



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

### SPECfp<sup>®</sup>2006 = 23.0

### CELSIUS R550, Intel Xeon X5450 processor

### SPECfp\_base2006 = 19.4

CPU2006 license: 22

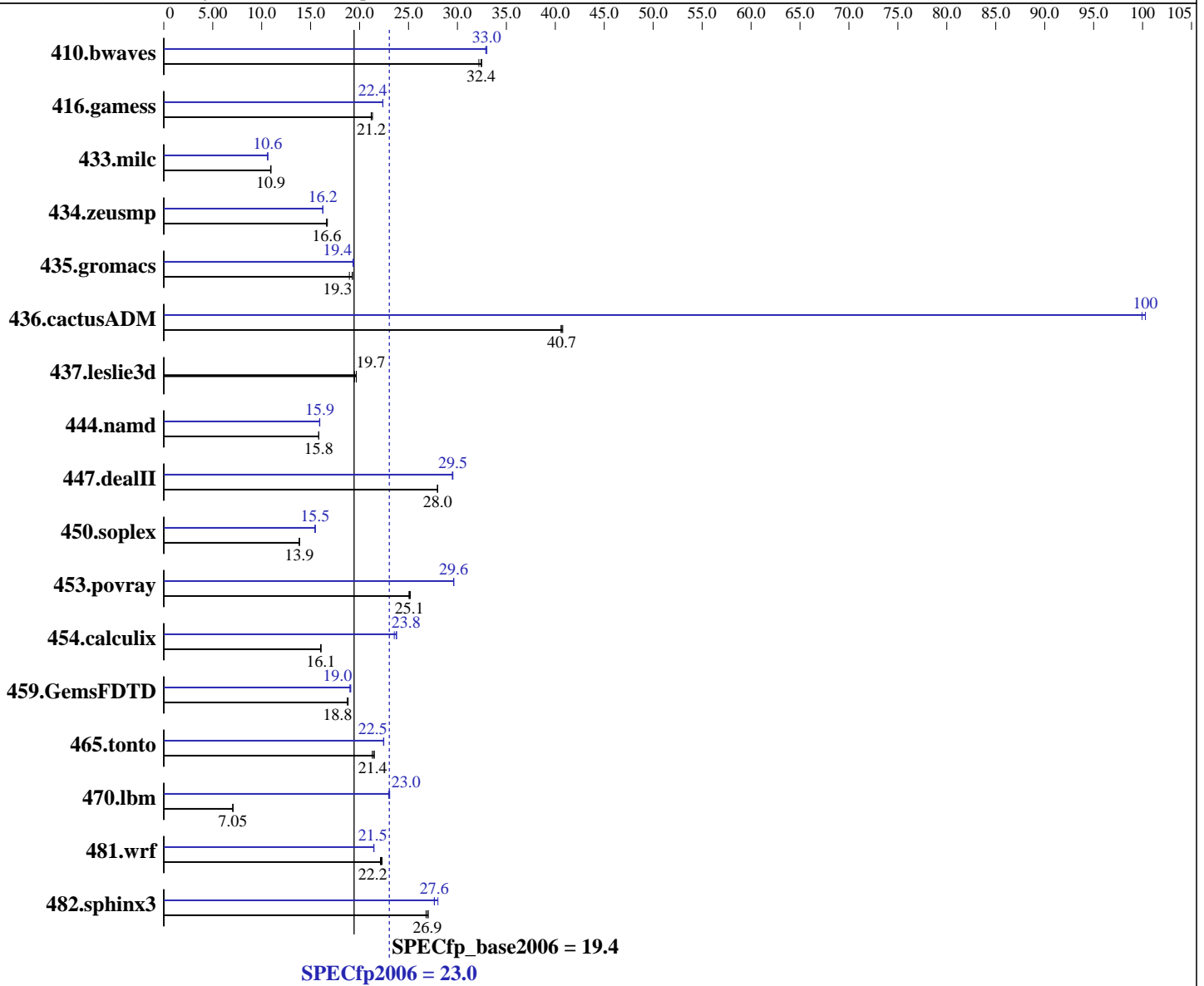
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Dec-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



