# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

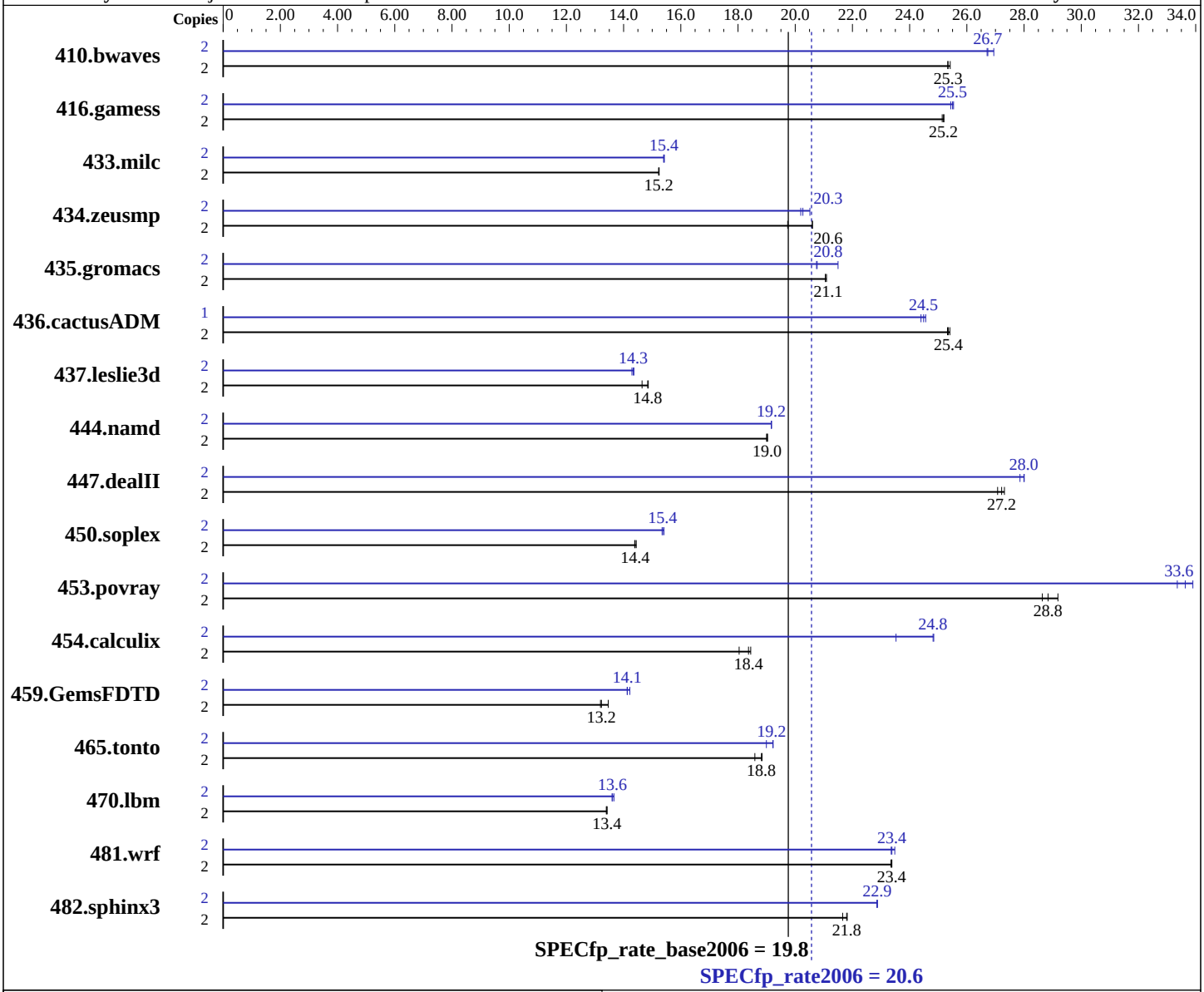
PRIMERGY TX150 S6, Intel Pentium Dual Core E2160, 1.80 GHz

