SPEC® CFP2006 Result
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Fujitsu

PRIMERGY TX300 S5, Intel Xeon X5570, 2.93 GHz

$SPECfp^{®}_rate2006 = $ 103

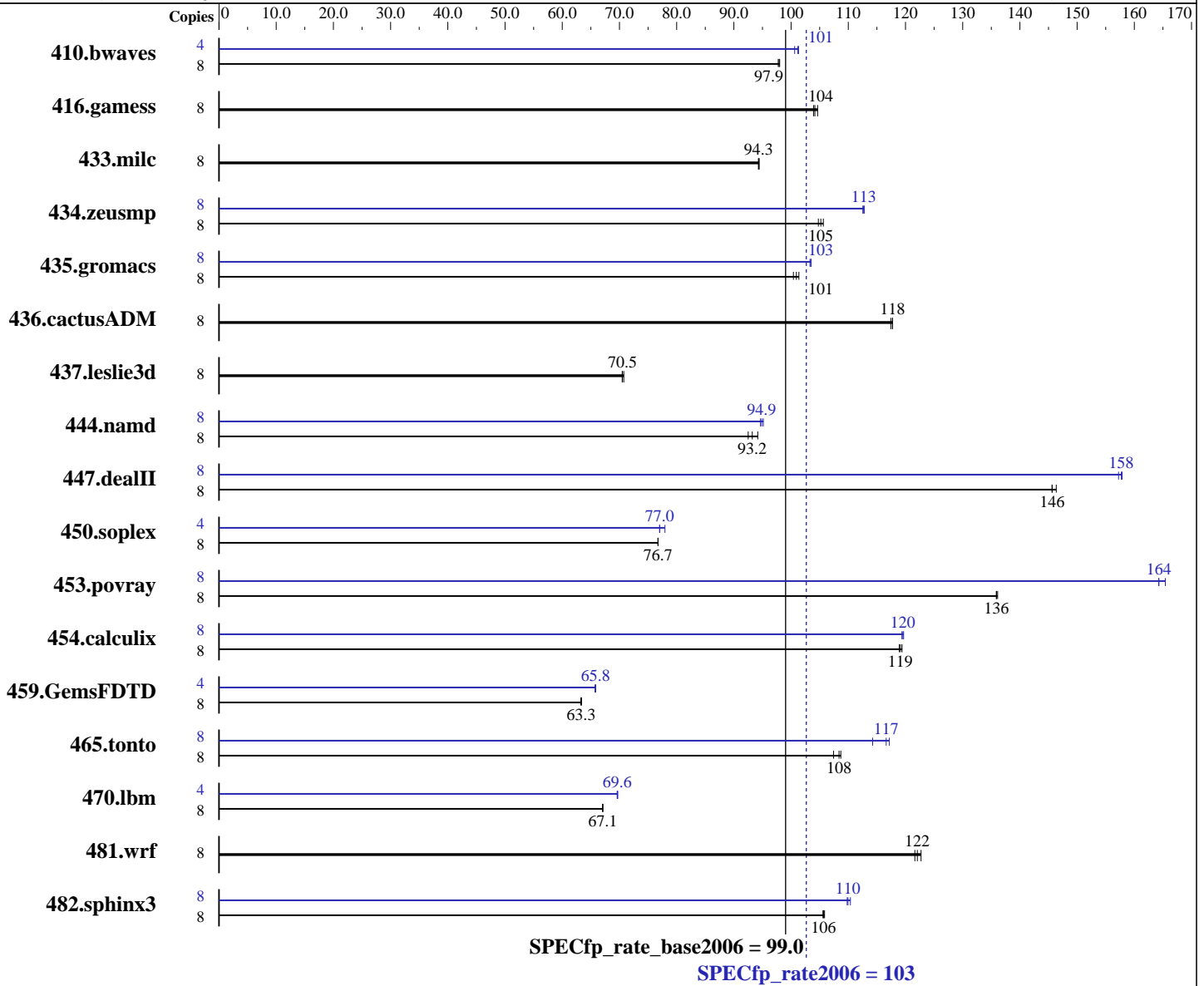$SPECfp_rate_base2006 = $ 99.0

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Mar-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009

