



# SPEC<sup>®</sup> CFP2006 Result

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## Acer Incorporated

SPECfp<sup>®</sup>2006 = **90.9**

## Altos R360 F2 (Intel Xeon E5-2690)

SPECfp\_base2006 = **86.4**

CPU2006 license: 97

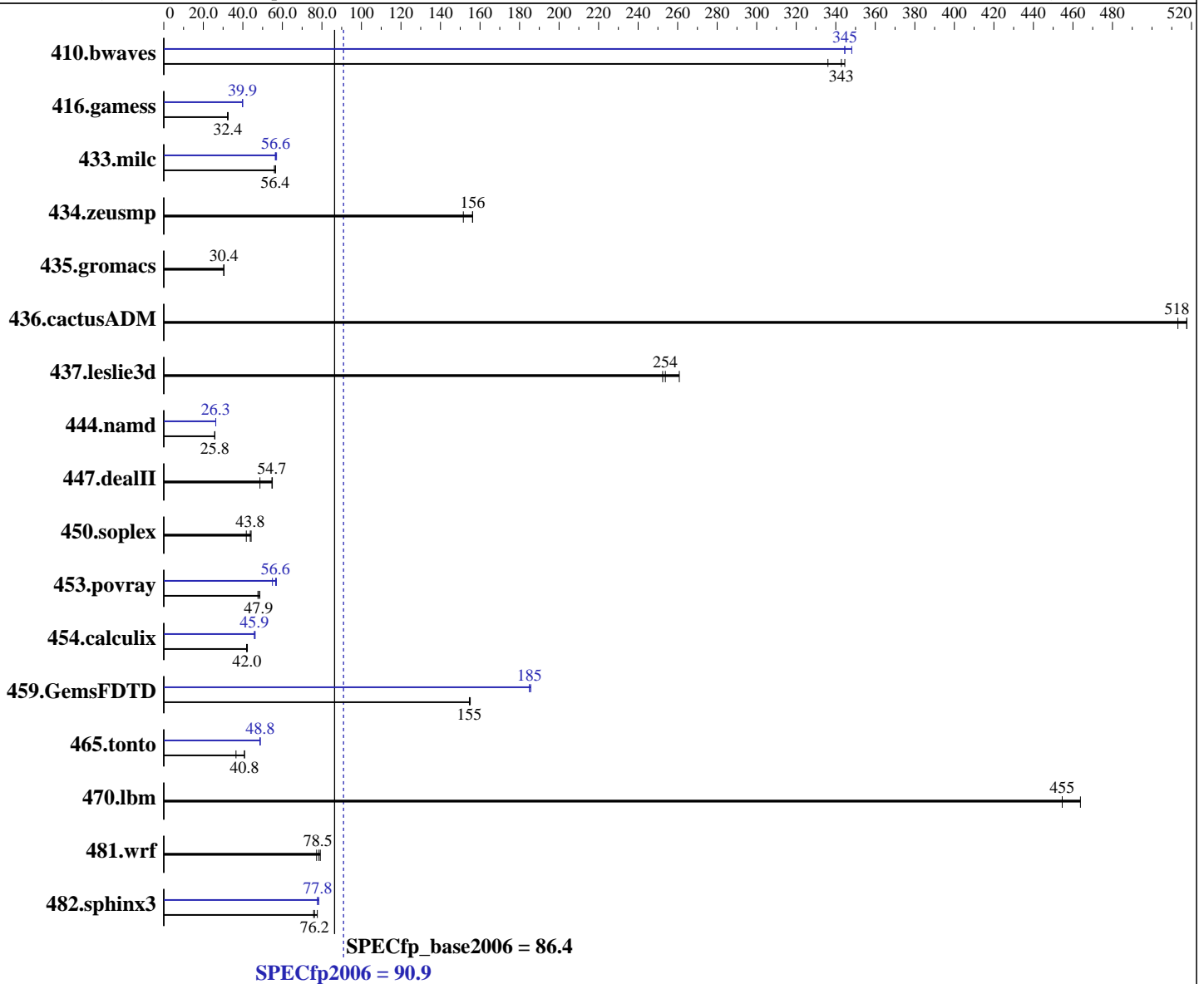
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Mar-2013

Hardware Availability: Apr-2013

Software Availability: Jun-2012



**Hardware**

CPU Name: Intel Xeon E5-2690  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 2900  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2 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 6.3 (Santiago)  
 2.6.32-279.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: Yes  
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
Disk Subsystem: 1 x 1 TB SATA, 7200 RPM  
Other Hardware: None

