SPEC® CFP2006 Result
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Fujitsu

PRIMERGY TX300 S5, Intel Xeon E5540, 2.53 GHz

$SPECfp®\_rate2006 = \quad 168$

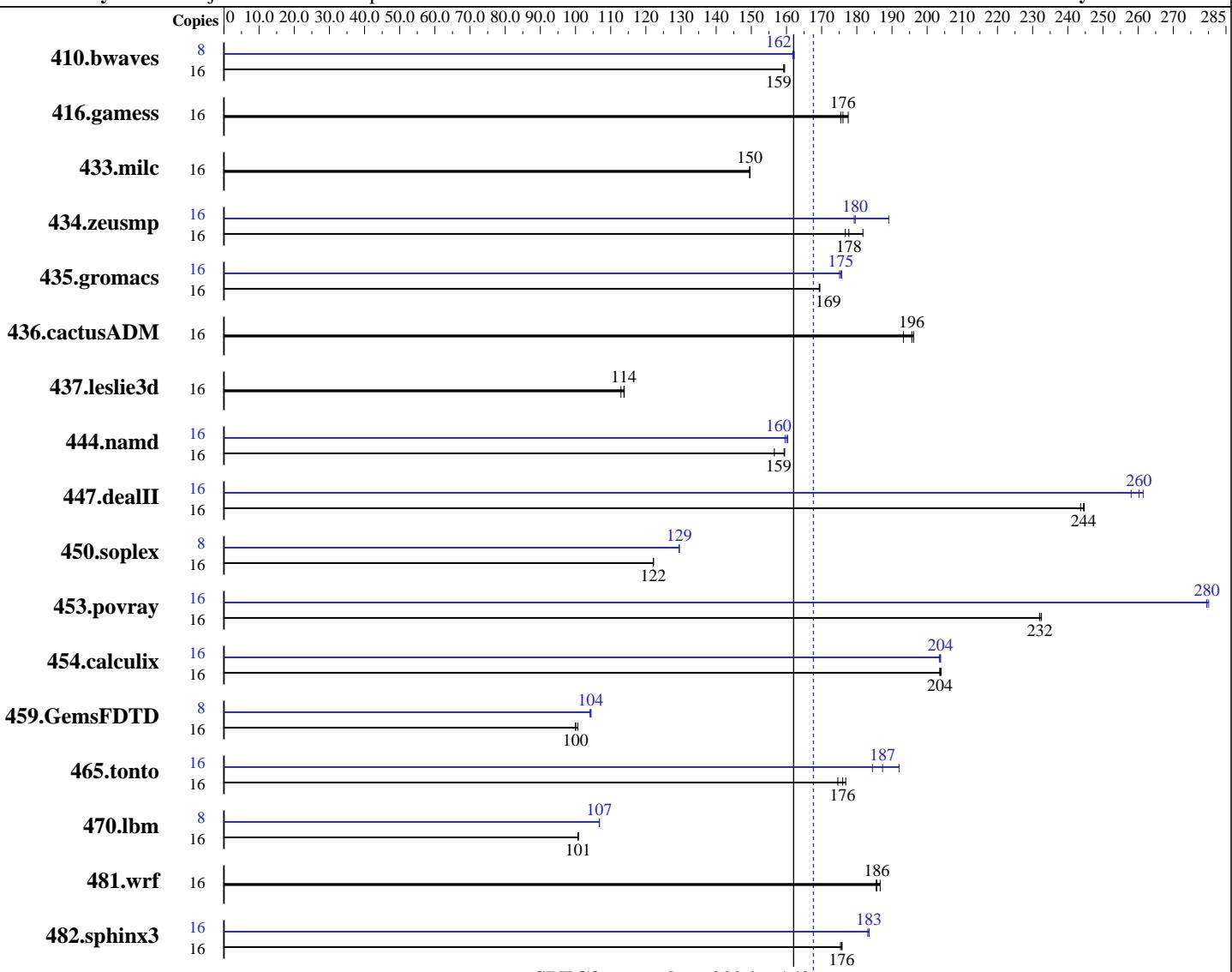$SPECfp\_rate\_base2006 = \quad 162$

CPU2006 license: 19	**Test date:** Feb-2009
Test sponsor: Fujitsu	**Hardware Availability:** Apr-2009
Tested by: Fujitsu Siemens Computers	**Software Availability:** Feb-2009

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, 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:	8 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.18.50.0.7.20080502
Memory:	48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)		
Disk Subsystem:	1 x SATA, 250 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	**1365**	**159**	1363	159	1366	159	8	**671**	**162**	670	162	672	162
416.gamess	16	1786	175	**1779**	**176**	1764	178	16	1786	175	**1779**	**176**	1764	178
433.milc	16	**982**	**150**	982	150	982	150	16	**982**	**150**	982	150	982	150
434.zeusmp	16	801	182	824	177	**819**	**178**	16	770	189	**811**	**180**	812	179
435.gromacs	16	**674**	**169**	675	169	674	169	16	650	176	652	175	**651**	**175**
436.cactusADM	16	**977**	**196**	975	196	989	193	16	**977**	**196**	975	196	989	193
437.leslie3d	16	1332	113	1321	114	**1322**	**114**	16	1332	113	1321	114	**1322**	**114**
444.namd	16	**805**	**159**	820	157	805	159	16	804	160	800	160	**802**	**160**
447.dealII	16	751	244	748	245	**749**	**244**	16	709	258	700	261	**703**	**260**
450.soplex	16	**1093**	**122**	1092	122	1093	122	8	515	130	**515**	**129**	516	129
453.povray	16	**367**	**232**	366	233	367	232	16	304	280	305	279	**304**	**280**
454.calculix	16	647	204	648	204	**648**	**204**	16	649	203	648	204	**648**	**204**
459.GemsFDTD	16	1697	100	1687	101	**1697**	**100**	8	815	104	813	104	**813**	**104**
465.tonto	16	890	177	**895**	**176**	902	175	16	854	184	**840**	**187**	820	192
470.lbm	16	2180	101	**2182**	**101**	2184	101	8	1030	107	**1029**	**107**	1029	107
481.wrf	16	**962**	**186**	958	187	963	186	16	**962**	**186**	958	187	963	186
482.sphinx3	16	1778	175	1774	176	**1775**	**176**	16	1699	184	1703	183	**1700**	**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
```

General Notes

```
   This result was measured on the PRIMERGY TX300 S5. The PRIMERGY TX300 S5
   and the PRIMERGY RX300 S5 are electronically equivalent.

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

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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
```

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

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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:

        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`

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Peak Optimization Flags (Continued)

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: `basepeak = yes`

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`

436.cactusADM: `basepeak = yes`

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `basepeak = yes`

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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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