SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX2530 M1, Intel Xeon E5-2697 v3, 2.6 GHz

$SPECfp^{®}\_rate2006 =$ 879

$SPECfp\_rate\_base2006 =$ 853

CPU2006 license: 19	**Test date:** Mar-2015
Test sponsor: Fujitsu	**Hardware Availability:** Feb-2015
Tested by: Fujitsu	**Software Availability:** Sep-2014

Copies

Benchmark	Copies	Result
410.bwaves	56	624
416.gamess	56	1110
416.gamess	56	1050
433.milc	56	589
433.milc	56	588
434.zeusmp	56	979
435.gromacs	56	1250
435.gromacs	56	1210
436.cactusADM	56	1120
437.leslie3d	28	459
437.leslie3d	56	442
444.namd	56	932
444.namd	56	921
447.dealII	56	1580
450.soplex	28	537
450.soplex	56	450
453.povray	56	1630
453.povray	56	1420
454.calculix	56	1600
459.GemsFDTD	56	423
465.tonto	56	1030
465.tonto	56	973
470.lbm	56	843
481.wrf	56	737
481.wrf	56	732
482.sphinx3	56	783

SPECfp_rate_base2006 = 853

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Hardware

CPU Name:	Intel Xeon E5-2697 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	28 cores, 2 chips, 14 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chip
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 7.0 (Maipo) Kernel 3.10.0-123.8.1.el7.x86_64
Compiler:	C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux; Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	xfs

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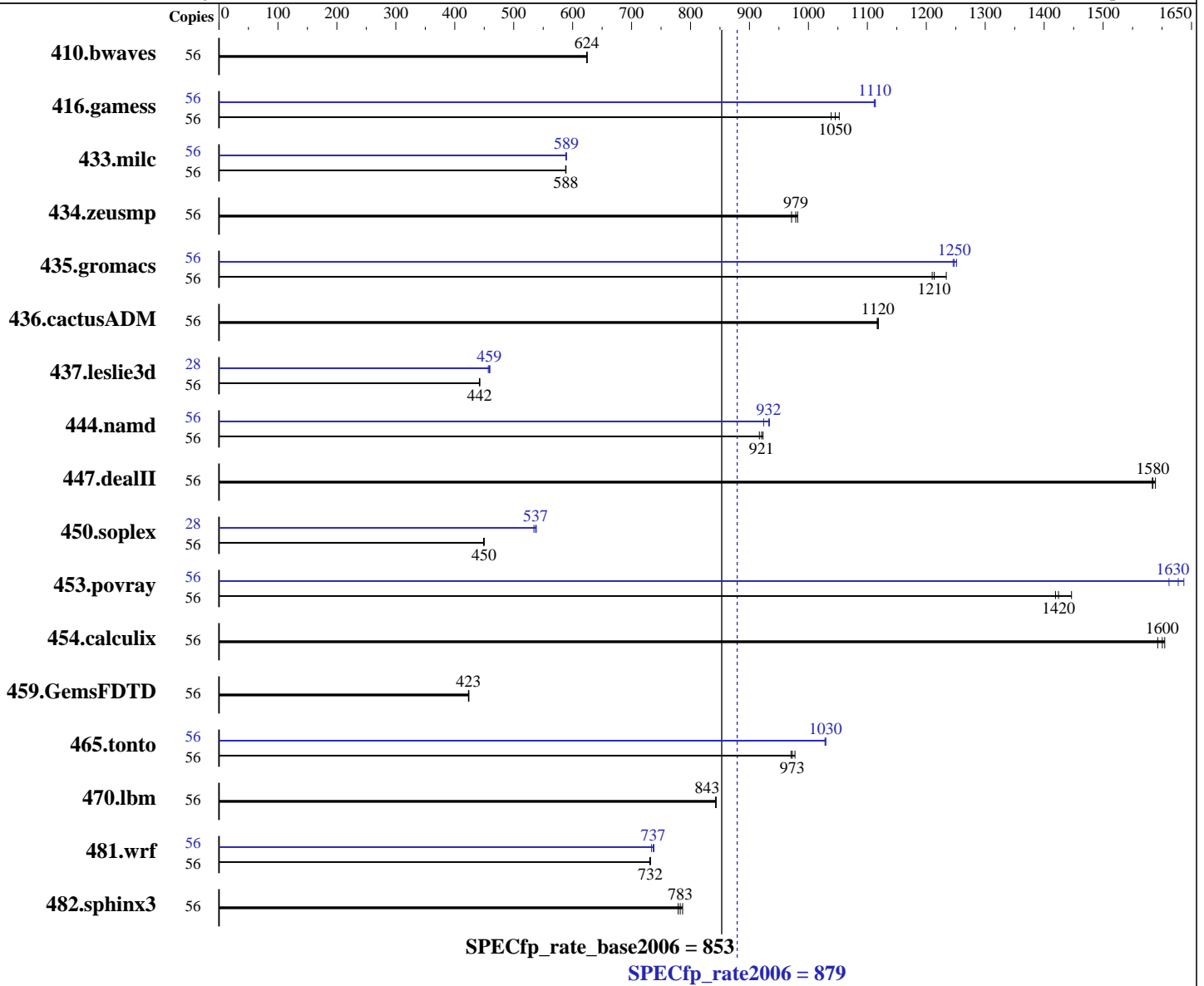|	
SPECfp_rate2006 =	879
SPECfp_rate_base2006 =	853