SPECfp®_rate2006 = 20.6

SPECfp_rate_base2006 = 19.8

**CPU2006 license:** 22
**Test sponsor:** Fujitsu Siemens Computers
**Tested by:** Fujitsu Siemens Computers

**Test date:** Apr-2008
**Hardware Availability:** Apr-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Pentium Dual Core E2160 |
| CPU Characteristics: | 800 MHz system bus |
| CPU MHz: | 1800 |
| 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-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: 4 GB (4x1 GB PC2-6400E, 2 rank, CL 6-6-6, ECC)
Disk Subsystem: 1x SAS, 36 GB, 10000 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 | 2 | 1069 | 25.4 | **1072** | **25.3** | 1073 | 25.3 | 2 | **1017** | **26.7** | 1009 | 26.9 | 1018 | 26.7 |
| 416.gamess | 2 | 1554 | 25.2 | 1558 | 25.1 | **1555** | **25.2** | 2 | 1534 | 25.5 | **1536** | **25.5** | 1540 | 25.4 |
| 433.milc | 2 | 1204 | 15.2 | **1205** | **15.2** | 1206 | 15.2 | 2 | 1192 | 15.4 | 1191 | 15.4 | **1191** | **15.4** |
| 434.zeusmp | 2 | 922 | 19.7 | **884** | **20.6** | 883 | 20.6 | 2 | **898** | **20.3** | 901 | 20.2 | 887 | 20.5 |
| 435.gromacs | 2 | 677 | 21.1 | **678** | **21.1** | 678 | 21.1 | 2 | 664 | 21.5 | 688 | 20.7 | **688** | **20.8** |
| 436.cactusADM | 2 | **943** | **25.4** | 944 | 25.3 | 941 | 25.4 | 1 | 487 | 24.6 | **488** | **24.5** | 490 | 24.4 |
| 437.leslie3d | 2 | **1267** | **14.8** | 1265 | 14.9 | 1284 | 14.6 | 2 | **1311** | **14.3** | 1316 | 14.3 | 1309 | 14.4 |
| 444.namd | 2 | 844 | 19.0 | 843 | 19.0 | **843** | **19.0** | 2 | 837 | 19.2 | 837 | 19.2 | **837** | **19.2** |
| 447.dealII | 2 | **841** | **27.2** | 838 | 27.3 | 845 | 27.1 | 2 | 817 | 28.0 | **817** | **28.0** | 821 | 27.9 |
| 450.soplex | 2 | 1155 | 14.4 | **1158** | **14.4** | 1159 | 14.4 | 2 | **1085** | **15.4** | 1087 | 15.3 | 1082 | 15.4 |
| 453.povray | 2 | 372 | 28.6 | 365 | 29.2 | **369** | **28.8** | 2 | 319 | 33.4 | **316** | **33.6** | 314 | 33.9 |
| 454.calculix | 2 | 915 | 18.0 | 895 | 18.4 | **898** | **18.4** | 2 | 664 | 24.8 | 701 | 23.5 | **665** | **24.8** |
| 459.GemsFDTD | 2 | 1576 | 13.5 | 1609 | 13.2 | **1605** | **13.2** | 2 | 1502 | 14.1 | **1502** | **14.1** | 1492 | 14.2 |
| 465.tonto | 2 | 1045 | 18.8 | **1046** | **18.8** | 1059 | 18.6 | 2 | 1036 | 19.0 | **1024** | **19.2** | 1023 | 19.2 |
| 470.lbm | 2 | 2047 | 13.4 | 2052 | 13.4 | **2049** | **13.4** | 2 | 2011 | 13.7 | **2019** | **13.6** | 2021 | 13.6 |
| 481.wrf | 2 | 956 | 23.4 | 957 | 23.3 | **956** | **23.4** | 2 | 957 | 23.4 | 951 | 23.5 | **955** | **23.4** |
| 482.sphinx3 | 2 | 1787 | 21.8 | 1800 | 21.7 | **1788** | **21.8** | 2 | 1704 | 22.9 | 1706 | 22.9 | **1705** | **22.9** |

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 = Enable, Adjacent Sector Prefetch = Enable
```

## 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.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

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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:

Continued on next page

## 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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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