SPEC® CFP2006 Result
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Fujitsu Siemens Computers

CELSIUS R650, Intel Xeon X5450 processor

SPECfp®_rate2006 =　77.6

SPECfp_rate_base2006 =　69.4

CPU2006 license: 22	**Test date:** Dec-2007
Test sponsor: Fujitsu Siemens Computers	**Hardware Availability:** Nov-2007
Tested by: Fujitsu Siemens Computers	**Software Availability:** Nov-2007

Copies

Benchmark	Copies	Value
410.bwaves	4	36.3
	8	36.0
416.gamess	8	178
	8	176
433.milc	8	31.2
	8	31.7
434.zeusmp	8	68.6
	8	68.7
435.gromacs	8	150
	8	144
436.cactusADM	1	99.8
	8	72.2
437.leslie3d	8	30.5
	8	29.1
444.namd	8	126
	8	125
447.dealII	8	130
	8	130
450.soplex	8	42.3
	8	36.8
453.povray	8	236
	8	202
454.calculix	8	157
	8	115
459.GemsFDTD	8	32.5
	8	32.3
465.tonto	8	115
	8	114
470.lbm	4	44.5
	8	27.5
481.wrf	8	51.3
	8	51.2
482.sphinx3	4	96.5
	8	67.6

SPECfp_rate_base2006 = 69.4

SPECfp_rate2006 = 77.6

Hardware

CPU Name:	Intel Xeon X5450
CPU Characteristics:	
CPU MHz:	3000
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

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:	ext3
System State:	Multi-User, Run Level 3
Base Pointers:	64-bit

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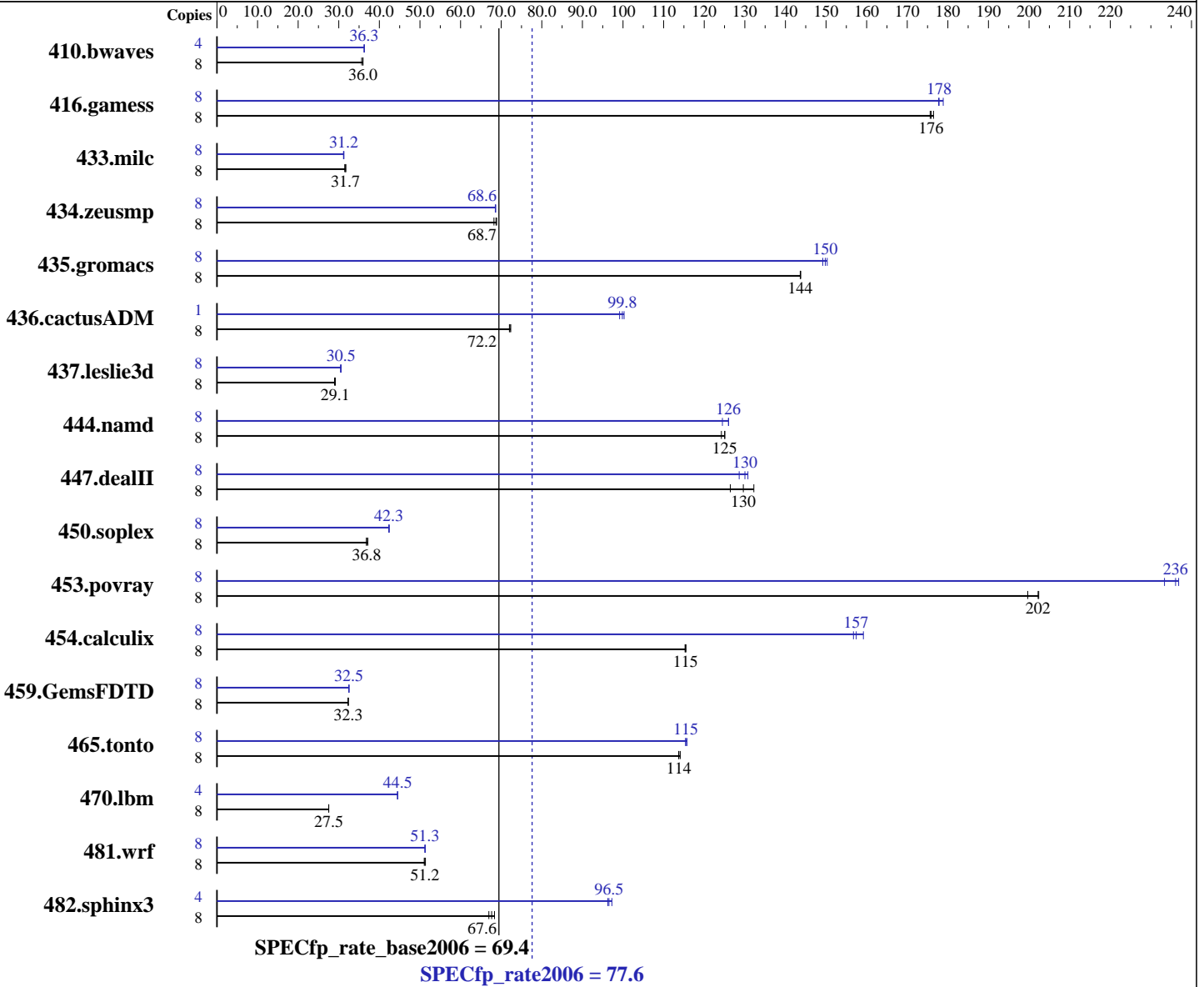
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L3 Cache: None
Other Cache: None
Memory: 8 GB (8x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1 x 400 GB SATA II 7200 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50.0.5-0.1.x86_64

