



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

PRIMERGY TX150 S6, Intel Pentium Dual-Core E2140,  
1.60 GHz

SPECfp<sup>®</sup>\_rate2006 = 18.8

SPECfp\_rate\_base2006 = 18.0

CPU2006 license: 22

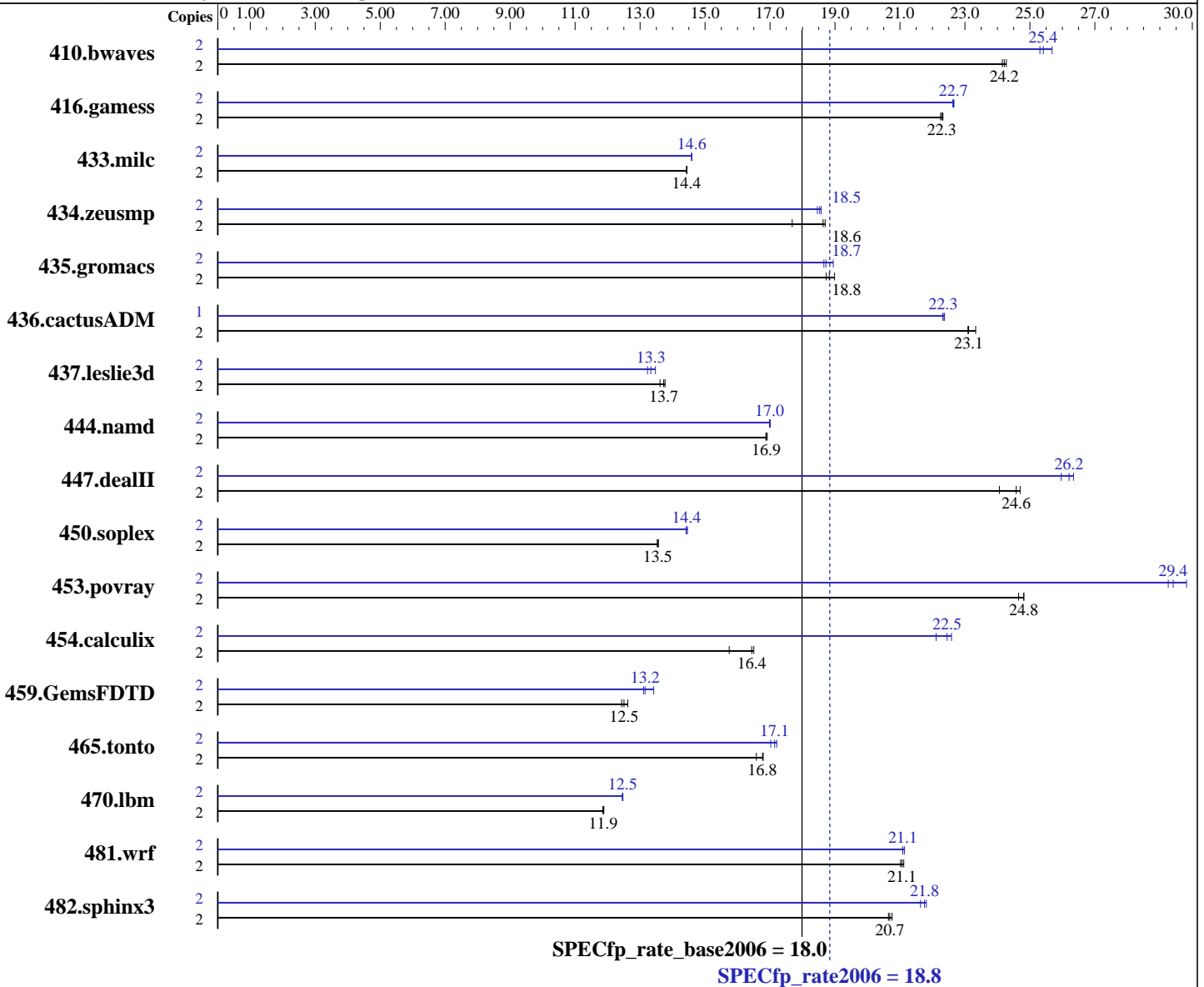
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Jan-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Pentium Dual-Core E2140  
 CPU Characteristics: 800 MHz system bus  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per chip

