



SPEC[®] CFP2006 Result

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Fujitsu Limited

SPECfp[®]_rate2006 = 140

Fujitsu SPARC Enterprise M5000

SPECfp_rate_base2006 = 133

CPU2006 license: 19

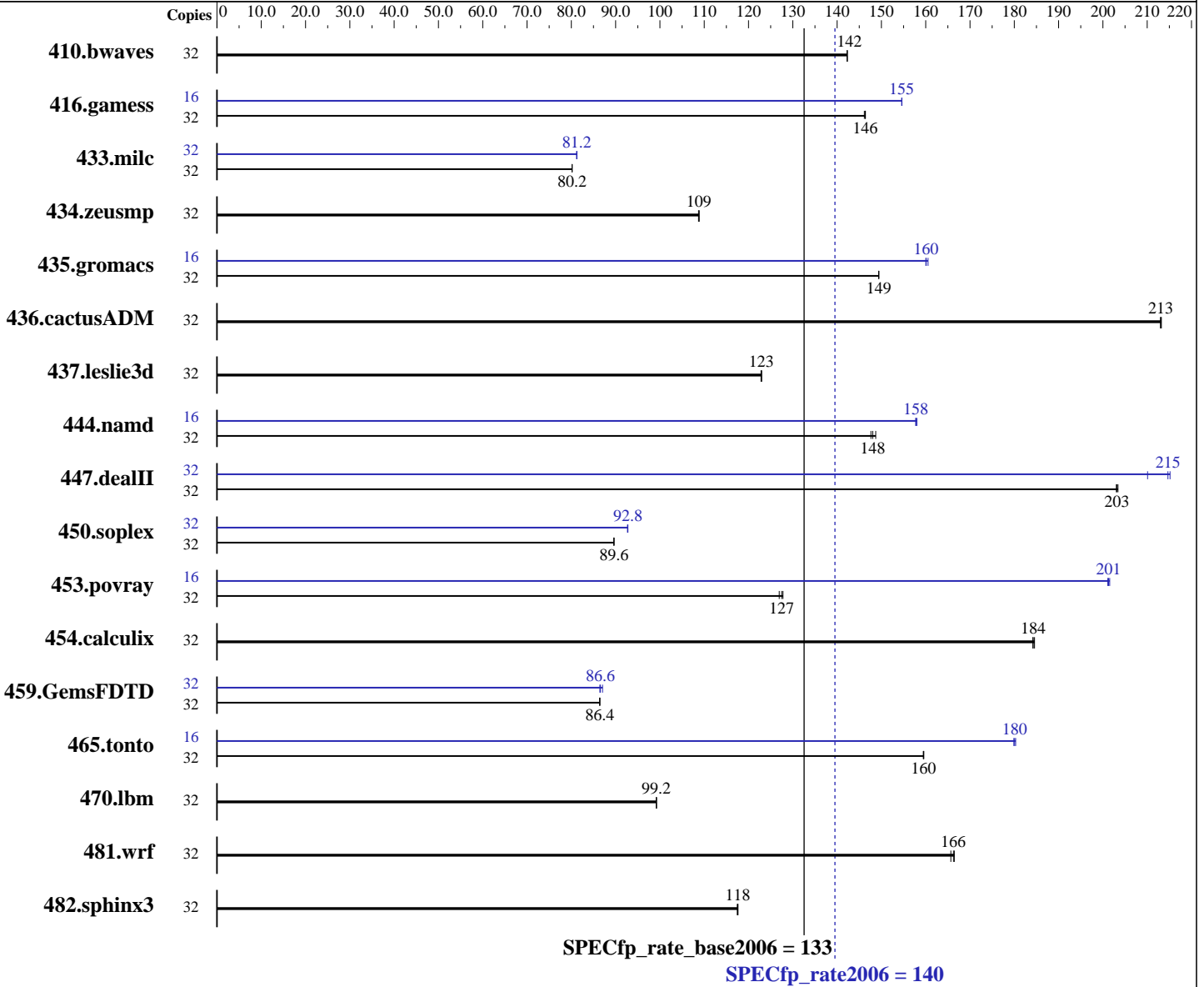
Test sponsor: Fujitsu Limited

Tested by: Sun Microsystems

Test date: Apr-2007

Hardware Availability: May-2007

Software Availability: Jul-2007



Hardware

CPU Name: SPARC64 VI
 CPU Characteristics:
 CPU MHz: 2150
 FPU: Integrated
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 to 4 CPUM; each CPUM contains 2 CPU chips
 Primary Cache: 128 KB I + 128 KB D on chip per core
 Secondary Cache: 5 MB I+D on chip per chip

