SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX2560 M1, Intel Xeon E5-2637 v3, 3.5 GHz

$SPECfp^®\_rate2006 =$ 439
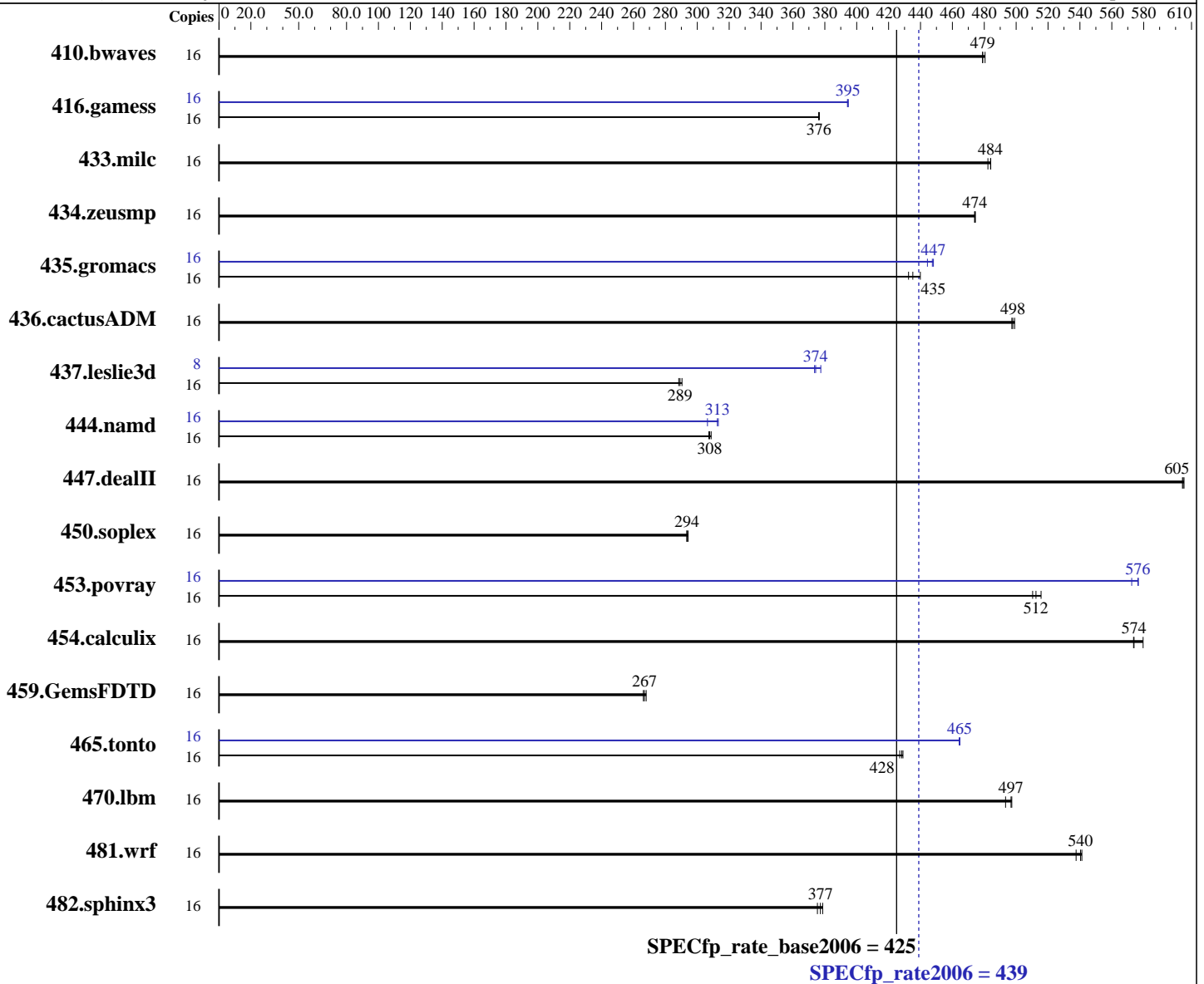
$SPECfp\_rate\_base2006 =$ 425

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Benchmark	Copies	Result
410.bwaves	16	479
416.gamess	16	395
416.gamess	16	376
433.milc	16	484
434.zeusmp	16	474
435.gromacs	16	447
435.gromacs	16	435
436.cactusADM	16	498
437.leslie3d	8	374
437.leslie3d	16	289
444.namd	16	313
444.namd	16	308
447.dealII	16	605
450.soplex	16	294
453.povray	16	576
453.povray	16	512
454.calculix	16	574
459.GemsFDTD	16	267
465.tonto	16	465
465.tonto	16	428
470.lbm	16	497
481.wrf	16	540
482.sphinx3	16	377

SPECfp_rate_base2006 = 425

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Hardware

CPU Name: Intel Xeon E5-2637 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3500
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 7.0 (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

Continued on next page

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L3 Cache:	15 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)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	**454**	**479**	454	479	453	481	16	**454**	**479**	454	479	453	481
416.gamess	16	**833**	**376**	833	376	832	377	16	**794**	**395**	795	394	794	395
433.milc	16	303	484	**304**	**484**	305	482	16	303	484	**304**	**484**	305	482
434.zeusmp	16	**307**	**474**	307	474	307	474	16	**307**	**474**	307	474	307	474
435.gromacs	16	260	440	264	433	**263**	**435**	16	257	444	**255**	**447**	255	448
436.cactusADM	16	383	499	384	497	**384**	**498**	16	383	499	384	497	**384**	**498**
437.leslie3d	16	522	288	**520**	**289**	518	290	8	**201**	**374**	199	377	201	374
444.namd	16	**417**	**308**	416	309	418	307	16	**411**	**313**	410	313	419	306
447.dealII	16	303	604	**303**	**605**	302	605	16	303	604	**303**	**605**	302	605
450.soplex	16	455	293	**455**	**294**	453	294	16	455	293	**455**	**294**	453	294
453.povray	16	**166**	**512**	167	510	165	516	16	148	577	**148**	**576**	149	572
454.calculix	16	**230**	**574**	228	580	230	574	16	**230**	**574**	228	580	230	574
459.GemsFDTD	16	**636**	**267**	638	266	634	268	16	**636**	**267**	638	266	634	268
465.tonto	16	367	429	369	427	**368**	**428**	16	339	465	**339**	**465**	339	464
470.lbm	16	446	493	442	497	**443**	**497**	16	446	493	442	497	**443**	**497**
481.wrf	16	330	541	332	538	**331**	**540**	16	330	541	332	538	**331**	**540**
482.sphinx3	16	831	375	824	379	**827**	**377**	16	831	375	824	379	**827**	**377**

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
 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:
```
icpc   -m64
```

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

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

Peak Portability Flags

```
Same as Base Portability Flags
```

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Peak Optimization Flags

C benchmarks:

       433.milc: `basepeak = yes`

       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: `basepeak = yes`

    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`

    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`

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Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

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

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Tested with SPEC CPU2006 v1.2.
Report generated on Tue May 19 18:14:35 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 May 2015.