



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®\_rate2006 = 871

PRIMERGY TX2560 M1, Intel Xeon E5-2697 v3, 2.6 GHz

SPECfp\_rate\_base2006 = 846

CPU2006 license: 19

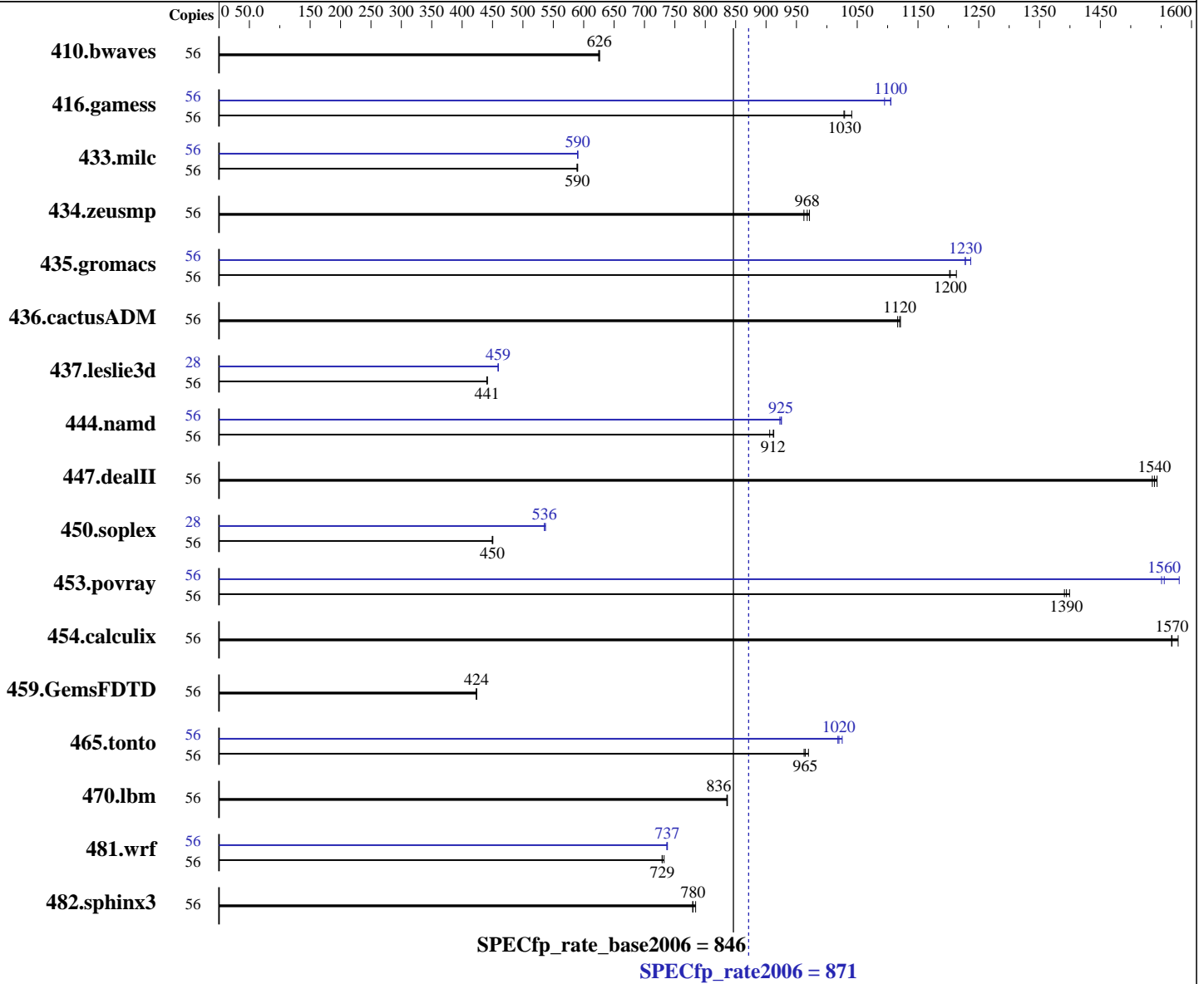
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2015

