SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX2560 M1, Intel Xeon E5-2695 v3, 2.3 GHz

$SPECfp^®\_rate2006 = \quad 812$

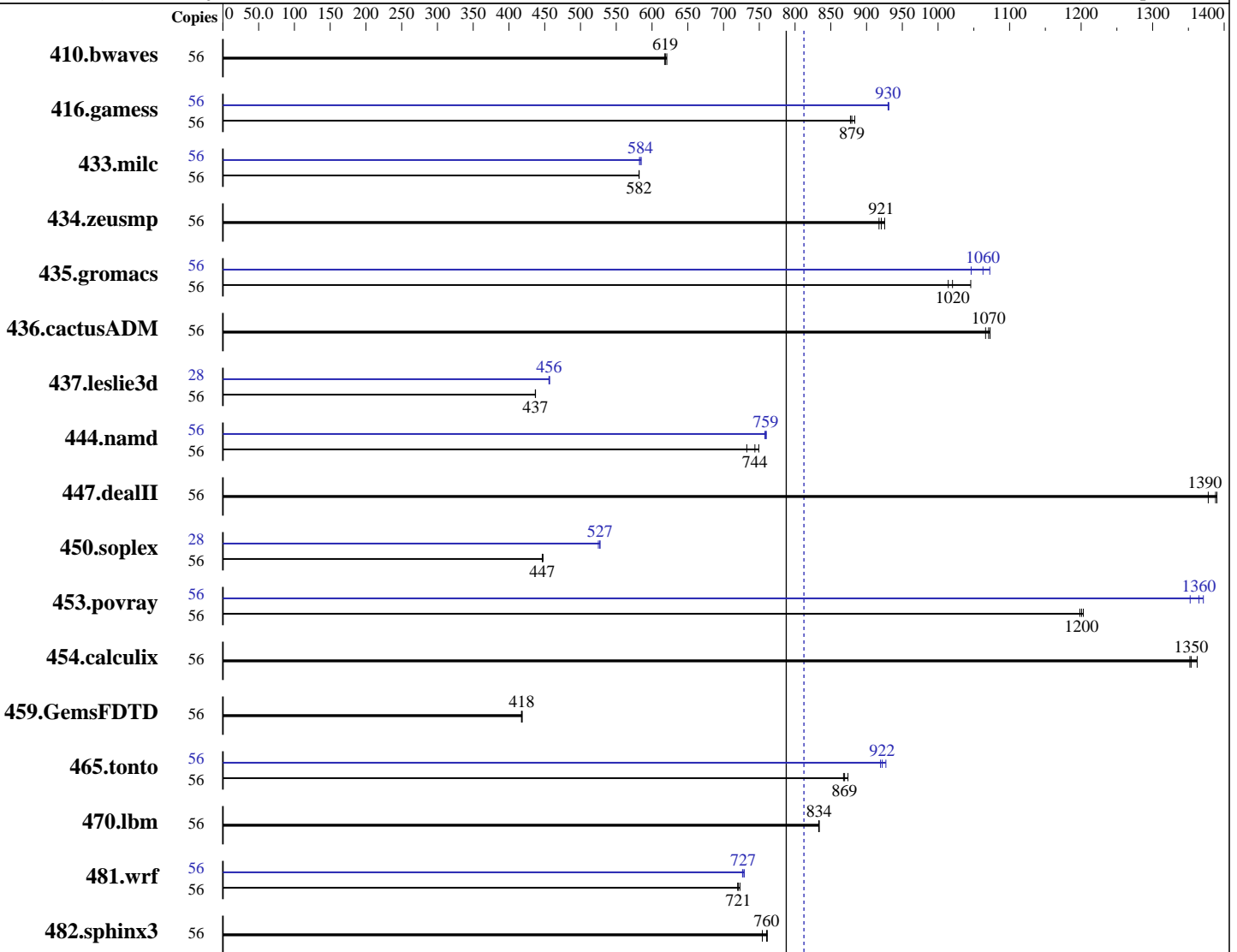$SPECfp\_rate\_base2006 = \quad 788$

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	56	619
416.gamess	56	930
416.gamess	56	879
433.milc	56	584
433.milc	56	582
434.zeusmp	56	921
435.gromacs	56	1060
435.gromacs	56	1020
436.cactusADM	56	1070
437.leslie3d	28	456
437.leslie3d	56	437
444.namd	56	759
444.namd	56	744
447.dealII	56	1390
450.soplex	28	527
450.soplex	56	447
453.povray	56	1360
453.povray	56	1200
454.calculix	56	1350
459.GemsFDTD	56	418
465.tonto	56	922
465.tonto	56	869
470.lbm	56	834
481.wrf	56	727
481.wrf	56	721
482.sphinx3	56	760

SPECfp_rate_base2006 = 788

SPECfp_rate2006 = 812

Hardware

CPU Name:	Intel Xeon E5-2695 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2300
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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L3 Cache:	35 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 Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	56	**1230**	**619**	1232	618	1226	621	56	**1230**	**619**	1232	618	1226	621
416.gamess	56	**1247**	**879**	1241	884	1250	877	56	1178	931	**1179**	**930**	1179	930
433.milc	56	884	582	883	582	**883**	**582**	56	879	585	**881**	**584**	883	582
434.zeusmp	56	**554**	**921**	555	917	551	925	56	**554**	**921**	555	917	551	925
435.gromacs	56	394	1010	**392**	**1020**	382	1050	56	373	1070	**376**	**1060**	382	1050
436.cactusADM	56	628	1070	624	1070	**625**	**1070**	56	628	1070	624	1070	**625**	**1070**
437.leslie3d	56	1205	437	**1205**	**437**	1204	437	28	577	456	576	457	**577**	**456**
444.namd	56	599	749	**604**	**744**	613	733	56	591	760	593	758	**592**	**759**
447.dealII	56	465	1380	461	1390	**462**	**1390**	56	465	1380	461	1390	**462**	**1390**
450.soplex	56	1043	448	1046	447	**1045**	**447**	28	445	525	**443**	**527**	443	527
453.povray	56	**248**	**1200**	248	1200	249	1200	56	**218**	**1360**	220	1350	217	1370
454.calculix	56	**341**	**1350**	339	1360	342	1350	56	**341**	**1350**	339	1360	342	1350
459.GemsFDTD	56	1423	418	**1422**	**418**	1420	419	56	1423	418	**1422**	**418**	1420	419
465.tonto	56	630	874	**634**	**869**	635	868	56	599	919	594	927	**598**	**922**
470.lbm	56	924	833	923	834	**923**	**834**	56	924	833	923	834	**923**	**834**
481.wrf	56	869	720	**868**	**721**	865	723	56	**860**	**727**	858	729	861	727
482.sphinx3	56	**1436**	**760**	1447	754	1434	761	56	**1436**	**760**	1447	754	1434	761

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: Cluster on Die
      COD Enable = Enabled, Early Snoop = Disabled
   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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Test sponsor: Fujitsu	**Hardware Availability:** Sep-2014
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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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Fujitsu

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Test sponsor:	Fujitsu	**Hardware Availability:**	Sep-2014
Tested by:	Fujitsu	**Software Availability:**	Sep-2014

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
```

Fujitsu

$SPECfp_rate2006 = $ **812**

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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 18:14:38 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 May 2015.