



# SPEC<sup>®</sup> CFP2006 Result

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**Acer Incorporated**  
(Test Sponsor: Acer Incorporation)

**SPECfp<sup>®</sup>\_rate2006 = 110**

**Acer AR320 F2 (Xeon E3-1220)**

**SPECfp\_rate\_base2006 = 108**

CPU2006 license: 97

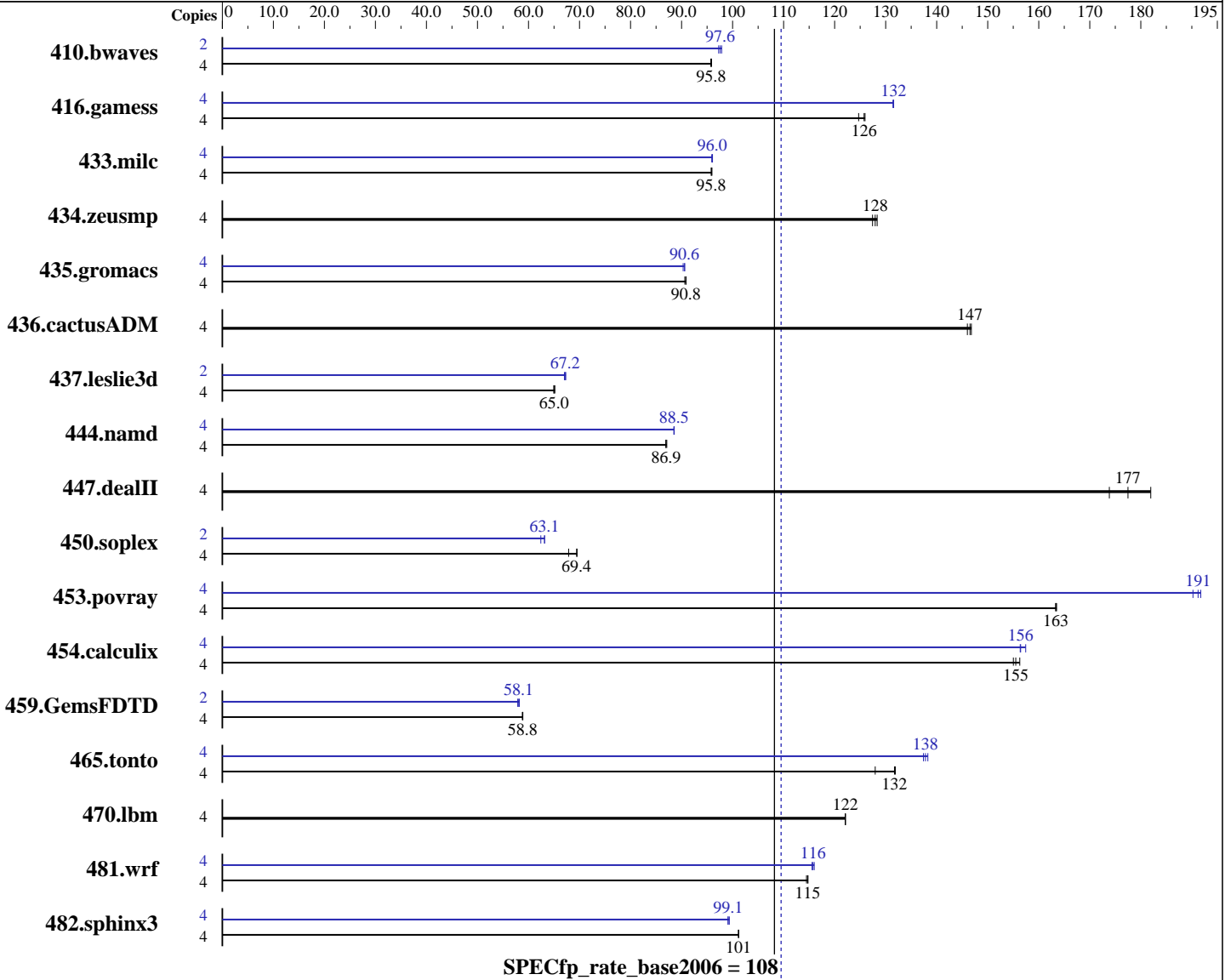
Test date: Dec-2011

Test sponsor: Acer Incorporation

Hardware Availability: Jan-2012

Tested by: Acer Incorporation

Software Availability: Dec-2011



## Hardware

CPU Name: Intel Xeon E3-1220  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: Red Hat Enterprise Linux Server release 6.1  
 Kernel 2.6.32-131.0.15.el6.x86\_64-default  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9,ECC)  
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: Microquill SmartHeap V9.01