#### Hardware

CPU Name: Intel Xeon X5450  
 CPU Characteristics:  
 CPU MHz: 3000  
 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 20070913  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Multi-User Run Level 3  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit

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## Hardware (Continued)

L3 Cache: None  
Other Cache: None  
Memory: 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1 x 400 GB SATA II 7200 RPM  
Other Hardware: None

## Software (Continued)

Other Software: binutils-2.17.50.0.5-0.1.x86\_64

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	422	32.2	418	32.5	<b>419</b>	<b>32.4</b>	<b>412</b>	<b>33.0</b>	413	32.9	412	33.0
416.gamess	918	21.3	<b>923</b>	<b>21.2</b>	924	21.2	875	22.4	<b>875</b>	<b>22.4</b>	874	22.4
433.milc	<b>841</b>	<b>10.9</b>	841	10.9	838	11.0	864	10.6	<b>865</b>	<b>10.6</b>	866	10.6
434.zeusmp	547	16.6	<b>547</b>	<b>16.6</b>	544	16.7	559	16.3	560	16.2	<b>560</b>	<b>16.2</b>
435.gromacs	377	19.0	<b>371</b>	<b>19.3</b>	371	19.3	369	19.3	368	19.4	<b>369</b>	<b>19.4</b>
436.cactusADM	<b>294</b>	<b>40.7</b>	293	40.8	294	40.6	<b>119</b>	<b>100</b>	120	99.9	119	100
437.leslie3d	<b>478</b>	<b>19.7</b>	478	19.7	482	19.5	<b>478</b>	<b>19.7</b>	478	19.7	482	19.5
444.namd	506	15.8	507	15.8	<b>507</b>	<b>15.8</b>	<b>503</b>	<b>15.9</b>	503	15.9	504	15.9
447.dealII	409	28.0	<b>409</b>	<b>28.0</b>	409	28.0	<b>387</b>	<b>29.5</b>	387	29.5	388	29.5
450.soplex	603	13.8	<b>602</b>	<b>13.9</b>	602	13.9	<b>539</b>	<b>15.5</b>	539	15.5	540	15.4
453.povray	212	25.1	<b>212</b>	<b>25.1</b>	211	25.2	180	29.6	<b>180</b>	<b>29.6</b>	180	29.6
454.calculix	<b>514</b>	<b>16.1</b>	515	16.0	514	16.1	347	23.8	350	23.5	<b>347</b>	<b>23.8</b>
459.GemsFDTD	563	18.8	<b>565</b>	<b>18.8</b>	566	18.8	558	19.0	<b>557</b>	<b>19.0</b>	555	19.1
465.tonto	457	21.5	462	21.3	<b>459</b>	<b>21.4</b>	438	22.5	438	22.5	<b>438</b>	<b>22.5</b>
470.lbm	1943	7.07	1949	7.05	<b>1948</b>	<b>7.05</b>	<b>596</b>	<b>23.0</b>	595	23.1	598	23.0
481.wrf	<b>503</b>	<b>22.2</b>	505	22.1	501	22.3	520	21.5	<b>520</b>	<b>21.5</b>	521	21.5
482.sphinx3	721	27.0	<b>723</b>	<b>26.9</b>	728	26.8	696	28.0	<b>705</b>	<b>27.6</b>	705	27.6

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).

## Platform Notes

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



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## General Notes

All binaries were built with 64-bit Intel compiler except: 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.

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.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 -parallel

C++ benchmarks:  
-fast -parallel

Fortran benchmarks:  
-fast -parallel

Benchmarks using both Fortran and C:  
-fast -parallel

## 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:  
ifort

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  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main

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## Peak Portability Flags (Continued)

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 -parallel

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: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch -parallel

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 -parallel -prefetch -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-intel64.20090714.00.html>

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

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20090714.00.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.0.  
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