SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX920 S1, Intel Xeon E5540, 2.53 GHz

$SPECfp^®\_rate2006 =$ 168

$SPECfp\_rate\_base2006 =$ 162

CPU2006 license: 19	**Test date:** Mar-2009
Test sponsor: Fujitsu	**Hardware Availability:** May-2009
Tested by: Fujitsu	**Software Availability:** Feb-2009

Copies

Benchmark	Copies	Result
410.bwaves	8	162
	16	160
416.gamess	8	173
	16	172
433.milc	16	152
434.zeusmp	16	181
	16	176
435.gromacs	16	175
	16	169
436.cactusADM	16	194
437.leslie3d	16	114
444.namd	16	161
	16	158
447.dealII	16	263
	16	244
450.soplex	8	128
	16	122
453.povray	16	281
	16	231
454.calculix	16	203
	16	203
459.GemsFDTD	8	105
	16	101
465.tonto	16	187
	16	176
470.lbm	8	110
	16	101
481.wrf	16	187
482.sphinx3	16	183
	16	175

SPECfp_rate_base2006 = 162

SPECfp_rate2006 = 168

Hardware

CPU Name:	Intel Xeon E5540
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2533
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
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

Continued on next page

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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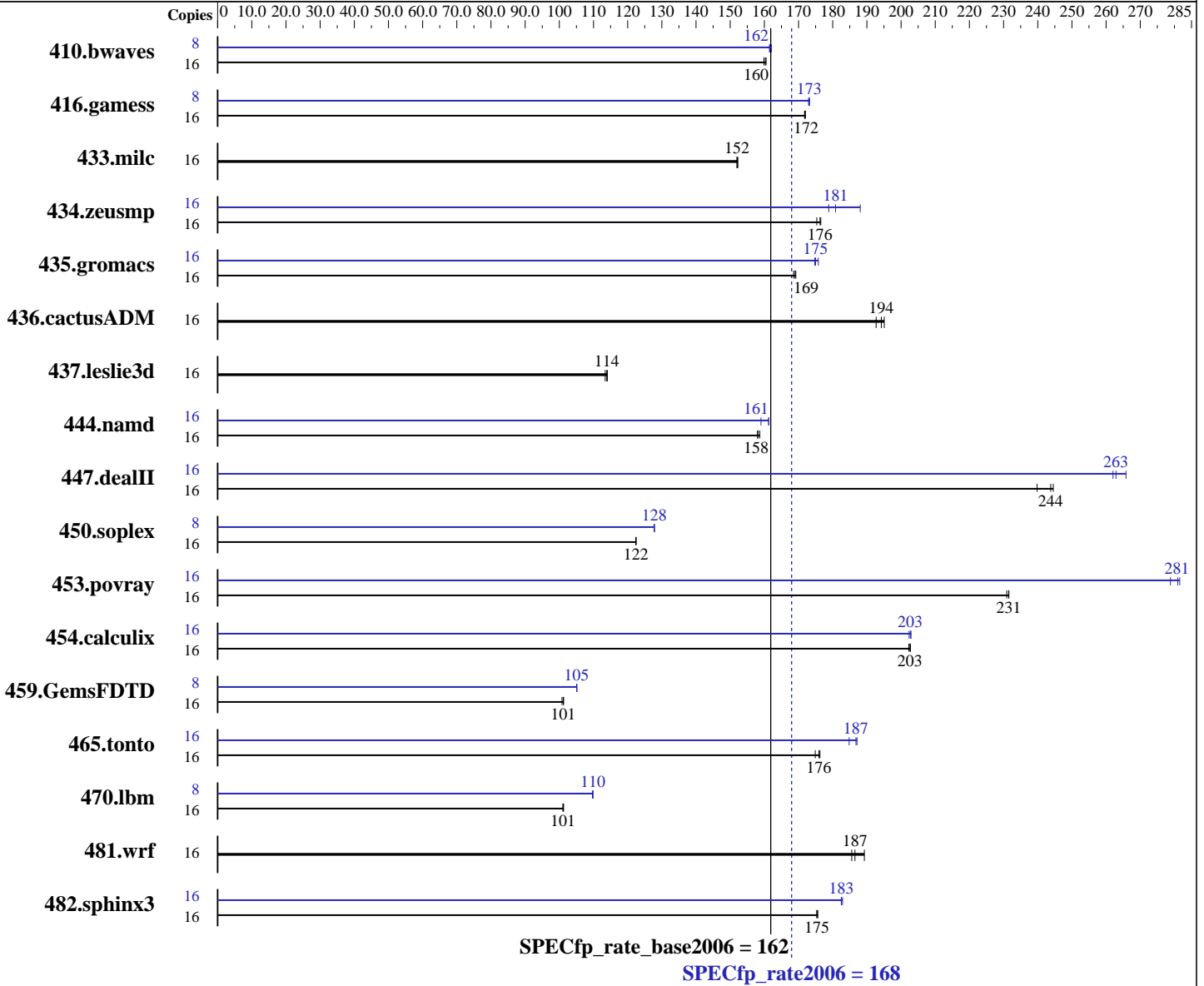**Test sponsor:** Fujitsu
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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6x4 GB + 3x8 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SAS, 73 GB, 10000 RPM
Other Hardware:	None

