



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = 52.1

PRIMERGY BX920 S3, Intel Xeon E5-2407, 2.20 GHz

SPECfp\_base2006 = 50.4

CPU2006 license: 19

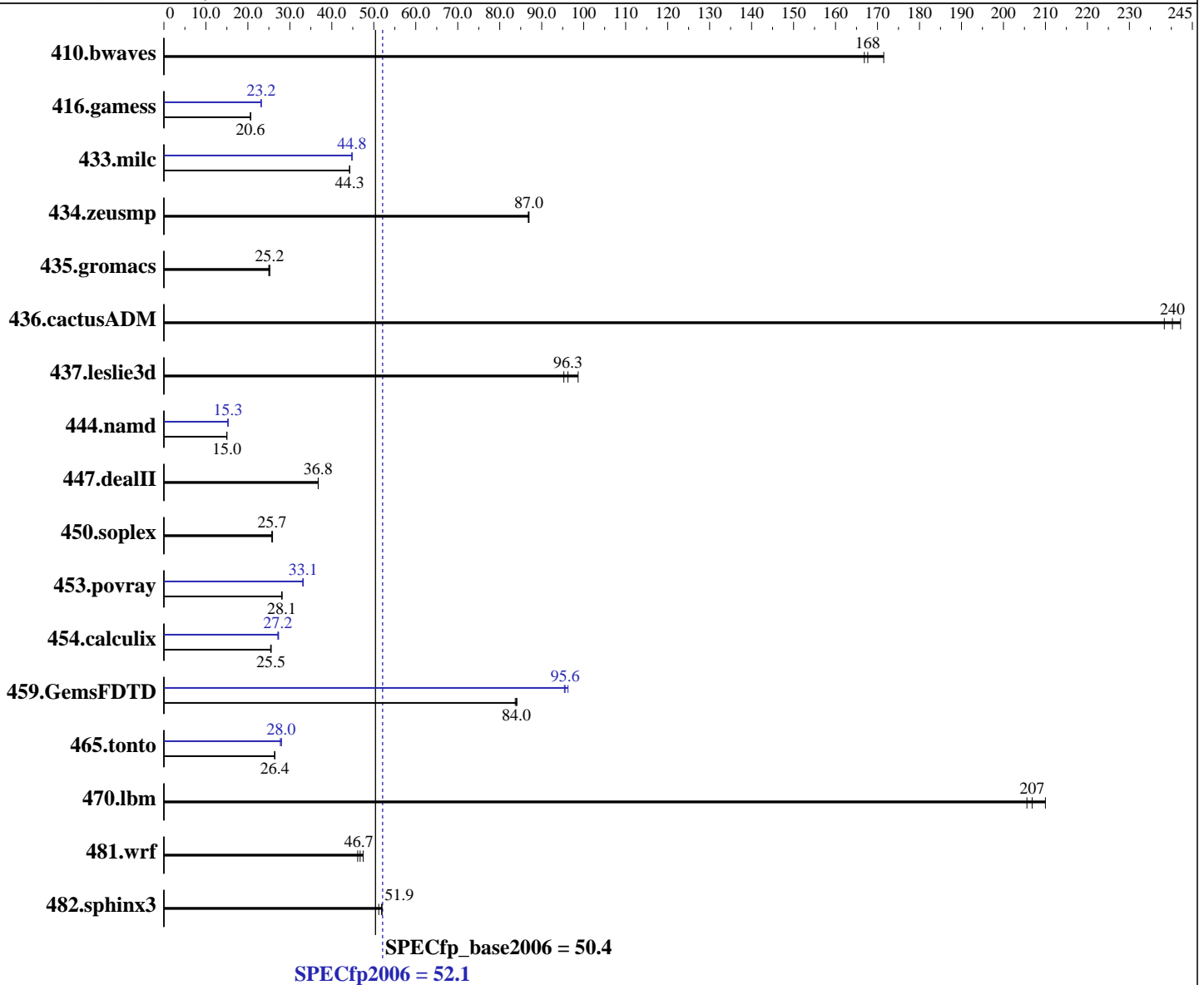
Test date: Aug-2012

Test sponsor: Fujitsu

Hardware Availability: May-2012

Tested by: Fujitsu

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-2407  
 CPU Characteristics:  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

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L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 MHz and CL7)  
 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	79.2	171	81.4	167	<b>81.0</b>	<b>168</b>	79.2	171	81.4	167	<b>81.0</b>	<b>168</b>
416.gamess	948	20.7	<b>949</b>	<b>20.6</b>	949	20.6	844	23.2	847	23.1	<b>845</b>	<b>23.2</b>
433.milc	208	44.2	<b>207</b>	<b>44.3</b>	207	44.3	205	44.8	205	44.8	<b>205</b>	<b>44.8</b>
434.zeusmp	105	87.0	<b>105</b>	<b>87.0</b>	105	86.8	105	87.0	<b>105</b>	<b>87.0</b>	105	86.8
435.gromacs	<b>284</b>	<b>25.2</b>	283	25.2	286	25.0	<b>284</b>	<b>25.2</b>	283	25.2	286	25.0
436.cactusADM	49.3	242	<b>49.7</b>	<b>240</b>	50.1	238	49.3	242	<b>49.7</b>	<b>240</b>	50.1	238
437.leslie3d	<b>97.7</b>	<b>96.3</b>	95.3	98.7	98.7	95.3	<b>97.7</b>	<b>96.3</b>	95.3	98.7	98.7	95.3
444.namd	535	15.0	<b>535</b>	<b>15.0</b>	535	15.0	<b>526</b>	<b>15.3</b>	525	15.3	526	15.3
447.dealII	311	36.7	<b>311</b>	<b>36.8</b>	311	36.8	311	36.7	<b>311</b>	<b>36.8</b>	311	36.8
450.soplex	<b>324</b>	<b>25.7</b>	324	25.7	322	25.9	<b>324</b>	<b>25.7</b>	324	25.7	322	25.9
453.povray	189	28.2	<b>189</b>	<b>28.1</b>	190	28.0	160	33.2	<b>160</b>	<b>33.1</b>	161	33.1
454.calculix	323	25.6	324	25.4	<b>324</b>	<b>25.5</b>	304	27.2	<b>303</b>	<b>27.2</b>	302	27.3
459.GemsFDTD	<b>126</b>	<b>84.0</b>	127	83.7	126	84.1	<b>111</b>	<b>95.6</b>	111	95.4	110	96.3
465.tonto	373	26.4	372	26.4	<b>373</b>	<b>26.4</b>	352	28.0	<b>352</b>	<b>28.0</b>	355	27.7
470.lbm	66.8	206	<b>66.4</b>	<b>207</b>	65.4	210	66.8	206	<b>66.4</b>	<b>207</b>	65.4	210
481.wrf	242	46.2	<b>239</b>	<b>46.7</b>	235	47.5	242	46.2	<b>239</b>	<b>46.7</b>	235	47.5
482.sphinx3	381	51.2	375	52.0	<b>376</b>	<b>51.9</b>	381	51.2	375	52.0	<b>376</b>	<b>51.9</b>

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:

Frequency Floor Override = Enable



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## 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"

OMP\_NUM\_THREADS = "8"

Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB memory using RHEL6.2

Transparent Huge Pages enabled with:

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

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:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias`

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -static -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: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

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## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(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: basepeak = yes

453.povray: -xAVX(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: -xAVX(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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

465.tonto: -xAVX(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: -xAVX -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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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

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