



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = 38.1

PRIMERGY TX120 S3, Intel Pentium G620, 2.60 GHz

SPECfp\_base2006 = 36.8

CPU2006 license: 19

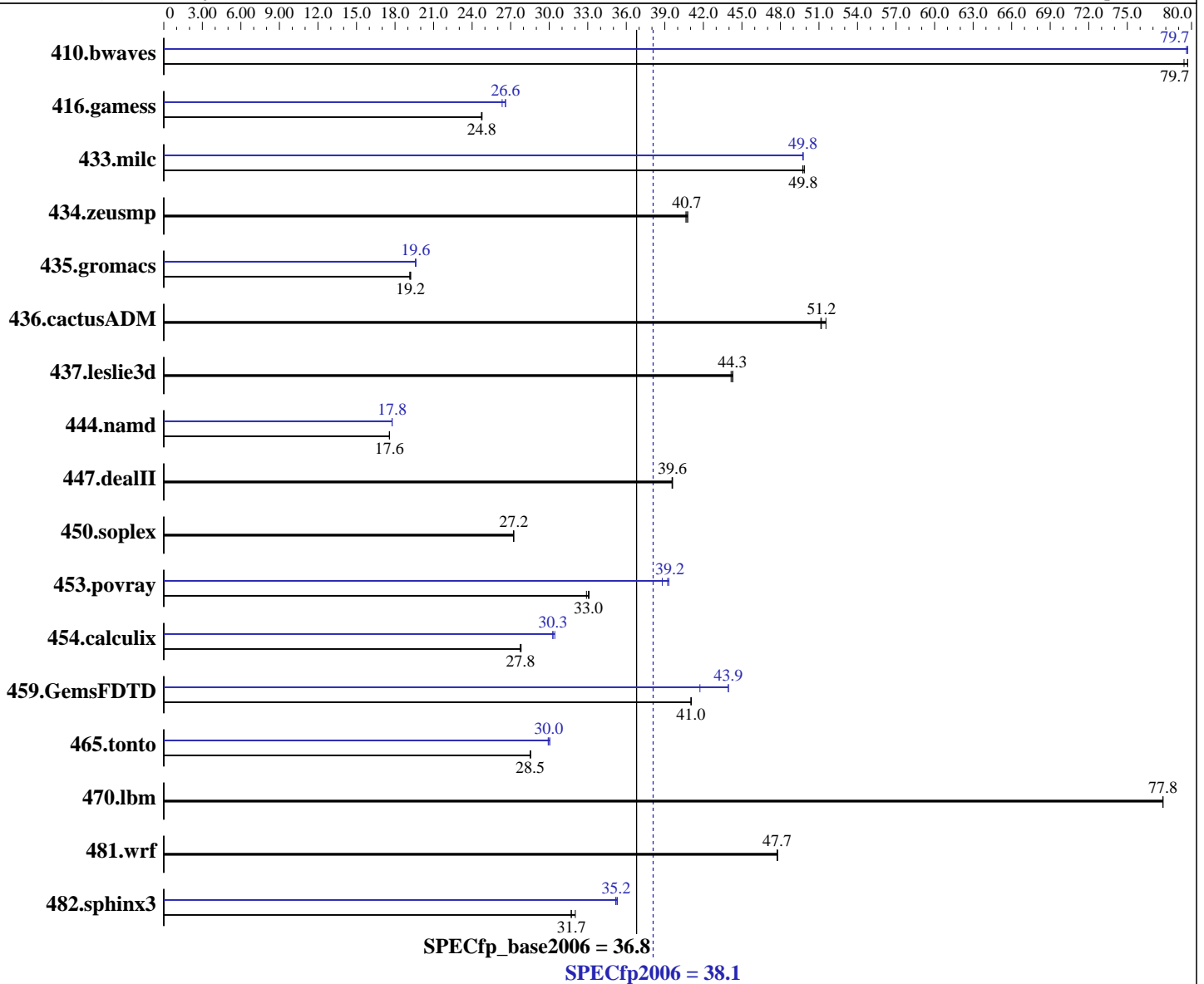
Test date: May-2011

Test sponsor: Fujitsu

Hardware Availability: Jun-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, 300 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	<b>171</b>	<b>79.7</b>	171	79.7	171	79.6	171	79.7	<b>171</b>	<b>79.7</b>
416.gamess	790	24.8	<b>791</b>	<b>24.8</b>	792	24.7	736	26.6	<b>736</b>	<b>26.6</b>	743	26.3
433.milc	184	49.9	185	49.7	<b>184</b>	<b>49.8</b>	185	49.8	<b>184</b>	<b>49.8</b>	184	49.8
434.zeusmp	224	40.6	223	40.8	<b>224</b>	<b>40.7</b>	224	40.6	223	40.8	<b>224</b>	<b>40.7</b>
435.gromacs	<b>372</b>	<b>19.2</b>	372	19.2	373	19.1	<b>364</b>	<b>19.6</b>	365	19.6	364	19.6
436.cactusADM	<b>233</b>	<b>51.2</b>	232	51.5	234	51.1	<b>233</b>	<b>51.2</b>	232	51.5	234	51.1
437.leslie3d	213	44.2	212	44.3	<b>212</b>	<b>44.3</b>	213	44.2	212	44.3	<b>212</b>	<b>44.3</b>
444.namd	457	17.6	<b>457</b>	<b>17.6</b>	456	17.6	<b>451</b>	<b>17.8</b>	451	17.8	451	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	306	27.2	306	27.2	<b>306</b>	<b>27.2</b>	306	27.2	306	27.2	<b>306</b>	<b>27.2</b>
453.povray	162	32.9	<b>161</b>	<b>33.0</b>	161	33.1	137	38.8	<b>136</b>	<b>39.2</b>	135	39.3
454.calculix	297	27.8	297	27.8	<b>297</b>	<b>27.8</b>	271	30.4	272	30.3	<b>272</b>	<b>30.3</b>
459.GemsFDTD	258	41.1	259	41.0	<b>259</b>	<b>41.0</b>	254	41.7	241	43.9	<b>241</b>	<b>43.9</b>
465.tonto	345	28.5	345	28.6	<b>345</b>	<b>28.5</b>	327	30.0	329	29.9	<b>328</b>	<b>30.0</b>
470.lbm	177	77.8	<b>177</b>	<b>77.8</b>	177	77.8	177	77.8	<b>177</b>	<b>77.8</b>	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	615	31.7	<b>614</b>	<b>31.7</b>	608	32.0	552	35.3	554	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
```

## 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  
This result was measured on the PRIMERGY TX140 S1. The PRIMERGY TX120 S3 and the PRIMERGY TX140 S1 are electronically equivalent.



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## 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

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



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## 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

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:

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## Peak Optimization Flags (Continued)

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:

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

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