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xipo=2 -xprefetch_level=3 -xprefetch=latx:3.0 -xalias_level=std -xautopar -xreduction -Qoption iropt -Aparallel:nthreads=4

481.wrf: -fast(cc) -fast(f90) -fma=fused -xpagesize=4M -xipo=2 -xprefetch_level=3 -xunroll=8 -xautopar -xreduction -Qoption iropt -Aparallel:nthreads=12

Peak Other Flags

C benchmarks:
-xjobs=32 -V -#

C++ benchmarks:
-xjobs=32 -verbose=diags,version

Fortran benchmarks:
-xjobs=32 -V -v

Benchmarks using both Fortran and C:
-xjobs=32 -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.20101221.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.20101221.xml

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

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