



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>\_rate2006 = 591

PRIMERGY RX2530 M1, Intel Xeon E5-2643 v3, 3.4 GHz

SPECfp\_rate\_base2006 = 575

CPU2006 license: 19

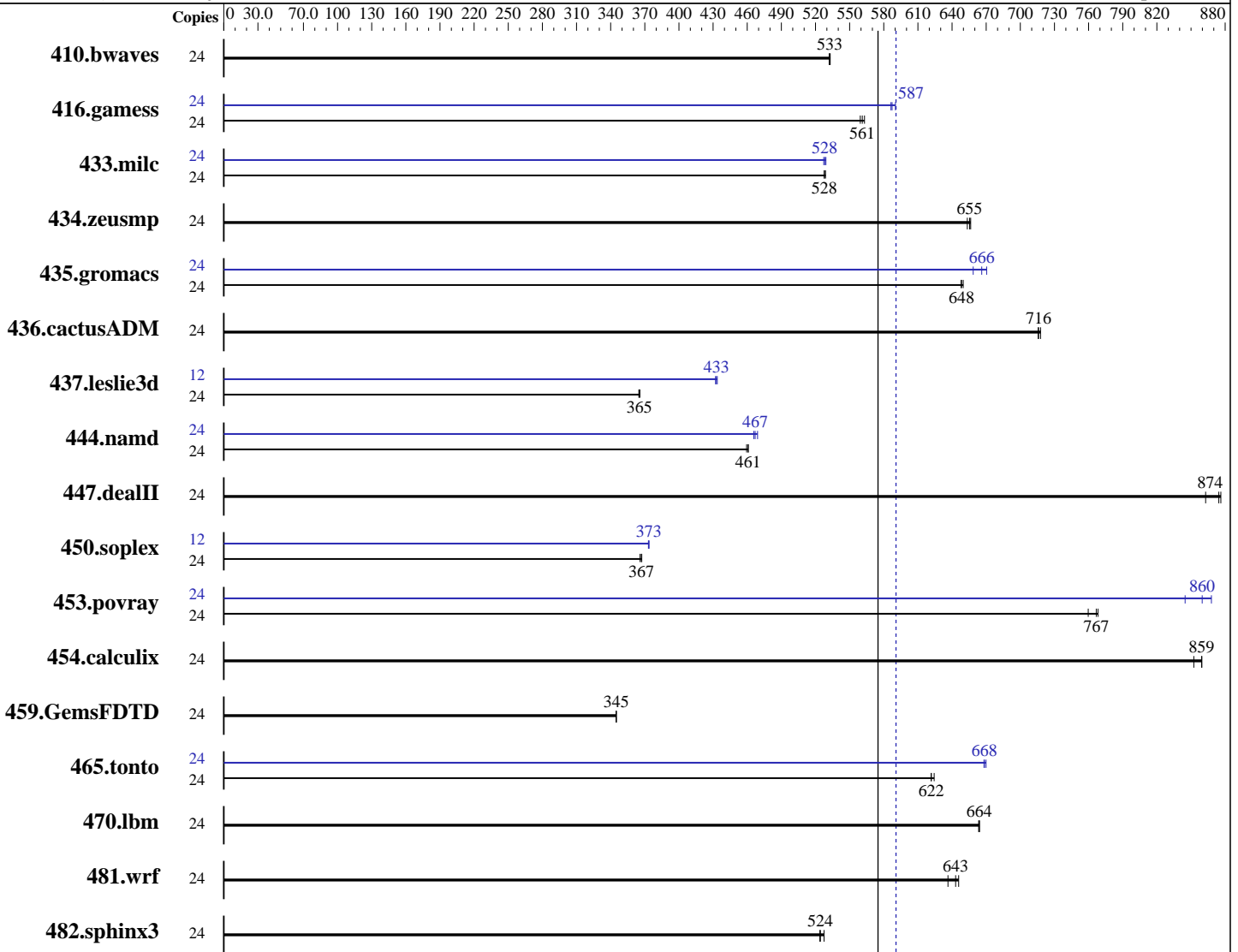
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2015

Hardware Availability: Feb-2015

Software Availability: Sep-2014



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### Hardware

CPU Name: Intel Xeon E5-2643 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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

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### 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 = **591**

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L3 Cache: 20 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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	612	533	613	532	<b>612</b>	<b>533</b>	24	612	533	613	532	<b>612</b>	<b>533</b>
416.gamess	24	835	563	840	559	<b>837</b>	<b>561</b>	24	796	590	801	586	<b>800</b>	<b>587</b>
433.milc	24	417	529	418	528	<b>417</b>	<b>528</b>	24	418	527	<b>417</b>	<b>528</b>	416	529
434.zeusmp	24	<b>333</b>	<b>655</b>	333	656	334	653	24	<b>333</b>	<b>655</b>	333	656	334	653
435.gromacs	24	264	650	264	648	<b>264</b>	<b>648</b>	24	260	659	256	670	<b>257</b>	<b>666</b>
436.cactusADM	24	<b>401</b>	<b>716</b>	400	718	401	716	24	<b>401</b>	<b>716</b>	400	718	401	716
437.leslie3d	24	<b>618</b>	<b>365</b>	617	366	619	365	12	261	432	260	434	<b>261</b>	<b>433</b>
444.namd	24	<b>418</b>	<b>461</b>	418	461	419	459	24	413	466	<b>412</b>	<b>467</b>	410	469
447.dealII	24	313	876	<b>314</b>	<b>874</b>	318	863	24	313	876	<b>314</b>	<b>874</b>	318	863
450.soplex	24	<b>546</b>	<b>367</b>	547	366	545	367	12	268	373	268	374	<b>268</b>	<b>373</b>
453.povray	24	<b>167</b>	<b>767</b>	168	760	166	768	24	<b>148</b>	<b>860</b>	151	845	147	868
454.calculix	24	230	860	<b>230</b>	<b>859</b>	232	852	24	230	860	<b>230</b>	<b>859</b>	232	852
459.GemsFDTD	24	739	345	738	345	<b>738</b>	<b>345</b>	24	739	345	738	345	<b>738</b>	<b>345</b>
465.tonto	24	<b>380</b>	<b>622</b>	380	622	378	624	24	353	670	<b>353</b>	<b>668</b>	353	668
470.lbm	24	<b>497</b>	<b>664</b>	497	663	497	664	24	<b>497</b>	<b>664</b>	497	663	497	664
481.wrf	24	<b>417</b>	<b>643</b>	415	646	421	636	24	<b>417</b>	<b>643</b>	415	646	421	636
482.sphinx3	24	893	524	887	528	<b>892</b>	<b>524</b>	24	893	524	887	528	<b>892</b>	<b>524</b>

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: Early Snoop

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## Platform Notes (Continued)

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  
459.GemsFDTD: -DSPEC\_CPU\_LP64

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## Base Portability Flags (Continued)

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  
433.milc: -DSPEC\_CPU\_LP64

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**Tested by:** Fujitsu

**Software Availability:** Sep-2014

## Peak Portability Flags (Continued)

```

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

```

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-

```

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## Peak Optimization Flags (Continued)

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: 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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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