



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

PRIMERGY TX1330 M1, Intel Xeon E3-1231 v3, 3.40 GHz

SPECfp<sup>®</sup>2006 = 74.2

SPECfp\_base2006 = 72.8

CPU2006 license: 19

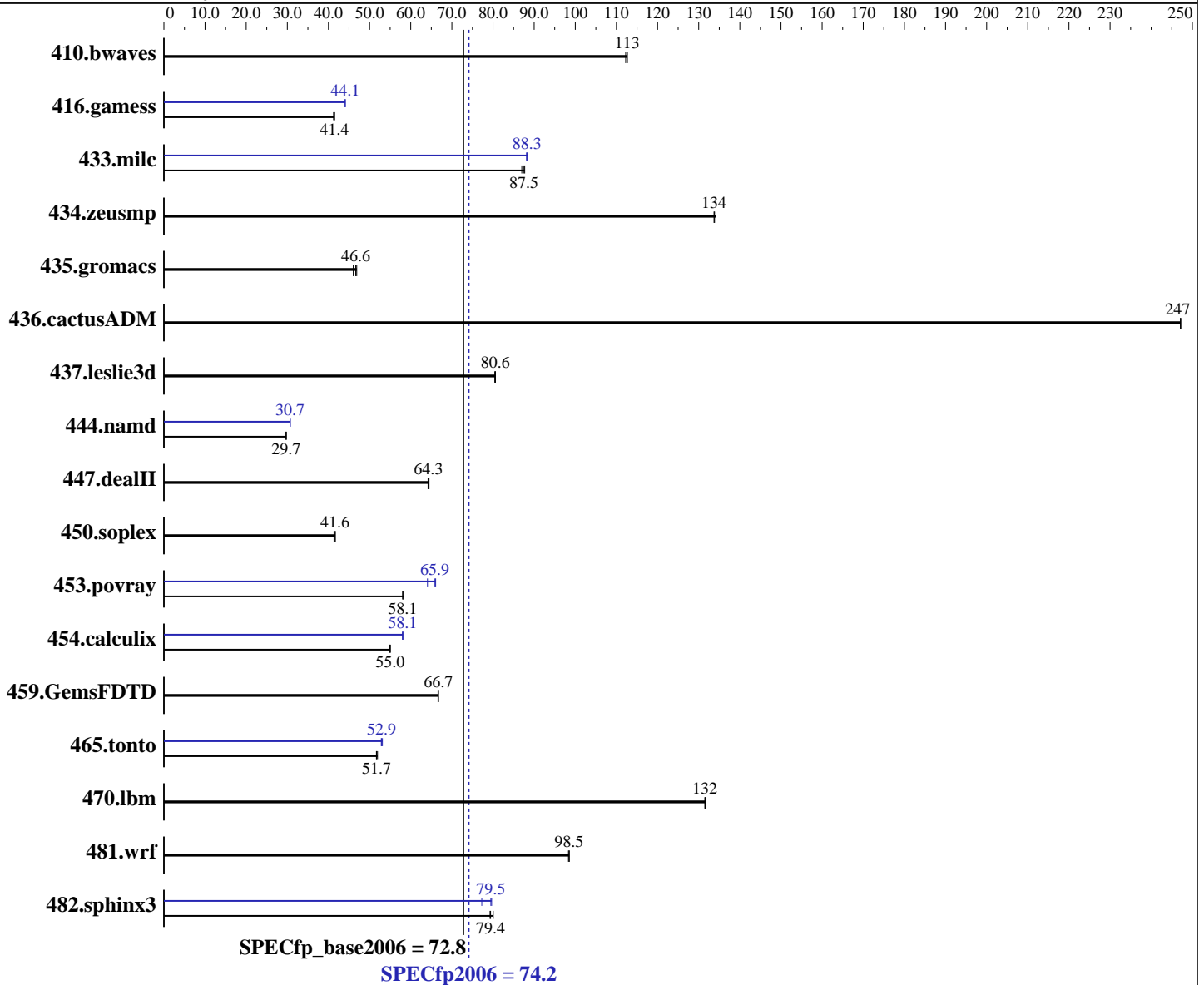
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2014

Hardware Availability: Jul-2014

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E3-1231 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 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 6.5 (Santiago)  
 2.6.32-431.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11, ECC)  
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	121	112	<u>121</u>	<u>113</u>	121	113	121	112	<u>121</u>	<u>113</u>	121	113
416.gamess	475	41.2	<u>472</u>	<u>41.4</u>	472	41.5	446	43.9	<u>444</u>	<u>44.1</u>	444	44.1
433.milc	105	87.7	<u>105</u>	<u>87.5</u>	106	87.0	104	88.4	<u>104</u>	<u>88.3</u>	104	88.1
434.zeusmp	<u>68.0</u>	<u>134</u>	67.8	134	68.0	134	<u>68.0</u>	<u>134</u>	67.8	134	68.0	134
435.gromacs	152	46.9	155	46.0	<u>153</u>	<u>46.6</u>	152	46.9	155	46.0	<u>153</u>	<u>46.6</u>
436.cactusADM	48.4	247	<u>48.4</u>	<u>247</u>	48.4	247	48.4	247	<u>48.4</u>	<u>247</u>	48.4	247
437.leslie3d	117	80.6	117	80.4	<u>117</u>	<u>80.6</u>	117	80.6	117	80.4	<u>117</u>	<u>80.6</u>
444.namd	270	29.7	<u>270</u>	<u>29.7</u>	270	29.7	261	30.7	261	30.7	<u>261</u>	<u>30.7</u>
447.dealII	<u>178</u>	<u>64.3</u>	178	64.5	178	64.2	<u>178</u>	<u>64.3</u>	178	64.5	178	64.2
450.soplex	202	41.4	<u>200</u>	<u>41.6</u>	200	41.7	202	41.4	<u>200</u>	<u>41.6</u>	200	41.7
453.povray	91.7	58.0	91.4	58.2	<u>91.6</u>	<u>58.1</u>	<u>80.8</u>	<u>65.9</u>	80.5	66.1	83.0	64.1
454.calculix	150	54.9	150	55.0	<u>150</u>	<u>55.0</u>	<u>142</u>	<u>58.1</u>	142	58.0	142	58.1
459.GemsFDTD	159	66.6	159	66.7	<u>159</u>	<u>66.7</u>	159	66.6	159	66.7	<u>159</u>	<u>66.7</u>
465.tonto	189	51.9	190	51.7	<u>190</u>	<u>51.7</u>	<u>186</u>	<u>52.9</u>	185	53.1	186	52.8
470.lbm	104	132	<u>104</u>	<u>132</u>	104	132	104	132	<u>104</u>	<u>132</u>	104	132
481.wrf	113	98.5	<u>113</u>	<u>98.5</u>	114	98.3	113	98.5	<u>113</u>	<u>98.5</u>	114	98.3
482.sphinx3	243	80.1	<u>245</u>	<u>79.4</u>	246	79.3	245	79.7	252	77.3	<u>245</u>	<u>79.5</u>

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"

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact,1,0"

LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"

OMP\_NUM\_THREADS = "4"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

runspec command invoked through numactl i.e.:

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### General Notes (Continued)

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  
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 -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

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## Base Optimization Flags (Continued)

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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel`

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`

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## Peak Optimization Flags (Continued)

447.dealll: 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: 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)  
-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-ic14.0-official-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revB.xml>

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