



# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

CELSIUS R550, Intel Xeon E5205, 1.87 GHz

**SPECfp®2006 = 15.7**

CPU2006 license: 22

**Test date:** Jan-2008

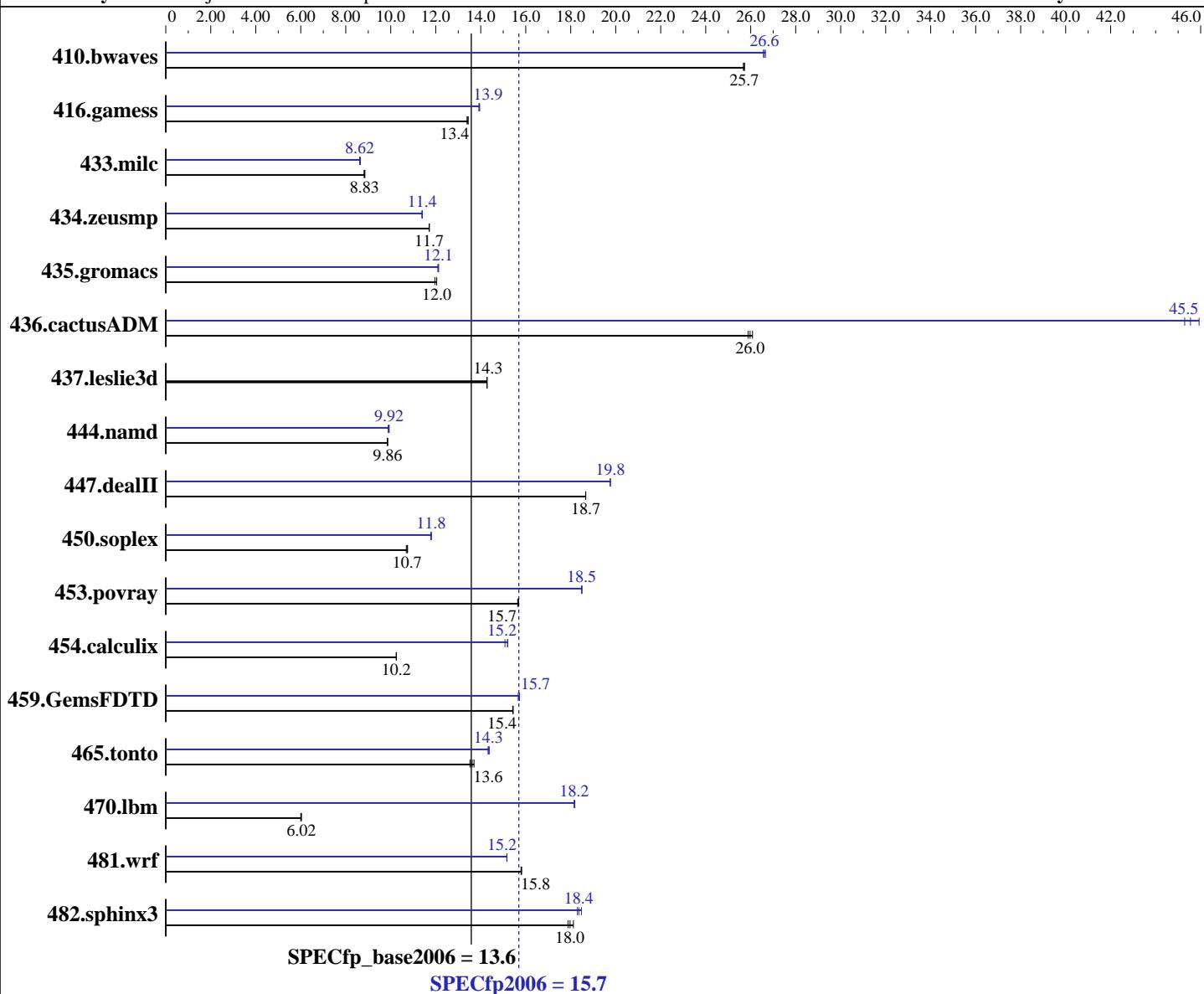
**Hardware Availability:** Jan-2008

**Software Availability:** Nov-2007

**Test sponsor:** Fujitsu Siemens Computers

**Tested by:** Fujitsu Siemens Computers

**SPECfp\_base2006 = 13.6**



### Hardware

CPU Name: Intel Xeon E5205  
CPU Characteristics: 1067 MHz system bus  
CPU MHz: 1867  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
CPU(s) orderable: 1,2 chips  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 6 MB I+D on chip per chip

