



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

### SPECfp<sup>®</sup>\_rate2006 = 44.3

PRIMERGY RX200 S4, Intel Xeon E5440, 2.83 GHz

### SPECfp\_rate\_base2006 = 39.0

CPU2006 license: 22

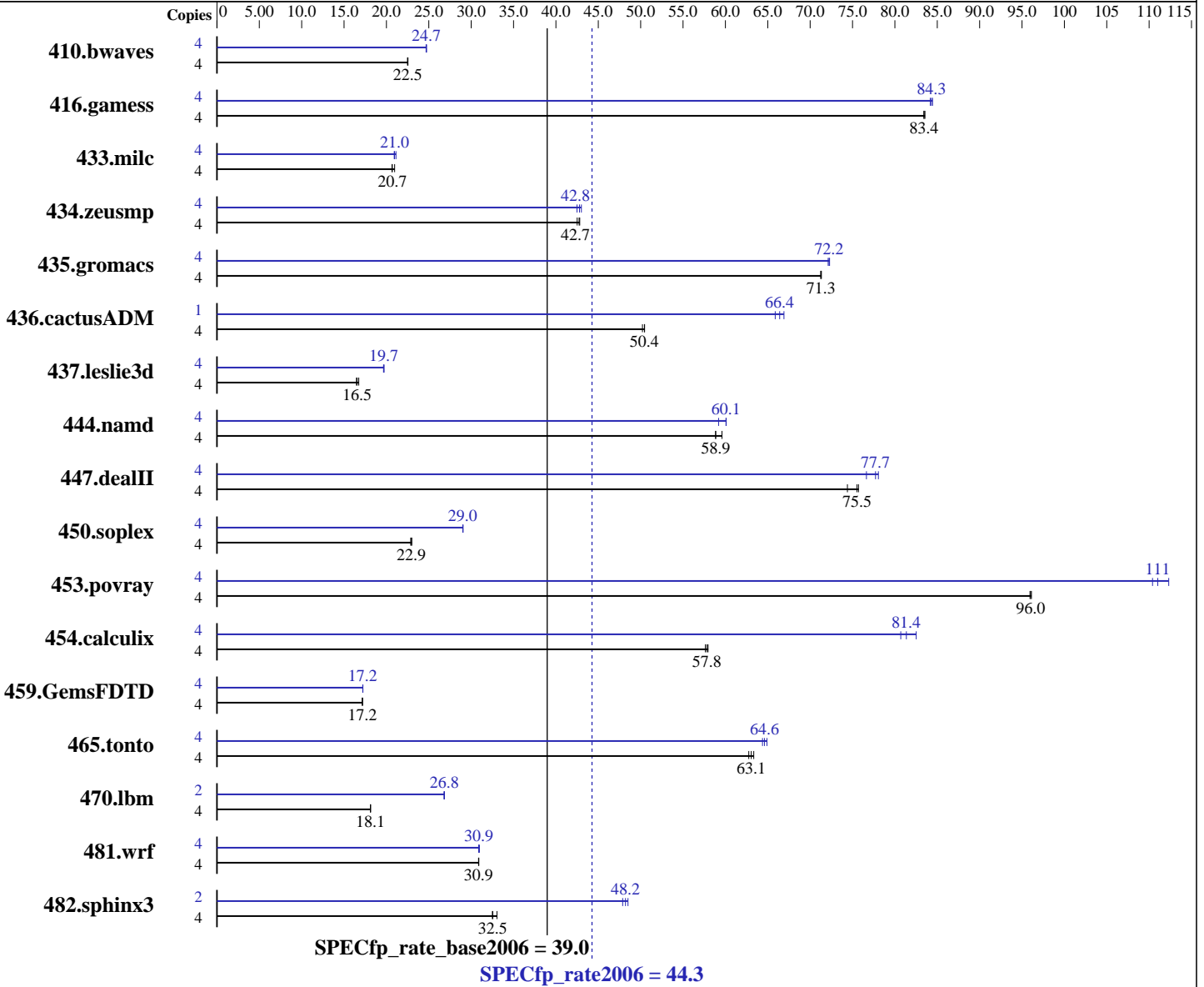
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Jul-2008

Hardware Availability: Dec-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2833  
 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	2416	22.5	2412	22.5	<b>2415</b>	<b>22.5</b>	4	2197	24.7	<b>2201</b>	<b>24.7</b>	2203	24.7
416.gamess	4	<b>939</b>	<b>83.4</b>	939	83.4	937	83.5	4	930	84.2	<b>929</b>	<b>84.3</b>	928	84.4
433.milc	4	1751	21.0	1778	20.7	<b>1774</b>	<b>20.7</b>	4	<b>1752</b>	<b>21.0</b>	1755	20.9	1738	21.1
434.zeusmp	4	<b>852</b>	<b>42.7</b>	856	42.5	850	42.8	4	<b>851</b>	<b>42.8</b>	857	42.5	846	43.0
435.gromacs	4	401	71.3	<b>401</b>	<b>71.3</b>	400	71.3	4	<b>395</b>	<b>72.2</b>	395	72.3	396	72.1
436.cactusADM	4	<b>948</b>	<b>50.4</b>	947	50.5	952	50.2	1	179	66.9	181	65.9	<b>180</b>	<b>66.4</b>
437.leslie3d	4	<b>2272</b>	<b>16.5</b>	2247	16.7	2284	16.5	4	1908	19.7	1913	19.7	<b>1908</b>	<b>19.7</b>
444.namd	4	545	58.8	538	59.6	<b>545</b>	<b>58.9</b>	4	534	60.1	542	59.2	<b>534</b>	<b>60.1</b>
447.dealII	4	615	74.4	<b>606</b>	<b>75.5</b>	604	75.7	4	597	76.6	<b>589</b>	<b>77.7</b>	586	78.1
450.soplex	4	<b>1454</b>	<b>22.9</b>	1451	23.0	1459	22.9	4	1150	29.0	<b>1150</b>	<b>29.0</b>	1148	29.0
453.povray	4	<b>222</b>	<b>96.0</b>	221	96.1	222	95.9	4	189	112	193	110	<b>192</b>	<b>111</b>
454.calculix	4	569	58.0	<b>571</b>	<b>57.8</b>	573	57.6	4	400	82.5	<b>406</b>	<b>81.4</b>	409	80.7
459.GemsFDTD	4	<b>2473</b>	<b>17.2</b>	2474	17.2	2472	17.2	4	<b>2466</b>	<b>17.2</b>	2466	17.2	2464	17.2
465.tonto	4	621	63.3	627	62.8	<b>624</b>	<b>63.1</b>	4	606	64.9	611	64.4	<b>609</b>	<b>64.6</b>
470.lbm	4	3034	18.1	<b>3033</b>	<b>18.1</b>	3032	18.1	2	1025	26.8	1023	26.8	<b>1024</b>	<b>26.8</b>
481.wrf	4	<b>1447</b>	<b>30.9</b>	1446	30.9	1447	30.9	4	1443	31.0	1447	30.9	<b>1446</b>	<b>30.9</b>
482.sphinx3	4	2359	33.0	2398	32.5	<b>2395</b>	<b>32.5</b>	2	804	48.5	814	47.9	<b>809</b>	<b>48.2</b>

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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