



# SPEC® CFP2006 Result

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## Fujitsu

PRIMERGY RX2540 M1, Intel Xeon E5-2650L v3, 1.8 GHz

SPECfp®2006 = **91.4**

SPECfp\_base2006 = **87.5**

CPU2006 license: 19

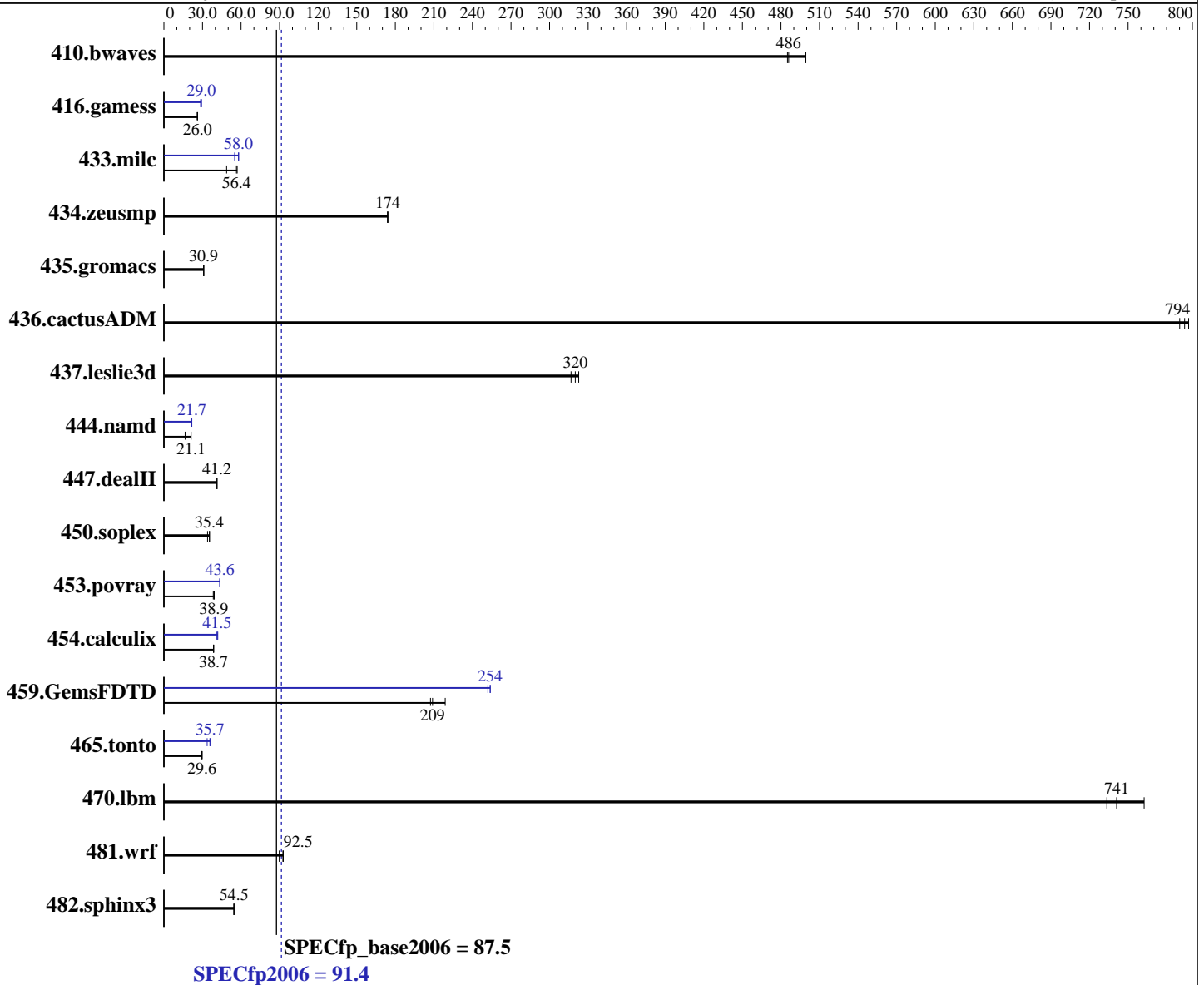
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Nov-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2650L v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 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: Yes  
 File System: xfs

