SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX350 S7, Intel Xeon E5-2603, 1.80 GHz

$SPECfp^{®}\_rate2006 =$ 91.7

$SPECfp\_rate\_base2006 =$ 90.1

CPU2006 license: 19	**Test date:** Feb-2012
Test sponsor: Fujitsu	**Hardware Availability:** Mar-2012
Tested by: Fujitsu	**Software Availability:** Dec-2011

Copies

Benchmark	Copies	Result
410.bwaves	4	122
416.gamess	4	75.6
416.gamess	4	72.4
433.milc	4	122
433.milc	4	122
434.zeusmp	4	95.5
435.gromacs	4	51.4
435.gromacs	4	51.4
436.cactusADM	4	133
437.leslie3d	4	88.4
444.namd	4	50.0
444.namd	4	49.1
447.dealII	4	109
450.soplex	4	72.3
453.povray	4	108
453.povray	4	91.9
454.calculix	4	89.1
454.calculix	4	88.6
459.GemsFDTD	4	69.1
465.tonto	4	88.0
465.tonto	4	83.3
470.lbm	4	142
481.wrf	4	125
481.wrf	4	123
482.sphinx3	4	86.0

SPECfp_rate_base2006 = 90.1

SPECfp_rate2006 = 91.7

Hardware

CPU Name:	Intel Xeon E5-2603
CPU Characteristics:	
CPU MHz:	1800
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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago)
	2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
	Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4

Continued on next page

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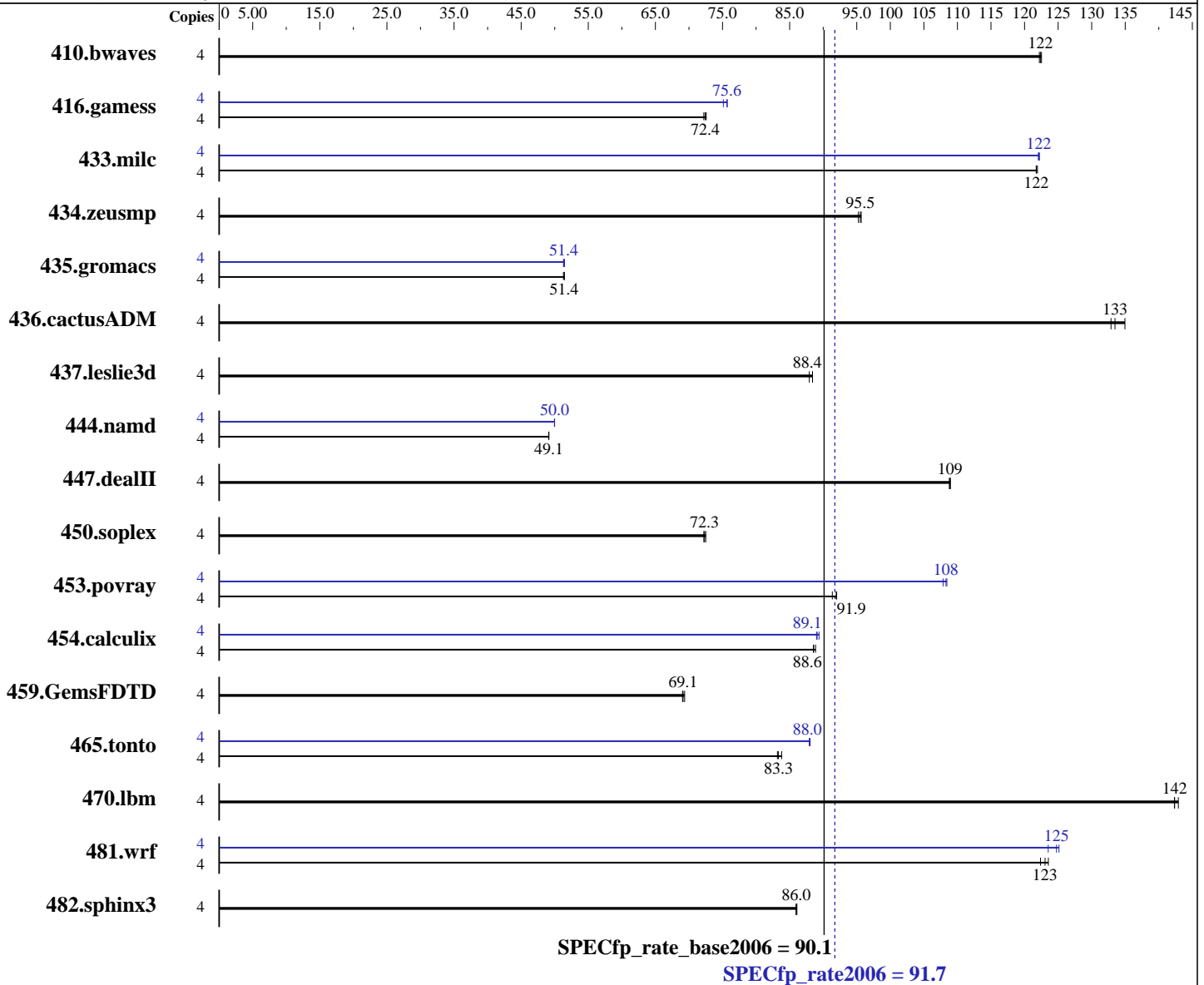SPECfp_rate_base2006 = 90.1

