



# SPEC<sup>®</sup> CFP2006 Result

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**Acer Incorporated**  
**Acer AR380 F2 (Xeon E5-2603)**

**SPECfp<sup>®</sup>\_rate2006 = 183**

**SPECfp\_rate\_base2006 = 179**

CPU2006 license: 97

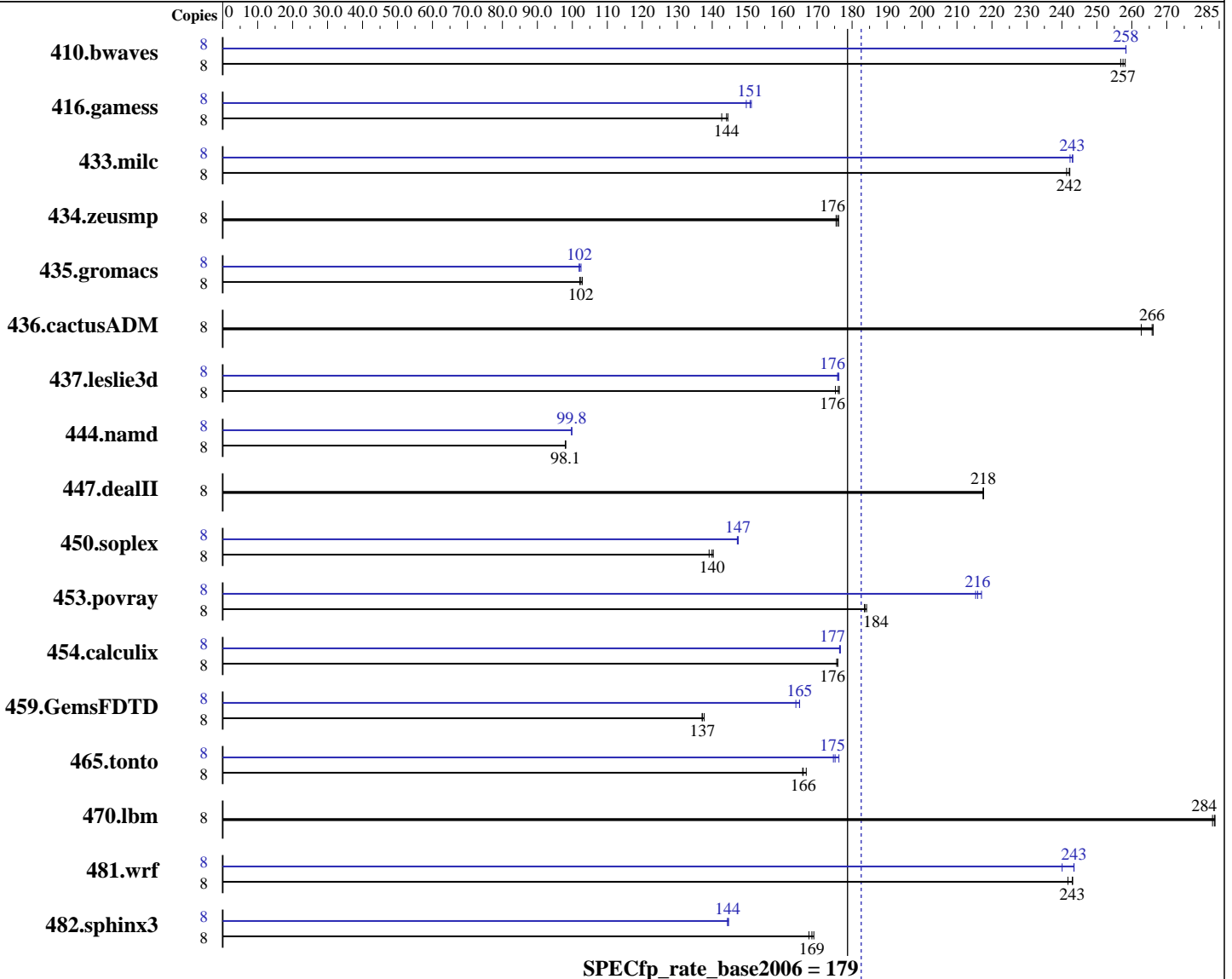
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Jul-2012

Hardware Availability: Jul-2012

Software Availability: Dec-2011



**SPECfp\_rate2006 = 183**

### Hardware

CPU Name: Intel Xeon E5-2603  
 CPU Characteristics:  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 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: ext4

Continued on next page



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L3 Cache: 10 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3L-10600R-9, ECC)  
Disk Subsystem: 1 x 2 TB SAS, 7200 RPM  
Other Hardware: None