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3051	35.6	3024	36.0	**3024**	**36.0**	4	1499	36.3	**1499**	**36.3**	1498	36.3
416.gamess	8	888	176	892	176	**890**	**176**	8	881	178	**881**	**178**	876	179
433.milc	8	2334	31.5	2314	31.7	**2320**	**31.7**	8	2349	31.3	**2352**	**31.2**	2357	31.2
434.zeusmp	8	1057	68.9	1067	68.2	**1059**	**68.7**	8	1062	68.5	**1061**	**68.6**	1061	68.6
435.gromacs	8	**398**	**144**	397	144	398	144	8	**381**	**150**	380	150	383	149
436.cactusADM	8	1327	72.0	1321	72.4	**1325**	**72.2**	1	121	99.2	119	100	**120**	**99.8**
437.leslie3d	8	2597	29.0	**2585**	**29.1**	2580	29.1	8	**2463**	**30.5**	2471	30.4	2461	30.6
444.namd	8	**513**	**125**	513	125	516	124	8	**509**	**126**	509	126	515	124
447.dealII	8	692	132	724	126	**706**	**130**	8	**704**	**130**	700	131	712	129
450.soplex	8	1795	37.2	**1811**	**36.8**	1812	36.8	8	1576	42.3	1572	42.4	**1576**	**42.3**
453.povray	8	213	200	210	202	**210**	**202**	8	182	233	180	237	**180**	**236**
454.calculix	8	**572**	**115**	571	116	573	115	8	415	159	**419**	**157**	421	157
459.GemsFDTD	8	2623	32.4	**2626**	**32.3**	2628	32.3	8	2612	32.5	**2611**	**32.5**	2610	32.5
465.tonto	8	**692**	**114**	692	114	690	114	8	682	115	680	116	**682**	**115**
470.lbm	8	3994	27.5	**3993**	**27.5**	3992	27.5	4	1235	44.5	**1235**	**44.5**	1236	44.5
481.wrf	8	1740	51.3	1751	51.0	**1745**	**51.2**	8	1741	51.3	**1743**	**51.3**	1745	51.2
482.sphinx3	8	2281	68.4	2328	67.0	**2305**	**67.6**	4	**808**	**96.5**	810	96.2	802	97.3

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 = Disable, Adjacent Sector Prefetch = Disable
    SnoopFilter = Enable

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Software Availability: Nov-2007

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 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
```

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`

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Peak Portability Flags (Continued)

```
  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
```

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
```

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Peak Optimization Flags (Continued)

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`

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-intel64.20090714.00.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

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

Tested with SPEC CPU2006 v1.0.
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