System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
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	40.4	336	39.4	345	<b><u>39.6</u></b>	<b><u>343</u></b>	<b><u>39.4</u></b>	<b><u>345</u></b>	39.4	345	39.0	348
416.gamess	602	32.5	608	32.2	<b><u>604</u></b>	<b><u>32.4</u></b>	491	39.9	492	39.8	<b><u>491</u></b>	<b><u>39.9</u></b>
433.milc	<b><u>163</u></b>	<b><u>56.4</u></b>	164	55.9	162	56.6	<b><u>162</u></b>	<b><u>56.6</u></b>	161	57.1	163	56.4
434.zeusmp	58.2	156	60.0	152	<b><u>58.2</u></b>	<b><u>156</u></b>	58.2	156	60.0	152	<b><u>58.2</u></b>	<b><u>156</u></b>
435.gromacs	235	30.4	235	30.3	<b><u>235</u></b>	<b><u>30.4</u></b>	235	30.4	235	30.3	<b><u>235</u></b>	<b><u>30.4</u></b>
436.cactusADM	23.1	518	<b><u>23.1</u></b>	<b><u>518</u></b>	23.3	513	<b><u>23.1</u></b>	518	<b><u>23.1</u></b>	<b><u>518</u></b>	23.3	513
437.leslie3d	<b><u>37.0</u></b>	<b><u>254</u></b>	37.2	252	36.0	261	<b><u>37.0</u></b>	<b><u>254</u></b>	37.2	252	36.0	261
444.namd	<b><u>311</u></b>	<b><u>25.8</u></b>	311	25.8	310	25.8	305	26.3	305	26.3	<b><u>305</u></b>	<b><u>26.3</u></b>
447.dealII	235	48.6	208	54.9	<b><u>209</u></b>	<b><u>54.7</u></b>	235	48.6	208	54.9	<b><u>209</u></b>	<b><u>54.7</u></b>
450.soplex	200	41.7	<b><u>191</u></b>	<b><u>43.8</u></b>	189	44.2	200	41.7	<b><u>191</u></b>	<b><u>43.8</u></b>	189	44.2
453.povray	<b><u>111</u></b>	<b><u>47.9</u></b>	109	48.6	112	47.6	96.8	55.0	93.4	57.0	<b><u>94.0</u></b>	<b><u>56.6</u></b>
454.calculix	195	42.3	<b><u>196</u></b>	<b><u>42.0</u></b>	197	41.9	178	46.2	180	45.9	<b><u>180</u></b>	<b><u>45.9</u></b>
459.GemsFDTD	68.4	155	68.6	155	<b><u>68.6</u></b>	<b><u>155</u></b>	<b><u>57.3</u></b>	<b><u>185</u></b>	57.1	186	57.3	185
465.tonto	241	40.9	<b><u>241</u></b>	<b><u>40.8</u></b>	269	36.5	202	48.8	202	48.6	<b><u>202</u></b>	<b><u>48.8</u></b>
470.lbm	30.2	455	<b><u>30.2</u></b>	<b><u>455</u></b>	29.6	464	30.2	455	<b><u>30.2</u></b>	<b><u>455</u></b>	29.6	464
481.wrf	141	79.2	<b><u>142</u></b>	<b><u>78.5</u></b>	144	77.3	141	79.2	<b><u>142</u></b>	<b><u>78.5</u></b>	144	77.3
482.sphinx3	<b><u>256</u></b>	<b><u>76.2</u></b>	257	75.8	251	77.7	248	78.4	251	77.7	<b><u>250</u></b>	<b><u>77.8</u></b>

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

## 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 altosr380f2 Fri Mar 22 11:24:52 2013

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 E5-2690 0 @ 2.90GHz  
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**SPECfp\_base2006 = 86.4**

**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated

**Test date:** Mar-2013  
**Hardware Availability:** Apr-2013  
**Software Availability:** Jun-2012

## Platform Notes (Continued)

```

2 "physical id"s (chips)
32 "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 : 8
siblings  : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

From /proc/meminfo
MemTotal:      132114000 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.3 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux altosr380f2 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36 EDT 2012
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 22 11:07

SPEC is set to: /usr/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_altosr380f2-lv_root
                ext4      913G   73G  794G   9% /

Additional information from dmidecode:
Memory:
16x Hynix HMT31GR7CFR4C-PB 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)

```

## General Notes

Environment variables set by runspec before the start of the run:

```

KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "16"

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
Transparent Huge Pages enabled with:

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## General Notes (Continued)

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
Altos R360 F2 and Altos R380 F2 are electronically equivalent.
This result was measured on Altos R380 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.deall: -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 -parallel -opt-prefetch  
-ansi-alias

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## Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xAVX -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: `-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  
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel`

C++ benchmarks:

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## Peak Optimization Flags (Continued)

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.dealII: basepeak = yes

450.soplex: basepeak = yes

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 -ipo -O3 -no-prec-div -opt-prefetch -parallel  
 -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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

465.tonto: -xAVX(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

### Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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

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-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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