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Software

Operating System: Solaris 10 7/07 (build s10s_u4wos_04)
 Compiler: Sun Studio 12 (build 44.0)
 Auto Parallel: No
 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: 128 GB (64 x 2 GB)
Disk Subsystem: 73 GB FUJITSU MAY2073RC 10K RPM SAS
Other Hardware: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	3056	142	3057	142	3057	142	32	3056	142	3057	142	3057	142
416.gamess	32	4287	146	4281	146	4280	146	16	2026	155	2026	155	2026	155
433.milc	32	3663	80.2	3665	80.2	3665	80.2	32	3616	81.2	3616	81.2	3617	81.2
434.zeusmp	32	2675	109	2676	109	2679	109	32	2675	109	2676	109	2679	109
435.gromacs	32	1530	149	1529	149	1529	149	16	712	161	713	160	714	160
436.cactusADM	32	1795	213	1795	213	1794	213	32	1795	213	1795	213	1794	213
437.leslie3d	32	2446	123	2448	123	2449	123	32	2446	123	2448	123	2449	123
444.namd	32	1726	149	1733	148	1738	148	16	812	158	813	158	813	158
447.dealII	32	1802	203	1800	203	1803	203	32	1743	210	1701	215	1705	215
450.soplex	32	2977	89.6	2978	89.6	2979	89.6	32	2877	92.8	2877	92.8	2880	92.7
453.povray	32	1335	127	1332	128	1341	127	16	423	201	423	201	422	202
454.calculix	32	1430	185	1433	184	1433	184	32	1430	185	1433	184	1433	184
459.GemsFDTD	32	3928	86.4	3928	86.4	3929	86.4	32	3901	87.0	3928	86.4	3922	86.6
465.tonto	32	1973	160	1975	159	1974	160	16	874	180	875	180	873	180
470.lbm	32	4434	99.2	4432	99.2	4431	99.2	32	4434	99.2	4432	99.2	4431	99.2
481.wrf	32	2147	166	2150	166	2157	166	32	2147	166	2150	166	2157	166
482.sphinx3	32	5304	118	5310	117	5302	118	32	5304	118	5310	117	5302	118

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

Operating System Notes

Processes were bound to cores using "submit" and "pbind".
The SPEC toolset was bound to processor 0.

These shell commands request use of local 4MB pages:

```
export LD_PRELOAD=madv.so.1:mpss.so.1
export MPSSHEAP=4MB
export MPSSSTACK=4MB
export MADV=access_lwp
```

'access_lwp' means that the next light weight process to touch the specified address range will access it the most heavily.

ulimit -s 131072 was used to limit the space

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Operating System Notes (Continued)

consumed by the stack (and therefore make more space available to the heap).

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

Platform Notes

"CPUM" = CPU Module; each module holds two CPU chips.

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

This result was measured using a Sun SPARC Enterprise M5000 Server. Note that the Fujitsu SPARC Enterprise M5000 and Sun SPARC Enterprise M5000 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:

-fast -fma=fused -xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xprefetch=latx:2 -xalias_level=std
-xprefetch_level=3 -xprefetch_auto_type=indirect_array_access

C++ benchmarks:

-xdepend -library=stlport4 -fast -fma=fused
-xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M -xprefetch_level=2
-xprefetch=latx:2 -xalias_level=compatible

Fortran benchmarks:

-fast -fma=fused -xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xprefetch=latx:2

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-fast(cc) -fast(f90) -fma=fused -xcache=128/64/2:5120/256/10 -xipo=2
-xpagesize=4M -xprefetch_level=2 -xprefetch=latx:2 -xalias_level=std
-xprefetch_level=3 -xprefetch_auto_type=indirect_array_access
```

Base Other Flags

C benchmarks:

```
-xjobs=12 -V -#
```

C++ benchmarks:

```
-xjobs=12 -verbose=diags,version
```

Fortran benchmarks:

```
-xjobs=12 -V -v
```

Benchmarks using both Fortran and C:

```
-xjobs=12 -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 -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch_level=2 -fsimple=1
-xprefetch_auto_type=indirect_array_access
-W2,-Ainline:rs=400 -xalias_level=std -fma=fused
-xprefetch=latx:3
```

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Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xdepend -library=stlport4 -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xprefetch_level=1 -fma=fused
-xprefetch=latx:3

447.deallI: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xrestrict -fma=fused
-xprefetch=latx:4.5

450.soplex: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fsimple=0 -xrestrict
-xprefetch_auto_type=indirect_array_access
-Qoption cg -Qlp-ol=1 -Qoption cg -Qlp-it=3
-Qoption cg -Qlp-imb=1 -Qoption iropt -Apf:pdl=3

453.povray: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xrestrict -fma=fused

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch_level=2 -fma=fused

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -fsimple=1
-xprefetch_level=2 -fma=fused -xprefetch=latx:2

465.tonto: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch=latx:12 -lfast

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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)
             -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
             -xinline= -xarch=generic -xchip=generic -fsimple=0
             -fma=fused
```

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

Peak Other Flags

C benchmarks:

```
-xjobs=12 -V -#
```

C++ benchmarks:

```
-xjobs=12 -verbose=diags,version
```

Fortran benchmarks:

```
-xjobs=12 -V -v
```

Benchmarks using both Fortran and C:

```
-xjobs=12 -V -# -v
```

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.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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