



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

### SPECfp<sup>®</sup>\_rate2006 = 69.4

### CELSIUS R650, Intel Xeon E5410 processor

### SPECfp\_rate\_base2006 = 62.6

CPU2006 license: 22

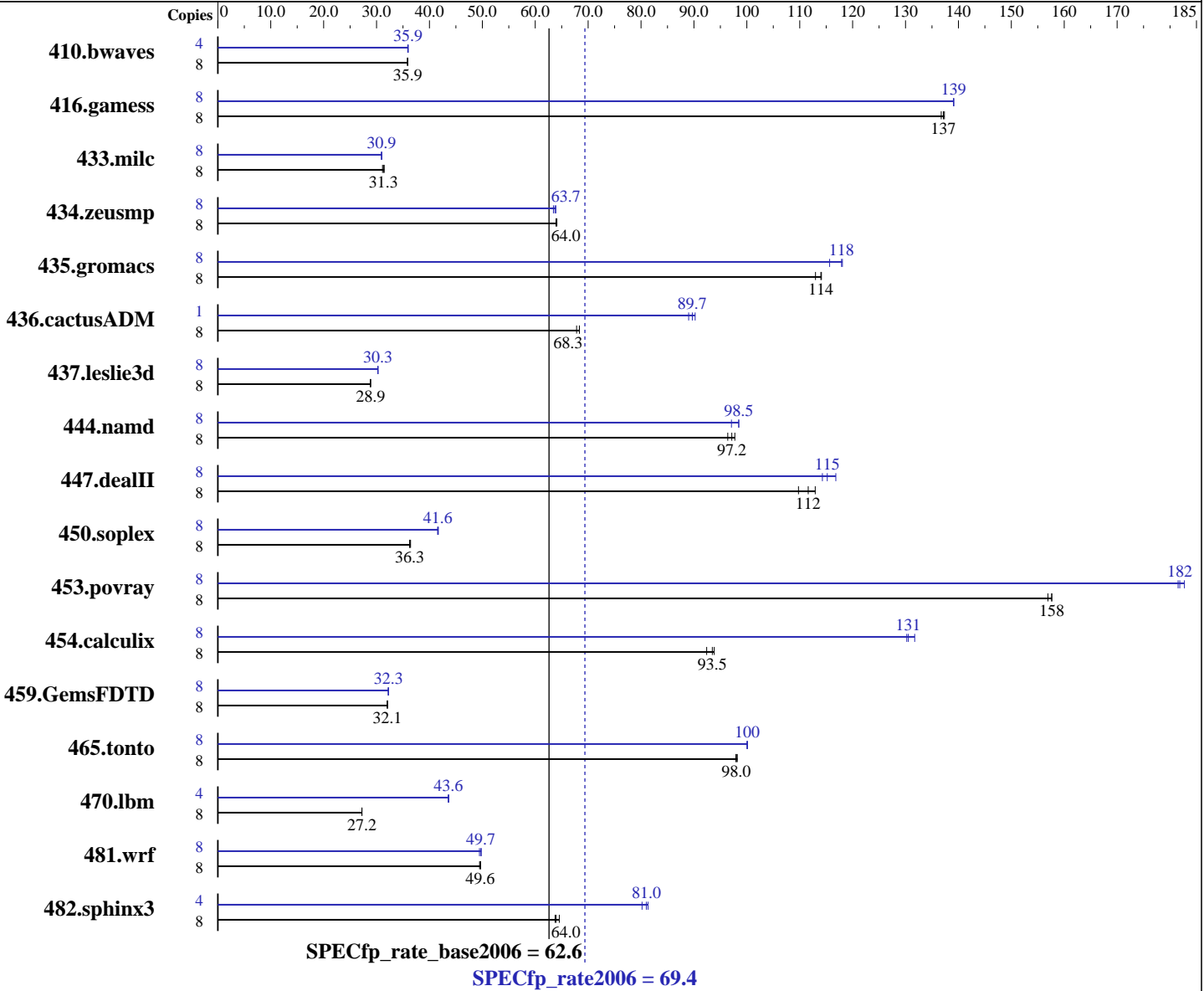
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Nov-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



