



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

PRIMERGY BX620 S4, Intel Xeon processor L5310,  
1.60 GHz

SPECfp<sup>®</sup>\_rate2006 = 46.5

SPECfp\_rate\_base2006 = 43.0

CPU2006 license: 22

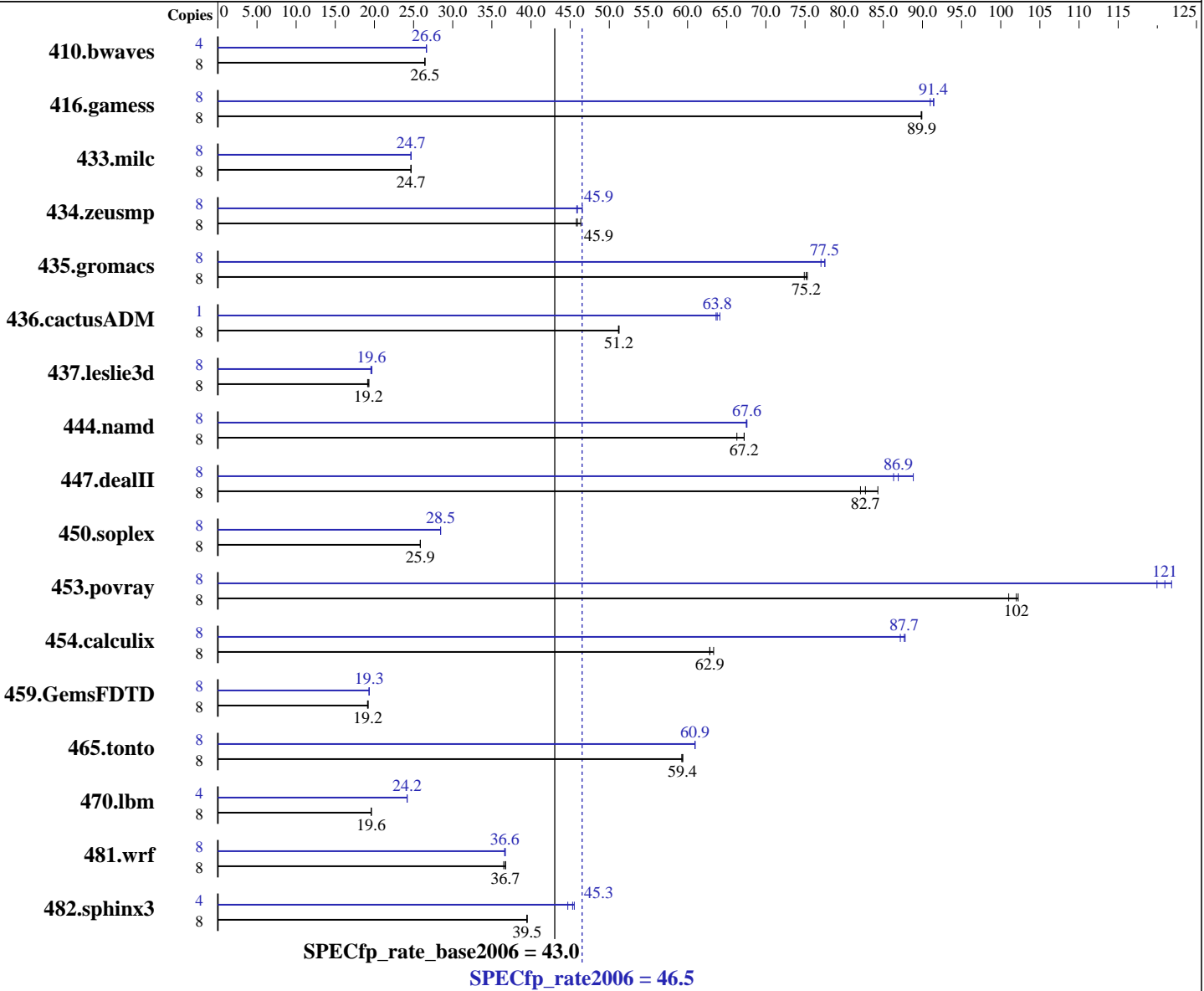
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Dec-2007

Hardware Availability: Dec-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon L5310  
 CPU Characteristics: 1067 MHz system bus  
 CPU MHz: 1600  
 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: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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### 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	4113	26.4	<b>4110</b>	<b>26.5</b>	4110	26.5	4	2040	26.6	2041	26.6	<b>2040</b>	<b>26.6</b>
416.gamess	8	1744	89.8	<b>1742</b>	<b>89.9</b>	1742	89.9	8	1721	91.0	1713	91.5	<b>1714</b>	<b>91.4</b>
433.milc	8	2980	24.6	<b>2974</b>	<b>24.7</b>	2973	24.7	8	2975	24.7	2978	24.7	<b>2975</b>	<b>24.7</b>
434.zeusmp	8	1571	46.4	<b>1585</b>	<b>45.9</b>	1590	45.8	8	<b>1585</b>	<b>45.9</b>	1564	46.6	1588	45.8
435.gromacs	8	<b>760</b>	<b>75.2</b>	763	74.9	759	75.3	8	737	77.5	741	77.0	<b>737</b>	<b>77.5</b>
436.cactusADM	8	<b>1867</b>	<b>51.2</b>	1868	51.2	1865	51.2	1	<b>187</b>	<b>63.8</b>	188	63.6	186	64.1
437.leslie3d	8	3896	19.3	<b>3913</b>	<b>19.2</b>	3931	19.1	8	<b>3832</b>	<b>19.6</b>	3848	19.5	3821	19.7
444.namd	8	968	66.3	<b>954</b>	<b>67.2</b>	954	67.2	8	949	67.6	<b>950</b>	<b>67.6</b>	951	67.5
447.dealII	8	<b>1106</b>	<b>82.7</b>	1115	82.1	1086	84.3	8	1060	86.3	1030	88.8	<b>1053</b>	<b>86.9</b>
450.soplex	8	2581	25.9	2579	25.9	<b>2579</b>	<b>25.9</b>	8	2345	28.5	2346	28.4	<b>2345</b>	<b>28.5</b>
453.povray	8	<b>417</b>	<b>102</b>	416	102	421	101	8	355	120	349	122	<b>352</b>	<b>121</b>
454.calculix	8	1042	63.3	<b>1050</b>	<b>62.9</b>	1051	62.8	8	757	87.2	752	87.8	<b>753</b>	<b>87.7</b>
459.GemsFDTD	8	4440	19.1	<b>4427</b>	<b>19.2</b>	4421	19.2	8	4391	19.3	<b>4392</b>	<b>19.3</b>	4393	19.3
465.tonto	8	<b>1326</b>	<b>59.4</b>	1326	59.4	1329	59.3	8	1291	61.0	1292	60.9	<b>1292</b>	<b>60.9</b>
470.lbm	8	<b>5610</b>	<b>19.6</b>	5610	19.6	5611	19.6	4	<b>2273</b>	<b>24.2</b>	2273	24.2	2274	24.2
481.wrf	8	<b>2433</b>	<b>36.7</b>	2447	36.5	2431	36.8	8	<b>2438</b>	<b>36.6</b>	2439	36.6	2433	36.7
482.sphinx3	8	3951	39.5	<b>3947</b>	<b>39.5</b>	3947	39.5	4	1712	45.5	1744	44.7	<b>1720</b>	<b>45.3</b>

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 = Disable

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## 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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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