SPEC® CFP2006 Result
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Sun Microsystems
Sun Fire X4150

$SPECfp^{®}\_rate2006 =$ 63.1
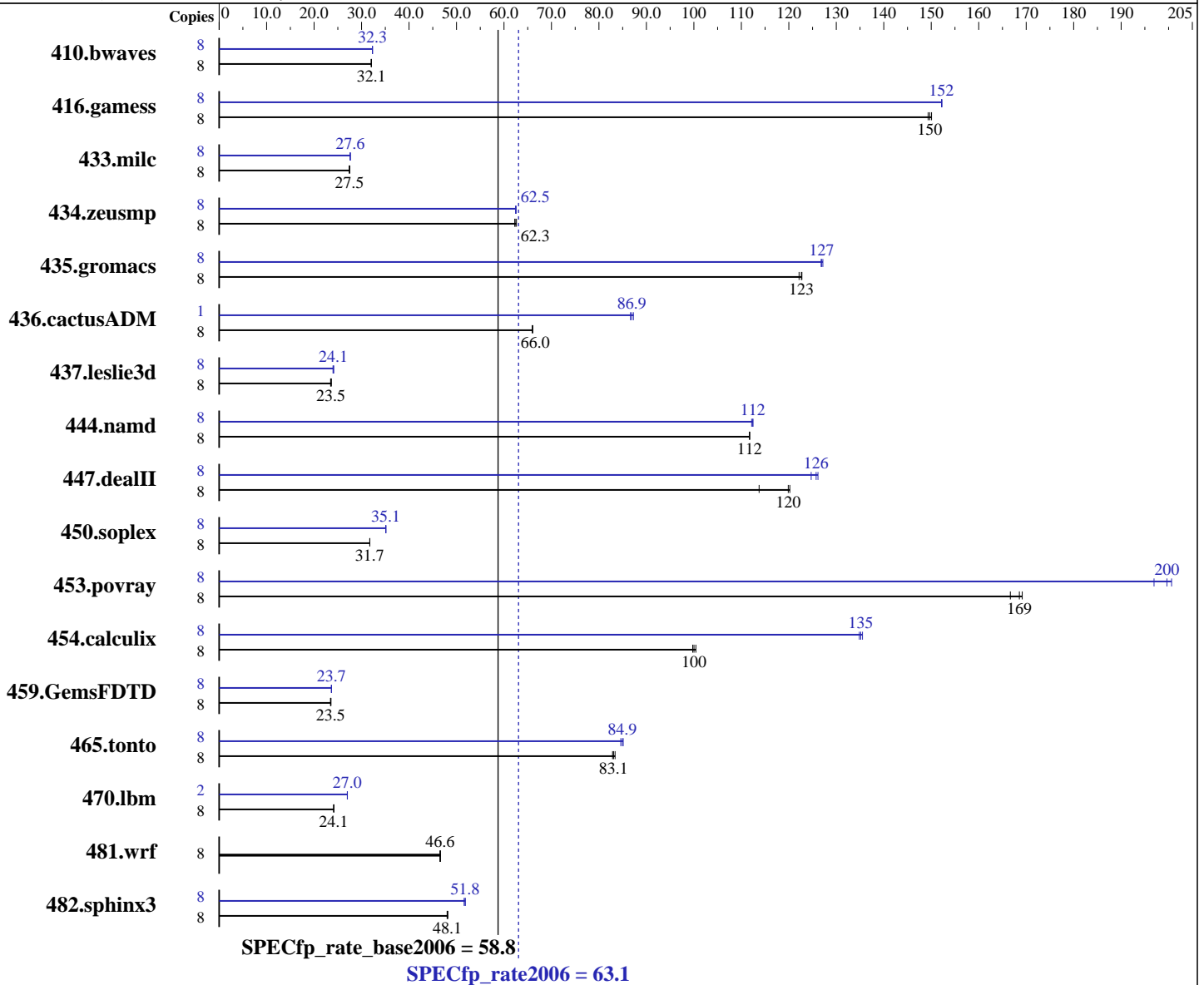
SPECfp_rate_base2006 = 58.8

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Oct-2007
Hardware Availability: Sep-2007
Software Availability: Nov-2007

