



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

### SPECfp<sup>®</sup>\_rate2006 = 46.5

### PRIMERGY RX200 S4, Intel Xeon X5460, 3.16 GHz

### SPECfp\_rate\_base2006 = 40.8

CPU2006 license: 22

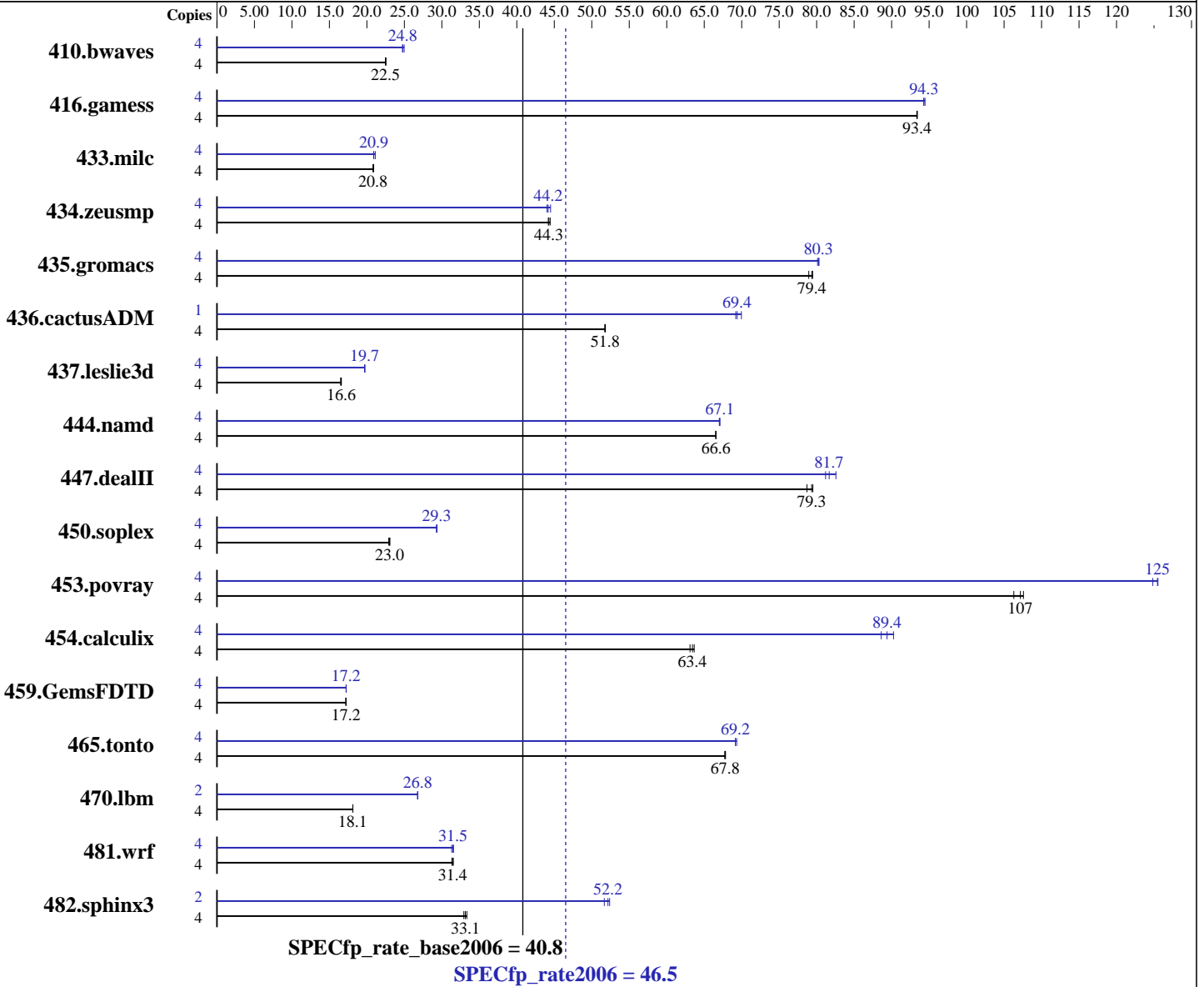
Test sponsor: Fujitsu Siemens Computers

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: 4 cores, 1 chip, 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: ext2  
 System State: Multi-User Run Level 3  
 Base Pointers: 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

