



# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

PRIMERGY RX200 S4, Intel Xeon processor L5310,  
1.60 GHz

SPECfp®\_rate2006 = 46.7

SPECfp\_rate\_base2006 = 43.2

CPU2006 license: 22

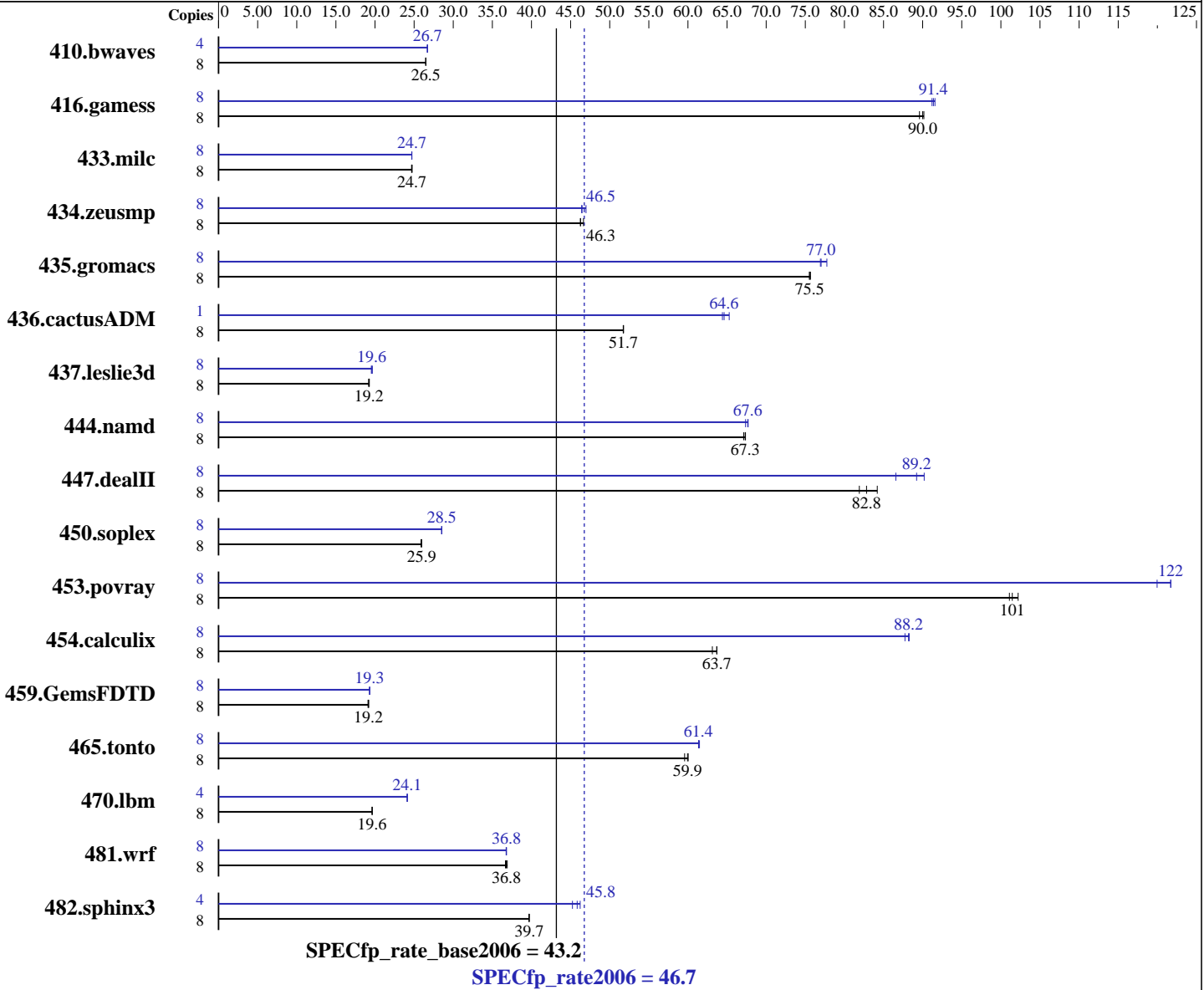
Test sponsor: Fujitsu Siemens Computers

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	<b>4104</b>	<b>26.5</b>	4103	26.5	4104	26.5	4	2036	26.7	<b>2036</b>	<b>26.7</b>	2036	26.7
416.gamess	8	<b>1740</b>	<b>90.0</b>	1737	90.2	1748	89.6	8	1711	91.6	1718	91.2	<b>1714</b>	<b>91.4</b>
433.milc	8	2977	24.7	<b>2971</b>	<b>24.7</b>	2969	24.7	8	<b>2972</b>	<b>24.7</b>	2973	24.7	2972	24.7
434.zeusmp	8	<b>1574</b>	<b>46.3</b>	1574	46.3	1561	46.6	8	1550	47.0	<b>1567</b>	<b>46.5</b>	1568	46.4
435.gromacs	8	<b>756</b>	<b>75.5</b>	755	75.7	756	75.5	8	735	77.8	<b>742</b>	<b>77.0</b>	742	76.9
436.cactusADM	8	1847	51.8	<b>1847</b>	<b>51.7</b>	1848	51.7	1	<b>185</b>	<b>64.6</b>	183	65.3	186	64.4
437.leslie3d	8	3921	19.2	<b>3908</b>	<b>19.2</b>	3901	19.3	8	<b>3838</b>	<b>19.6</b>	3850	19.5	3825	19.7
444.namd	8	956	67.1	<b>953</b>	<b>67.3</b>	953	67.4	8	952	67.4	<b>949</b>	<b>67.6</b>	948	67.7
447.dealII	8	1117	81.9	1087	84.2	<b>1105</b>	<b>82.8</b>	8	1057	86.6	1015	90.2	<b>1026</b>	<b>89.2</b>
450.soplex	8	<b>2571</b>	<b>25.9</b>	2570	26.0	2578	25.9	8	2338	28.5	<b>2338</b>	<b>28.5</b>	2340	28.5
453.povray	8	416	102	421	101	<b>419</b>	<b>101</b>	8	350	122	355	120	<b>350</b>	<b>122</b>
454.calculix	8	1046	63.1	<b>1036</b>	<b>63.7</b>	1036	63.7	8	748	88.3	<b>748</b>	<b>88.2</b>	752	87.7
459.GemsFDTD	8	<b>4430</b>	<b>19.2</b>	4422	19.2	4443	19.1	8	<b>4396</b>	<b>19.3</b>	4394	19.3	4397	19.3
465.tonto	8	1311	60.0	<b>1313</b>	<b>59.9</b>	1321	59.6	8	1281	61.5	1283	61.4	<b>1283</b>	<b>61.4</b>
470.lbm	8	<b>5598</b>	<b>19.6</b>	5598	19.6	5598	19.6	4	<b>2279</b>	<b>24.1</b>	2278	24.1	2279	24.1
481.wrf	8	2421	36.9	2437	36.7	<b>2430</b>	<b>36.8</b>	8	<b>2429</b>	<b>36.8</b>	2428	36.8	2431	36.8
482.sphinx3	8	3930	39.7	<b>3928</b>	<b>39.7</b>	3925	39.7	4	1687	46.2	1723	45.2	<b>1701</b>	<b>45.8</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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