



# SPEC® CFP2006 Result

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## BOXX Technologies, Inc.

### SPECfp®\_rate2006 = 102

### 3DBOXX WORKSTATION 8450SE Special Edition

### SPECfp\_rate\_base2006 = 93.0

CPU2006 license: 3314

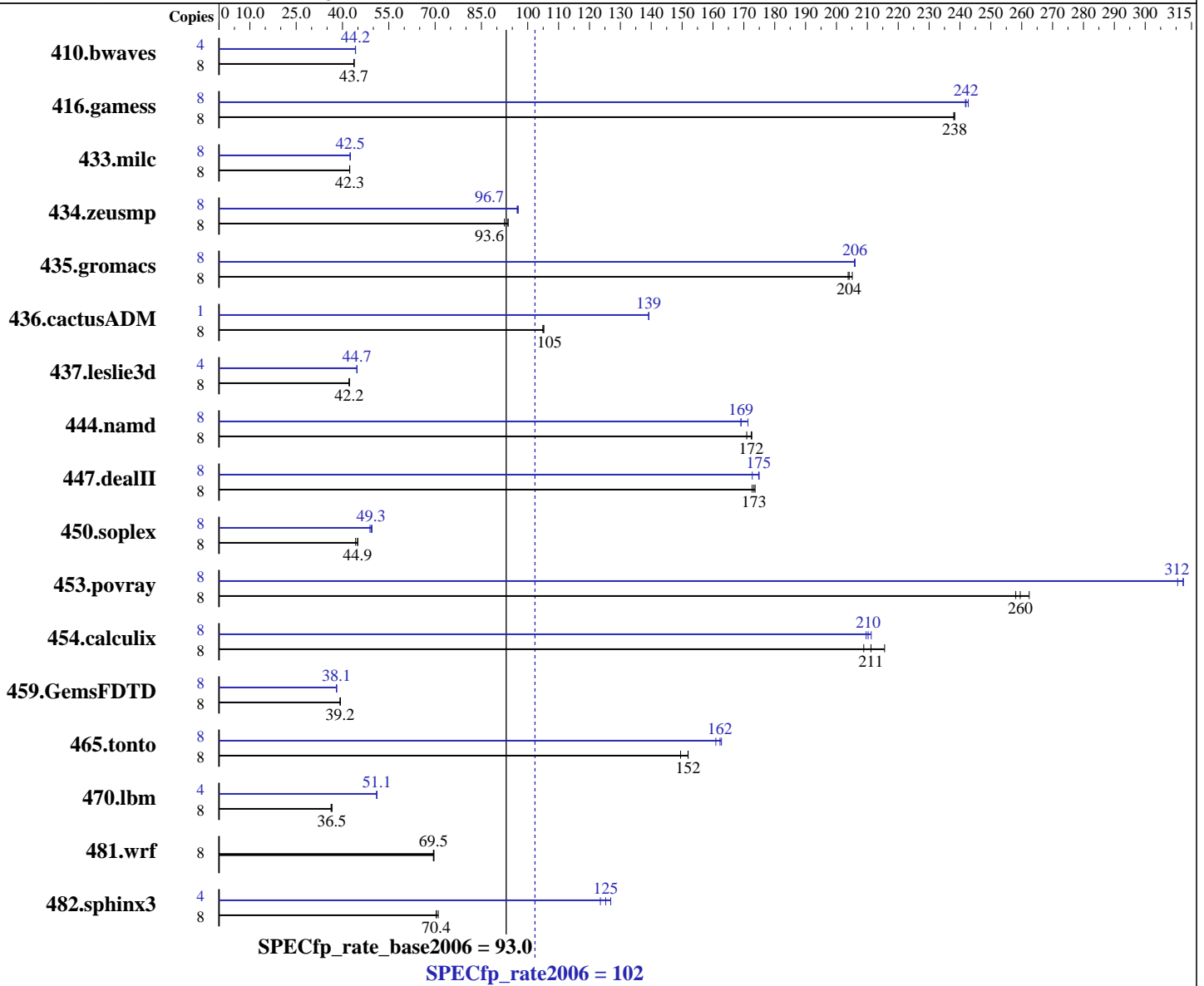
Test date: Nov-2008

Test sponsor: BOXX Technologies, Inc.

