SPEC® CFP2006 Result

Fujitsu

PRIMERGY RX600 S5, Intel Xeon E7530, 1.87 GHz

$SPECfp®\_rate2006 =$ 192

$SPECfp\_rate\_base2006 =$ 186

CPU2006 license: 19		**Test date:** Jul-2010
Test sponsor: Fujitsu		**Hardware Availability:** Jun-2010
Tested by: Fujitsu		**Software Availability:** Jan-2010

Copies — results chart:

- 410.bwaves: 12 → 187; 24 → 180
- 416.gamess: 24 → 192
- 433.milc: 24 → 207; 24 → 207
- 434.zeusmp: 24 → 192
- 435.gromacs: 24 → 185; 24 → 183
- 436.cactusADM: 24 → 201
- 437.leslie3d: 12 → 129; 24 → 128
- 444.namd: 24 → 182; 24 → 178
- 447.dealII: 24 → 312
- 450.soplex: 24 → 151; 24 → 141
- 453.povray: 24 → 313; 24 → 260
- 454.calculix: 24 → 229
- 459.GemsFDTD: 12 → 119; 24 → 117
- 465.tonto: 24 → 236; 24 → 219
- 470.lbm: 12 → 123; 24 → 116
- 481.wrf: 24 → 232
- 482.sphinx3: 24 → 203; 24 → 192

SPECfp_rate_base2006 = 186

SPECfp_rate2006 = 192

Hardware

CPU Name:	Intel Xeon E7530
CPU Characteristics:	Intel Turbo Boost Technology up to 2.13 GHz
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	2,3,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel:	No
File System:	ext3
System State:	Multi-User Run Level 3

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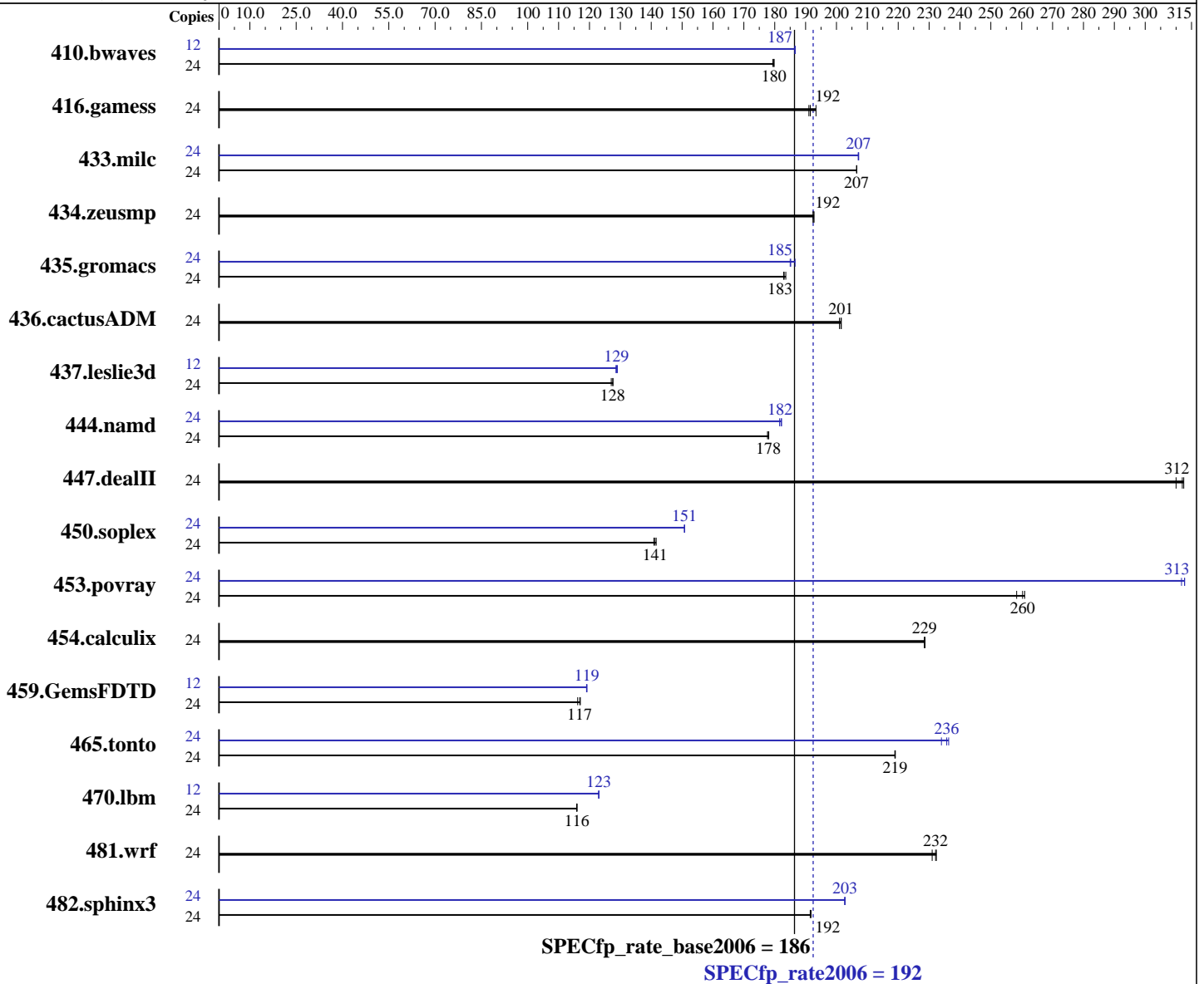
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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32x8 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM
Other Hardware:	None

