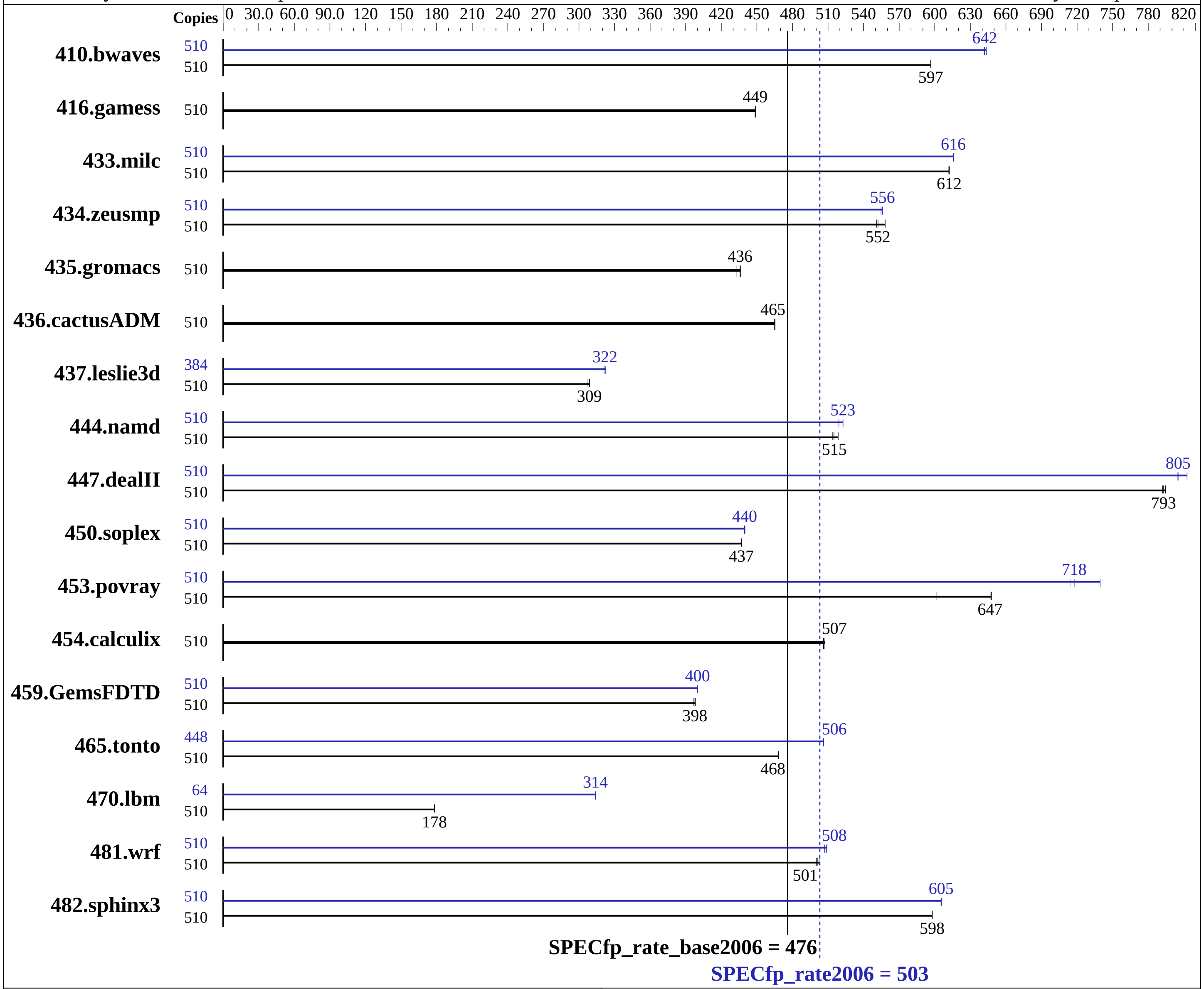
SPEC® CFP2006 Result

Oracle Corporation
SPARC T3-4

SPECfp®_rate2006 = 503

SPECfp_rate_base2006 = 476

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



Hardware	
CPU Name:	SPARC T3
CPU Characteristics:	
CPU MHz:	1649
FPU:	Integrated
CPU(s) enabled:	64 cores, 4 chips, 16 cores/chip, 8 threads/core
CPU(s) orderable:	1 to 4 chips
Primary Cache:	16 KB I + 8 KB D on chip per core
Secondary Cache:	6 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:	No
File System:	zfs with gzip compression
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

L3 Cache: None
Other Cache: None
Memory: 512 GB (64 x 8 GB)
Disk Subsystem: 821 GB (zfs 3 x 2-way mirrors on 6x SAS 300G 10000 RPM)
Other Hardware: None

Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	510	**11615**	**597**	11614	597	11618	597	510	10771	643	10803	642	**10795**	**642**
416.gamess	510	22263	449	22236	449	**22257**	**449**	510	22263	449	22236	449	**22257**	**449**
433.milc	510	**7647**	**612**	7652	612	7646	612	510	7602	616	7605	616	**7604**	**616**
434.zeusmp	510	8314	558	**8406**	**552**	8422	551	510	8366	555	**8347**	**556**	8345	556
435.gromacs	510	**8355**	**436**	8348	436	8407	433	510	**8355**	**436**	8348	436	8407	433
436.cactusADM	510	13120	465	**13107**	**465**	13096	465	510	13120	465	**13107**	**465**	13096	465
437.leslie3d	510	15585	308	15513	309	**15522**	**309**	384	11243	321	**11211**	**322**	11190	323
444.namd	510	7964	514	7888	519	**7943**	**515**	510	7827	523	7878	519	**7827**	**523**
447.dealII	510	**7358**	**793**	7342	795	7366	792	510	**7246**	**805**	7248	805	7179	813
450.soplex	510	9736	437	9731	437	**9736**	**437**	510	9677	440	**9673**	**440**	9667	440
453.povray	510	4509	602	4188	648	**4196**	**647**	510	3800	714	3669	739	**3781**	**718**
454.calculix	510	8314	506	**8306**	**507**	8292	507	510	8314	506	**8306**	**507**	8292	507
459.GemsFDTD	510	**13604**	**398**	13588	398	13654	396	510	13521	400	**13527**	**400**	13540	400
465.tonto	510	10720	468	**10725**	**468**	10725	468	448	8713	506	8708	506	**8708**	**506**
470.lbm	510	39308	178	**39319**	**178**	39349	178	64	2800	314	**2801**	**314**	2802	314
481.wrf	510	11338	502	**11363**	**501**	11384	500	510	11233	507	11192	509	**11205**	**508**
482.sphinx3	510	**16626**	**598**	16631	598	16623	598	510	**16418**	**605**	16415	606	16422	605

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
```

Submit Notes

```
Processes were bound to cores using "submit" and "pbind".  The config
file option 'submit' was used in order to accomplish this.
```

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).
    tsb_rss_factor=128
        Suggests that the the size of the TSB (Translation
        Storage Buffer) may be increased if it is more than
        25% (128/512) full.  Doing so may reduce TSB traps,
        at the cost of additional kernel memory.
    zfs:zfs_arc_max=0x10000000
    zfs:zfs_arc_min=0x10000000
        Limits the consumption of memory by the zfs file system
        cache to 256 MB.  (The arc_max sets the maximum cache
        size; arc_min sets the minimum.)
    zfs:zfs_prefetch_disable = 1
        Indicates that prefetching is not desired.  This setting
        may be desirable when the file system cache is small.
 USB devices were turned off with ILOM command
    set /SYS/MB/USB component_state=disabled
 The "webconsole" service was turned off using
     svcadm disable webconsole
 The system had 437 GB of swap space.
```

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:
`-g -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2 -xalias_level=std -M /usr/lib/ld/map.bssalign`

C++ benchmarks:
`-g0 -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2 -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign`

Fortran benchmarks:
`-g -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2 -M /usr/lib/ld/map.bssalign`

Benchmarks using both Fortran and C:
`-g -fast`(cc) `-fast`(f90) `-fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2 -xalias_level=std -M /usr/lib/ld/map.bssalign`

Base 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`

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: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch_level=2 -xprefetch_auto_type=indirect_array_access -xalias_level=std -fsimple=1

470.lbm: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign -xprefetch_level=3 -xipo=2 -xrestrict

482.sphinx3: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign -xinline= -xprefetch_level=2 -Wc,-Qlp-ol=1 -xrestrict -xalias_level=strong -fsimple=1 -xlinkopt=2 -lfast

C++ benchmarks:

444.namd: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xprefetch_level=1 -xlinkopt=2

447.dealII: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xipo=2 -xrestrict

450.soplex: -g0 -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch=no%auto -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign

453.povray: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -fma=fused -xpagesize=4M -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xipo=2 -xrestrict -xlinkopt=2

Fortran benchmarks:

410.bwaves: -g -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=3 -M /usr/lib/ld/map.bssalign

416.gamess: basepeak = yes

434.zeusmp: -g -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=1 -qoption cg -Qeps:enabled=1 -qoption cg -Qeps:ws=8 -lmopt

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Peak Optimization Flags (Continued)

437.leslie3d: -g -fast -fma=fused -xpagesize_heap=4M
-xpagesize_stack=64K -M /usr/lib/ld/map.bssalign
-xprefetch_level=3 -xprefetch=latx:1.6 -qoption cg -Qlp=1
-qoption cg -Qlp-fa=0 -qoption cg -Qlp-fl=1
-qoption cg -Qlp-av=448 -qoption cg -Qlp-t=4

459.GemsFDTD: -g -fast -fma=fused -xipo=2 -xpagesize=4M
-xprefetch=no%auto -M /usr/lib/ld/map.bssalign

465.tonto: -g -fast -fma=fused -xpagesize=4M
-M /usr/lib/ld/map.bssalign -xipo=2 -lfast

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -g -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xlinkopt=2

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.20110110.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.20110110.xml

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

Tested with SPEC CPU2006 v1.1.
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