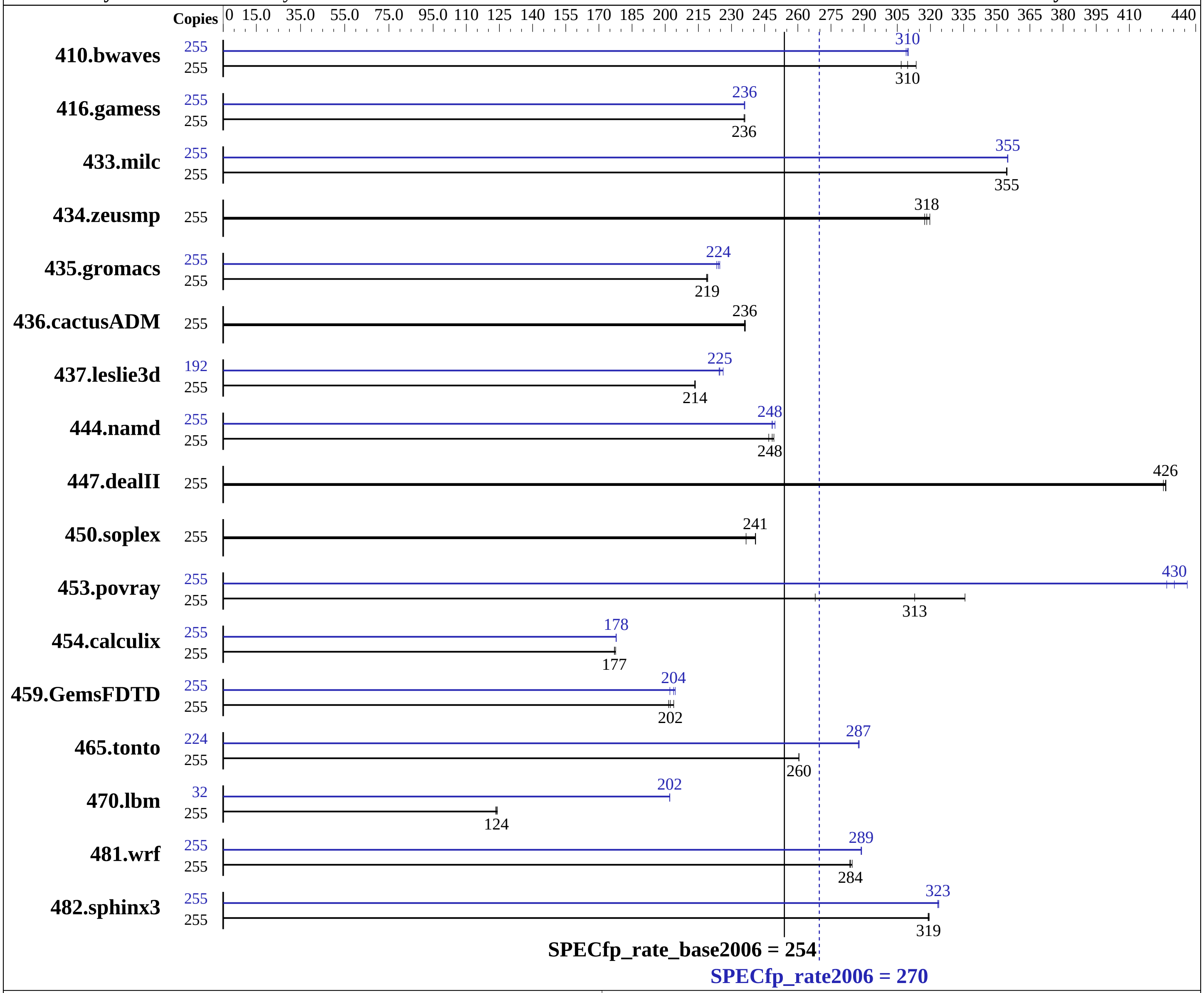
SPEC® CFP2006 Result

Fujitsu
Fujitsu SPARC Enterprise T5440

SPECfp®_rate2006 = 270

SPECfp_rate_base2006 = 254

CPU2006 license:	6	**Test date:**	May-2009
Test sponsor:	Fujitsu	**Hardware Availability:**	Jul-2009
Tested by:	Sun Microsystems	**Software Availability:**	Jun-2009



Hardware		**Software**	
CPU Name:	UltraSPARC T2 Plus	Operating System:	Solaris 10 5/09
CPU Characteristics:		Compiler:	Sun Studio 12 Update 1
CPU MHz:	1596	Auto Parallel:	No
FPU:	Integrated	File System:	zfs
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 8 threads/core	System State:	Default
CPU(s) orderable:	1 to 4 chips	Base Pointers:	32-bit
Primary Cache:	16 KB I + 8 KB D on chip per core	Peak Pointers:	32-bit
Secondary Cache:	4 MB I+D on chip per chip	Other Software:	None