Hardware Availability: Apr-2015

Software Availability: Sep-2014



### 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

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### 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

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SPECfp\_rate2006 = **871**

PRIMERGY TX2560 M1, Intel Xeon E5-2697 v3, 2.6 GHz

SPECfp\_rate\_base2006 = **846**

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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								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	56	1219	625	<b><u>1216</u></b>	<b><u>626</u></b>	1216	626	56	1219	625	<b><u>1216</u></b>	<b><u>626</u></b>	1216	626		
416.gamess	56	1053	1040	<b><u>1065</u></b>	<b><u>1030</u></b>	1066	1030	56	992	1110	<b><u>992</u></b>	<b><u>1100</u></b>	1001	1100		
433.milc	56	871	590	873	589	<b><u>871</u></b>	<b><u>590</u></b>	56	871	590	871	590	<b><u>871</u></b>	<b><u>590</u></b>		
434.zeusmp	56	525	971	<b><u>527</u></b>	<b><u>968</u></b>	530	962	56	525	971	<b><u>527</u></b>	<b><u>968</u></b>	530	962		
435.gromacs	56	<b><u>332</u></b>	<b><u>1200</u></b>	330	1210	333	1200	56	323	1240	326	1230	<b><u>326</u></b>	<b><u>1230</u></b>		
436.cactusADM	56	599	1120	<b><u>598</u></b>	<b><u>1120</u></b>	597	1120	56	599	1120	<b><u>598</u></b>	<b><u>1120</u></b>	597	1120		
437.leslie3d	56	<b><u>1193</u></b>	<b><u>441</u></b>	1195	441	1192	442	28	573	459	<b><u>573</u></b>	<b><u>459</u></b>	573	459		
444.namd	56	<b><u>493</u></b>	<b><u>912</u></b>	492	913	496	906	56	487	923	485	925	<b><u>486</u></b>	<b><u>925</u></b>		
447.dealII	56	415	1540	417	1540	<b><u>416</u></b>	<b><u>1540</u></b>	56	415	1540	417	1540	<b><u>416</u></b>	<b><u>1540</u></b>		
450.soplex	56	1037	451	1038	450	<b><u>1038</u></b>	<b><u>450</u></b>	28	436	535	<b><u>436</u></b>	<b><u>536</u></b>	435	537		
453.povray	56	<b><u>214</u></b>	<b><u>1390</u></b>	213	1400	214	1390	56	<b><u>192</u></b>	<b><u>1560</u></b>	189	1580	192	1550		
454.calculix	56	<b><u>295</u></b>	<b><u>1570</u></b>	295	1570	293	1580	56	<b><u>295</u></b>	<b><u>1570</u></b>	295	1570	293	1580		
459.GemsFDTD	56	1402	424	1403	423	<b><u>1403</u></b>	<b><u>424</u></b>	56	1402	424	1403	423	<b><u>1403</u></b>	<b><u>424</u></b>		
465.tonto	56	572	963	<b><u>571</u></b>	<b><u>965</u></b>	568	970	56	541	1020	537	1030	<b><u>540</u></b>	<b><u>1020</u></b>		
470.lbm	56	920	837	921	836	<b><u>921</u></b>	<b><u>836</u></b>	56	920	837	921	836	<b><u>921</u></b>	<b><u>836</u></b>		
481.wrf	56	858	729	854	732	<b><u>858</u></b>	<b><u>729</u></b>	56	<b><u>848</u></b>	<b><u>737</u></b>	848	738	849	737		
482.sphinx3	56	1400	779	1392	784	<b><u>1400</u></b>	<b><u>780</u></b>	56	1400	779	1392	784	<b><u>1400</u></b>	<b><u>780</u></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  
Utilization Profile = Unbalanced

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CPU2006 license: 19

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Hardware Availability: Apr-2015

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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

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 (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

```



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**Hardware Availability:** Apr-2015

**Software Availability:** Sep-2014

## Peak 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
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)
         -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: -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-malloc-options=3

```

```

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

```

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## Peak Optimization Flags (Continued)

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)  
-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>



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

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