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

Results Table

Benchmark	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	24	1818	179	1814	180	**1815**	**180**	12	**874**	**187**	874	187	874	187
416.gamess	24	**2454**	**192**	2430	193	2459	191	24	**2454**	**192**	2430	193	2459	191
433.milc	24	1066	207	1067	207	**1067**	**207**	24	1064	207	1063	207	**1064**	**207**
434.zeusmp	24	**1135**	**192**	1135	192	1133	193	24	**1135**	**192**	1135	192	1133	193
435.gromacs	24	937	183	933	184	**936**	**183**	24	926	185	918	187	**925**	**185**
436.cactusADM	24	1427	201	**1424**	**201**	1423	202	24	1427	201	**1424**	**201**	1423	202
437.leslie3d	24	1776	127	**1769**	**128**	1768	128	12	877	129	**876**	**129**	874	129
444.namd	24	**1082**	**178**	1083	178	1081	178	24	1056	182	1060	182	**1057**	**182**
447.dealII	24	879	312	886	310	**880**	**312**	24	879	312	886	310	**880**	**312**
450.soplex	24	1414	142	**1417**	**141**	1421	141	24	**1328**	**151**	1328	151	1327	151
453.povray	24	**491**	**260**	489	261	494	258	24	410	312	**408**	**313**	408	313
454.calculix	24	866	229	**866**	**229**	867	228	24	866	229	**866**	**229**	867	228
459.GemsFDTD	24	**2179**	**117**	2176	117	2192	116	12	**1069**	**119**	1070	119	1068	119
465.tonto	24	1078	219	1079	219	**1078**	**219**	24	1009	234	**1002**	**236**	999	236
470.lbm	24	**2845**	**116**	2847	116	2843	116	12	1339	123	1341	123	**1340**	**123**
481.wrf	24	1161	231	1154	232	**1155**	**232**	24	1161	231	1154	232	**1155**	**232**
482.sphinx3	24	**2441**	**192**	2439	192	2443	191	24	**2307**	**203**	2307	203	2308	203

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
 numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

The system automatically configures the memory to run at 978 MHz.

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General Notes

    For information about Fujitsu please visit: http://www.fujitsu.com
    Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

Base Compiler Invocation

C benchmarks:
    icc   -m64

C++ benchmarks:
    icpc   -m64

Fortran benchmarks:
    ifort -m64

Benchmarks using both Fortran and C:
    icc   -m64 ifort -m64

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:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

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Test date: Jul-2010
Hardware Availability: Jun-2010
Software Availability: Jan-2010

Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc    -m64
```

```
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):
```
icpc   -m64
```

```
450.soplex: icpc -m32
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

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
470.lbm: -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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -fno-alias -opt-prefetch

        470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -opt-malloc-options=3 -ansi-alias -auto-ilp32

        482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

        444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -fno-alias -auto-ilp32

        447.dealII: basepeak = yes

        450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -opt-malloc-options=3

        453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -unroll4 -ansi-alias

Fortran benchmarks:

        410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

        416.gamess: basepeak = yes

        434.zeusmp: basepeak = yes

        437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

  459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -unroll2 -Ob0

        465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

        435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.xml

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