SPEC® CFP2006 Result
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Fujitsu Siemens Computers

CELSIUS R550, Intel Xeon X5470 processor

$SPECfp®2006 =$ 24.5

$SPECfp\_base2006 =$ 20.5
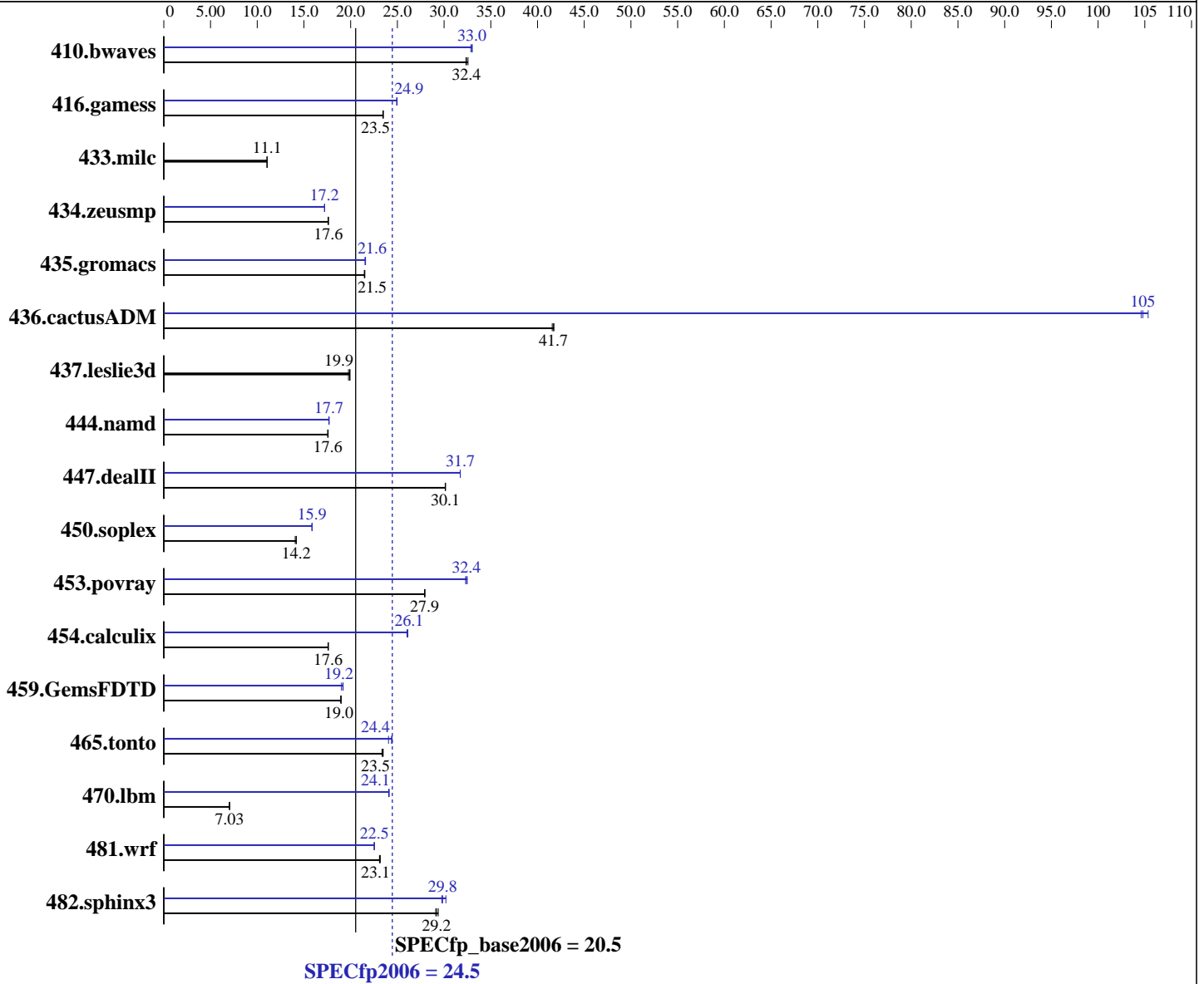
CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers

