



# SPEC® CFP2006 Result

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## Fujitsu

**SPECfp®2006 = 38.1**

PRIMERGY TX100 S3, Intel Pentium G620, 2.60 GHz

**SPECfp\_base2006 = 36.8**

CPU2006 license: 19

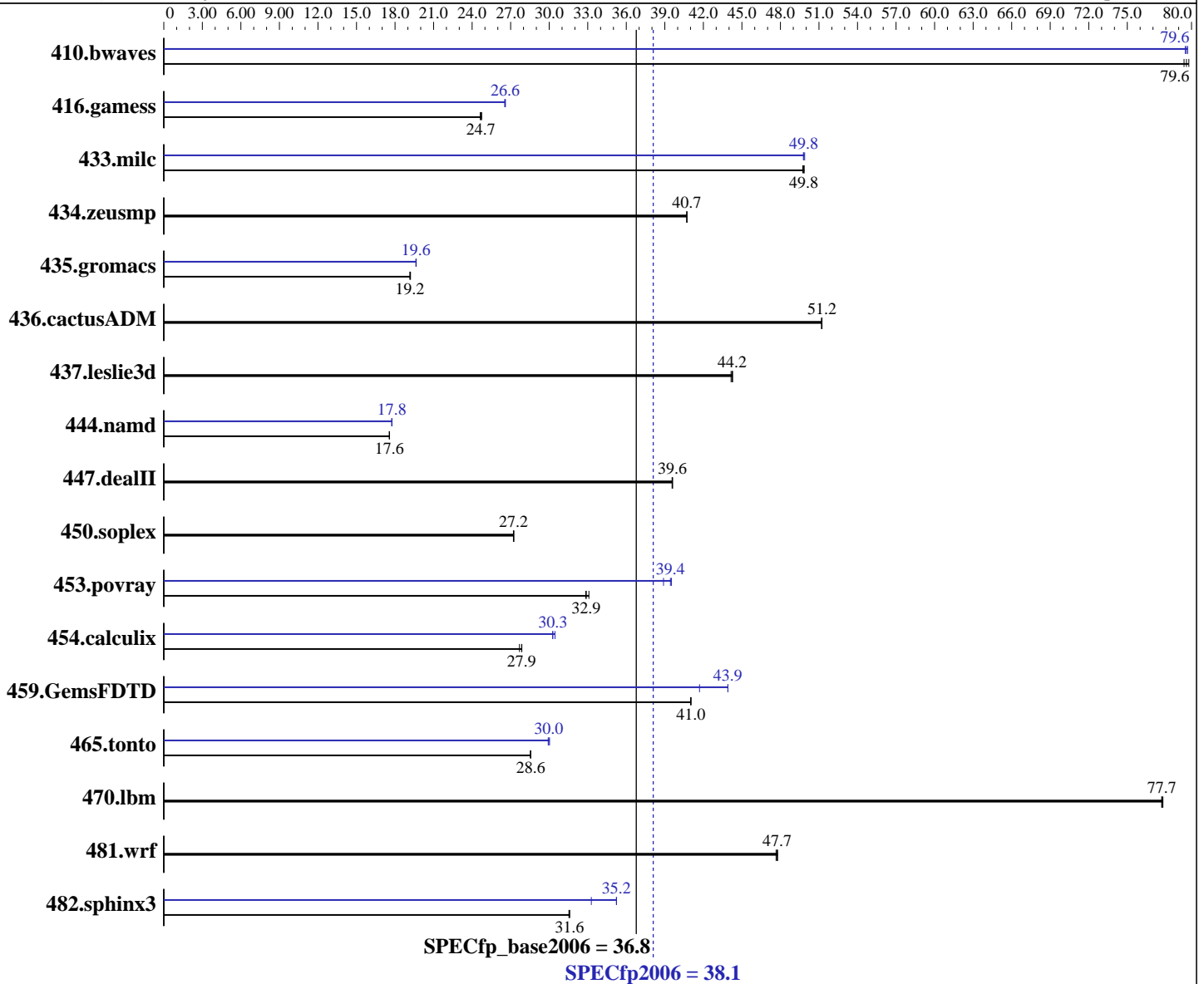
Test date: Jul-2011

Test sponsor: Fujitsu

Hardware Availability: Sep-2011

Tested by: Fujitsu

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Pentium G620  
 CPU Characteristics:  
 CPU MHz: 2600  
 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: 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: 3 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC, running at 1067 MHz and CL7)  
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM  
 Other Hardware: None

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	171	79.4	170	79.8	<b>171</b>	<b>79.6</b>	171	79.5	<b>171</b>	<b>79.6</b>	171	79.7
416.gamess	791	24.7	<b>793</b>	<b>24.7</b>	795	24.6	738	26.5	736	26.6	<b>737</b>	<b>26.6</b>
433.milc	185	49.7	<b>184</b>	<b>49.8</b>	184	49.8	184	49.9	<b>184</b>	<b>49.8</b>	184	49.8
434.zeusmp	224	40.7	<b>224</b>	<b>40.7</b>	224	40.7	224	40.7	<b>224</b>	<b>40.7</b>	224	40.7
435.gromacs	372	19.2	373	19.2	<b>373</b>	<b>19.2</b>	363	19.7	<b>364</b>	<b>19.6</b>	364	19.6
436.cactusADM	233	51.2	<b>233</b>	<b>51.2</b>	233	51.2	233	51.2	<b>233</b>	<b>51.2</b>	233	51.2
437.leslie3d	<b>212</b>	<b>44.2</b>	212	44.3	213	44.2	<b>212</b>	<b>44.2</b>	212	44.3	213	44.2
444.namd	<b>457</b>	<b>17.6</b>	457	17.6	457	17.6	452	17.7	<b>452</b>	<b>17.8</b>	452	17.8
447.dealII	289	39.6	289	39.6	<b>289</b>	<b>39.6</b>	289	39.6	289	39.6	<b>289</b>	<b>39.6</b>
450.soplex	<b>306</b>	<b>27.2</b>	306	27.2	306	27.2	<b>306</b>	<b>27.2</b>	306	27.2	306	27.2
453.povray	162	32.8	161	33.1	<b>162</b>	<b>32.9</b>	135	39.5	<b>135</b>	<b>39.4</b>	137	38.9
454.calculix	298	27.7	296	27.9	<b>296</b>	<b>27.9</b>	<b>272</b>	<b>30.3</b>	271	30.5	272	30.3
459.GemsFDTD	259	41.0	259	41.0	<b>259</b>	<b>41.0</b>	<b>242</b>	<b>43.9</b>	242	43.9	254	41.7
465.tonto	345	28.6	<b>345</b>	<b>28.6</b>	345	28.5	329	29.9	<b>328</b>	<b>30.0</b>	328	30.0
470.lbm	<b>177</b>	<b>77.7</b>	177	77.7	177	77.8	<b>177</b>	<b>77.7</b>	177	77.7	177	77.8
481.wrf	<b>234</b>	<b>47.7</b>	234	47.8	234	47.7	<b>234</b>	<b>47.7</b>	234	47.8	234	47.7
482.sphinx3	618	31.5	617	31.6	<b>617</b>	<b>31.6</b>	586	33.3	553	35.2	<b>553</b>	<b>35.2</b>

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
'nodet /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



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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

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

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/Fujitsu-Platform.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/Fujitsu-Platform.xml>

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Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 22:30:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 13 September 2011.