Peak Pointers: 32/64-bit  
Other Software: binutils-2.17.50.0.5-0.1.x86\_64

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2417	22.5	2411	22.5	<b>2416</b>	<b>22.5</b>	4	2195	24.8	<b>2194</b>	<b>24.8</b>	2177	25.0
416.gamess	4	839	93.4	<b>839</b>	<b>93.4</b>	838	93.4	4	831	94.3	829	94.5	<b>830</b>	<b>94.3</b>
433.milc	4	1765	20.8	1756	20.9	<b>1763</b>	<b>20.8</b>	4	1756	20.9	1738	21.1	<b>1755</b>	<b>20.9</b>
434.zeusmp	4	824	44.2	819	44.5	<b>822</b>	<b>44.3</b>	4	827	44.0	818	44.5	<b>824</b>	<b>44.2</b>
435.gromacs	4	359	79.5	<b>360</b>	<b>79.4</b>	362	78.9	4	<b>356</b>	<b>80.3</b>	356	80.3	356	80.1
436.cactusADM	4	922	51.8	924	51.7	<b>923</b>	<b>51.8</b>	1	171	70.0	<b>172</b>	<b>69.4</b>	173	69.2
437.leslie3d	4	2266	16.6	<b>2267</b>	<b>16.6</b>	2280	16.5	4	1905	19.7	1909	19.7	<b>1908</b>	<b>19.7</b>
444.namd	4	<b>482</b>	<b>66.6</b>	482	66.6	482	66.5	4	479	67.0	478	67.1	<b>478</b>	<b>67.1</b>
447.dealII	4	581	78.7	<b>577</b>	<b>79.3</b>	576	79.5	4	<b>560</b>	<b>81.7</b>	554	82.6	564	81.2
450.soplex	4	1456	22.9	<b>1448</b>	<b>23.0</b>	1447	23.1	4	1139	29.3	1136	29.4	<b>1138</b>	<b>29.3</b>
453.povray	4	<b>199</b>	<b>107</b>	198	108	200	106	4	170	126	<b>170</b>	<b>125</b>	170	125
454.calculix	4	523	63.1	518	63.7	<b>520</b>	<b>63.4</b>	4	<b>369</b>	<b>89.4</b>	372	88.6	366	90.3
459.GemsFDTD	4	<b>2466</b>	<b>17.2</b>	2465	17.2	2468	17.2	4	2463	17.2	2462	17.2	<b>2463</b>	<b>17.2</b>
465.tonto	4	<b>581</b>	<b>67.8</b>	580	67.8	581	67.7	4	568	69.3	569	69.2	<b>569</b>	<b>69.2</b>
470.lbm	4	3033	18.1	<b>3031</b>	<b>18.1</b>	3030	18.1	2	1027	26.7	1025	26.8	<b>1026</b>	<b>26.8</b>
481.wrf	4	1426	31.3	1417	31.5	<b>1421</b>	<b>31.4</b>	4	1416	31.6	1427	31.3	<b>1420</b>	<b>31.5</b>
482.sphinx3	4	<b>2353</b>	<b>33.1</b>	2339	33.3	2367	32.9	2	754	51.7	<b>747</b>	<b>52.2</b>	744	52.4

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 = Disable, Adjacent Sector Prefetch = Disable

## 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

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## General Notes (Continued)

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

## Base Optimization Flags

C benchmarks:

-fast

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## Base Optimization Flags (Continued)

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

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