SPEC® CFP2006 Result

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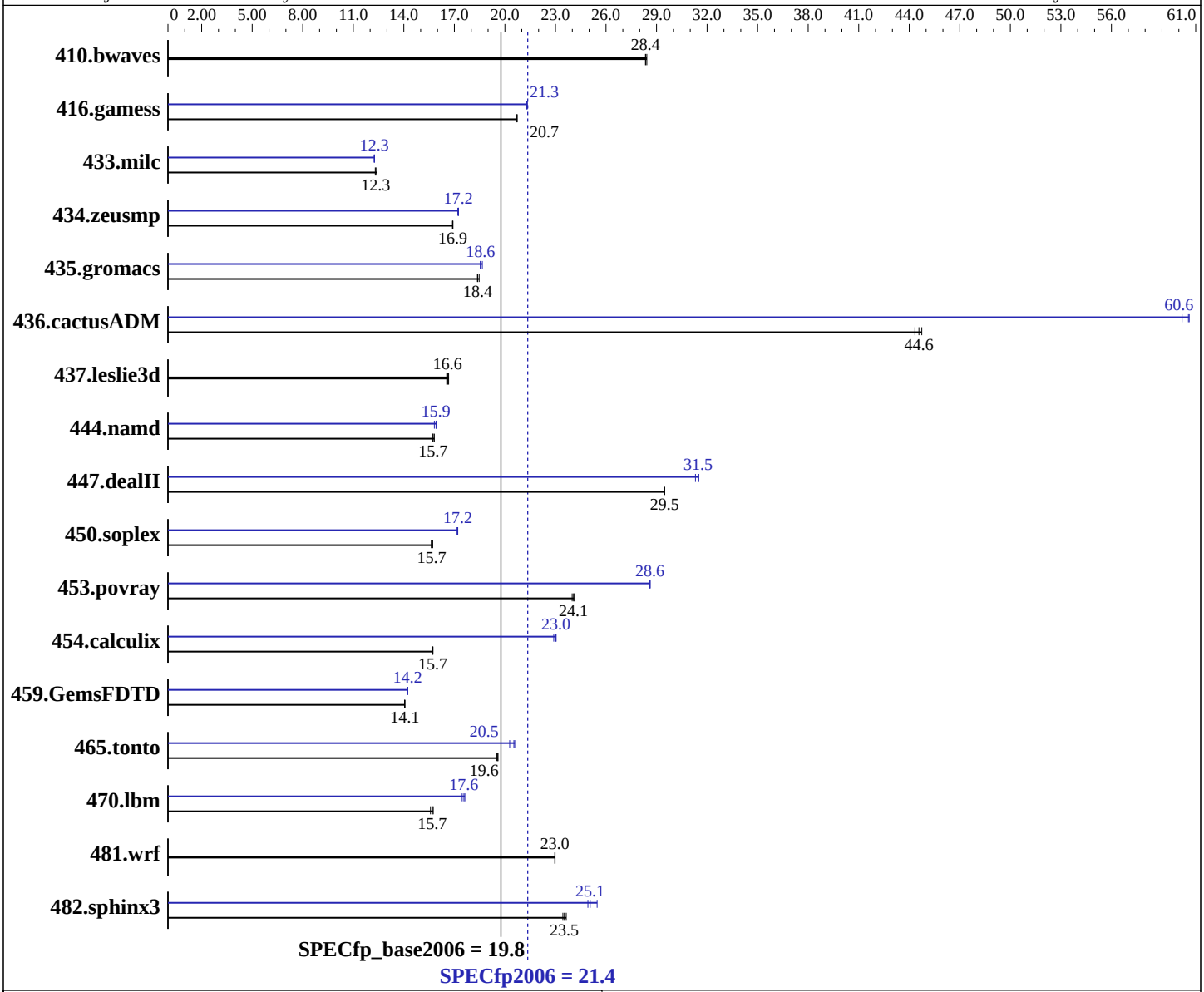
Sun Microsystems
Sun Ultra 24