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<b>568</b>	<b>95.8</b>	567	95.9	568	95.7	2	279	97.3	278	97.9	<b>279</b>	<b>97.6</b>
416.gamess	4	622	126	628	125	<b>623</b>	<b>126</b>	4	595	132	<b>595</b>	<b>132</b>	596	131
433.milc	4	383	96.0	<b>383</b>	<b>95.8</b>	383	95.8	4	382	96.1	383	95.9	<b>382</b>	<b>96.0</b>
434.zeusmp	4	286	127	<b>285</b>	<b>128</b>	284	128	4	286	127	<b>285</b>	<b>128</b>	284	128
435.gromacs	4	315	90.6	314	90.9	<b>314</b>	<b>90.8</b>	4	315	90.6	<b>315</b>	<b>90.6</b>	316	90.3
436.cactusADM	4	326	147	327	146	<b>326</b>	<b>147</b>	4	326	147	327	146	<b>326</b>	<b>147</b>
437.leslie3d	4	577	65.2	<b>579</b>	<b>65.0</b>	579	65.0	2	280	67.0	<b>280</b>	<b>67.2</b>	279	67.3
444.namd	4	<b>369</b>	<b>86.9</b>	369	86.9	368	87.1	4	363	88.5	362	88.6	<b>362</b>	<b>88.5</b>
447.dealII	4	251	182	263	174	<b>258</b>	<b>177</b>	4	251	182	263	174	<b>258</b>	<b>177</b>
450.soplex	4	492	67.9	<b>480</b>	<b>69.4</b>	480	69.5	2	267	62.4	<b>264</b>	<b>63.1</b>	264	63.1
453.povray	4	<b>130</b>	<b>163</b>	130	163	130	163	4	112	190	111	192	<b>111</b>	<b>191</b>
454.calculix	4	<b>212</b>	<b>155</b>	213	155	211	156	4	210	157	<b>211</b>	<b>156</b>	211	156
459.GemsFDTD	4	721	58.9	722	58.8	<b>721</b>	<b>58.8</b>	2	365	58.2	367	57.9	<b>365</b>	<b>58.1</b>
465.tonto	4	308	128	298	132	<b>299</b>	<b>132</b>	4	286	137	285	138	<b>286</b>	<b>138</b>
470.lbm	4	450	122	450	122	<b>450</b>	<b>122</b>	4	450	122	450	122	<b>450</b>	<b>122</b>
481.wrf	4	<b>390</b>	<b>115</b>	390	114	389	115	4	<b>386</b>	<b>116</b>	385	116	387	116
482.sphinx3	4	<b>771</b>	<b>101</b>	771	101	771	101	4	787	99.1	785	99.4	<b>786</b>	<b>99.1</b>

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

## Submit Notes

numactl was used to bind copies to the cores  
The config file option 'submit' was used.

## Operating System Notes

Large pages were disabled for this run.

## General Notes

Binaries compiled on RHEL5.5



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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:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias

Fortran benchmarks:

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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias
```

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc -m64
```

```
482.sphinx3:icc -m32
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

```
450.soplex:icpc -m32
```

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
icc -m64 ifort -m64
```

## 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  
437.leslie3d: -DSPEC_CPU_LP64  
444.namd: -DSPEC_CPU_LP64  
447.dealII: -DSPEC_CPU_LP64  
453.povray: -DSPEC_CPU_LP64  
454.calculix: -DSPEC_CPU_LP64 -nofor_main  
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:

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## Peak Optimization Flags (Continued)

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

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

### 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.dealIII: basepeak = yes

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

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static

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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

### Benchmarks using both Fortran and C:

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

436.cactusADM: basepeak = yes

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## Peak Optimization Flags (Continued)

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

481.wrf: Same as 454.calculix

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

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

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

<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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