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L3 Cache: 30 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: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	28.0	485	<b><u>28.0</u></b>	<b><u>486</u></b>	27.2	499	28.0	485	<b><u>28.0</u></b>	<b><u>486</u></b>	27.2	499
416.gamess	754	26.0	<b><u>752</u></b>	<b><u>26.0</u></b>	751	26.1	686	28.5	<b><u>675</u></b>	<b><u>29.0</u></b>	671	29.2
433.milc	161	57.0	188	48.8	<b><u>163</u></b>	<b><u>56.4</u></b>	167	55.0	158	58.2	<b><u>158</u></b>	<b><u>58.0</u></b>
434.zeusmp	52.3	174	52.2	174	<b><u>52.3</u></b>	<b><u>174</u></b>	52.3	174	52.2	174	<b><u>52.3</u></b>	<b><u>174</u></b>
435.gromacs	231	31.0	<b><u>231</u></b>	<b><u>30.9</u></b>	231	30.9	231	31.0	<b><u>231</u></b>	<b><u>30.9</u></b>	231	30.9
436.cactusADM	15.1	790	<b><u>15.1</u></b>	<b><u>794</u></b>	15.0	797	15.1	790	<b><u>15.1</u></b>	<b><u>794</u></b>	15.0	797
437.leslie3d	29.1	323	29.7	317	<b><u>29.4</u></b>	<b><u>320</u></b>	29.1	323	29.7	317	<b><u>29.4</u></b>	<b><u>320</u></b>
444.namd	<b><u>381</u></b>	<b><u>21.1</u></b>	379	21.1	487	16.5	<b><u>370</u></b>	<b><u>21.7</u></b>	369	21.7	370	21.7
447.dealII	276	41.4	281	40.7	<b><u>278</u></b>	<b><u>41.2</u></b>	276	41.4	281	40.7	<b><u>278</u></b>	<b><u>41.2</u></b>
450.soplex	235	35.5	<b><u>236</u></b>	<b><u>35.4</u></b>	246	33.9	235	35.5	<b><u>236</u></b>	<b><u>35.4</u></b>	246	33.9
453.povray	<b><u>137</u></b>	<b><u>38.9</u></b>	136	39.1	139	38.4	123	43.4	122	43.6	<b><u>122</u></b>	<b><u>43.6</u></b>
454.calculix	213	38.7	214	38.6	<b><u>213</u></b>	<b><u>38.7</u></b>	<b><u>199</u></b>	<b><u>41.5</u></b>	197	41.9	200	41.3
459.GemsFDTD	<b><u>50.8</u></b>	<b><u>209</u></b>	51.2	207	48.5	219	<b><u>41.8</u></b>	<b><u>254</u></b>	41.8	254	42.1	252
465.tonto	<b><u>333</u></b>	<b><u>29.6</u></b>	333	29.6	332	29.7	<b><u>275</u></b>	<b><u>35.7</u></b>	273	36.0	293	33.6
470.lbm	18.0	762	<b><u>18.5</u></b>	<b><u>741</u></b>	18.7	734	18.0	762	<b><u>18.5</u></b>	<b><u>741</u></b>	18.7	734
481.wrf	<b><u>121</u></b>	<b><u>92.5</u></b>	120	92.9	125	89.7	<b><u>121</u></b>	<b><u>92.5</u></b>	120	92.9	125	89.7
482.sphinx3	<b><u>358</u></b>	<b><u>54.5</u></b>	358	54.5	358	54.4	<b><u>358</u></b>	<b><u>54.5</u></b>	358	54.5	358	54.4

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS configuration:  
Energy Performance = Performance  
Utilization Profile = Unbalanced  
QPI snoop mode: Home Snoop  
COD Enable = Disabled, Early Snoop = Disabled  
CPU ClE Support = Disabled



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Software Availability: Sep-2014

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact,1,0"  
LD\_LIBRARY\_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"  
OMP\_NUM\_THREADS = "24"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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  
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



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## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-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

## 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 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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## Peak Optimization Flags (Continued)

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.dealIII: 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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

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)  
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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>



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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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