



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

PRIMERGY RX300 S4, Intel Xeon processor L5310,  
1.60 GHz

SPECfp<sup>®</sup>\_rate2006 = 46.7

SPECfp\_rate\_base2006 = 43.1

CPU2006 license: 22

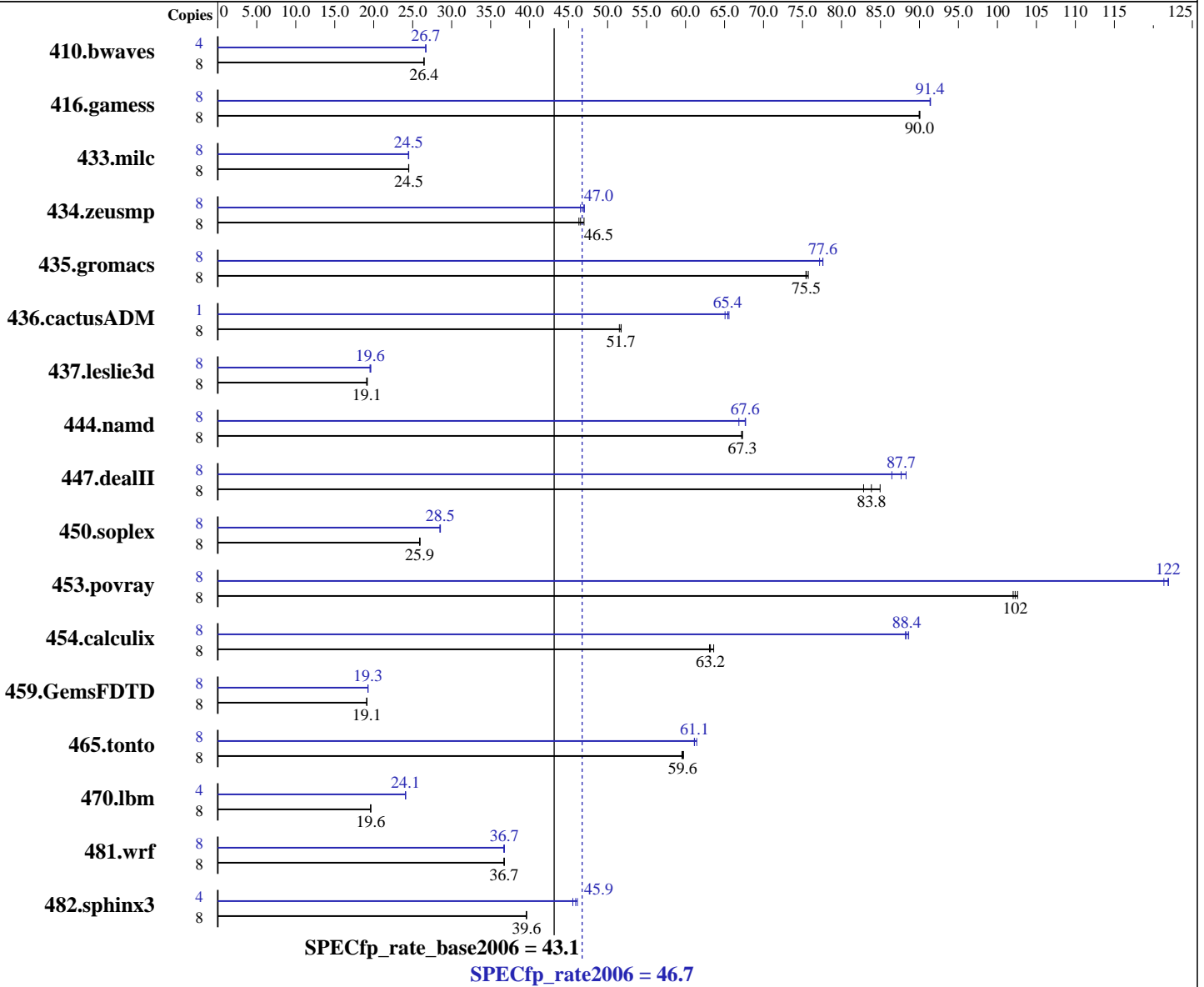
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Nov-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	4110	26.4	4109	26.5	<b>4110</b>	<b>26.4</b>	4	<b>2037</b>	<b>26.7</b>	2037	26.7	2038	26.7
416.gamess	8	1739	90.1	<b>1740</b>	<b>90.0</b>	1741	90.0	8	<b>1714</b>	<b>91.4</b>	1713	91.4	1714	91.4
433.milc	8	2997	24.5	<b>2999</b>	<b>24.5</b>	3001	24.5	8	3002	24.5	<b>3002</b>	<b>24.5</b>	2998	24.5
434.zeusmp	8	<b>1565</b>	<b>46.5</b>	1550	47.0	1572	46.3	8	<b>1551</b>	<b>47.0</b>	1548	47.0	1565	46.5
435.gromacs	8	757	75.4	754	75.7	<b>757</b>	<b>75.5</b>	8	<b>736</b>	<b>77.6</b>	736	77.6	740	77.2
436.cactusADM	8	<b>1848</b>	<b>51.7</b>	1848	51.7	1856	51.5	1	182	65.6	<b>183</b>	<b>65.4</b>	184	65.1
437.leslie3d	8	3920	19.2	3939	19.1	<b>3929</b>	<b>19.1</b>	8	3851	19.5	<b>3844</b>	<b>19.6</b>	3831	19.6
444.namd	8	<b>954</b>	<b>67.3</b>	955	67.2	953	67.3	8	948	67.7	960	66.8	<b>948</b>	<b>67.6</b>
447.dealII	8	1105	82.8	<b>1092</b>	<b>83.8</b>	1077	85.0	8	<b>1044</b>	<b>87.7</b>	1037	88.3	1059	86.5
450.soplex	8	2579	25.9	2571	25.9	<b>2576</b>	<b>25.9</b>	8	2341	28.5	2336	28.6	<b>2340</b>	<b>28.5</b>
453.povray	8	417	102	<b>416</b>	<b>102</b>	415	103	8	<b>349</b>	<b>122</b>	349	122	351	121
454.calculix	8	<b>1044</b>	<b>63.2</b>	1047	63.1	1038	63.6	8	745	88.6	748	88.2	<b>747</b>	<b>88.4</b>
459.GemsFDTD	8	4436	19.1	<b>4442</b>	<b>19.1</b>	4443	19.1	8	<b>4407</b>	<b>19.3</b>	4408	19.3	4404	19.3
465.tonto	8	1318	59.7	<b>1320</b>	<b>59.6</b>	1322	59.5	8	1281	61.4	1288	61.1	<b>1287</b>	<b>61.1</b>
470.lbm	8	<b>5606</b>	<b>19.6</b>	5606	19.6	5604	19.6	4	2283	24.1	2281	24.1	<b>2282</b>	<b>24.1</b>
481.wrf	8	2434	36.7	2431	36.8	<b>2432</b>	<b>36.7</b>	8	<b>2432</b>	<b>36.7</b>	2431	36.8	2436	36.7
482.sphinx3	8	3942	39.6	3936	39.6	<b>3938</b>	<b>39.6</b>	4	1690	46.1	1712	45.5	<b>1698</b>	<b>45.9</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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