



SPEC® CFP2006 Result

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Oracle Corporation SPARC Enterprise M3000

SPECfp®2006 = 18.9

SPECfp_base2006 = 17.9

CPU2006 license: 6

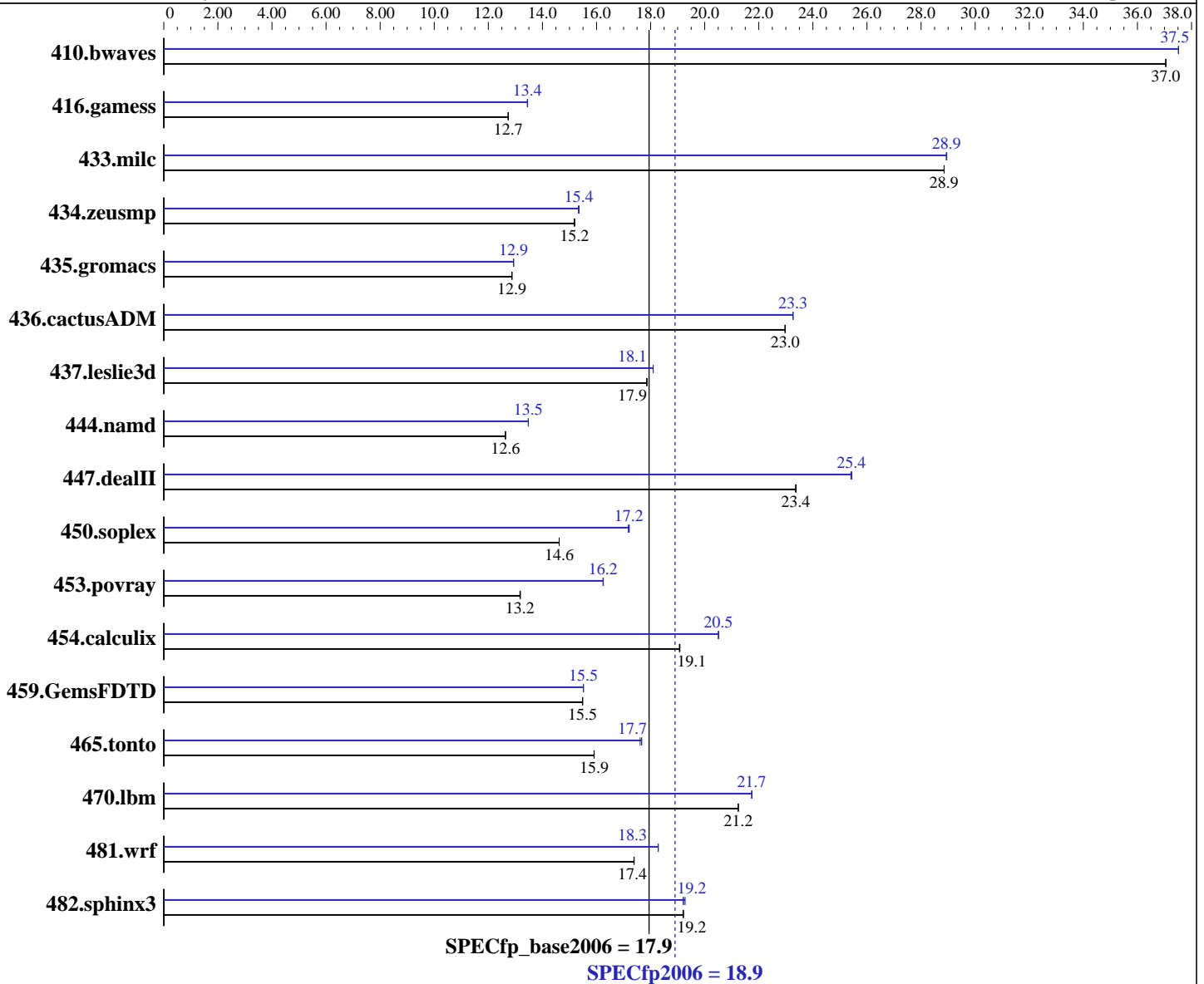
Test sponsor: Oracle Corporation

Tested by: Fujitsu

Test date: Feb-2011

Hardware Availability: Apr-2011

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

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	367	37.0	367	37.0	367	37.1	362	37.5	362	37.5	362	37.5
416.gamess	1538	12.7	1537	12.7	1537	12.7	1456	13.5	1456	13.4	1457	13.4
433.milc	318	28.9	318	28.9	318	28.9	317	28.9	317	29.0	317	28.9
434.zeusmp	599	15.2	599	15.2	599	15.2	593	15.4	593	15.4	594	15.3
435.gromacs	555	12.9	555	12.9	555	12.9	552	12.9	552	12.9	552	12.9
436.cactusADM	520	23.0	520	23.0	520	23.0	514	23.3	514	23.3	514	23.3
437.leslie3d	526	17.9	526	17.9	526	17.9	519	18.1	519	18.1	520	18.1
444.namd	635	12.6	635	12.6	635	12.6	595	13.5	595	13.5	595	13.5
447.dealII	490	23.4	490	23.4	489	23.4	450	25.4	450	25.4	450	25.4
450.soplex	570	14.6	570	14.6	570	14.6	485	17.2	485	17.2	486	17.2
453.povray	404	13.2	403	13.2	404	13.2	328	16.2	327	16.3	328	16.2
454.calculix	433	19.1	432	19.1	433	19.1	402	20.5	402	20.5	402	20.5
459.GemsFDTD	685	15.5	685	15.5	685	15.5	684	15.5	684	15.5	684	15.5
465.tonto	618	15.9	619	15.9	618	15.9	557	17.7	557	17.7	559	17.6
470.lbm	647	21.2	647	21.2	647	21.2	632	21.7	632	21.7	632	21.7
481.wrf	643	17.4	642	17.4	642	17.4	611	18.3	611	18.3	611	18.3
482.sphinx3	1014	19.2	1014	19.2	1015	19.2	1015	19.2	1013	19.2	1011	19.3

