



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = 54.1

PRIMERGY TX140 S2, Intel Pentium G3420, 3.20 GHz

SPECfp\_base2006 = 53.5

CPU2006 license: 19

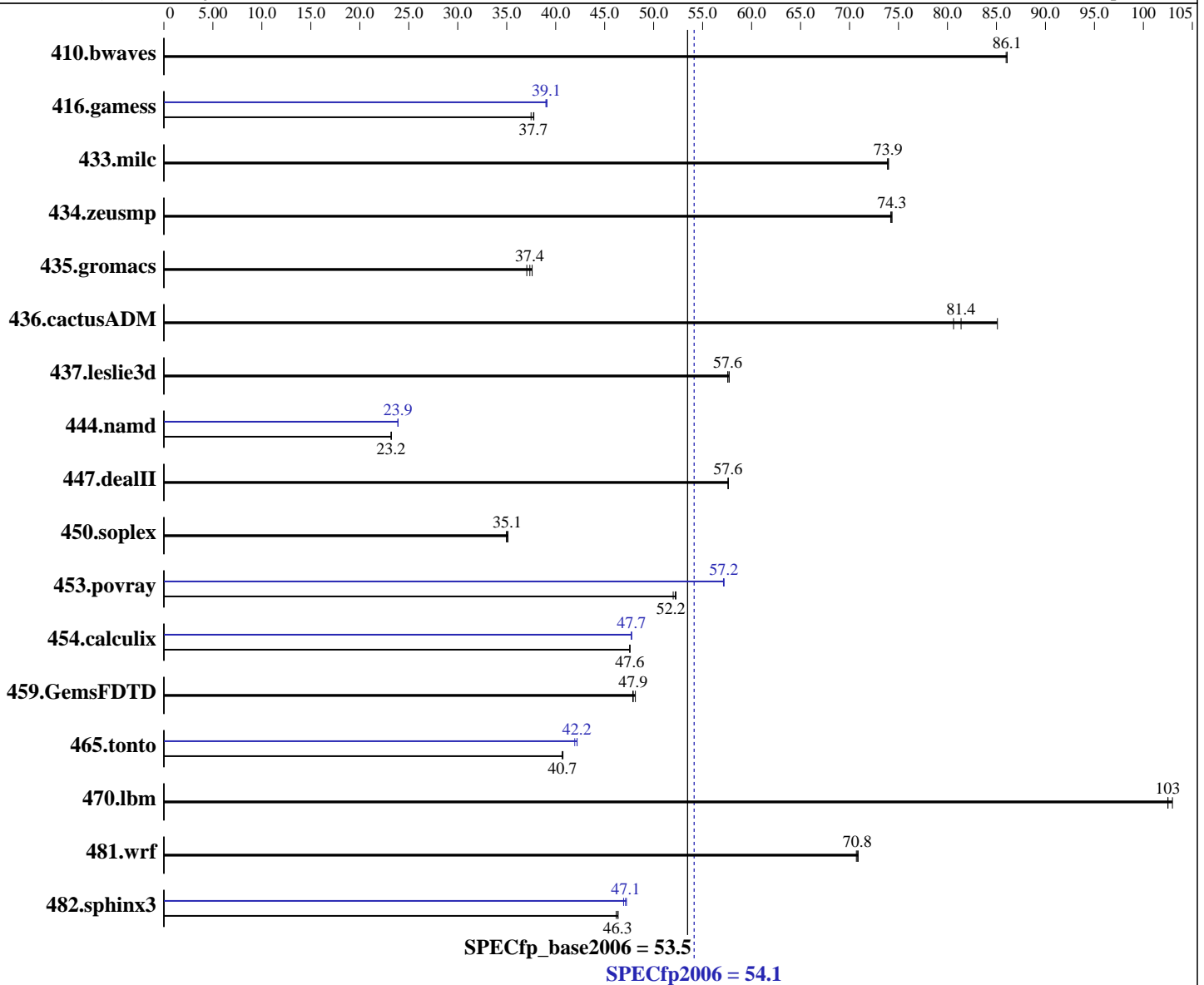
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Aug-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Pentium G3420  
 CPU Characteristics:  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 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 6.4 (Santiago)  
 2.6.32-358.11.1.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: 3 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	158	86.0	<b>158</b>	<b>86.1</b>	158	86.1	158	86.0	<b>158</b>	<b>86.1</b>	158	86.1
416.gamess	522	37.5	<b>519</b>	<b>37.7</b>	518	37.8	<b>501</b>	<b>39.1</b>	502	39.0	501	39.1
433.milc	124	74.0	124	73.9	<b>124</b>	<b>73.9</b>	124	74.0	124	73.9	<b>124</b>	<b>73.9</b>
434.zeusmp	<b>122</b>	<b>74.3</b>	122	74.3	123	74.2	<b>122</b>	<b>74.3</b>	122	74.3	123	74.2
435.gromacs	193	37.0	190	37.6	<b>191</b>	<b>37.4</b>	193	37.0	190	37.6	<b>191</b>	<b>37.4</b>
436.cactusADM	<b>147</b>	<b>81.4</b>	140	85.1	148	80.6	<b>147</b>	<b>81.4</b>	140	85.1	148	80.6
437.leslie3d	163	57.6	163	57.7	<b>163</b>	<b>57.6</b>	163	57.6	163	57.7	<b>163</b>	<b>57.6</b>
444.namd	345	23.2	<b>346</b>	<b>23.2</b>	346	23.2	336	23.9	336	23.9	<b>336</b>	<b>23.9</b>
447.dealII	<b>199</b>	<b>57.6</b>	199	57.6	199	57.6	<b>199</b>	<b>57.6</b>	199	57.6	199	57.6
450.soplex	239	35.0	237	35.1	<b>238</b>	<b>35.1</b>	239	35.0	237	35.1	<b>238</b>	<b>35.1</b>
453.povray	102	52.0	<b>102</b>	<b>52.2</b>	102	52.3	93.0	57.2	93.1	57.1	<b>93.1</b>	<b>57.2</b>
454.calculix	173	47.6	173	47.6	<b>173</b>	<b>47.6</b>	<b>173</b>	<b>47.7</b>	173	47.7	173	47.7
459.GemsFDTD	222	47.9	<b>221</b>	<b>47.9</b>	220	48.1	222	47.9	<b>221</b>	<b>47.9</b>	220	48.1
465.tonto	242	40.7	242	40.7	<b>242</b>	<b>40.7</b>	<b>233</b>	<b>42.2</b>	233	42.2	235	41.9
470.lbm	134	103	<b>134</b>	<b>103</b>	133	103	134	103	<b>134</b>	<b>103</b>	133	103
481.wrf	<b>158</b>	<b>70.8</b>	158	70.7	158	70.9	<b>158</b>	<b>70.8</b>	158	70.7	158	70.9
482.sphinx3	422	46.2	420	46.4	<b>421</b>	<b>46.3</b>	415	46.9	<b>413</b>	<b>47.1</b>	413	47.2

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 = "2"

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:  
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

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## Base Optimization Flags (Continued)

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xSSE4.2 -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: `basepeak = yes`

470.lbm: `basepeak = yes`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

C++ benchmarks:

444.namd: `-xSSE4.2(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.deallI: `basepeak = yes`

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## Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

453.povray: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -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-linux64.20140128.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-linux64.20140128.xml>

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



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

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