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

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

## Results Table

| Benchmark     | Base        |             |             |             |             |             | Peak        |             |             |             |             |             |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|               | Seconds     | Ratio       |
| 410.bwaves    | 529         | 25.7        | <b>529</b>  | <b>25.7</b> | 528         | 25.7        | <b>511</b>  | <b>26.6</b> | 512         | 26.6        | 510         | 26.7        |
| 416.gamess    | 1462        | 13.4        | <b>1457</b> | <b>13.4</b> | 1457        | 13.4        | <b>1406</b> | <b>13.9</b> | <b>1406</b> | <b>13.9</b> | 1403        | 14.0        |
| 433.milc      | 1037        | 8.85        | <b>1040</b> | <b>8.83</b> | 1041        | 8.82        | <b>1061</b> | <b>8.65</b> | 1065        | 8.62        | <b>1065</b> | <b>8.62</b> |
| 434.zeusmp    | <b>777</b>  | <b>11.7</b> | 777         | 11.7        | 777         | 11.7        | <b>799</b>  | <b>11.4</b> | <b>798</b>  | <b>11.4</b> | 798         | 11.4        |
| 435.gromacs   | <b>593</b>  | <b>12.0</b> | 593         | 12.0        | 597         | 12.0        | <b>590</b>  | <b>12.1</b> | <b>589</b>  | <b>12.1</b> | 589         | 12.1        |
| 436.cactusADM | 462         | 25.9        | 458         | 26.1        | <b>460</b>  | <b>26.0</b> | 260         | 45.9        | <b>262</b>  | <b>45.5</b> | 264         | 45.3        |
| 437.leslie3d  | 658         | 14.3        | 658         | 14.3        | <b>658</b>  | <b>14.3</b> | 658         | 14.3        | 658         | 14.3        | <b>658</b>  | <b>14.3</b> |
| 444.namd      | 813         | 9.86        | <b>814</b>  | <b>9.86</b> | 814         | 9.86        | <b>808</b>  | <b>9.92</b> | 811         | 9.89        | 808         | 9.93        |
| 447.dealII    | 613         | 18.7        | 613         | 18.7        | <b>613</b>  | <b>18.7</b> | <b>579</b>  | <b>19.8</b> | 579         | 19.8        | 579         | 19.8        |
| 450.soplex    | 776         | 10.7        | <b>777</b>  | <b>10.7</b> | 780         | 10.7        | <b>706</b>  | <b>11.8</b> | <b>707</b>  | <b>11.8</b> | 708         | 11.8        |
| 453.povray    | <b>340</b>  | <b>15.7</b> | 339         | 15.7        | 340         | 15.6        | 288         | 18.5        | <b>288</b>  | <b>18.5</b> | 288         | 18.5        |
| 454.calculix  | 805         | 10.2        | 805         | 10.3        | <b>805</b>  | <b>10.2</b> | <b>543</b>  | <b>15.2</b> | 547         | 15.1        | 543         | 15.2        |
| 459.GemsFDTD  | 687         | 15.4        | <b>688</b>  | <b>15.4</b> | 688         | 15.4        | <b>675</b>  | <b>15.7</b> | 675         | 15.7        | 677         | 15.7        |
| 465.tonto     | <b>722</b>  | <b>13.6</b> | 718         | 13.7        | 728         | 13.5        | 684         | 14.4        | <b>686</b>  | <b>14.3</b> | 687         | 14.3        |
| 470.lbm       | <b>2281</b> | <b>6.02</b> | 2280        | 6.03        | 2290        | 6.00        | <b>756</b>  | <b>18.2</b> | <b>757</b>  | <b>18.2</b> | <b>757</b>  | <b>18.2</b> |
| 481.wrf       | 706         | 15.8        | 707         | 15.8        | <b>707</b>  | <b>15.8</b> | <b>737</b>  | <b>15.2</b> | 737         | 15.2        | 737         | 15.2        |
| 482.sphinx3   | 1076        | 18.1        | 1090        | 17.9        | <b>1085</b> | <b>18.0</b> | <b>1055</b> | <b>18.5</b> | 1065        | 18.3        | <b>1062</b> | <b>18.4</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:

Enhanced Speedstep Technology = Disable

Hardware Prefetch = Enable, Adjacent Sector Prefetch = Enable

SnooFilter = 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.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



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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 -O0  
-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 -O0  
-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 -unroll12  
-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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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