



# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

### SPECfp®2006 = 20.6

PRIMERGY RX300 S4, Intel Xeon E5420, 2.50 GHz

### SPECfp\_base2006 = 17.4

CPU2006 license: 22

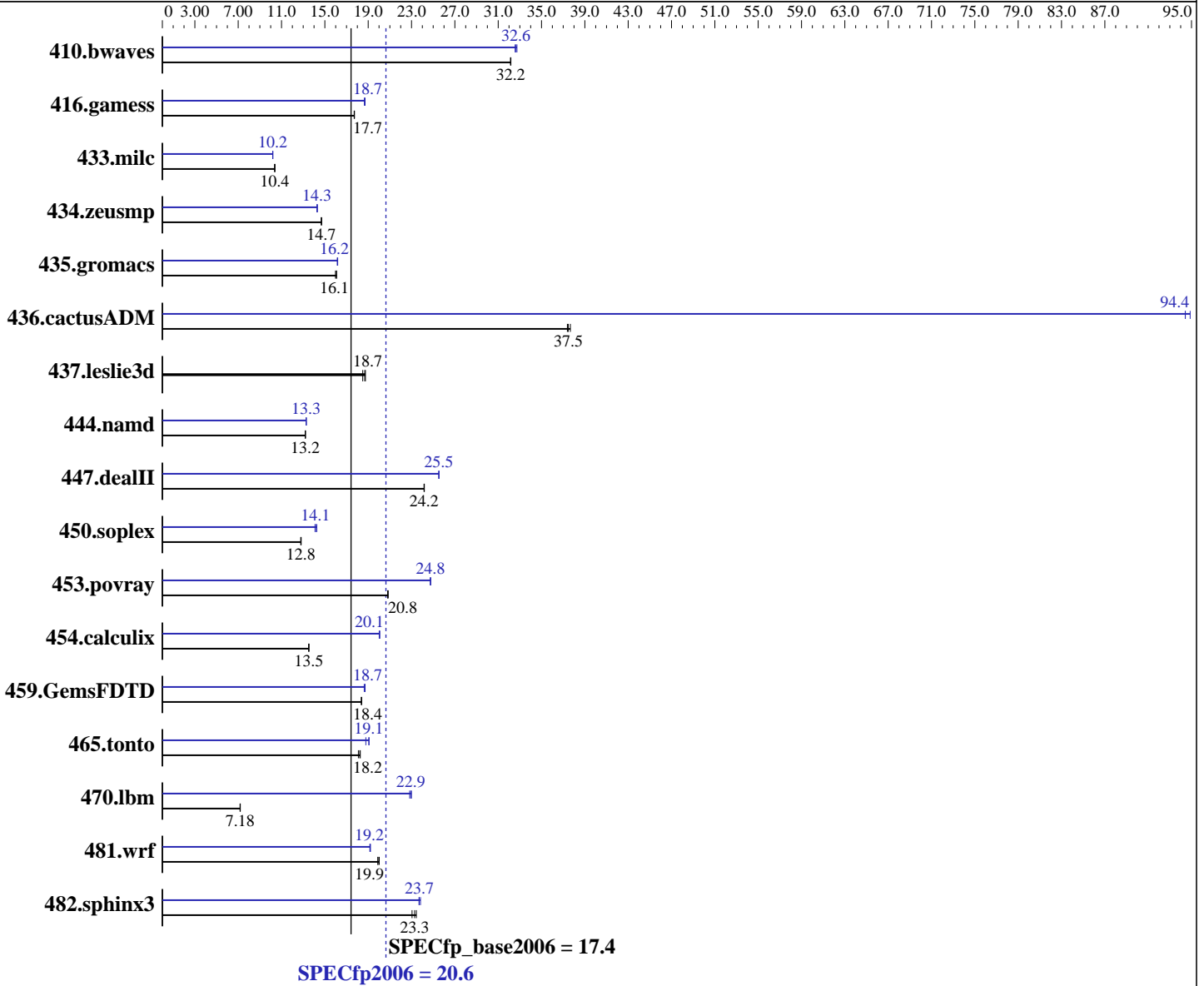
Test date: Jul-2008

Test sponsor: Fujitsu Siemens Computers

Hardware Availability: Dec-2007

Tested by: Fujitsu Siemens Computers

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5420  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2500  
 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>423</b>	<b>32.2</b>	423	32.1	422	32.2	<b>416</b>	<b>32.6</b>	415	32.7	417	32.6
416.gamess	1106	17.7	<b>1105</b>	<b>17.7</b>	1104	17.7	1046	18.7	<b>1049</b>	<b>18.7</b>	1050	18.7
433.milc	886	10.4	<b>884</b>	<b>10.4</b>	884	10.4	901	10.2	900	10.2	<b>901</b>	<b>10.2</b>
434.zeusmp	620	14.7	619	14.7	<b>620</b>	<b>14.7</b>	<b>637</b>	<b>14.3</b>	636	14.3	637	14.3
435.gromacs	444	16.1	447	16.0	<b>444</b>	<b>16.1</b>	442	16.1	<b>442</b>	<b>16.2</b>	441	16.2
436.cactusADM	<b>319</b>	<b>37.5</b>	320	37.4	317	37.7	<b>127</b>	<b>94.4</b>	127	94.4	126	94.9
437.leslie3d	508	18.5	501	18.7	<b>503</b>	<b>18.7</b>	508	18.5	501	18.7	<b>503</b>	<b>18.7</b>
444.namd	<b>608</b>	<b>13.2</b>	608	13.2	607	13.2	<b>604</b>	<b>13.3</b>	604	13.3	604	13.3
447.dealII	<b>473</b>	<b>24.2</b>	473	24.2	474	24.2	448	25.5	<b>448</b>	<b>25.5</b>	448	25.5
450.soplex	<b>652</b>	<b>12.8</b>	651	12.8	653	12.8	592	14.1	<b>590</b>	<b>14.1</b>	585	14.3
453.povray	255	20.8	<b>256</b>	<b>20.8</b>	256	20.8	215	24.7	215	24.8	<b>215</b>	<b>24.8</b>
454.calculix	610	13.5	611	13.5	<b>610</b>	<b>13.5</b>	<b>411</b>	<b>20.1</b>	412	20.0	411	20.1
459.GemsFDTD	<b>577</b>	<b>18.4</b>	577	18.4	578	18.4	567	18.7	<b>567</b>	<b>18.7</b>	569	18.6
465.tonto	539	18.3	<b>540</b>	<b>18.2</b>	544	18.1	516	19.1	524	18.8	<b>516</b>	<b>19.1</b>
470.lbm	1909	7.20	1916	7.17	<b>1912</b>	<b>7.18</b>	598	23.0	<b>599</b>	<b>22.9</b>	602	22.8
481.wrf	<b>561</b>	<b>19.9</b>	558	20.0	561	19.9	581	19.2	583	19.2	<b>582</b>	<b>19.2</b>
482.sphinx3	831	23.4	846	23.0	<b>837</b>	<b>23.3</b>	818	23.8	823	23.7	<b>822</b>	<b>23.7</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

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  
for include and library files.

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## General Notes (Continued)

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.dealII: -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

C++ benchmarks:

-fast -parallel

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## Base Optimization Flags (Continued)

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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