SPEC® CFP2006 Result

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Fujitsu

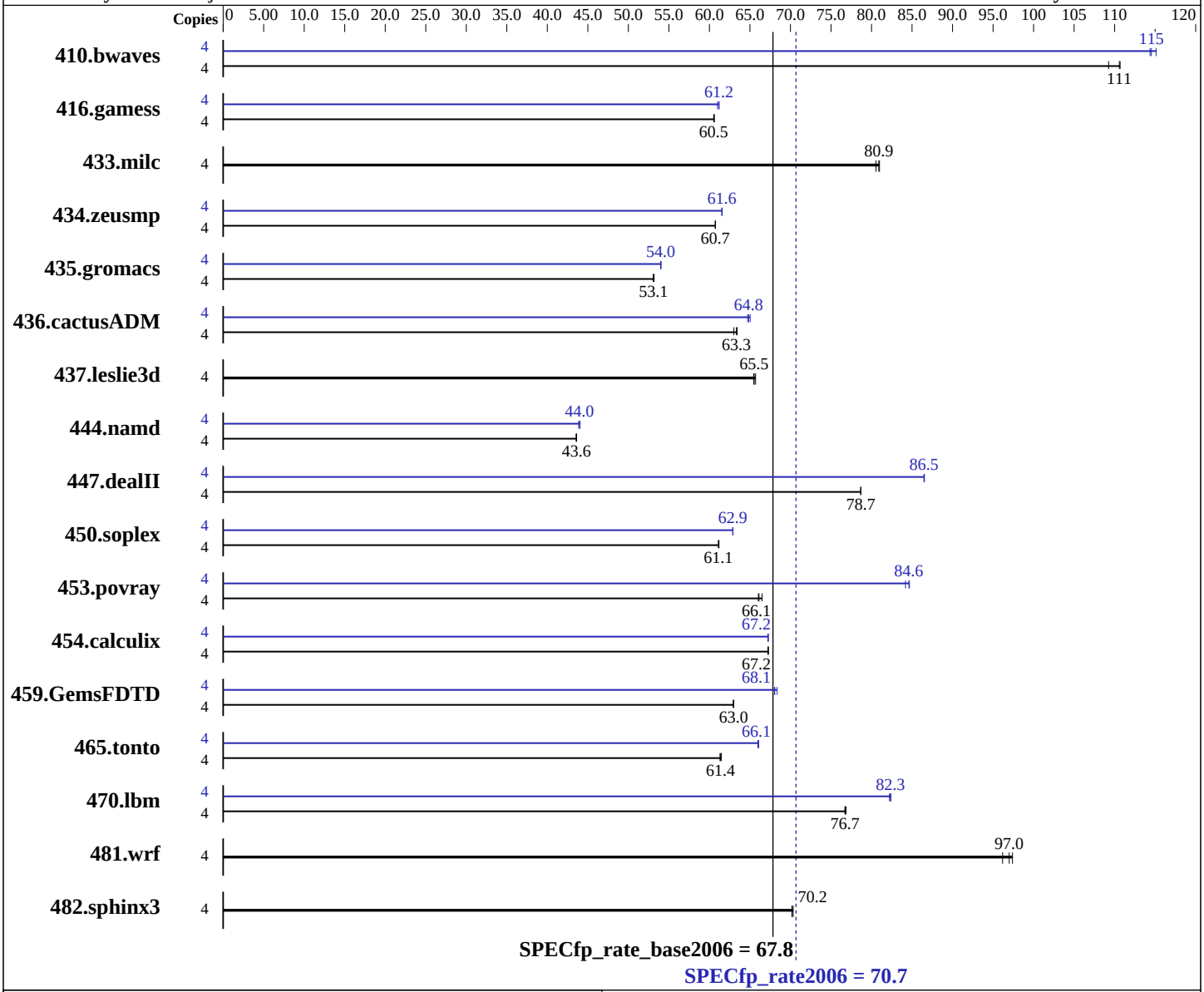
PRIMERGY BX920 S1, Intel Xeon E5502, 1.86 GHz

SPECfp®_rate2006 = 70.7

SPECfp_rate_base2006 = 67.8

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2009
Hardware Availability: May-2009
Software Availability: Feb-2009



Hardware

CPU Name:	Intel Xeon E5502
CPU Characteristics:	
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
Auto Parallel:	No
File System:	ext3
System State:	Multi-User Run Level 3

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 36 GB (9x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem: 1 x SAS, 73 GB, 10000 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	498	109	491	111	**492**	**111**	4	**475**	**115**	472	115	475	114
416.gamess	4	1292	60.6	1294	60.5	**1294**	**60.5**	4	**1280**	**61.2**	1284	61.0	1280	61.2
433.milc	4	456	80.6	453	81.0	**454**	**80.9**	4	456	80.6	453	81.0	**454**	**80.9**
434.zeusmp	4	600	60.7	**599**	**60.7**	599	60.8	4	591	61.6	591	61.5	**591**	**61.6**
435.gromacs	4	**538**	**53.1**	538	53.1	537	53.2	4	**529**	**54.0**	529	54.0	529	54.0
436.cactusADM	4	754	63.4	758	63.0	**755**	**63.3**	4	735	65.0	739	64.7	**737**	**64.8**
437.leslie3d	4	**574**	**65.5**	572	65.7	574	65.5	4	**574**	**65.5**	572	65.7	574	65.5
444.namd	4	737	43.5	736	43.6	**736**	**43.6**	4	731	43.9	**729**	**44.0**	729	44.0
447.dealII	4	581	78.7	582	78.7	**582**	**78.7**	4	529	86.5	**529**	**86.5**	529	86.5
450.soplex	4	546	61.1	545	61.2	**546**	**61.1**	4	**530**	**62.9**	531	62.9	530	62.9
453.povray	4	322	66.0	320	66.5	**322**	**66.1**	4	251	84.7	**251**	**84.6**	253	84.2
454.calculix	4	490	67.3	**491**	**67.2**	491	67.2	4	491	67.2	491	67.2	**491**	**67.2**
459.GemsFDTD	4	**674**	**63.0**	674	63.0	674	62.9	4	621	68.4	624	68.1	**624**	**68.1**
465.tonto	4	**641**	**61.4**	640	61.5	642	61.3	4	**596**	**66.1**	596	66.1	597	66.0
470.lbm	4	**716**	**76.7**	716	76.7	715	76.9	4	667	82.4	**668**	**82.3**	668	82.2
481.wrf	4	**461**	**97.0**	465	96.2	459	97.4	4	**461**	**97.0**	465	96.2	459	97.4
482.sphinx3	4	1108	70.3	1111	70.2	**1111**	**70.2**	4	1108	70.3	1111	70.2	**1111**	**70.2**

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

Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

Operating System Notes

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

Platform Notes

```
The system automatically configures the memory to run at 800 MHz.
```

General Notes

For information about Fujitsu please visit: http://www.fujitsu.com

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:
-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static`

Peak Compiler Invocation

C benchmarks:
`icc`

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

450.soplex: `icpc -m32`

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`
470.lbm: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`
482.sphinx3: `-DSPEC_CPU_LP64`

Peak Optimization Flags

C benchmarks:

433.milc: `basepeak = yes`

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Peak Optimization Flags (Continued)

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias -scalar-rep-

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -opt-prefetch

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

436.cactusADM: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-unroll2 -opt-prefetch -auto-ilp32`

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -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-ic11.0-fp-linux64-revA.20090710.04.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.04.xml`

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