Hardware Availability: May-2008

Tested by: BOXX Technologies, Inc.

Software Availability: Nov-2008



#### Hardware

CPU Name: Intel Core 2 Extreme QX9775  
 CPU Characteristics: 1600 MHz Bus speed, CPU frequency set to 4.0GHz  
 CPU MHz: 4000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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#### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16-60-0.21-smpp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042, l\_fproc\_b\_11.0.042  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (4 x 4GB ECC PC2-6400,CL5,FBDIMM)  
 Disk Subsystem: 300 GB SATA, 10000RPM  
 Other Hardware: None

Peak Pointers: 32/64-bit  
 Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	<u>2485</u>	<u>43.7</u>	2485	43.7	2485	43.8	4	1229	44.2	1230	44.2	<u>1229</u>	<u>44.2</u>
416.gamess	8	658	238	657	238	<u>657</u>	<u>238</u>	8	648	242	<u>647</u>	<u>242</u>	645	243
433.milc	8	1735	42.3	1735	42.3	<u>1735</u>	<u>42.3</u>	8	<u>1728</u>	<u>42.5</u>	1728	42.5	1727	42.5
434.zeusmp	8	788	92.4	<u>778</u>	<u>93.6</u>	778	93.6	8	751	96.9	754	96.6	<u>753</u>	<u>96.7</u>
435.gromacs	8	<u>280</u>	<u>204</u>	280	204	278	205	8	<u>277</u>	<u>206</u>	278	206	277	206
436.cactusADM	8	909	105	912	105	<u>909</u>	<u>105</u>	1	85.9	139	<u>85.9</u>	<u>139</u>	85.8	139
437.leslie3d	8	<u>1782</u>	<u>42.2</u>	1784	42.2	1780	42.2	4	842	44.7	841	44.7	<u>841</u>	<u>44.7</u>
444.namd	8	372	173	<u>372</u>	<u>172</u>	375	171	8	374	171	<u>379</u>	<u>169</u>	380	169
447.dealII	8	530	173	<u>528</u>	<u>173</u>	527	174	8	523	175	<u>524</u>	<u>175</u>	530	173
450.soplex	8	1508	44.3	<u>1487</u>	<u>44.9</u>	1484	45.0	8	1364	48.9	<u>1354</u>	<u>49.3</u>	1346	49.6
453.povray	8	165	258	<u>164</u>	<u>260</u>	162	262	8	137	311	136	312	<u>136</u>	<u>312</u>
454.calculix	8	<u>313</u>	<u>211</u>	306	216	316	209	8	<u>314</u>	<u>210</u>	312	211	315	210
459.GemsFDTD	8	2163	39.2	2157	39.4	<u>2163</u>	<u>39.2</u>	8	2230	38.1	<u>2229</u>	<u>38.1</u>	2229	38.1
465.tonto	8	527	150	518	152	<u>518</u>	<u>152</u>	8	484	163	<u>485</u>	<u>162</u>	489	161
470.lbm	8	3028	36.3	<u>3010</u>	<u>36.5</u>	3005	36.6	4	1074	51.2	<u>1075</u>	<u>51.1</u>	1077	51.0
481.wrf	8	<u>1286</u>	<u>69.5</u>	1283	69.6	1287	69.5	8	<u>1286</u>	<u>69.5</u>	1283	69.6	1287	69.5
482.sphinx3	8	<u>2215</u>	<u>70.4</u>	2216	70.4	2196	71.0	4	<u>622</u>	<u>125</u>	631	124	614	127

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

## Submit Notes

The config file option 'submit' was used.  
 taskset was used to bind processes to cores except  
 for 436.cactusADM peak

## General Notes

OMP\_NUM\_THREADS set to number of processors  
 KMP\_AFFINITY set to "physical,0"  
 KMP\_STACKSIZE set to 64M



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## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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.lelie3d: -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:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

```
482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
             -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
             -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/Compiler/11.0/042/bin/ia32/ifort
              -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
              -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

Benchmarks using both Fortran and C:

icc ifort

## Peak 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
444.namd: -DSPEC_CPU_LP64
447.deallI: -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
```

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias -auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -ansi-alias  
-scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -opt-prefetch -parallel  
-auto-ilp32

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## Peak Optimization Flags (Continued)

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.15.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.15.xml>

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

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