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

Results Table

Benchmark	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	16	1360	160	1355	161	**1357**	**160**	8	673	161	671	162	**673**	**162**
416.gamess	16	1821	172	1824	172	**1824**	**172**	8	**905**	**173**	906	173	904	173
433.milc	16	965	152	967	152	**966**	**152**	16	965	152	967	152	**966**	**152**
434.zeusmp	16	**826**	**176**	825	177	830	175	16	774	188	**805**	**181**	814	179
435.gromacs	16	675	169	678	169	**676**	**169**	16	654	175	**653**	**175**	650	176
436.cactusADM	16	**984**	**194**	992	193	980	195	16	**984**	**194**	992	193	980	195
437.leslie3d	16	1326	113	1319	114	**1321**	**114**	16	1326	113	1319	114	**1321**	**114**
444.namd	16	809	159	**811**	**158**	812	158	16	807	159	796	161	**796**	**161**
447.dealII	16	**751**	**244**	763	240	748	245	16	699	262	**696**	**263**	689	266
450.soplex	16	1090	122	1090	122	**1090**	**122**	8	522	128	**522**	**128**	522	128
453.povray	16	369	231	368	232	**368**	**231**	16	**303**	**281**	302	282	305	279
454.calculix	16	651	203	**652**	**203**	653	202	16	650	203	652	202	**651**	**203**
459.GemsFDTD	16	1677	101	**1678**	**101**	1684	101	8	807	105	808	105	**808**	**105**
465.tonto	16	900	175	893	176	**895**	**176**	16	852	185	841	187	**843**	**187**
470.lbm	16	2171	101	**2175**	**101**	2176	101	8	1000	110	**1001**	**110**	1002	110
481.wrf	16	944	189	963	186	**958**	**187**	16	944	189	963	186	**958**	**187**
482.sphinx3	16	**1778**	**175**	1775	176	1779	175	16	1705	183	**1708**	**183**	1709	183

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 1066 MHz.

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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 (except as noted below):
```
icc
```

482.sphinx3: `icc -m32`

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`

Peak Optimization Flags

C benchmarks:

Fujitsu

PRIMERGY BX920 S1, Intel Xeon E5540, 2.53 GHz

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CPU2006 license: 19		**Test date:**	Mar-2009
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Tested by:	Fujitsu	**Software Availability:**	Feb-2009

Peak Optimization Flags (Continued)

433.milc: `basepeak = yes`

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

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`

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: basepeak = yes

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

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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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