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1,  
 Kernel 2.6.16.46-0.12-smpp  
 Compiler: Intel C++ and Fortran Compiler  
 for Linux32 and Linux64  
 Version 10.1 - Build 20070725  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Multiuser, Runlevel 3  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 4 GB (4x1 GB PC2-6400E, 2 rank, CAS 6-6-6, with ECC)  
Disk Subsystem: Fujitsu MAY2036RC (SAS, 36GB, 10000rpm)  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

| Benchmark     | Base   |             |             |             |             |             |             | Peak   |             |             |             |             |             |             |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
|               | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       |
| 410.bwaves    | 2      | <b>1123</b> | <b>24.2</b> | 1120        | 24.3        | 1125        | 24.2        | 2      | 1074        | 25.3        | <b>1070</b> | <b>25.4</b> | 1058        | 25.7        |
| 416.gamess    | 2      | <b>1757</b> | <b>22.3</b> | 1754        | 22.3        | 1760        | 22.2        | 2      | <b>1729</b> | <b>22.7</b> | 1728        | 22.7        | 1731        | 22.6        |
| 433.milc      | 2      | 1272        | 14.4        | <b>1272</b> | <b>14.4</b> | 1272        | 14.4        | 2      | <b>1258</b> | <b>14.6</b> | 1258        | 14.6        | 1259        | 14.6        |
| 434.zeusmp    | 2      | 1029        | 17.7        | 973         | 18.7        | <b>977</b>  | <b>18.6</b> | 2      | 986         | 18.5        | <b>982</b>  | <b>18.5</b> | 980         | 18.6        |
| 435.gromacs   | 2      | <b>759</b>  | <b>18.8</b> | 752         | 19.0        | 762         | 18.7        | 2      | 754         | 18.9        | <b>763</b>  | <b>18.7</b> | 765         | 18.7        |
| 436.cactusADM | 2      | 1035        | 23.1        | <b>1034</b> | <b>23.1</b> | 1024        | 23.3        | 1      | 535         | 22.3        | <b>535</b>  | <b>22.3</b> | 534         | 22.4        |
| 437.leslie3d  | 2      | <b>1369</b> | <b>13.7</b> | 1365        | 13.8        | 1381        | 13.6        | 2      | 1421        | 13.2        | 1395        | 13.5        | <b>1410</b> | <b>13.3</b> |
| 444.namd      | 2      | <b>950</b>  | <b>16.9</b> | 951         | 16.9        | 948         | 16.9        | 2      | 943         | 17.0        | 944         | 17.0        | <b>944</b>  | <b>17.0</b> |
| 447.dealII    | 2      | 951         | 24.1        | 926         | 24.7        | <b>931</b>  | <b>24.6</b> | 2      | <b>873</b>  | <b>26.2</b> | 869         | 26.3        | 881         | 26.0        |
| 450.soplex    | 2      | 1230        | 13.6        | <b>1232</b> | <b>13.5</b> | 1233        | 13.5        | 2      | 1157        | 14.4        | <b>1156</b> | <b>14.4</b> | 1154        | 14.5        |
| 453.povray    | 2      | 432         | 24.7        | <b>429</b>  | <b>24.8</b> | 429         | 24.8        | 2      | 364         | 29.3        | <b>362</b>  | <b>29.4</b> | 357         | 29.8        |
| 454.calculix  | 2      | 1048        | 15.7        | <b>1004</b> | <b>16.4</b> | 1000        | 16.5        | 2      | 746         | 22.1        | 731         | 22.6        | <b>735</b>  | <b>22.5</b> |
| 459.GemsFDTD  | 2      | 1681        | 12.6        | <b>1697</b> | <b>12.5</b> | 1707        | 12.4        | 2      | 1619        | 13.1        | 1581        | 13.4        | <b>1613</b> | <b>13.2</b> |
| 465.tonto     | 2      | 1172        | 16.8        | 1187        | 16.6        | <b>1174</b> | <b>16.8</b> | 2      | 1144        | 17.2        | <b>1148</b> | <b>17.1</b> | 1156        | 17.0        |
| 470.lbm       | 2      | 2312        | 11.9        | <b>2315</b> | <b>11.9</b> | 2319        | 11.8        | 2      | 2203        | 12.5        | 2207        | 12.5        | <b>2205</b> | <b>12.5</b> |
| 481.wrf       | 2      | 1063        | 21.0        | <b>1061</b> | <b>21.1</b> | 1058        | 21.1        | 2      | 1057        | 21.1        | <b>1059</b> | <b>21.1</b> | 1060        | 21.1        |
| 482.sphinx3   | 2      | 1888        | 20.6        | 1878        | 20.8        | <b>1884</b> | <b>20.7</b> | 2      | <b>1792</b> | <b>21.8</b> | 1787        | 21.8        | 1802        | 21.6        |

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)

## General Notes

This result has been produced with binaries provided and compiled by Intel.

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 the path for include and library files.

BIOS configuration:

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**CPU2006 license:** 22

**Test sponsor:** Fujitsu Siemens Computers

**Tested by:** Fujitsu Siemens Computers

**Test date:** Jan-2008

**Hardware Availability:** Jan-2008

**Software Availability:** Nov-2007

## General Notes (Continued)

Hardware Prefetch = Enable, Adjacent Sector Prefetch = Enable

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

C++ benchmarks:

-fast

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## Base Optimization Flags (Continued)

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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:

Continued on next page



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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/Intel-ic10.1-FP-intel64-linux-flags.20090714.01.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.01.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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