SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX300 S6, Intel Xeon E5603, 1.60 GHz

$SPECfp^{®}\_rate2006 =$ 60.4

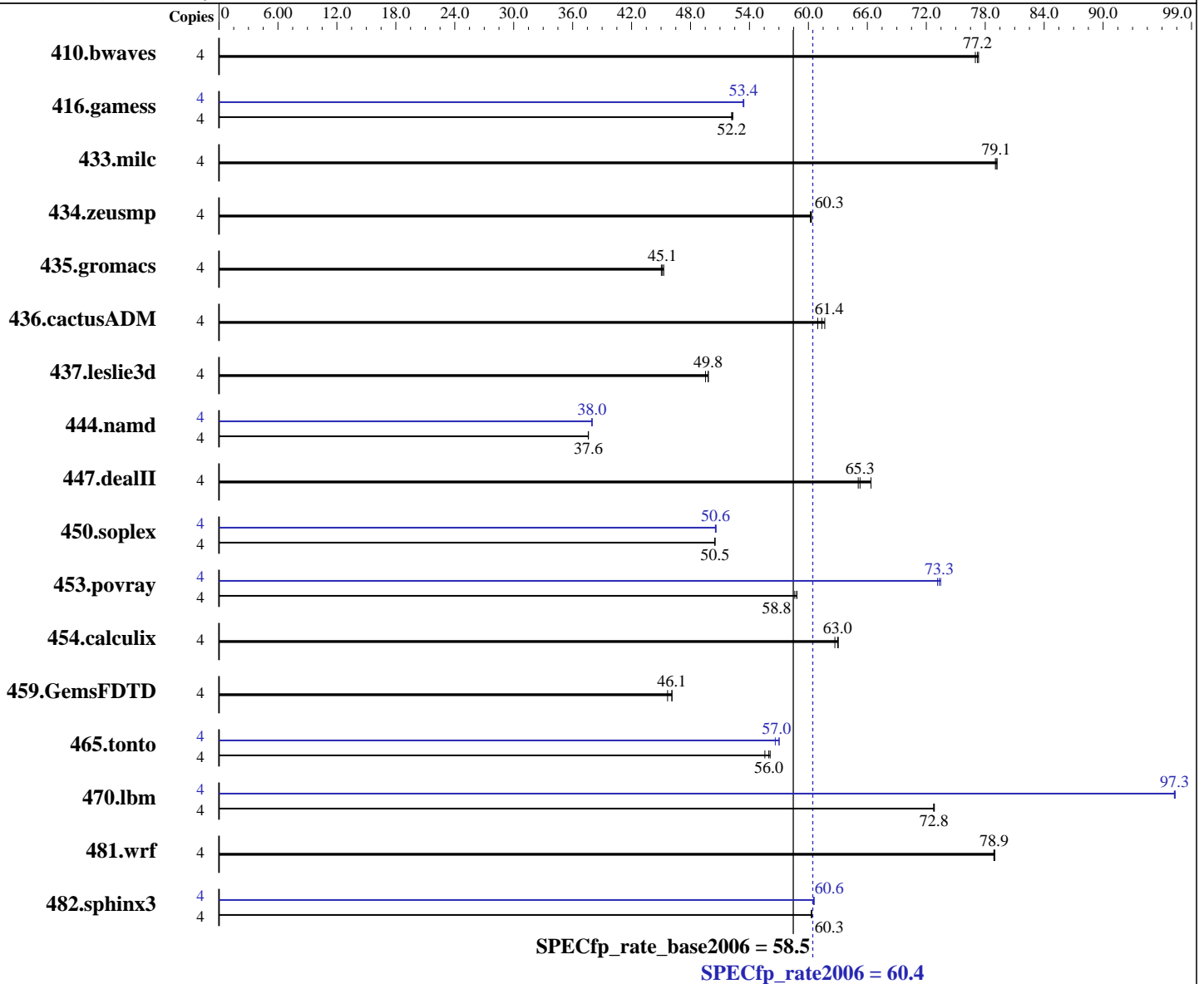$SPECfp\_rate\_base2006 =$ 58.5

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

Test date: Jan-2011
Hardware Availability: Feb-2011
Software Availability: Nov-2010

