SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX2560 M1, Intel Xeon E5-2623 v3, 3.0 GHz

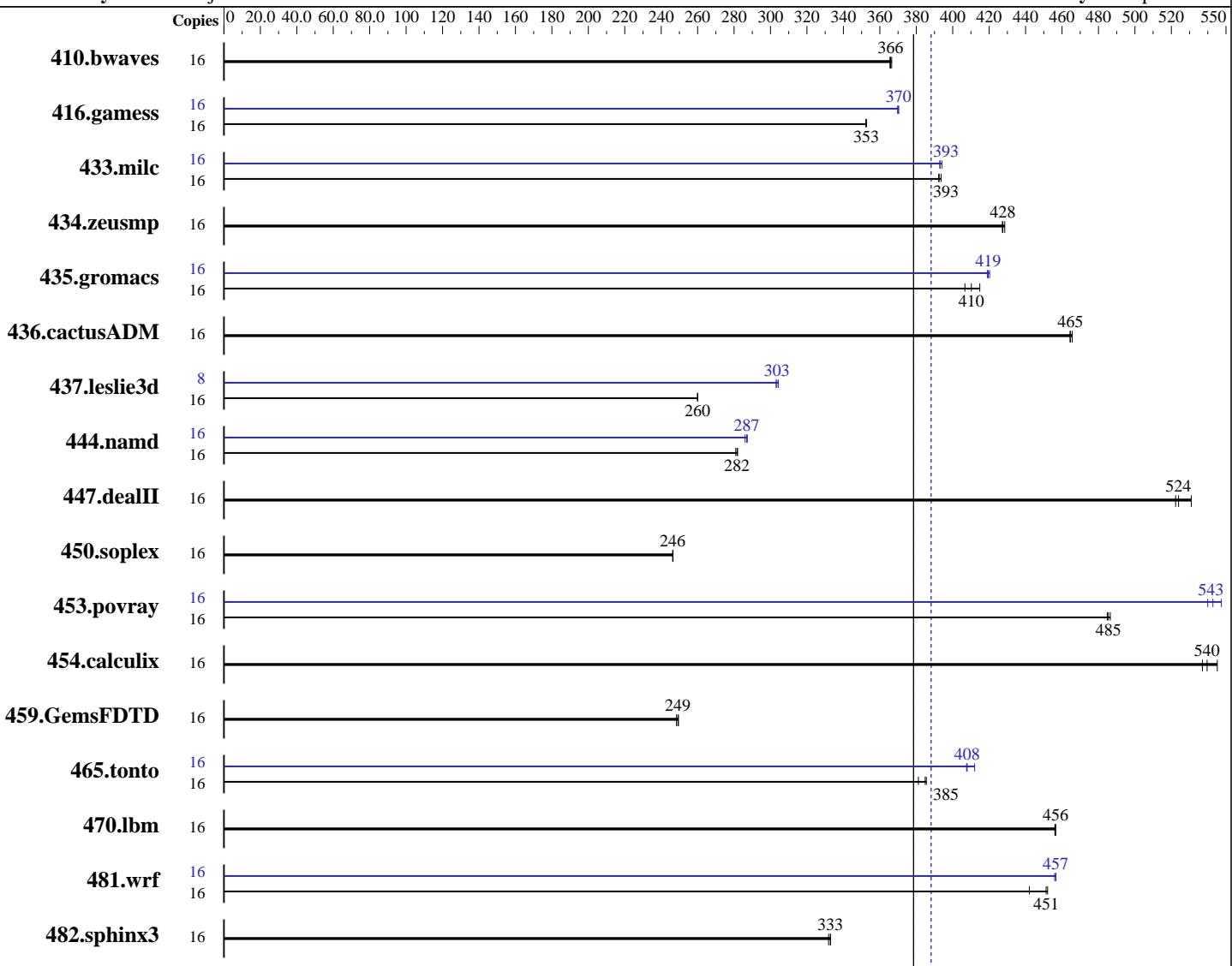$SPECfp^{®}\_rate2006 =$ 388

$SPECfp\_rate\_base2006 =$ 379

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

Copies

Benchmark	Copies	Result
410.bwaves	16	366
416.gamess	16 / 16	370 / 353
433.milc	16 / 16	393 / 393
434.zeusmp	16	428
435.gromacs	16 / 16	419 / 410
436.cactusADM	16	465
437.leslie3d	8 / 16	303 / 260
444.namd	16 / 16	287 / 282
447.dealII	16	524
450.soplex	16	246
453.povray	16 / 16	543 / 485
454.calculix	16	540
459.GemsFDTD	16	249
465.tonto	16 / 16	408 / 385
470.lbm	16	456
481.wrf	16 / 16	457 / 451
482.sphinx3	16	333

SPECfp_rate_base2006 = 379

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Hardware

CPU Name:	Intel Xeon E5-2623 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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 7.1 (Maipo) Kernel 3.10.0-229.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

Continued on next page

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L3 Cache:	10 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM		
Other Hardware:	None		

Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	16	**594**	**366**	593	367	595	366	16	**594**	**366**	593	367	595	366
416.gamess	16	889	352	**889**	**353**	888	353	16	846	370	**846**	**370**	847	370
433.milc	16	**374**	**393**	374	392	373	394	16	374	393	**374**	**393**	373	394
434.zeusmp	16	**341**	**428**	341	427	340	429	16	**341**	**428**	341	427	340	429
435.gromacs	16	281	407	**278**	**410**	275	415	16	**272**	**419**	272	420	273	419
436.cactusADM	16	412	464	411	466	**412**	**465**	16	412	464	411	466	**412**	**465**
437.leslie3d	16	**578**	**260**	578	260	579	260	8	248	303	247	304	**248**	**303**
444.namd	16	455	282	457	281	**456**	**282**	16	449	286	447	287	**447**	**287**
447.dealII	16	**349**	**524**	350	522	345	531	16	**349**	**524**	350	522	345	531
450.soplex	16	542	246	541	247	**542**	**246**	16	542	246	541	247	**542**	**246**
453.povray	16	176	485	**175**	**485**	175	486	16	155	547	158	540	**157**	**543**
454.calculix	16	**245**	**540**	242	545	246	537	16	**245**	**540**	242	545	246	537
459.GemsFDTD	16	683	248	**681**	**249**	680	249	16	683	248	**681**	**249**	680	249
465.tonto	16	**409**	**385**	413	381	408	386	16	386	408	382	412	**386**	**408**
470.lbm	16	482	456	482	456	**482**	**456**	16	482	456	482	456	**482**	**456**
481.wrf	16	395	452	**396**	**451**	404	442	16	**391**	**457**	392	456	391	457
482.sphinx3	16	**937**	**333**	937	333	940	332	16	**937**	**333**	937	333	940	332

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
Utilization Profile = Unbalanced

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Platform Notes (Continued)

```
    QPI snoop mode: Early Snoop
       COD Enable = Disabled, Early Snoop = Enabled
    CPU C1E Support = Disabled
```

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
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
  Filesystem page cache cleared with:
  echo 1>        /proc/sys/vm/drop_caches
  runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>

  This result was measured on the PRIMERGY RX2560 M1. The PRIMERGY RX2560 M1
  and the PRIMERGY TX2560 M1 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
```

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Base Portability Flags (Continued)

```
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:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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 -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
```

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Peak Portability Flags

Same as Base Portability Flags

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)
-opt-mem-layout-trans=3(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)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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

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Peak Optimization Flags (Continued)

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)
             -opt-mem-layout-trans=3(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.

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