Test date: Aug-2008
Hardware Availability: Sep-2008
Software Availability: Jun-2008

410.bwaves 33.0 / 32.4
416.gamess 24.9 / 23.5
433.milc 11.1
434.zeusmp 17.2 / 17.6
435.gromacs 21.6 / 21.5
436.cactusADM 105 / 41.7
437.leslie3d 19.9
444.namd 17.7 / 17.6
447.dealII 31.7 / 30.1
450.soplex 15.9 / 14.2
453.povray 32.4 / 27.9
454.calculix 26.1 / 17.6
459.GemsFDTD 19.2 / 19.0
465.tonto 24.4 / 23.5
470.lbm 24.1 / 7.03
481.wrf 22.5 / 23.1
482.sphinx3 29.8 / 29.2

SPECfp_base2006 = 20.5
SPECfp2006 = 24.5

Hardware

CPU Name:	Intel Xeon X5470
CPU Characteristics:	
CPU MHz:	3333
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

Continued on next page

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 20080602
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 (8x1 GB DDR2 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 Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	417	32.6	420	32.3	**419**	**32.4**	414	32.9	**412**	**33.0**	412	33.0
416.gamess	835	23.4	**834**	**23.5**	833	23.5	784	25.0	**785**	**24.9**	785	24.9
433.milc	830	11.1	**830**	**11.1**	830	11.1	830	11.1	**830**	**11.1**	830	11.1
434.zeusmp	517	17.6	**517**	**17.6**	517	17.6	529	17.2	529	17.2	**529**	**17.2**
435.gromacs	**332**	**21.5**	332	21.5	333	21.5	331	21.5	**331**	**21.6**	331	21.6
436.cactusADM	286	41.8	**286**	**41.7**	287	41.6	**114**	**105**	114	105	113	105
437.leslie3d	472	19.9	**472**	**19.9**	476	19.8	472	19.9	**472**	**19.9**	476	19.8
444.namd	**457**	**17.6**	457	17.5	456	17.6	**454**	**17.7**	453	17.7	454	17.7
447.dealII	380	30.1	379	30.2	**380**	**30.1**	361	31.7	361	31.7	**361**	**31.7**
450.soplex	593	14.1	588	14.2	**589**	**14.2**	**525**	**15.9**	525	15.9	526	15.8
453.povray	**191**	**27.9**	190	28.0	191	27.9	165	32.3	**164**	**32.4**	164	32.5
454.calculix	**469**	**17.6**	469	17.6	469	17.6	316	26.1	**316**	**26.1**	317	26.0
459.GemsFDTD	560	18.9	559	19.0	**559**	**19.0**	**554**	**19.2**	553	19.2	558	19.0
465.tonto	419	23.5	**419**	**23.5**	421	23.4	403	24.4	**404**	**24.4**	409	24.1
470.lbm	1956	7.02	1951	7.04	**1954**	**7.03**	569	24.1	571	24.1	**571**	**24.1**
481.wrf	482	23.2	484	23.1	**483**	**23.1**	496	22.5	**496**	**22.5**	496	22.5
482.sphinx3	670	29.1	663	29.4	**668**	**29.2**	645	30.2	655	29.8	**653**	**29.8**

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
C1 Enhanced Mode = Disable
Hardware Prefetch = Enable, Adjacent Sector Prefetch = Enable
SnoopFilter = Disable
```

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General Notes

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/10.1.017/bin/icc -L/opt/intel/cc/10.1.017/lib
-I/opt/intel/cc/10.1.017/include
```

     433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

   450.soplex: `/opt/intel/cc/10.1.017/bin/icpc -L/opt/intel/cc/10.1.017/lib`
          `-I/opt/intel/cc/10.1.017/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: `basepeak = yes`

       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-intel64.20090714.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.xml`

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

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 19:32:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 September 2008.