SPEC® CFP2006 Result

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Fujitsu

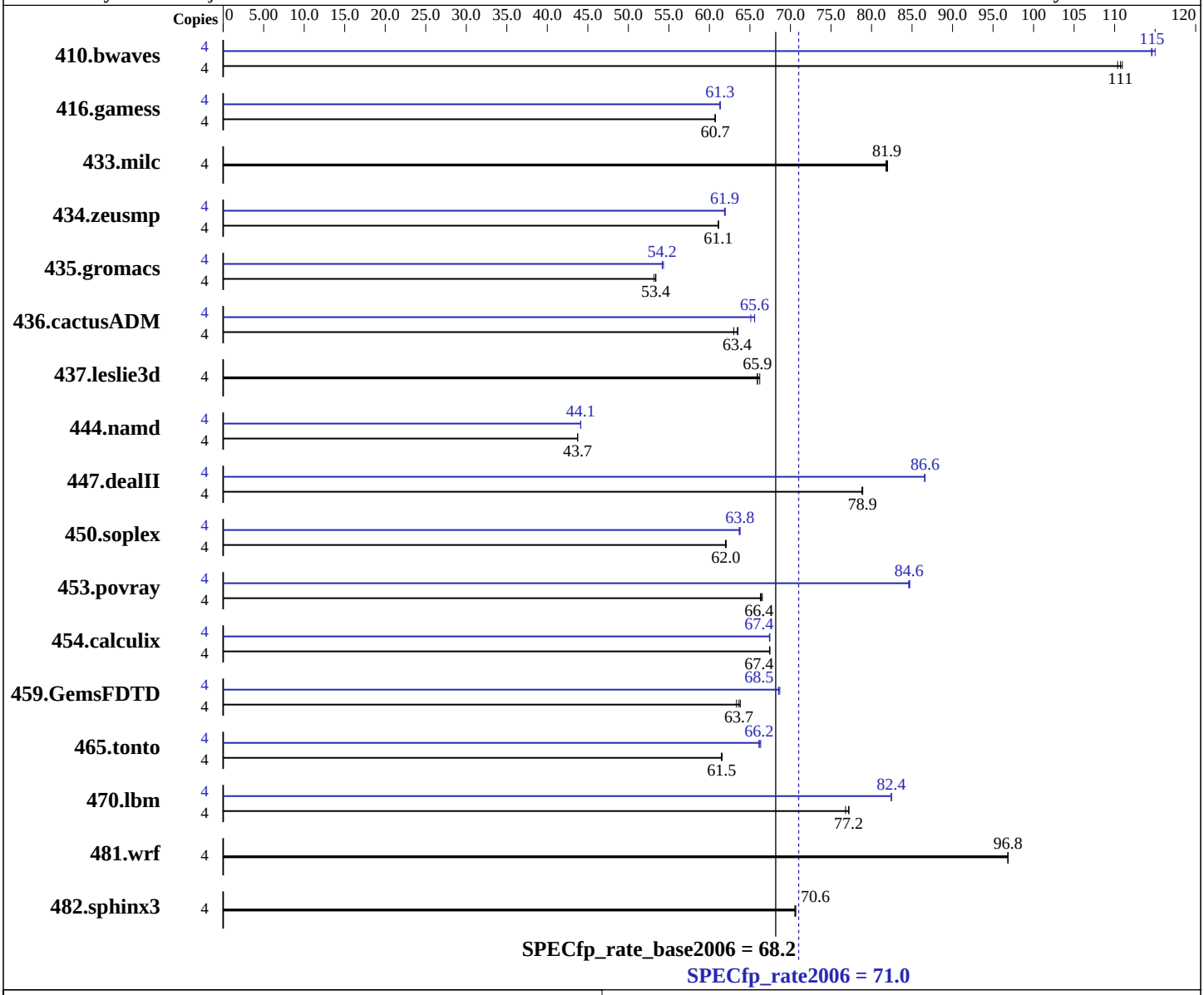
PRIMERGY BX620 S5, Intel Xeon E5502, 1.86 GHz

SPECfp®_rate2006 = 71.0

SPECfp_rate_base2006 = 68.2

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

Test date: May-2009
Hardware Availability: Jun-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, Kernel 2.6.16.60-0.21-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
Base Pointers:	64-bit

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12x4 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

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	493	110	**491**	**111**	490	111	4	**474**	**115**	473	115	475	115
416.gamess	4	**1290**	**60.7**	1291	60.7	1289	60.7	4	**1277**	**61.3**	1277	61.3	1278	61.3
433.milc	4	448	82.0	449	81.8	**448**	**81.9**	4	448	82.0	449	81.8	**448**	**81.9**
434.zeusmp	4	**596**	**61.1**	596	61.1	595	61.1	4	588	62.0	588	61.9	**588**	**61.9**
435.gromacs	4	**535**	**53.4**	535	53.4	537	53.2	4	**527**	**54.2**	527	54.2	526	54.3
436.cactusADM	4	752	63.5	759	63.0	**753**	**63.4**	4	**729**	**65.6**	729	65.6	734	65.1
437.leslie3d	4	570	65.9	568	66.2	**570**	**65.9**	4	570	65.9	568	66.2	**570**	**65.9**
444.namd	4	**734**	**43.7**	733	43.8	734	43.7	4	727	44.1	**727**	**44.1**	727	44.1
447.dealII	4	581	78.8	**580**	**78.9**	580	78.9	4	529	86.5	**528**	**86.6**	528	86.6
450.soplex	4	538	62.0	537	62.1	**538**	**62.0**	4	**523**	**63.8**	524	63.7	523	63.8
453.povray	4	320	66.5	**320**	**66.4**	321	66.3	4	**251**	**84.6**	251	84.7	252	84.6
454.calculix	4	490	67.4	489	67.5	**489**	**67.4**	4	489	67.5	490	67.4	**489**	**67.4**
459.GemsFDTD	4	**667**	**63.7**	670	63.3	665	63.8	4	619	68.5	**619**	**68.5**	618	68.7
465.tonto	4	**640**	**61.5**	640	61.5	639	61.6	4	**594**	**66.2**	593	66.3	595	66.1
470.lbm	4	716	76.8	712	77.2	**712**	**77.2**	4	667	82.5	**667**	**82.4**	667	82.4
481.wrf	4	461	96.9	**461**	**96.8**	461	96.8	4	461	96.9	**461**	**96.8**	461	96.8
482.sphinx3	4	1105	70.6	**1105**	**70.6**	1103	70.7	4	1105	70.6	**1105**	**70.6**	1103	70.7

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 processes to cores and its local memory.
  Details may be found in the config file.
```

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.20090901.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.20090901.xml`

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