System State: Run level 3 (multi-user)  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

| Benchmark     | Base   |            |            |            |            |             |             | Peak   |             |             |            |            |             |            |
|---------------|--------|------------|------------|------------|------------|-------------|-------------|--------|-------------|-------------|------------|------------|-------------|------------|
|               | Copies | Seconds    | Ratio      | Seconds    | Ratio      | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds    | Ratio      | Seconds     | Ratio      |
| 410.bwaves    | 8      | 423        | 257        | <u>422</u> | <u>257</u> | 421         | 258         | 8      | 421         | 258         | 421        | 258        | <u>421</u>  | <u>258</u> |
| 416.gamess    | 8      | 1084       | 144        | 1098       | 143        | <u>1087</u> | <u>144</u>  | 8      | 1046        | 150         | 1036       | 151        | <u>1038</u> | <u>151</u> |
| 433.milc      | 8      | <u>303</u> | <u>242</u> | 304        | 241        | 303         | 242         | 8      | 303         | 242         | 302        | 243        | <u>302</u>  | <u>243</u> |
| 434.zeusmp    | 8      | 413        | 176        | <u>414</u> | <u>176</u> | 415         | 175         | 8      | 413         | 176         | <u>414</u> | <u>176</u> | 415         | 175        |
| 435.gromacs   | 8      | <u>557</u> | <u>102</u> | 555        | 103        | 559         | 102         | 8      | 560         | 102         | <u>560</u> | <u>102</u> | 557         | 102        |
| 436.cactusADM | 8      | 364        | 263        | 359        | 266        | <u>360</u>  | <u>266</u>  | 8      | 364         | 263         | 359        | 266        | <u>360</u>  | <u>266</u> |
| 437.leslie3d  | 8      | 426        | 176        | 429        | 175        | <u>427</u>  | <u>176</u>  | 8      | 428         | 176         | 427        | 176        | <u>427</u>  | <u>176</u> |
| 444.namd      | 8      | 655        | 98.0       | 654        | 98.1       | <u>654</u>  | <u>98.1</u> | 8      | <u>643</u>  | <u>99.8</u> | 643        | 99.8       | 643         | 99.8       |
| 447.dealII    | 8      | <u>421</u> | <u>218</u> | 421        | 218        | 421         | 217         | 8      | <u>421</u>  | <u>218</u>  | 421        | 218        | 421         | 217        |
| 450.soplex    | 8      | 480        | 139        | <u>477</u> | <u>140</u> | 476         | 140         | 8      | 452         | 147         | <u>453</u> | <u>147</u> | 453         | 147        |
| 453.povray    | 8      | 231        | 184        | <u>232</u> | <u>184</u> | 232         | 184         | 8      | 196         | 217         | <u>197</u> | <u>216</u> | 198         | 215        |
| 454.calculix  | 8      | 375        | 176        | <u>375</u> | <u>176</u> | 376         | 176         | 8      | 374         | 177         | <u>374</u> | <u>177</u> | 374         | 176        |
| 459.GemsFDTD  | 8      | 616        | 138        | <u>619</u> | <u>137</u> | 619         | 137         | 8      | 518         | 164         | <u>515</u> | <u>165</u> | 514         | 165        |
| 465.tonto     | 8      | <u>474</u> | <u>166</u> | 475        | 166        | 472         | 167         | 8      | 451         | 175         | 447        | 176        | <u>449</u>  | <u>175</u> |
| 470.lbm       | 8      | <u>388</u> | <u>284</u> | 388        | 283        | 387         | 284         | 8      | <u>388</u>  | <u>284</u>  | 388        | 283        | 387         | 284        |
| 481.wrf       | 8      | 368        | 243        | <u>368</u> | <u>243</u> | 370         | 242         | 8      | 372         | 240         | 367        | 244        | <u>367</u>  | <u>243</u> |
| 482.sphinx3   | 8      | 922        | 169        | 930        | 168        | <u>925</u>  | <u>169</u>  | 8      | <u>1080</u> | <u>144</u>  | 1078       | 145        | 1080        | 144        |

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

Sysinfo program /usr/cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Fri Jul 13 18:35:06 2012

Continued on next page



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## Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) CPU E5-2603 0 @ 1.80GHz
 2 "physical id"s (chips)
 8 "processors"
```

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores      : 4
siblings       : 4
physical 0:    : cores 0 1 2 3
physical 1:    : cores 0 1 2 3
cache size     : 10240 KB
```

From /proc/meminfo

```
MemTotal:      132132504 kB
HugePages_Total: 0
Hugepagesize:   2048 kB
```

/usr/bin/lsb\_release -d

```
Red Hat Enterprise Linux Server release 6.2 (Santiago)
```

From /etc/\*release\* /etc/\*version\*

```
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
EST 2011 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jul 13 18:33

SPEC is set to: /usr/cpu2006

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_root
                ext4      338G  113G  209G  35% /
```

Additional information from dmidecode:

Memory:

```
14x Hynix Semiconducto HMT31GR7BFR4A 8 GB 1066 MHz 1 rank
2x Hynix Semiconductor HMT31GR7BFR4A- 8 GB 1066 MHz 1 rank
```

(End of data from sysinfo program)



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## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>  
The Acer AR360 F2 and AR380 F2 are electronically equivalent.  
This result was measured on Acer AR360 F2.

## 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



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## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## 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.deallI: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64

Continued on next page



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## Peak Portability Flags (Continued)

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:

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  
 -opt-mem-layout-trans=3

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

Continued on next page



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## Peak Optimization Flags (Continued)

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 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-mem-layout-trans=3

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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Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 12:41:06 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 6 August 2012.