CPU2006 license: 19
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Test date: Mar-2015
Hardware Availability: Feb-2015
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L3 Cache:	35 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
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	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	56	1218	625	1219	624	**1219**	**624**	56	1218	625	1219	624	**1219**	**624**
416.gamess	56	**1049**	**1050**	1042	1050	1056	1040	56	986	1110	985	1110	**985**	**1110**
433.milc	56	874	588	**874**	**588**	873	589	56	874	588	**872**	**589**	872	590
434.zeusmp	56	519	982	**521**	**979**	525	971	56	519	982	**521**	**979**	525	971
435.gromacs	56	**330**	**1210**	330	1210	324	1230	56	**320**	**1250**	321	1250	320	1250
436.cactusADM	56	598	1120	**599**	**1120**	599	1120	56	598	1120	**599**	**1120**	599	1120
437.leslie3d	56	1190	442	**1191**	**442**	1191	442	28	576	457	**574**	**459**	573	460
444.namd	56	487	923	**488**	**921**	490	917	56	481	934	486	924	**482**	**932**
447.dealII	56	405	1580	**404**	**1580**	403	1590	56	405	1580	**404**	**1580**	403	1590
450.soplex	56	1038	450	1040	449	**1039**	**450**	28	**435**	**537**	434	538	437	534
453.povray	56	**209**	**1420**	210	1420	206	1450	56	**183**	**1630**	185	1610	182	1640
454.calculix	56	288	1600	**289**	**1600**	290	1590	56	288	1600	**289**	**1600**	290	1590
459.GemsFDTD	56	1404	423	**1404**	**423**	1401	424	56	1404	423	**1404**	**423**	1401	424
465.tonto	56	568	971	564	977	**566**	**973**	56	536	1030	**535**	**1030**	535	1030
470.lbm	56	912	844	913	843	**913**	**843**	56	912	844	913	843	**913**	**843**
481.wrf	56	855	732	856	731	**855**	**732**	56	**849**	**737**	853	734	848	738
482.sphinx3	56	1401	779	**1395**	**783**	1388	787	56	1401	779	**1395**	**783**	1388	787

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"

Platform Notes

    BIOS configuration:
    Energy Performance = Performance
    QPI snoop mode: Cluster on Die

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Platform Notes (Continued)

```
     COD Enable = Enabled, Early Snoop = Disabled
  CPU C1E Support = Disabled
  QPI Link Frequency Select = 6.4 GT/s
```

General Notes

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

 Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
 memory using RedHat EL 7.0
 Filesystem page cache cleared with:
 echo 1>         /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>

 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
```

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Base Portability Flags (Continued)

```
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:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias
```

Peak Compiler Invocation

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

C++ benchmarks (except as noted below):
```
icpc   -m64
```
```
  450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

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
```

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Peak Portability Flags (Continued)

```
   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
 482.sphinx3: -DSPEC_CPU_LP64
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
          -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes
```

C++ benchmarks:

```
444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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
```

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Peak Optimization Flags (Continued)

416.gamess: `-xCORE-AVX2(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch`

459.GemsFDTD: `basepeak = yes`

465.tonto: `-xCORE-AVX2(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: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-opt-prefetch -auto-ilp32`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

481.wrf: `-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue May 19 18:14:20 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 May 2015.