SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX620 S5, Intel Xeon E5504, 2.0 GHz

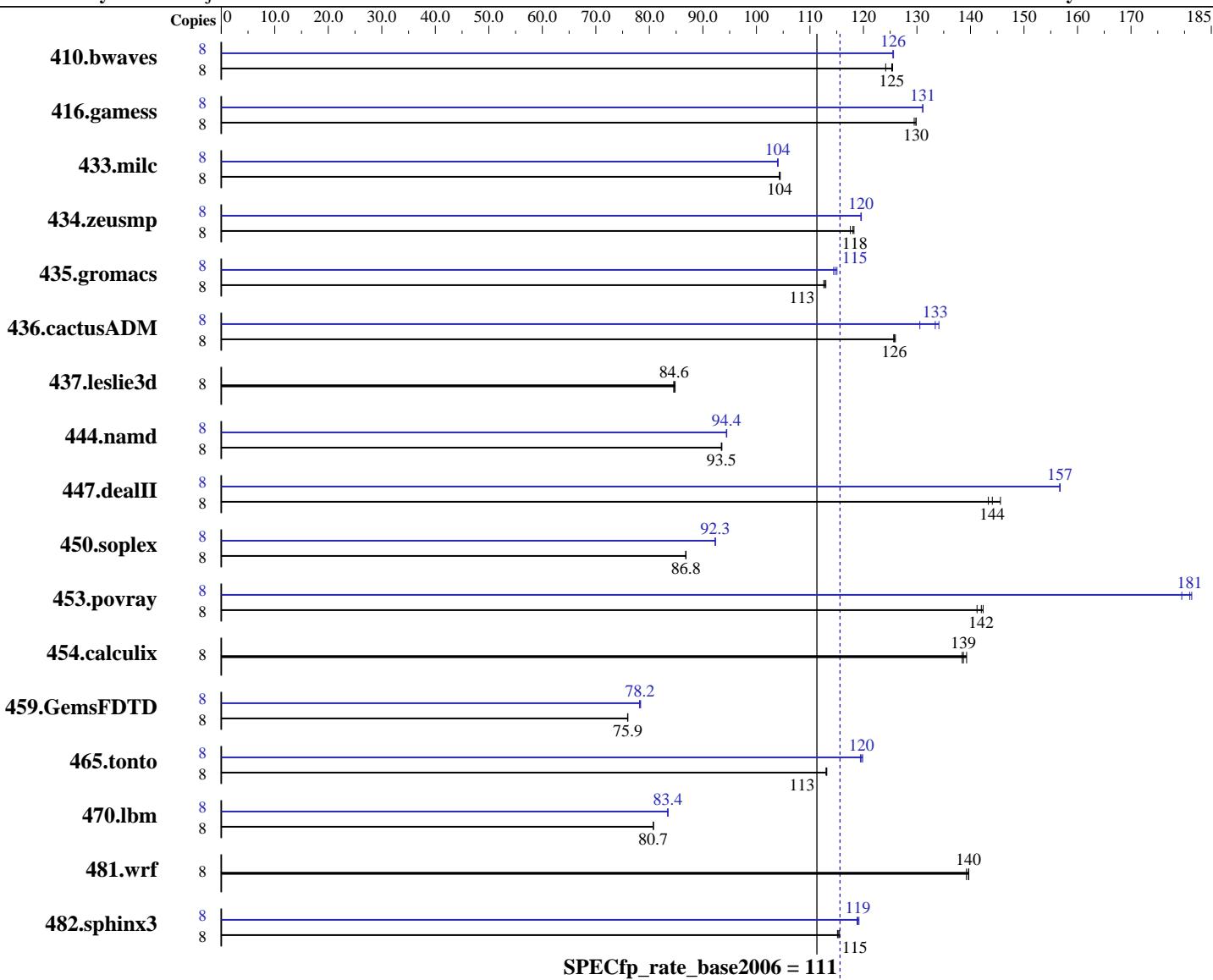$SPECfp^®\_rate2006 =$ 116

$SPECfp\_rate\_base2006 =$ 111

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

Copies

Benchmark	Copies	Blue (peak)	Black (base)
410.bwaves	8 / 8	126	125
416.gamess	8 / 8	131	130
433.milc	8 / 8	104	104
434.zeusmp	8 / 8	120	118
435.gromacs	8 / 8	115	113
436.cactusADM	8 / 8	133	126
437.leslie3d	8		84.6
444.namd	8 / 8	94.4	93.5
447.dealII	8 / 8	157	144
450.soplex	8 / 8	92.3	86.8
453.povray	8 / 8	181	142
454.calculix	8		139
459.GemsFDTD	8 / 8	78.2	75.9
465.tonto	8 / 8	120	113
470.lbm	8 / 8	83.4	80.7
481.wrf	8		140
482.sphinx3	8 / 8	119	115

SPECfp_rate_base2006 = 111

SPECfp_rate2006 = 116

Hardware

CPU Name:	Intel Xeon E5504
CPU Characteristics:	
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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

Continued on next page

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 Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	8	876	124	867	125	**868**	**125**	8	865	126	866	126	**866**	**126**
416.gamess	8	1207	130	**1207**	**130**	1210	129	8	**1195**	**131**	1195	131	1195	131
433.milc	8	703	104	**704**	**104**	704	104	8	707	104	706	104	**706**	**104**
434.zeusmp	8	619	118	616	118	**617**	**118**	8	609	120	609	120	**609**	**120**
435.gromacs	8	506	113	**507**	**113**	507	113	8	496	115	499	114	**498**	**115**
436.cactusADM	8	761	126	759	126	**760**	**126**	8	732	131	**717**	**133**	713	134
437.leslie3d	8	887	84.8	**889**	**84.6**	889	84.6	8	887	84.8	**889**	**84.6**	889	84.6
444.namd	8	**686**	**93.5**	687	93.4	686	93.6	8	680	94.4	679	94.5	**679**	**94.4**
447.dealII	8	629	146	638	143	**635**	**144**	8	**584**	**157**	584	157	584	157
450.soplex	8	769	86.8	768	86.8	**768**	**86.8**	8	723	92.3	**723**	**92.3**	723	92.3
453.povray	8	301	141	299	142	**300**	**142**	8	**235**	**181**	235	181	237	179
454.calculix	8	474	139	477	138	**476**	**139**	8	474	139	477	138	**476**	**139**
459.GemsFDTD	8	1118	75.9	**1118**	**75.9**	1117	76.0	8	1083	78.4	**1085**	**78.2**	1086	78.2
465.tonto	8	697	113	696	113	**696**	**113**	8	659	119	**658**	**120**	657	120
470.lbm	8	1361	80.7	1362	80.7	**1361**	**80.7**	8	1317	83.5	**1317**	**83.4**	1318	83.4
481.wrf	8	642	139	**640**	**140**	640	140	8	642	139	**640**	**140**	640	140
482.sphinx3	8	**1353**	**115**	1350	116	1354	115	8	1312	119	1308	119	**1310**	**119**

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.
```

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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:

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Peak Optimization Flags (Continued)

```
     433.milc: -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

      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:

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Peak Optimization Flags (Continued)

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`

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: `basepeak = yes`

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`

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

Tested with SPEC CPU2006 v1.1.
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