SPEC® CFP2006 Result
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Fujitsu Siemens Computers

PRIMERGY TX300 S4, Intel Xeon E5405, 2.0 GHz

$SPECfp®\_rate2006 = 63.8$

$SPECfp\_rate\_base2006 = 58.2$
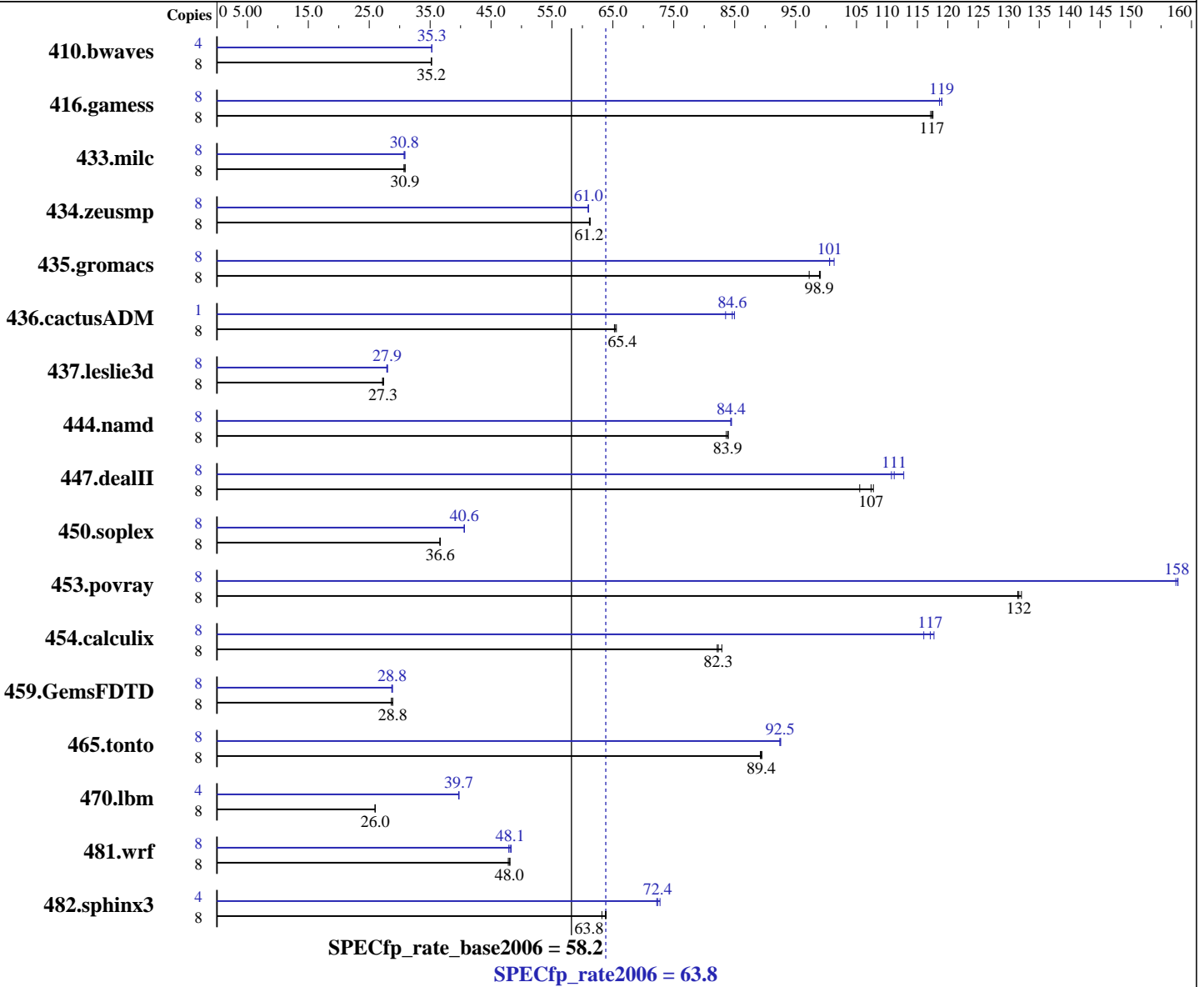
CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers

Test date: Jan-2008
Hardware Availability: Mar-2007
Software Availability: Nov-2007