SPECfp_rate_base2006 = 58.8

SPECfp_rate2006 = 63.1

Hardware

CPU Name: Intel Xeon X5355
CPU Characteristics: Quad Core, 2.667 GHz
CPU MHz: 2667
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1,2 (order by number of chips)
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System: SUSE LINUX Enterprise Server 10 SP1 for x86_64
Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
Auto Parallel: Yes
File System: ReiserFS
System State: Multi-user, run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8x2GB DDR2 PC2-5300F 2rank CAS 5-5-5 with ECC)
Disk Subsystem:	SAS, 72 GB, 10K RPM
Other Hardware:	None

Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3391	32.1	3393	32.0	**3391**	**32.1**	8	3367	32.3	3366	32.3	**3366**	**32.3**
416.gamess	8	1049	149	1044	150	**1046**	**150**	8	1029	152	1029	152	**1029**	**152**
433.milc	8	**2673**	**27.5**	2681	27.4	2671	27.5	8	2657	27.6	2663	27.6	**2660**	**27.6**
434.zeusmp	8	1169	62.3	1162	62.6	**1168**	**62.3**	8	**1165**	**62.5**	1164	62.6	1166	62.4
435.gromacs	8	468	122	**466**	**123**	465	123	8	450	127	**450**	**127**	449	127
436.cactusADM	8	1447	66.0	1450	65.9	**1448**	**66.0**	1	138	86.6	**138**	**86.9**	137	87.3
437.leslie3d	8	3180	23.6	**3193**	**23.5**	3203	23.5	8	3136	24.0	**3125**	**24.1**	3116	24.1
444.namd	8	574	112	574	112	**574**	**112**	8	571	112	**571**	**112**	572	112
447.dealII	8	805	114	761	120	**763**	**120**	8	726	126	734	125	**728**	**126**
450.soplex	8	2103	31.7	2102	31.7	**2102**	**31.7**	8	1901	35.1	**1901**	**35.1**	1898	35.1
453.povray	8	255	167	252	169	**252**	**169**	8	**213**	**200**	216	197	212	201
454.calculix	8	662	99.8	**660**	**100**	657	100	8	**488**	**135**	487	136	489	135
459.GemsFDTD	8	3616	23.5	3602	23.6	**3615**	**23.5**	8	**3588**	**23.7**	3588	23.7	3587	23.7
465.tonto	8	944	83.4	**948**	**83.1**	950	82.9	8	**927**	**84.9**	925	85.1	930	84.6
470.lbm	8	**4552**	**24.1**	4552	24.1	4554	24.1	2	**1018**	**27.0**	1017	27.0	1018	27.0
481.wrf	8	1917	46.6	**1919**	**46.6**	1921	46.5	8	1917	46.6	**1919**	**46.6**	1921	46.5
482.sphinx3	8	**3242**	**48.1**	3237	48.2	3247	48.0	8	**3009**	**51.8**	3022	51.6	3007	51.8

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 "taskset".

'ulimit -s unlimited' was used to set the stacksize to unlimited
```

Platform Notes

```
BIOS configuration:
Hardware Prefetch = Disable; Adjacent Sector Prefetch = Disable
```

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General Notes

All benchmarks were compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3 for peak were compiled in 32-bit mode

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast

C++ benchmarks:
-fast

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-fast
```

Benchmarks using both Fortran and C:
```
-fast
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

    433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

  450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc`
```
            -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
            -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):
```
ifort
```

  437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort`
```
            -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
            -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Benchmarks using both Fortran and C:
```
icc ifort
```

Peak Portability Flags

```
   410.bwaves: -DSPEC_CPU_LP64
   416.gamess: -DSPEC_CPU_LP64
     433.milc: -DSPEC_CPU_LP64
   434.zeusmp: -DSPEC_CPU_LP64
  435.gromacs: -DSPEC_CPU_LP64 -nofor_main
 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
    444.namd: -DSPEC_CPU_LP64
   447.dealII: -DSPEC_CPU_LP64
   453.povray: -DSPEC_CPU_LP64
  454.calculix: -DSPEC_CPU_LP64 -nofor_main
  459.GemsFDTD: -DSPEC_CPU_LP64
```

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Test sponsor: Sun Microsystems

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Test date: Oct-2007

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Software Availability: Nov-2007

Peak Portability Flags (Continued)

```
465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
          -auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
         -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2
```

C++ benchmarks:

```
444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
          -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
            -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
            -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
            -ansi-alias
```

Fortran benchmarks:

```
410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
            -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
              -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
              -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto
```

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.22.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.22.xml

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

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