SPEC® CFP2006 Result
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Fujitsu Siemens Computers

PRIMERGY TX150 S6, Intel Xeon processor X3210, 2.13 GHz

$SPECfp®\_rate2006 =$ 39.3

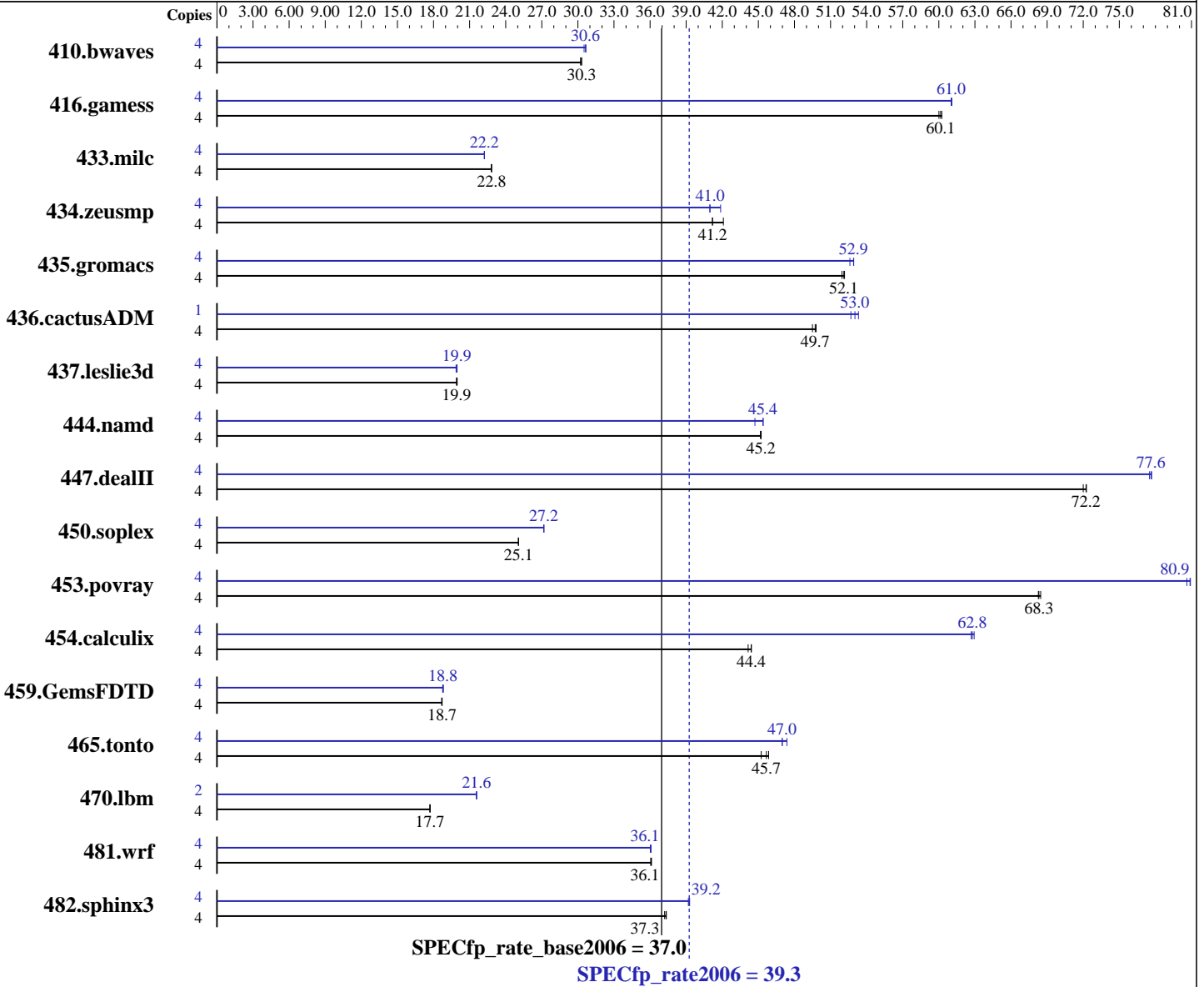$SPECfp\_rate\_base2006 =$ 37.0

CPU2006 license: 22

Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Oct-2007

Hardware Availability: Dec-2007

Software Availability: Nov-2007

Benchmark	Copies	Result
410.bwaves	4 / 4	30.6 / 30.3
416.gamess	4 / 4	61.0 / 60.1
433.milc	4 / 4	22.2 / 22.8
434.zeusmp	4 / 4	41.0 / 41.2
435.gromacs	4 / 4	52.9 / 52.1
436.cactusADM	1 / 4	53.0 / 49.7
437.leslie3d	4 / 4	19.9 / 19.9
444.namd	4 / 4	45.4 / 45.2
447.dealII	4 / 4	77.6 / 72.2
450.soplex	4 / 4	27.2 / 25.1
453.povray	4 / 4	80.9 / 68.3
454.calculix	4 / 4	62.8 / 44.4
459.GemsFDTD	4 / 4	18.8 / 18.7
465.tonto	4 / 4	47.0 / 45.7
470.lbm	2 / 4	21.6 / 17.7
481.wrf	4 / 4	36.1 / 36.1
482.sphinx3	4 / 4	39.2 / 37.3

SPECfp_rate_base2006 = 37.0

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Hardware

CPU Name: Intel Xeon X3210
CPU Characteristics: 1066 MHz system bus
CPU MHz: 2133
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
CPU(s) orderable: 1 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 8 MB I+D on chip per chip, 4 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	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	None
Memory:	4 GB (4x1 GB PC2-6400E, 2 rank, CAS 6-6-6, with ECC)		
Disk Subsystem:	Fujitsu MAY2036RC (SAS, 36GB, 10000rpm)		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1799	30.2	1794	30.3	**1794**	**30.3**	4	1781	30.5	1772	30.7	**1775**	**30.6**
416.gamess	4	1305	60.0	**1302**	**60.1**	1300	60.2	4	1282	61.1	**1283**	**61.0**	1283	61.0
433.milc	4	1609	22.8	**1609**	**22.8**	1610	22.8	4	1651	22.2	**1652**	**22.2**	1652	22.2