Benchmark	Copies	Result
410.bwaves	4	101
	8	97.9
416.gamess	8	104
433.milc	8	94.3
434.zeusmp	8	113
	8	105
435.gromacs	8	103
	8	101
436.cactusADM	8	118
437.leslie3d	8	70.5
444.namd	8	94.9
	8	93.2
447.dealII	8	158
	8	146
450.soplex	4	77.0
	8	76.7
453.povray	8	164
	8	136
454.calculix	8	120
	8	119
459.GemsFDTD	4	65.8
	8	63.3
465.tonto	8	117
	8	108
470.lbm	4	69.6
	8	67.1
481.wrf	8	122
482.sphinx3	8	110
	8	106

SPECfp_rate_base2006 = 99.0
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Hardware

CPU Name: Intel Xeon X5570
CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz: 2933
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
Auto Parallel: No
File System: ext3
System State: Multi-User Run Level 3
Base Pointers: 64-bit

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L3 Cache:	8 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.18.50.0.7.20080502
Memory:	12 GB (3x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)		
Disk Subsystem:	1 x SATA, 250 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	**1110**	**97.9**	1109	98.0	1112	97.8	4	540	101	537	101	**537**	**101**
416.gamess	8	1497	105	**1504**	**104**	1507	104	8	1497	105	**1504**	**104**	1507	104
433.milc	8	779	94.3	**779**	**94.3**	778	94.4	8	779	94.3	**779**	**94.3**	778	94.4
434.zeusmp	8	689	106	**692**	**105**	695	105	8	647	113	645	113	**646**	**113**
435.gromacs	8	563	101	569	100	**566**	**101**	8	**552**	**103**	552	103	553	103
436.cactusADM	8	814	117	**812**	**118**	812	118	8	814	117	**812**	**118**	812	118
437.leslie3d	8	1067	70.5	**1066**	**70.5**	1063	70.8	8	1067	70.5	**1066**	**70.5**	1063	70.8
444.namd	8	681	94.2	**688**	**93.2**	694	92.5	8	678	94.6	674	95.1	**676**	**94.9**
447.dealII	8	628	146	**628**	**146**	625	146	8	582	157	580	158	**580**	**158**
450.soplex	8	869	76.8	**869**	**76.7**	870	76.7	4	433	77.0	**433**	**77.0**	428	78.0
453.povray	8	313	136	**313**	**136**	313	136	8	259	164	257	165	**259**	**164**
454.calculix	8	553	119	555	119	**554**	**119**	8	552	120	553	119	**552**	**120**
459.GemsFDTD	8	1342	63.2	**1340**	**63.3**	1339	63.4	4	645	65.8	646	65.7	**645**	**65.8**
465.tonto	8	733	107	724	109	**726**	**108**	8	689	114	672	117	**675**	**117**
470.lbm	8	1638	67.1	1639	67.1	**1639**	**67.1**	4	**789**	**69.6**	789	69.6	788	69.7
481.wrf	8	728	123	**732**	**122**	735	122	8	728	123	**732**	**122**	735	122
482.sphinx3	8	1473	106	**1475**	**106**	1477	106	8	**1418**	**110**	1413	110	1420	110

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 processes to cores and its local memory.
    Details may be found in the config file.
```

General Notes

```
   This result was measured on the PRIMERGY RX300 S5. The PRIMERGY TX300 S5
   and the PRIMERGY RX300 S5 are electronically equivalent.

   For information about Fujitsu please visit: http://www.fujitsu.com
```

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

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

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

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

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Peak Compiler Invocation

C benchmarks (except as noted below):
    icc

    482.sphinx3: `icc -m32`

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

     450.soplex: `icpc -m32`

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`
           470.lbm: `-DSPEC_CPU_LP64`
           481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

        433.milc: `basepeak = yes`

        470.lbm: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`
                `-auto-ilp32`

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

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Peak Optimization Flags (Continued)

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: -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 -ansi-alias -scalar-rep-

    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: -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)

    437.leslie3d: basepeak = yes

    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 -opt-prefetch

    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

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

    436.cactusADM: basepeak = yes

    454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

    481.wrf: basepeak = yes

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The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.html

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

http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.xml

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