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L3 Cache:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 MHz and CL7)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	32/64-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	4	445	122	444	123	**444**	**122**	4	445	122	444	123	**444**	**122**
416.gamess	4	**1081**	**72.4**	1079	72.6	1085	72.2	4	**1035**	**75.6**	1034	75.7	1043	75.1
433.milc	4	**302**	**122**	301	122	302	122	4	**301**	**122**	300	122	301	122
434.zeusmp	4	380	95.7	382	95.2	**381**	**95.5**	4	380	95.7	382	95.2	**381**	**95.5**
435.gromacs	4	557	51.3	555	51.4	**555**	**51.4**	4	555	51.5	557	51.3	**556**	**51.4**
436.cactusADM	4	354	135	**358**	**133**	360	133	4	354	135	**358**	**133**	360	133
437.leslie3d	4	428	87.9	**425**	**88.4**	425	88.4	4	428	87.9	**425**	**88.4**	425	88.4
444.namd	4	**653**	**49.1**	653	49.1	653	49.1	4	**642**	**50.0**	642	50.0	642	50.0
447.dealII	4	421	109	**420**	**109**	420	109	4	421	109	**420**	**109**	420	109
450.soplex	4	**461**	**72.3**	460	72.5	462	72.2	4	**461**	**72.3**	460	72.5	462	72.2
453.povray	4	**231**	**91.9**	231	92.0	233	91.4	4	196	108	**196**	**108**	197	108
454.calculix	4	371	88.9	373	88.5	**373**	**88.6**	4	371	89.0	**370**	**89.1**	369	89.4
459.GemsFDTD	4	615	69.0	**614**	**69.1**	612	69.4	4	615	69.0	**614**	**69.1**	612	69.4
465.tonto	4	**472**	**83.3**	473	83.2	470	83.8	4	**447**	**88.0**	447	88.1	448	87.9
470.lbm	4	385	143	**386**	**142**	386	142	4	385	143	**386**	**142**	386	142
481.wrf	4	362	124	**363**	**123**	365	122	4	**358**	**125**	357	125	362	124
482.sphinx3	4	906	86.1	907	86.0	**907**	**86.0**	4	906	86.1	907	86.0	**907**	**86.0**

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

Continued on next page

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General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
This result was measured on the PRIMERGY RX350 S7. The PRIMERGY RX350 S7
and the PRIMERGY TX300 S7 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
```

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Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Peak Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

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

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

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
          -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
          -opt-mem-layout-trans=3

470.lbm: basepeak = yes
```

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Peak Optimization Flags (Continued)

482.sphinx3: basepeak = yes

C++ benchmarks:

    444.namd: -xAVX(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: basepeak = yes

    453.povray: -xAVX(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: -xAVX(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- -static

    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

  459.GemsFDTD: basepeak = yes

    465.tonto: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
        -static -auto-ilp32 -opt-mem-layout-trans=3

  436.cactusADM: basepeak = yes

    454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
        -opt-mem-layout-trans=3

    481.wrf: Same as 454.calculix

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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