434.zeusmp	4	**884**	**41.2**	884	41.2	865	42.1	4	889	41.0	869	41.9	**888**	**41.0**
435.gromacs	4	550	52.0	548	52.2	**548**	**52.1**	4	540	52.9	**540**	**52.9**	543	52.6
436.cactusADM	4	960	49.8	966	49.5	**961**	**49.7**	1	224	53.3	227	52.7	**225**	**53.0**
437.leslie3d	4	1883	20.0	1888	19.9	**1887**	**19.9**	4	1892	19.9	**1885**	**19.9**	1884	20.0
444.namd	4	710	45.2	**709**	**45.2**	709	45.2	4	717	44.7	707	45.4	**707**	**45.4**
447.dealII	4	**633**	**72.2**	633	72.3	636	72.0	4	**589**	**77.6**	589	77.7	590	77.5
450.soplex	4	**1331**	**25.1**	1331	25.1	1332	25.1	4	1228	27.2	1228	27.2	**1228**	**27.2**
453.povray	4	**311**	**68.3**	312	68.3	311	68.5	4	263	80.9	264	80.6	**263**	**80.9**
454.calculix	4	**743**	**44.4**	747	44.2	743	44.4	4	524	62.9	**526**	**62.8**	526	62.7
459.GemsFDTD	4	**2268**	**18.7**	2273	18.7	2268	18.7	4	**2260**	**18.8**	2255	18.8	2262	18.8
465.tonto	4	870	45.2	858	45.9	**862**	**45.7**	4	838	47.0	**838**	**47.0**	831	47.4
470.lbm	4	3103	17.7	3104	17.7	**3104**	**17.7**	2	1273	21.6	1274	21.6	**1274**	**21.6**
481.wrf	4	1239	36.1	**1239**	**36.1**	1237	36.1	4	**1239**	**36.1**	1240	36.0	1238	36.1
482.sphinx3	4	2095	37.2	**2089**	**37.3**	2087	37.4	4	**1987**	**39.2**	1990	39.2	1984	39.3

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

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:
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Enable

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Test sponsor:	Fujitsu Siemens Computers	**Hardware Availability:**	Dec-2007
Tested by:	Fujitsu Siemens Computers	**Software Availability:**	Nov-2007

General Notes (Continued)

```
   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.20090714.05.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.20090714.05.xml`

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

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