



# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

**SPECfp®2006 = 23.7**

PRIMERGY RX200 S4, Intel Xeon X5460, 3.16 GHz

**SPECfp\_base2006 = 20.0**

CPU2006 license: 22

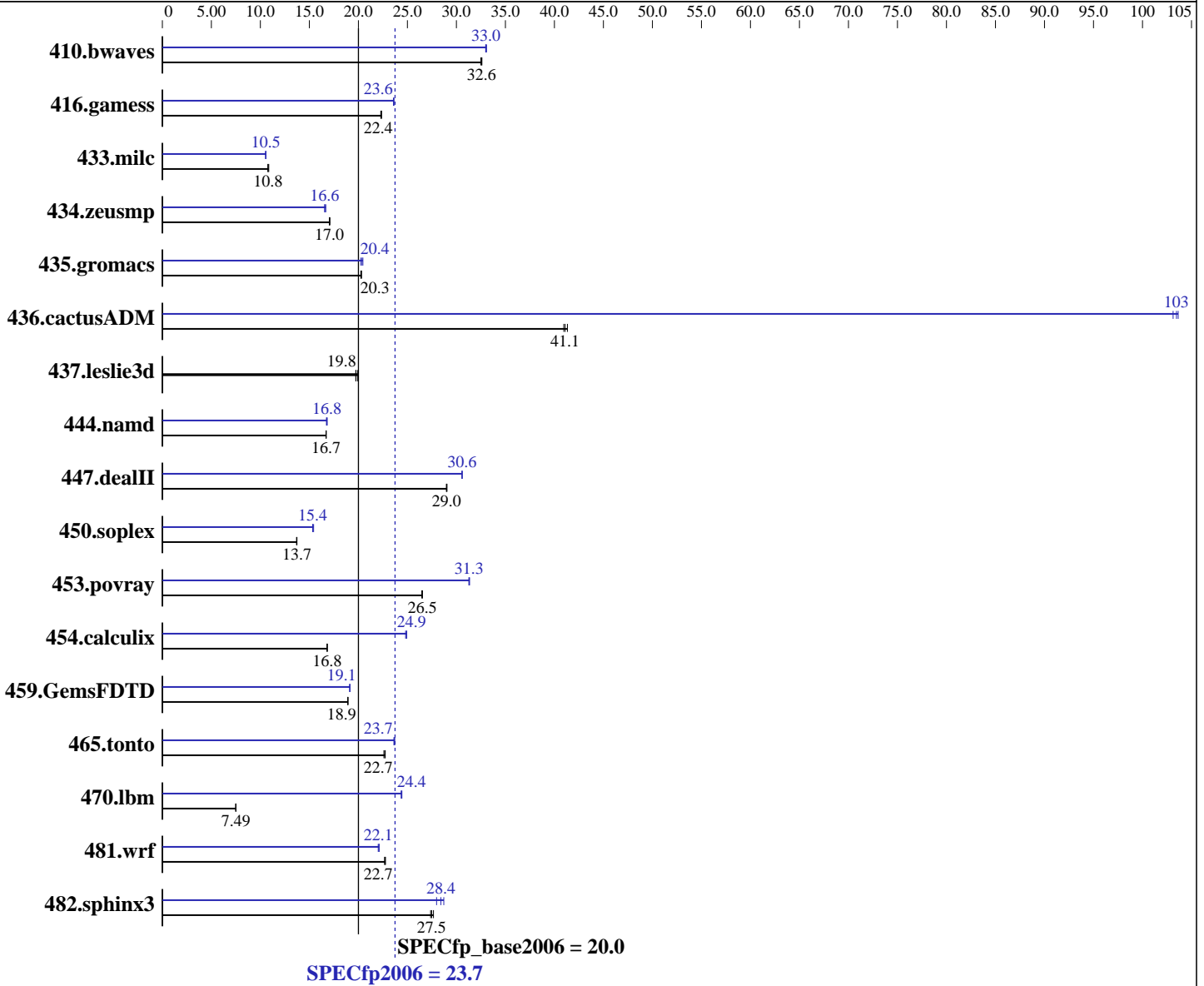
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Jun-2008

Hardware Availability: Dec-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5460  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 3167  
 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: ext2  
 System State: Multi-User Run Level 3  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL 5-5-5, ECC)  
Disk Subsystem: 1x SAS, 73 GB, 15000 rpm  
Other Hardware: None

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	<b>417</b>	<b>32.6</b>	418	32.5	417	32.6	<b>412</b>	<b>33.0</b>	411	33.1	412	33.0
416.gamess	879	22.3	876	22.4	<b>876</b>	<b>22.4</b>	829	23.6	<b>830</b>	<b>23.6</b>	830	23.6
433.milc	853	10.8	<b>851</b>	<b>10.8</b>	846	10.9	<b>870</b>	<b>10.5</b>	872	10.5	868	10.6
434.zeusmp	<b>534</b>	<b>17.0</b>	534	17.0	532	17.1	<b>549</b>	<b>16.6</b>	549	16.6	546	16.7
435.gromacs	351	20.3	353	20.2	<b>352</b>	<b>20.3</b>	349	20.5	<b>350</b>	<b>20.4</b>	353	20.2
436.cactusADM	<b>291</b>	<b>41.1</b>	289	41.3	292	41.0	116	103	<b>115</b>	<b>103</b>	115	104
437.leslie3d	472	19.9	<b>476</b>	<b>19.8</b>	476	19.7	472	19.9	<b>476</b>	<b>19.8</b>	476	19.7
444.namd	480	16.7	<b>480</b>	<b>16.7</b>	480	16.7	477	16.8	479	16.7	<b>478</b>	<b>16.8</b>
447.dealII	394	29.0	<b>395</b>	<b>29.0</b>	395	29.0	374	30.6	374	30.6	<b>374</b>	<b>30.6</b>
450.soplex	607	13.7	<b>608</b>	<b>13.7</b>	609	13.7	<b>543</b>	<b>15.4</b>	540	15.4	544	15.3
453.povray	<b>201</b>	<b>26.5</b>	201	26.5	201	26.5	170	31.3	<b>170</b>	<b>31.3</b>	170	31.3
454.calculix	491	16.8	490	16.8	<b>491</b>	<b>16.8</b>	332	24.8	331	24.9	<b>331</b>	<b>24.9</b>
459.GemsFDTD	<b>561</b>	<b>18.9</b>	560	18.9	561	18.9	<b>555</b>	<b>19.1</b>	554	19.1	555	19.1
465.tonto	433	22.7	<b>434</b>	<b>22.7</b>	435	22.6	417	23.6	<b>415</b>	<b>23.7</b>	415	23.7
470.lbm	<b>1833</b>	<b>7.49</b>	1834	7.49	1832	7.50	562	24.4	<b>563</b>	<b>24.4</b>	564	24.4
481.wrf	<b>492</b>	<b>22.7</b>	491	22.8	493	22.7	<b>505</b>	<b>22.1</b>	507	22.0	505	22.1
482.sphinx3	705	27.7	712	27.4	<b>709</b>	<b>27.5</b>	<b>686</b>	<b>28.4</b>	679	28.7	697	28.0

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:  
Hardware Prefetch = Enable, Adjacent Sector Prefetch = Enable

## 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

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## General Notes (Continued)

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

```

## Base Optimization Flags

C benchmarks:  
-fast -parallel

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## Base Optimization Flags (Continued)

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  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX



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## 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:

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

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## Peak Optimization Flags (Continued)

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-intel64.20090713.html>

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

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20090713.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).

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