Benchmark	Copies	Result
410.bwaves	4	77.2
416.gamess	4	53.4
416.gamess	4	52.2
433.milc	4	79.1
434.zeusmp	4	60.3
435.gromacs	4	45.1
436.cactusADM	4	61.4
437.leslie3d	4	49.8
444.namd	4	38.0
444.namd	4	37.6
447.dealII	4	65.3
450.soplex	4	50.6
450.soplex	4	50.5
453.povray	4	73.3
453.povray	4	58.8
454.calculix	4	63.0
459.GemsFDTD	4	46.1
465.tonto	4	57.0
465.tonto	4	56.0
470.lbm	4	97.3
470.lbm	4	72.8
481.wrf	4	78.9
482.sphinx3	4	60.6
482.sphinx3	4	60.3

SPECfp_rate_base2006 = 58.5

SPECfp_rate2006 = 60.4

Hardware

CPU Name:	Intel Xeon E5603
CPU Characteristics:	
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
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

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Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) with SP1, Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.0.082 Build 20101006
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache:	4 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	none
Memory:	24 GB (6 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1067 MHz and CL7)		
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM		
Other Hardware:	--		

Results Table

Benchmark	Base						Peak					
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	706	77.0	703	77.3	**704**	**77.2**	4	706	77.0	703	77.3	**704**	**77.2**
416.gamess	4	1497	52.3	1500	52.2	**1500**	**52.2**	4	1466	53.4	1468	53.4	**1466**	**53.4**
433.milc	4	464	79.2	465	79.0	**464**	**79.1**	4	464	79.2	465	79.0	**464**	**79.1**
434.zeusmp	4	604	60.3	605	60.2	**604**	**60.3**	4	604	60.3	605	60.2	**604**	**60.3**
435.gromacs	4	631	45.3	634	45.0	**633**	**45.1**	4	631	45.3	634	45.0	**633**	**45.1**
436.cactusADM	4	784	61.0	775	61.7	**779**	**61.4**	4	784	61.0	775	61.7	**779**	**61.4**
437.leslie3d	4	**755**	**49.8**	759	49.5	755	49.8	4	**755**	**49.8**	759	49.5	755	49.8
444.namd	4	853	37.6	853	37.6	**853**	**37.6**	4	**845**	**38.0**	845	38.0	845	38.0
447.dealII	4	**701**	**65.3**	703	65.1	689	66.4	4	**701**	**65.3**	703	65.1	689	66.4
450.soplex	4	661	50.5	661	50.5	**661**	**50.5**	4	660	50.5	**660**	**50.6**	659	50.6
453.povray	4	363	58.6	362	58.8	**362**	**58.8**	4	**290**	**73.3**	291	73.1	290	73.5
454.calculix	4	526	62.7	**524**	**63.0**	523	63.0	4	526	62.7	**524**	**63.0**	523	63.0
459.GemsFDTD	4	**921**	**46.1**	920	46.1	929	45.7	4	**921**	**46.1**	920	46.1	929	45.7
465.tonto	4	701	56.1	708	55.6	**703**	**56.0**	4	**690**	**57.0**	690	57.0	695	56.6
470.lbm	4	755	72.8	755	72.8	**755**	**72.8**	4	565	97.3	**565**	**97.3**	565	97.2
481.wrf	4	566	79.0	566	78.9	**566**	**78.9**	4	566	79.0	566	78.9	**566**	**78.9**
482.sphinx3	4	**1293**	**60.3**	1293	60.3	1292	60.3	4	**1287**	**60.6**	1287	60.6	1288	60.5

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

```
    BIOS configuration:
    Data Reuse Optimization = Disable
```

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General Notes

This result was measured on the PRIMERGY RX300 S6. The PRIMERGY TX300 S6
and the PRIMERGY RX300 S6 are electronically equivalent.

For information about Fujitsu please visit: http://www.fujitsu.com
Binaries were compiled on SLES 10 SP1 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 -ansi-alias
```

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Base Optimization Flags (Continued)

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

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

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

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: basepeak = yes

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

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

C++ benchmarks:

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

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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Peak Optimization Flags (Continued)

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-ic12.0-linux64-revA.20110222.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.xml

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