SPEC® CFP2006 Result

Fujitsu Siemens Computers

$SPECfp^{®}\_rate2006 =$ 68.8

PRIMERGY TX300 S4, Intel Xeon L5410, 2.33 GHz

$SPECfp\_rate\_base2006 =$ 62.2
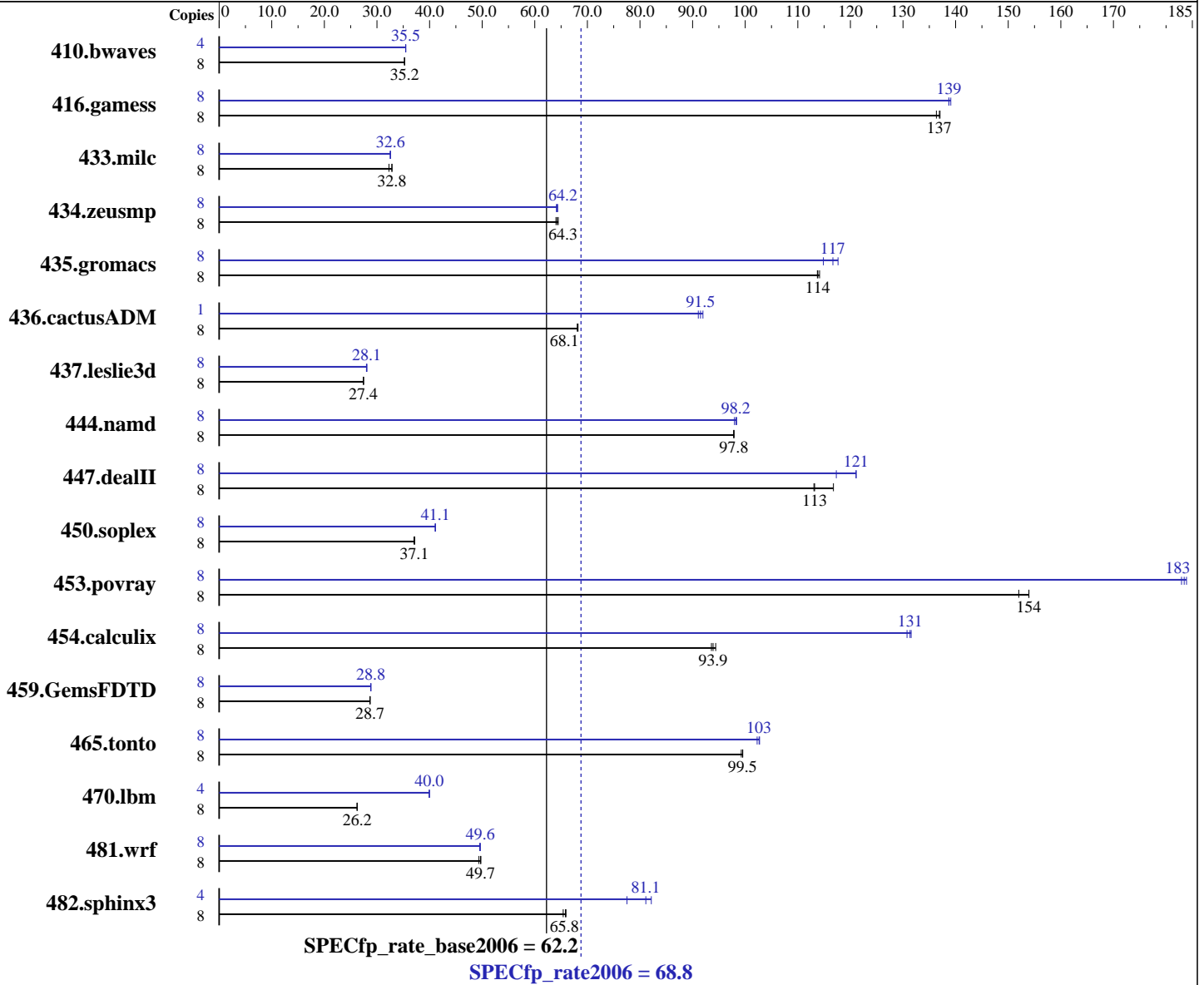
CPU2006 license: 22

Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Feb-2008

Hardware Availability: Mar-2008

Software Availability: Nov-2007

SPECfp_rate_base2006 = 62.2

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410.bwaves	4	35.5
	8	35.2
416.gamess	8	139
	8	137
433.milc	8	32.6
	8	32.8
434.zeusmp	8	64.2
	8	64.3
435.gromacs	8	117
	8	114
436.cactusADM	1	91.5
	8	68.1
437.leslie3d	8	28.1
	8	27.4
444.namd	8	98.2
	8	97.8
447.dealII	8	121
	8	113
450.soplex	8	41.1
	8	37.1
453.povray	8	183
	8	154
454.calculix	8	131
	8	93.9
459.GemsFDTD	8	28.8
	8	28.7
465.tonto	8	103
	8	99.5
470.lbm	4	40.0
	8	26.2
481.wrf	8	49.6
	8	49.7
482.sphinx3	4	81.1
	8	65.8

Hardware

CPU Name:	Intel Xeon L5410
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2333
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	3082	35.3	**3085**	**35.2**	3087	35.2	4	1532	35.5	**1533**	**35.5**	1533	35.4
416.gamess	8	1143	137	**1144**	**137**	1149	136	8	1129	139	**1129**	**139**	1126	139
433.milc	8	2275	32.3	2234	32.9	**2238**	**32.8**	8	2259	32.5	2254	32.6	**2255**	**32.6**
434.zeusmp	8	**1133**	**64.3**	1129	64.5	1137	64.0	8	1136	64.1	1131	64.4	**1133**	**64.2**
435.gromacs	8	**502**	**114**	502	114	500	114	8	486	118	**490**	**117**	497	115
436.cactusADM	8	**1403**	**68.1**	1401	68.2	1404	68.1	1	131	91.1	130	92.0	**131**	**91.5**
437.leslie3d	8	**2743**	**27.4**	2743	27.4	2738	27.5	8	**2680**	**28.1**	2678	28.1	2686	28.0
444.namd	8	**656**	**97.8**	656	97.9	656	97.8	8	652	98.4	**653**	**98.2**	655	97.9
447.dealII	8	784	117	**809**	**113**	809	113	8	**756**	**121**	780	117	756	121
450.soplex	8	**1797**	**37.1**	1801	37.0	1794	37.2	8	**1624**	**41.1**	1622	41.1	1625	41.1
453.povray	8	280	152	276	154	**277**	**154**	8	233	183	231	184	**232**	**183**
454.calculix	8	705	93.6	**703**	**93.9**	699	94.4	8	**503**	**131**	502	132	505	131
459.GemsFDTD	8	**2960**	**28.7**	2958	28.7	2960	28.7	8	2945	28.8	2942	28.9	**2944**	**28.8**
465.tonto	8	**791**	**99.5**	791	99.5	793	99.3	8	766	103	770	102	**767**	**103**
470.lbm	8	4192	26.2	**4190**	**26.2**	4188	26.2	4	1376	39.9	1375	40.0	**1376**	**40.0**
481.wrf	8	**1798**	**49.7**	1796	49.8	1809	49.4	8	**1800**	**49.6**	1800	49.6	1804	49.5
482.sphinx3	8	**2369**	**65.8**	2365	65.9	2384	65.4	4	949	82.2	1006	77.5	**961**	**81.1**

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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Tested by: Fujitsu Siemens Computers		**Software Availability:**	Nov-2007

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.20090713.02.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.20090713.02.xml`

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

Tested with SPEC CPU2006 v1.0.
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