Benchmark	Copies	Result
410.bwaves	4	35.3
	8	35.2
416.gamess	8	119
	8	117
433.milc	8	30.8
	8	30.9
434.zeusmp	8	61.0
	8	61.2
435.gromacs	8	101
	8	98.9
436.cactusADM	1	84.6
	8	65.4
437.leslie3d	8	27.9
	8	27.3
444.namd	8	84.4
	8	83.9
447.dealII	8	111
	8	107
450.soplex	8	40.6
	8	36.6
453.povray	8	158
	8	132
454.calculix	8	117
	8	82.3
459.GemsFDTD	8	28.8
	8	28.8
465.tonto	8	92.5
	8	89.4
470.lbm	4	39.7
	8	26.0
481.wrf	8	48.1
	8	48.0
482.sphinx3	4	72.4
	8	63.8

SPECfp_rate_base2006 = 58.2

SPECfp_rate2006 = 63.8

Hardware

CPU Name: Intel Xeon E5405
CPU Characteristics: 1333 MHz system bus
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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 - Build 20070725
Auto Parallel: Yes
File System: ext2
System State: Multiuser, Runlevel 3
Base Pointers: 64-bit

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8x2 GB PC2-5300F, 2 rank, CAS 5-5-5, with ECC)
Disk Subsystem:	Seagate ST973451SS (SAS, 73GB, 15000rpm)
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3088	35.2	**3087**	**35.2**	3087	35.2	4	1541	35.3	1541	35.3	**1541**	**35.3**
416.gamess	8	**1334**	**117**	1332	118	1337	117	8	**1316**	**119**	1320	119	1316	119
433.milc	8	**2380**	**30.9**	2392	30.7	2377	30.9	8	2389	30.7	**2387**	**30.8**	2379	30.9
434.zeusmp	8	1191	61.1	**1189**	**61.2**	1188	61.3	8	**1193**	**61.0**	1195	60.9	1193	61.0
435.gromacs	8	587	97.2	**577**	**98.9**	577	99.1	8	568	101	**568**	**101**	564	101
436.cactusADM	8	1465	65.3	**1463**	**65.4**	1458	65.6	1	**141**	**84.6**	143	83.5	141	85.0
437.leslie3d	8	2767	27.2	2748	27.4	**2757**	**27.3**	8	2684	28.0	2697	27.9	**2692**	**27.9**
444.namd	8	764	84.0	**765**	**83.9**	767	83.6	8	**760**	**84.4**	760	84.5	761	84.4
447.dealII	8	**852**	**107**	849	108	867	106	8	812	113	**823**	**111**	826	111
450.soplex	8	1823	36.6	1820	36.7	**1821**	**36.6**	8	1644	40.6	1642	40.6	**1643**	**40.6**
453.povray	8	324	131	**323**	**132**	322	132	8	**270**	**158**	270	157	270	158
454.calculix	8	**802**	**82.3**	804	82.1	796	82.9	8	569	116	**564**	**117**	561	118
459.GemsFDTD	8	2966	28.6	2942	28.9	**2943**	**28.8**	8	2945	28.8	2957	28.7	**2949**	**28.8**
465.tonto	8	880	89.5	**881**	**89.4**	882	89.2	8	850	92.6	**851**	**92.5**	852	92.4
470.lbm	8	4233	26.0	**4232**	**26.0**	4231	26.0	4	**1384**	**39.7**	1385	39.7	1383	39.7
481.wrf	8	1857	48.1	**1862**	**48.0**	1868	47.8	8	1850	48.3	1865	47.9	**1857**	**48.1**
482.sphinx3	8	2440	63.9	2467	63.2	**2445**	**63.8**	4	**1077**	**72.4**	1080	72.2	1072	72.7

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'OMP_NUM_THREADS' set to number of cores (default)

General Notes

This result has been produced with binaries provided and compiled by Intel.

All binaries were built with 64-bit Intel compiler except:
437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with
32-bit Intel compiler by changing the path for include and library files.

BIOS configuration:

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General Notes (Continued)

```
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable

For information about Fujitsu Siemens Computers please see:
http://www.fujitsu-siemens.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:
    -fast

C++ benchmarks:
    -fast

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-fast
```

Benchmarks using both Fortran and C:
```
-fast
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

    433.milc: `icc`

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

  450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc`
            `-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
            `-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Fortran benchmarks (except as noted below):
```
ifort
```

  437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort`
             `-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
            `-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

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
          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
```

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Peak Portability Flags (Continued)

```
465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
          -auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
         -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2
```

C++ benchmarks:

```
444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
          -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
            -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
            -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
            -ansi-alias
```

Fortran benchmarks:

```
410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
            -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
              -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
              -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto
```

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.01.xml`

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

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