



# SPEC® CFP2006 Result

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## Fujitsu

**SPECfp®2006 = 60.9**

PRIMERGY BX922 S2, Intel Xeon X5675, 3.07 GHz

**SPECfp\_base2006 = 57.6**

CPU2006 license: 19

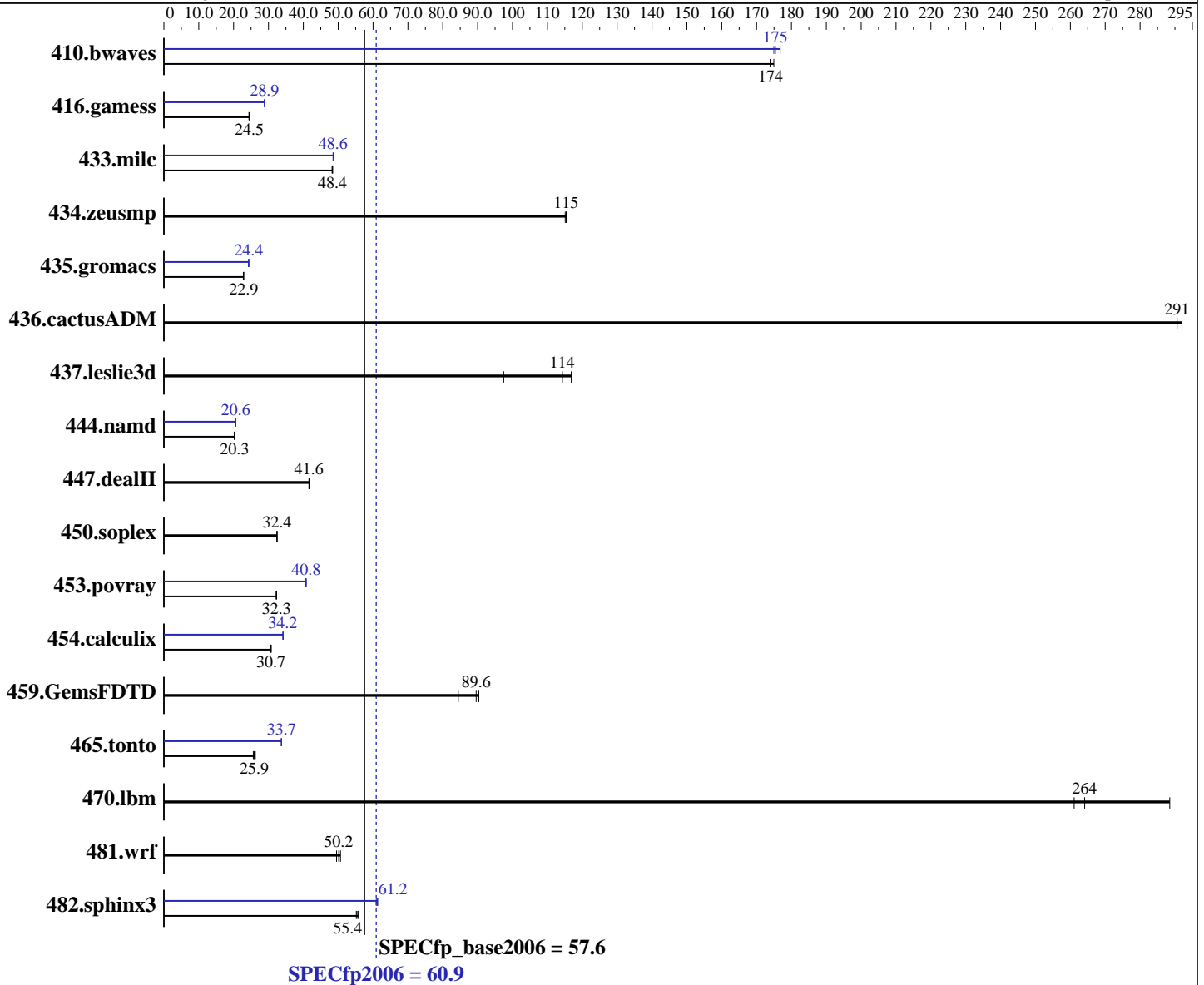
Test date: Mar-2011

Test sponsor: Fujitsu

Hardware Availability: Feb-2011

Tested by: Fujitsu

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Xeon X5675  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.47 GHz  
 CPU MHz: 3067  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: SUSE Linux Enterprise Server 11 (x86\_64) with SP1, Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: 12 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC)  
Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM  
Other Hardware: --