#### Hardware

CPU Name: Intel Xeon E5410  
 CPU Characteristics: 2333  
 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

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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: ext3  
 System State: Multi-User, Run Level 3  
 Base Pointers: 64-bit

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### Hardware (Continued)

### Software (Continued)

L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (8x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x SATA II, 400 GB, 7200 rpm  
 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	<u>3031</u>	<u>35.9</u>	3034	35.8	3028	35.9	4	1514	35.9	<u>1512</u>	<u>35.9</u>	1510	36.0		
416.gamess	8	1140	137	1145	137	<u>1142</u>	<u>137</u>	8	1126	139	1126	139	<u>1126</u>	<u>139</u>		
433.milc	8	2335	31.5	<u>2346</u>	<u>31.3</u>	2359	31.1	8	2374	30.9	2371	31.0	<u>2373</u>	<u>30.9</u>		
434.zeusmp	8	1136	64.1	1139	63.9	<u>1138</u>	<u>64.0</u>	8	1148	63.4	<u>1142</u>	<u>63.7</u>	1139	63.9		
435.gromacs	8	506	113	<u>501</u>	<u>114</u>	501	114	8	484	118	494	116	<u>484</u>	<u>118</u>		
436.cactusADM	8	1410	67.8	1399	68.4	<u>1399</u>	<u>68.3</u>	1	<u>133</u>	<u>89.7</u>	134	89.0	132	90.2		
437.leslie3d	8	2607	28.8	<u>2606</u>	<u>28.9</u>	2604	28.9	8	<u>2485</u>	<u>30.3</u>	2487	30.2	2483	30.3		
444.namd	8	<u>660</u>	<u>97.2</u>	666	96.4	656	97.7	8	661	97.1	<u>652</u>	<u>98.5</u>	651	98.5		
447.dealII	8	<u>820</u>	<u>112</u>	810	113	834	110	8	783	117	<u>794</u>	<u>115</u>	801	114		
450.soplex	8	1831	36.4	<u>1839</u>	<u>36.3</u>	1839	36.3	8	1605	41.6	1601	41.7	<u>1604</u>	<u>41.6</u>		
453.povray	8	271	157	<u>270</u>	<u>158</u>	270	158	8	<u>234</u>	<u>182</u>	233	183	234	182		
454.calculix	8	703	93.8	714	92.4	<u>706</u>	<u>93.5</u>	8	507	130	<u>506</u>	<u>131</u>	501	132		
459.GemsFDTD	8	<u>2648</u>	<u>32.1</u>	2651	32.0	2647	32.1	8	2637	32.2	2632	32.3	<u>2632</u>	<u>32.3</u>		
465.tonto	8	<u>803</u>	<u>98.0</u>	802	98.2	804	97.9	8	786	100	<u>786</u>	<u>100</u>	787	100		
470.lbm	8	4037	27.2	<u>4036</u>	<u>27.2</u>	4036	27.2	4	1259	43.6	1261	43.6	<u>1261</u>	<u>43.6</u>		
481.wrf	8	1799	49.7	<u>1801</u>	<u>49.6</u>	1806	49.5	8	1795	49.8	<u>1797</u>	<u>49.7</u>	1807	49.5		
482.sphinx3	8	2416	64.5	<u>2438</u>	<u>64.0</u>	2446	63.8	4	972	80.2	<u>962</u>	<u>81.0</u>	959	81.3		

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

## Platform Notes

BIOS configuration:  
 Enhanced Speedstep Technology = Disable  
 Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable  
 SnooPFilter = Enable



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## General Notes

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.

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## 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.deallI: -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

```



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## Base Optimization Flags

C benchmarks:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

## Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib  
-I/opt/intel/fc/10.1.008/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

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## Peak Portability Flags (Continued)

453.povray: -DSPEC\_CPU\_LP64  
 454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
 459.GemsFDTD: -DSPEC\_CPU\_LP64  
 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

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## Peak Optimization Flags (Continued)

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

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/flags-ic101-linux-intel64.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.xml>

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