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L3 Cache: None
Other Cache: None
Memory: 256 GB (64 x 4 GB)
Disk Subsystem: 536 GB using ZFS 3-way mirroring
on 24x 15K SUN72G FC (on 2x SE3510)
Other Hardware: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	255	11053	314	11297	307	**11190**	**310**	255	**11189**	**310**	11180	310	11215	309
416.gamess	255	**21186**	**236**	21187	236	21151	236	255	21153	236	**21163**	**236**	21177	236
433.milc	255	6600	355	6606	354	**6602**	**355**	255	6597	355	**6594**	**355**	6593	355
434.zeusmp	255	7258	320	7311	317	**7289**	**318**	255	7258	320	7311	317	**7289**	**318**
435.gromacs	255	8326	219	8304	219	**8314**	**219**	255	8153	223	8102	225	**8125**	**224**
436.cactusADM	255	**12910**	**236**	12921	236	12895	236	255	**12910**	**236**	12921	236	12895	236
437.leslie3d	255	11238	213	**11227**	**214**	11218	214	192	**8032**	**225**	7978	226	8043	224
444.namd	255	**8233**	**248**	8207	249	8285	247	255	8191	250	8236	248	**8231**	**248**
447.dealII	255	6839	427	**6842**	**426**	6858	425	255	6839	427	**6842**	**426**	6858	425
450.soplex	255	8989	237	**8834**	**241**	8827	241	255	8989	237	**8834**	**241**	8827	241
453.povray	255	**4336**	**313**	4042	336	5064	268	255	3178	427	3110	436	**3152**	**430**
454.calculix	255	11846	178	11885	177	**11883**	**177**	255	11837	178	11826	178	**11831**	**178**
459.GemsFDTD	255	**13373**	**202**	13272	204	13423	202	255	**13276**	**204**	13227	205	13385	202
465.tonto	255	9630	261	9634	260	**9634**	**260**	224	7670	287	**7668**	**287**	7659	288
470.lbm	255	**28328**	**124**	28242	124	28409	123	32	2176	202	**2177**	**202**	2177	202
481.wrf	255	**10036**	**284**	10046	284	10009	285	255	9869	289	9860	289	**9867**	**289**
482.sphinx3	255	15558	319	**15571**	**319**	15583	319	255	15349	324	15371	323	**15368**	**323**

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

Compiler Invocation Notes

```
Sun Studio 12 Update 1 pre-release build 41.1 was used.
```

Submit Notes

```
A processor set was created using
  psrset -c 1-255
and the runspec process was placed into the set using
  psrset -e 1
The config file option 'submit' was used to select specific
processors within the set, along with the pbind command.
```

Operating System Notes

```
ulimit -s 131072 was used to allow the stack to grow
up to 131072 KB (aka 128 MB).  Note that saying "131072"
is preferable to "unlimited", because there is a tradeoff
between space for the stack vs. space for 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.
   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
      Limits the consumption of memory by the zfs file system

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

The system had 229 GB of swap space.
```

Platform Notes

```
This result was measured on a Sun SPARC Enterprise T5440.
The Sun SPARC Enterprise T5440 and the Fujitsu SPARC
Enterprise T5440 are electrically equivalent.
```

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 -xipo=2 -xpagesize=4M -xprefetch_level=2 -xalias_level=std -xprefetch_level=3 -xprefetch_auto_type=indirect_array_access -M /usr/lib/ld/map.bssalign`

C++ benchmarks:

`-g0 -library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch_level=2 -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign`

Fortran benchmarks:

`-g -fast -xipo=2 -xpagesize=4M -xprefetch_level=2 -M /usr/lib/ld/map.bssalign`

Benchmarks using both Fortran and C:

`-g -fast`(cc) `-fast`(f90) `-xipo=2 -xpagesize=4M -xprefetch_level=2 -xalias_level=std -xprefetch_level=3 -xprefetch_auto_type=indirect_array_access -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 -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 -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 -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 -xpagesize=4M -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xprefetch_level=1 -xlinkopt=2

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=64K -xdepend -xalias_level=compatible -xipo=2 -xrestrict -xlinkopt=2

Fortran benchmarks:

410.bwaves: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch_level=2

416.gamess: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -M /usr/lib/ld/map.bssalign -xlinkopt=2

434.zeusmp: basepeak = yes

437.leslie3d: -g -fast -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

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Peak Optimization Flags (Continued)

437.leslie3d (continued):
-qoption cg -Qlp-t=4

459.GemsFDTD: -g -fast -xpagesize=4M -M /usr/lib/ld/map.bssalign -fsimple=1

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

Benchmarks using both Fortran and C:

435.gromacs: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=1 -xinline= -xarch=generic -xchip=generic -fsimple=0

436.cactusADM: basepeak = yes

454.calculix: -g -fast(cc) -fast(f90) -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xvector -xprefetch_level=1

481.wrf: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -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/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r3.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r3.xml

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

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