



# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

PRIMERGY BX620 S4, Intel Xeon processor L5335,  
2.0 GHz

SPECfp®\_rate2006 = 57.8

SPECfp\_rate\_base2006 = 53.5

CPU2006 license: 22

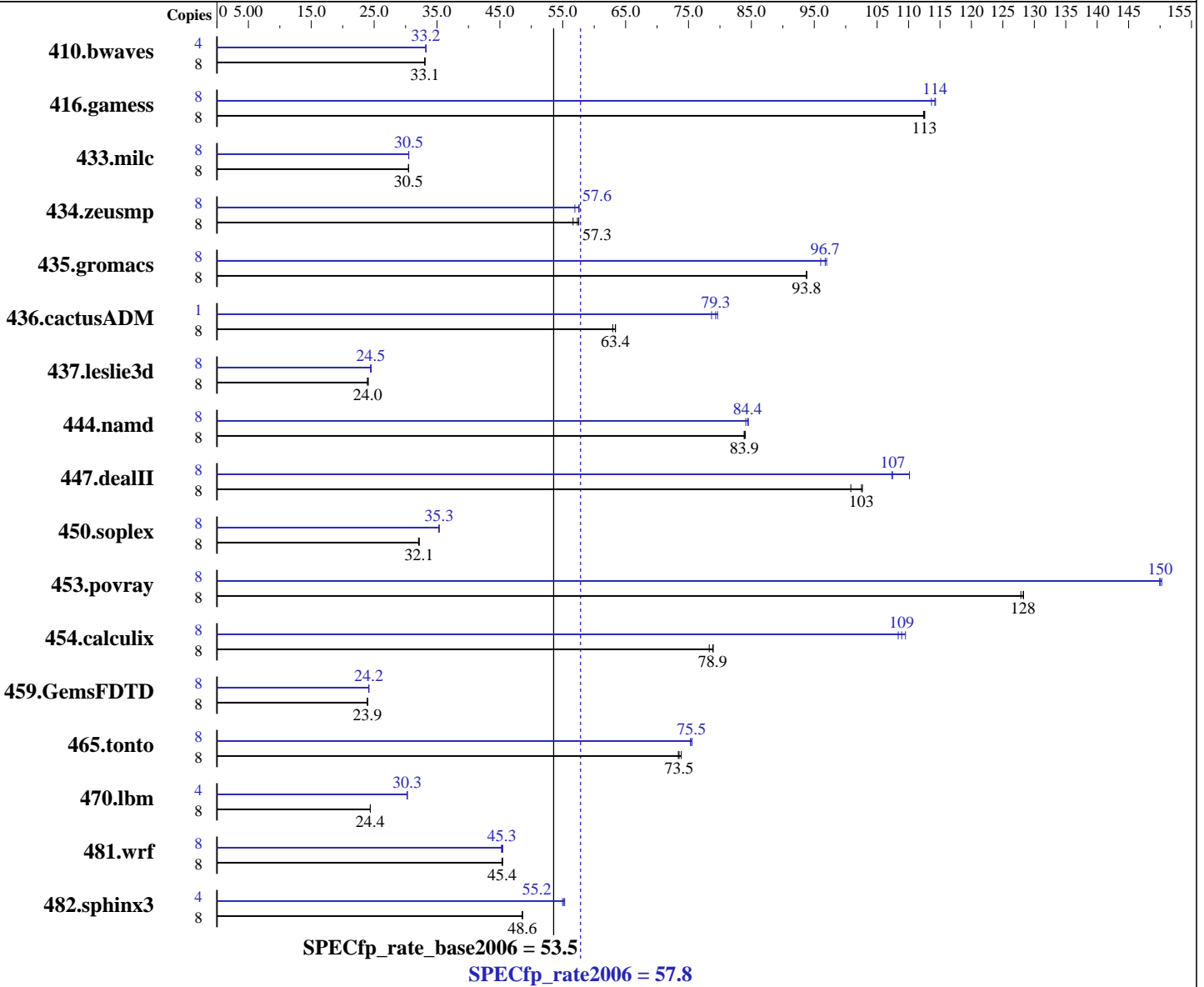
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Dec-2007

Hardware Availability: Sep-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon L5335  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2000  
 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: binutils-2.17.tar.gz, Version 2.17

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	3291	33.0	<b>3287</b>	<b>33.1</b>	3286	33.1	4	1636	33.2	1636	33.2	<b>1636</b>	<b>33.2</b>		
416.gamess	8	1391	113	<b>1392</b>	<b>113</b>	1394	112	8	<b>1372</b>	<b>114</b>	1378	114	1371	114		
433.milc	8	2412	30.4	2408	30.5	<b>2409</b>	<b>30.5</b>	8	2407	30.5	<b>2407</b>	<b>30.5</b>	2408	30.5		
434.zeusmp	8	1265	57.5	1285	56.6	<b>1270</b>	<b>57.3</b>	8	1264	57.6	<b>1265</b>	<b>57.6</b>	1279	56.9		
435.gromacs	8	609	93.7	609	93.8	<b>609</b>	<b>93.8</b>	8	589	97.0	<b>590</b>	<b>96.7</b>	595	96.0		
436.cactusADM	8	<b>1509</b>	<b>63.4</b>	1508	63.4	1519	63.0	1	152	78.7	150	79.6	<b>151</b>	<b>79.3</b>		
437.leslie3d	8	3123	24.1	<b>3138</b>	<b>24.0</b>	3139	24.0	8	<b>3074</b>	<b>24.5</b>	3078	24.4	3063	24.6		
444.namd	8	765	83.9	763	84.0	<b>765</b>	<b>83.9</b>	8	763	84.1	<b>760</b>	<b>84.4</b>	759	84.5		
447.dealII	8	<b>893</b>	<b>103</b>	908	101	891	103	8	853	107	831	110	<b>852</b>	<b>107</b>		
450.soplex	8	2074	32.2	<b>2076</b>	<b>32.1</b>	2081	32.1	8	1890	35.3	<b>1889</b>	<b>35.3</b>	1887	35.4		
453.povray	8	<b>332</b>	<b>128</b>	332	128	333	128	8	284	150	283	150	<b>284</b>	<b>150</b>		
454.calculix	8	843	78.3	836	78.9	<b>837</b>	<b>78.9</b>	8	609	108	<b>606</b>	<b>109</b>	603	110		
459.GemsFDTD	8	3550	23.9	<b>3547</b>	<b>23.9</b>	3536	24.0	8	3512	24.2	3516	24.1	<b>3514</b>	<b>24.2</b>		
465.tonto	8	1066	73.9	1073	73.4	<b>1071</b>	<b>73.5</b>	8	<b>1043</b>	<b>75.5</b>	1042	75.6	1045	75.3		
470.lbm	8	4507	24.4	4506	24.4	<b>4506</b>	<b>24.4</b>	4	1816	30.3	1816	30.3	<b>1816</b>	<b>30.3</b>		
481.wrf	8	1971	45.3	1966	45.4	<b>1970</b>	<b>45.4</b>	8	1965	45.5	<b>1971</b>	<b>45.3</b>	1975	45.2		
482.sphinx3	8	3208	48.6	<b>3209</b>	<b>48.6</b>	3211	48.6	4	<b>1413</b>	<b>55.2</b>	1418	55.0	1410	55.3		

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  
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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## 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:

Continued on next page



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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.20090714.09.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.20090714.09.xml>

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

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