SPEC® CFP2006 Result
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Fujitsu

PRIMERGY TX300 S6, Intel Xeon E5640, 2.67 GHz

$SPECfp®\_rate2006 =$ 92.6

$SPECfp\_rate\_base2006 =$ 89.1

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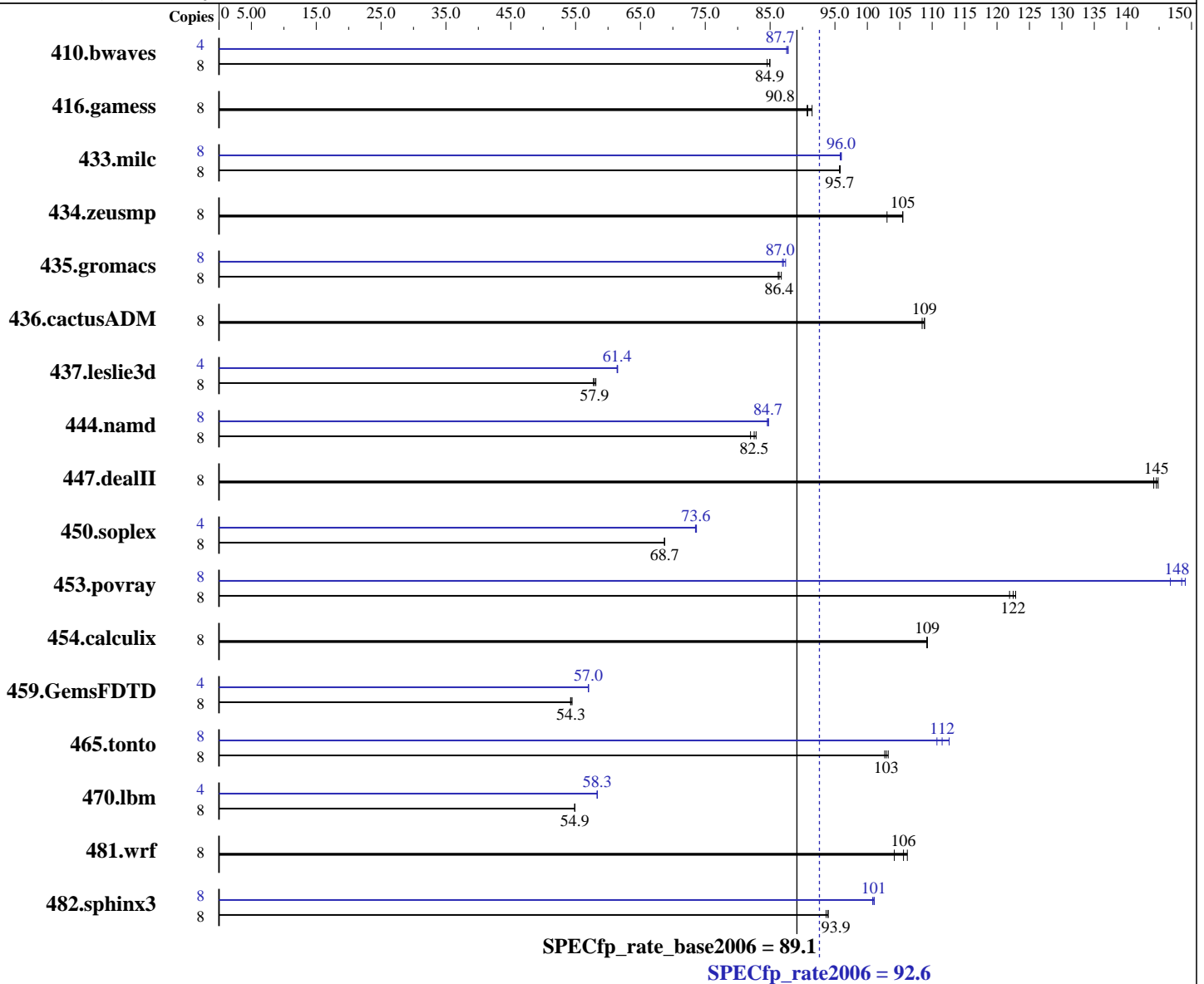**Test sponsor:** Fujitsu
Tested by: Fujitsu

Test date: Feb-2010
Hardware Availability: Apr-2010
Software Availability: Jan-2010

SPECfp_rate_base2006 = 89.1

SPECfp_rate2006 = 92.6

Hardware

CPU Name:	Intel Xeon E5640
CPU Characteristics:	Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz:	2667
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 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

Continued on next page

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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SATA, 160 GB, 5.4 krpm
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1279	85.0	**1280**	**84.9**	1286	84.6	4	621	87.6	619	87.8	**620**	**87.7**
416.gamess	8	**1725**	**90.8**	1727	90.7	1712	91.5	8	**1725**	**90.8**	1727	90.7	1712	91.5
433.milc	8	766	95.8	767	95.7	**767**	**95.7**	8	**765**	**96.0**	765	96.0	766	95.8
434.zeusmp	8	707	103	**690**	**105**	690	105	8	707	103	**690**	**105**	690	105
435.gromacs	8	659	86.7	**661**	**86.4**	662	86.3	8	654	87.4	**656**	**87.0**	657	86.9
436.cactusADM	8	879	109	**879**	**109**	882	108	8	879	109	**879**	**109**	882	108
437.leslie3d	8	1302	57.7	**1298**	**57.9**	1294	58.1	4	**612**	**61.4**	612	61.4	611	61.5
444.namd	8	783	82.0	**777**	**82.5**	774	82.8	8	757	84.8	**758**	**84.7**	759	84.6
447.dealII	8	635	144	632	145	**633**	**145**	8	635	144	632	145	**633**	**145**
450.soplex	8	**971**	**68.7**	971	68.7	971	68.7	4	453	73.6	454	73.5	**453**	**73.6**
453.povray	8	**347**	**122**	346	123	349	122	8	**287**	**148**	286	149	290	147
454.calculix	8	604	109	605	109	**604**	**109**	8	604	109	605	109	**604**	**109**
459.GemsFDTD	8	1565	54.2	**1563**	**54.3**	1559	54.5	4	745	57.0	**745**	**57.0**	745	57.0
465.tonto	8	763	103	**765**	**103**	767	103	8	699	113	711	111	**706**	**112**
470.lbm	8	2003	54.9	**2003**	**54.9**	2003	54.9	4	942	58.3	**942**	**58.3**	942	58.3
481.wrf	8	**846**	**106**	842	106	858	104	8	**846**	**106**	842	106	858	104
482.sphinx3	8	1660	93.9	**1660**	**93.9**	1665	93.6	8	**1544**	**101**	1543	101	1546	101

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 1066 MHz.
    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
```

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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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.20100316.00.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.20100316.00.xml

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 05:18:48 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 March 2010.