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	<b><u>78.1</u></b>	<b><u>174</u></b>	78.1	174	77.7	175	<b><u>77.5</u></b>	<b><u>175</u></b>	76.9	177	77.7	175
416.gamess	797	24.6	<b><u>800</u></b>	<b><u>24.5</u></b>	803	24.4	679	28.9	678	28.9	<b><u>678</u></b>	<b><u>28.9</u></b>
433.milc	190	48.4	<b><u>190</u></b>	<b><u>48.4</u></b>	190	48.2	188	48.8	189	48.5	<b><u>189</u></b>	<b><u>48.6</u></b>
434.zeusmp	78.9	115	79.1	115	<b><u>78.9</u></b>	<b><u>115</u></b>	78.9	115	79.1	115	<b><u>78.9</u></b>	<b><u>115</u></b>
435.gromacs	<b><u>312</u></b>	<b><u>22.9</u></b>	312	22.9	313	22.8	293	24.4	<b><u>293</u></b>	<b><u>24.4</u></b>	294	24.3
436.cactusADM	<b><u>41.1</u></b>	<b><u>291</u></b>	40.9	292	41.1	291	<b><u>41.1</u></b>	<b><u>291</u></b>	40.9	292	41.1	291
437.leslie3d	<b><u>82.2</u></b>	<b><u>114</u></b>	96.4	97.5	80.4	117	<b><u>82.2</u></b>	<b><u>114</u></b>	96.4	97.5	80.4	117
444.namd	397	20.2	396	20.3	<b><u>396</u></b>	<b><u>20.3</u></b>	389	20.6	<b><u>389</u></b>	<b><u>20.6</u></b>	389	20.6
447.dealII	275	41.6	275	41.6	<b><u>275</u></b>	<b><u>41.6</u></b>	275	41.6	275	41.6	<b><u>275</u></b>	<b><u>41.6</u></b>
450.soplex	<b><u>257</u></b>	<b><u>32.4</u></b>	257	32.4	257	32.4	<b><u>257</u></b>	<b><u>32.4</u></b>	257	32.4	257	32.4
453.povray	<b><u>165</u></b>	<b><u>32.3</u></b>	165	32.3	166	32.0	130	40.8	131	40.7	<b><u>130</u></b>	<b><u>40.8</u></b>
454.calculix	270	30.6	268	30.8	<b><u>269</u></b>	<b><u>30.7</u></b>	241	34.2	<b><u>241</u></b>	<b><u>34.2</u></b>	242	34.1
459.GemsFDTD	117	90.3	126	84.4	<b><u>118</u></b>	<b><u>89.6</u></b>	117	90.3	126	84.4	<b><u>118</u></b>	<b><u>89.6</u></b>
465.tonto	375	26.2	<b><u>380</u></b>	<b><u>25.9</u></b>	384	25.6	<b><u>292</u></b>	<b><u>33.7</u></b>	292	33.7	292	33.7
470.lbm	<b><u>52.0</u></b>	<b><u>264</u></b>	52.6	261	47.6	289	<b><u>52.0</u></b>	<b><u>264</u></b>	52.6	261	47.6	289
481.wrf	<b><u>223</u></b>	<b><u>50.2</u></b>	221	50.7	226	49.5	<b><u>223</u></b>	<b><u>50.2</u></b>	221	50.7	226	49.5
482.sphinx3	350	55.7	<b><u>352</u></b>	<b><u>55.4</u></b>	353	55.2	318	61.3	<b><u>319</u></b>	<b><u>61.2</u></b>	320	60.9

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'nodetv /mnt/hugepages hugetlbfs defaults 0 0' added to /etc/fstab
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

BIOS configuration:  
Data Reuse Optimization = Disable  
Performance/Power Setting = Traditional  
Intel HT Technology = Disable



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## General Notes

OMP\_NUM\_THREADS set to number of cores

For information about Fujitsu please visit: <http://www.fujitsu.com>

Binaries were compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

## 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 -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:

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

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## Base Optimization Flags (Continued)

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xSSE4.2 -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: `-xSSE4.2(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: `-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`

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## Peak Optimization Flags (Continued)

447.dealIII: basepeak = yes

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

### Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -parallel  
-static

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- -static

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

### Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(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

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-ic12.0-linux64-revB.20110316.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110316.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110316.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110316.xml>



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