SPECfp®2006 = 21.4

SPECfp_base2006 = 19.8

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

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



Hardware

CPU Name:	Intel Core 2 Extreme QX6850
CPU Characteristics:	3.00 GHz 1333 MHz FSB
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 (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 20070913
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: 8 GB (4x2GB DDR2 PC2-5300 2rank CAS 5-5-5 with ECC)
Disk Subsystem: SATA, 250 GB, 7200 RPM
Other Hardware: None

Other Software: SmartHeap library V8.1
Binutils 2.17.50.0.15

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	481	28.3	478	28.4	**479**	**28.4**	481	28.3	478	28.4	**479**	**28.4**
416.gamess	**945**	**20.7**	945	20.7	947	20.7	920	21.3	**919**	**21.3**	918	21.3
433.milc	**744**	**12.3**	741	12.4	746	12.3	749	12.3	750	12.2	**749**	**12.3**
434.zeusmp	538	16.9	539	16.9	**538**	**16.9**	529	17.2	528	17.2	**528**	**17.2**
435.gromacs	387	18.5	389	18.4	**388**	**18.4**	383	18.7	385	18.5	**385**	**18.6**
436.cactusADM	270	44.3	267	44.7	**268**	**44.6**	197	60.6	199	60.2	**197**	**60.6**
437.leslie3d	564	16.7	568	16.5	**566**	**16.6**	564	16.7	568	16.5	**566**	**16.6**
444.namd	**510**	**15.7**	510	15.7	507	15.8	507	15.8	**504**	**15.9**	504	15.9
447.dealII	**388**	**29.5**	388	29.4	388	29.5	363	31.5	**363**	**31.5**	365	31.3
450.soplex	531	15.7	534	15.6	**532**	**15.7**	**485**	**17.2**	485	17.2	486	17.2
453.povray	222	24.0	**221**	**24.1**	221	24.1	186	28.6	186	28.6	**186**	**28.6**
454.calculix	525	15.7	525	15.7	**525**	**15.7**	360	22.9	358	23.0	**358**	**23.0**
459.GemsFDTD	754	14.1	**755**	**14.1**	756	14.0	**746**	**14.2**	745	14.2	747	14.2
465.tonto	502	19.6	**503**	**19.6**	504	19.5	478	20.6	485	20.3	**479**	**20.5**
470.lbm	873	15.7	**875**	**15.7**	882	15.6	787	17.5	**782**	**17.6**	780	17.6
481.wrf	**486**	**23.0**	487	23.0	486	23.0	**486**	**23.0**	487	23.0	486	23.0
482.sphinx3	831	23.4	824	23.6	**828**	**23.5**	765	25.5	782	24.9	**778**	**25.1**

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited
OMP_NUM_THREADS set to 4
KMP_STACKSIZE set to 200M
KMP_AFFINITY set to physical,0
```

Platform Notes

```
Default BIOS configurations were used.
```

General Notes

```
All benchmarks were compiled in 64-bit mode except 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 -parallel
```

C++ benchmarks:
```
-fast -parallel
```

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Base Optimization Flags (Continued)

Fortran benchmarks:
`-fast -parallel`

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

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008-32bit/bin/icc -L/opt/intel/cc/10.1.008-32bit/lib -I/opt/intel/cc/10.1.008-32bit/include`

433.milc: `icc`

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

450.soplex: `/opt/intel/cc/10.1.008-32bit/bin/icpc -L/opt/intel/cc/10.1.008-32bit/lib -I/opt/intel/cc/10.1.008-32bit/include`

Fortran benchmarks:
`ifort`

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`
437.leslie3d: `-DSPEC_CPU_LP64`
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`
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: basepeak = yes

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: basepeak = yes

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

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

Benchmarks using both Fortran and C:

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

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Peak Optimization Flags (Continued)

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.20090714.20.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.20090714.20.xml`

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