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



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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.dealIII (peak): "apache_stdctx_4_2_1" src.alt was used.
447.dealIII (base): "apache_stdctx_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
-xcache=generic -xalias_level=std -xprefetch=latx:1.2
-xprefetch_level=3 -xunroll=4 -l12amm -lbsdmalloc

C++ benchmarks:
-xdepend -M /usr/lib/ld/map.bssalign -fast -fma=fused -xipo=2
-xpagesize=4M -xlinkopt -xvector -xcache=generic
-xalias_level=compatible -xprefetch_level=2 -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:
-M /usr/lib/ld/map.bssalign -fast -fma=fused -xipo=2 -xpagesize=4M
-xlinkopt -xvector -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xprefetch=latx:2

Benchmarks using both Fortran and C:
-M /usr/lib/ld/map.bssalign -fast(cc) -fast(f90) -fma=fused -xipo=2
-xpagesize=4M -xlinkopt -xvector -xcache=generic -xalias_level=std
-xprefetch=latx:1.2 -xprefetch_level=3 -xunroll=4
-xprefetch_auto_type=indirect_array_access -xprefetch=latx:2

Base Other Flags

C benchmarks:
-xjobs=2 -V -#

C++ benchmarks:
-xjobs=2 -verbose=diags,version

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Base Other Flags (Continued)

Fortran benchmarks:
-xjobs=2 -V -v

Benchmarks using both Fortran and C:
-xjobs=2 -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 -M /usr/lib/ld/map.bssalign
-xipo=2 -xO4 -xlinkopt -xvector -xunroll=4 -fsimple=1
-W2,-Ainline:rs=400 -xalias_level=std
-xprefetch_auto_type=indirect_array_access -xprefetch_level=3

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: -fast -fma=fused -xpagesize=4M -xalias_level=std -xipo=2
-xunroll=4 -xprefetch_level=3 -xprefetch=latx:1.2 -ll2amm
-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=2 -xchip=generic -xalias_level=any -xprefetch=no%auto
-xunroll=2

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Peak Optimization Flags (Continued)

447.dealIII: -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 -xO4
 -xchip=generic -xrestrict -xunroll=4
 -xprefetch_auto_type=indirect_array_access
 -xprefetch=latx:0.5 -L/mnt/spec//stdcxx-4.2.1/build/lib
 -R/mnt/spec//stdcxx-4.2.1/build/lib -lstd8d -ll2amm

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -fma=fused
 -xpagesize=4M -Qoption cg -Qlp-ol=1 -Qoption cg -Qlp-it=3
 -Qoption cg -Qlp-imb=1 -Qoption iropt -Apf:pdl=3
 -xalias_level=simple -xrestrict -library=stlport4 -xipo=2
 -xO4 -xunroll=10 -xprefetch_auto_type=indirect_array_access
 -xprefetch_level=3 -ll2amm

453.povray: -xdepend -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -fma=fused
 -xpagesize=4M -xalias_level=compatible -library=stlport4
 -xipo=2 -xcache=generic -xunroll=3 -xprefetch=no%auto
 -lfast -lbsdmalloc

Fortran benchmarks:

410.bwaves: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
 -xipo=2 -xlinkopt -xunroll=4 -xprefetch=latx:3

416.gamess: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -fma=fused
 -xpagesize=4M -xipo=2 -xO3 -xlinkopt -xprefetch_level=1
 -xunroll=6 -lfast -lbsdmalloc

434.zeusmp: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -fma=fused
 -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xO4
 -xprefetch=latx:3 -lfast

437.leslie3d: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -fma=fused
 -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2
 -xunroll=7 -xprefetch_level=1 -xprefetch=latx:1.2

459.GemsFDTD: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
 -xipo=2 -xunroll=9 -xprefetch_level=3 -xprefetch=latx:2

465.tonto: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -fma=fused
 -xpagesize=4M -xipo=2 -xO4 -xunroll=3 -ll2amm -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 -xchip=generic -fsimple=0
-xprefetch_auto_type=indirect_array_access -xunroll=4

436.cactusADM: -fast(cc) -fast(f90) -fma=fused -xpagesize=4M
-xalias_level=std -M /usr/lib/ld/map.bssalign -xipo=2
-xprefetch_auto_type=indirect_array_access -xprefetch_level=2
-xprefetch=latx:1.2 -lfast

454.calculix: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xprefetch_level=3 -xprefetch=latx:3
-xalias_level=std

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
-xcache=generic -xunroll=5
-xprefetch_auto_type=indirect_array_access -xprefetch=latx:2

Peak Other Flags

C benchmarks:
-xjobs=2 -V -#

C++ benchmarks:
-xjobs=2 -verbose=diags,version

Fortran benchmarks:
-xjobs=2 -V -v

Benchmarks using both Fortran and C:
-xjobs=2 -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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