



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Acer Incorporated

**SPECfp®\_rate2006 = 167**

Altos R380 F2 (Intel Xeon E5-2620)

**SPECfp\_rate\_base2006 = 163**

CPU2006 license: 97

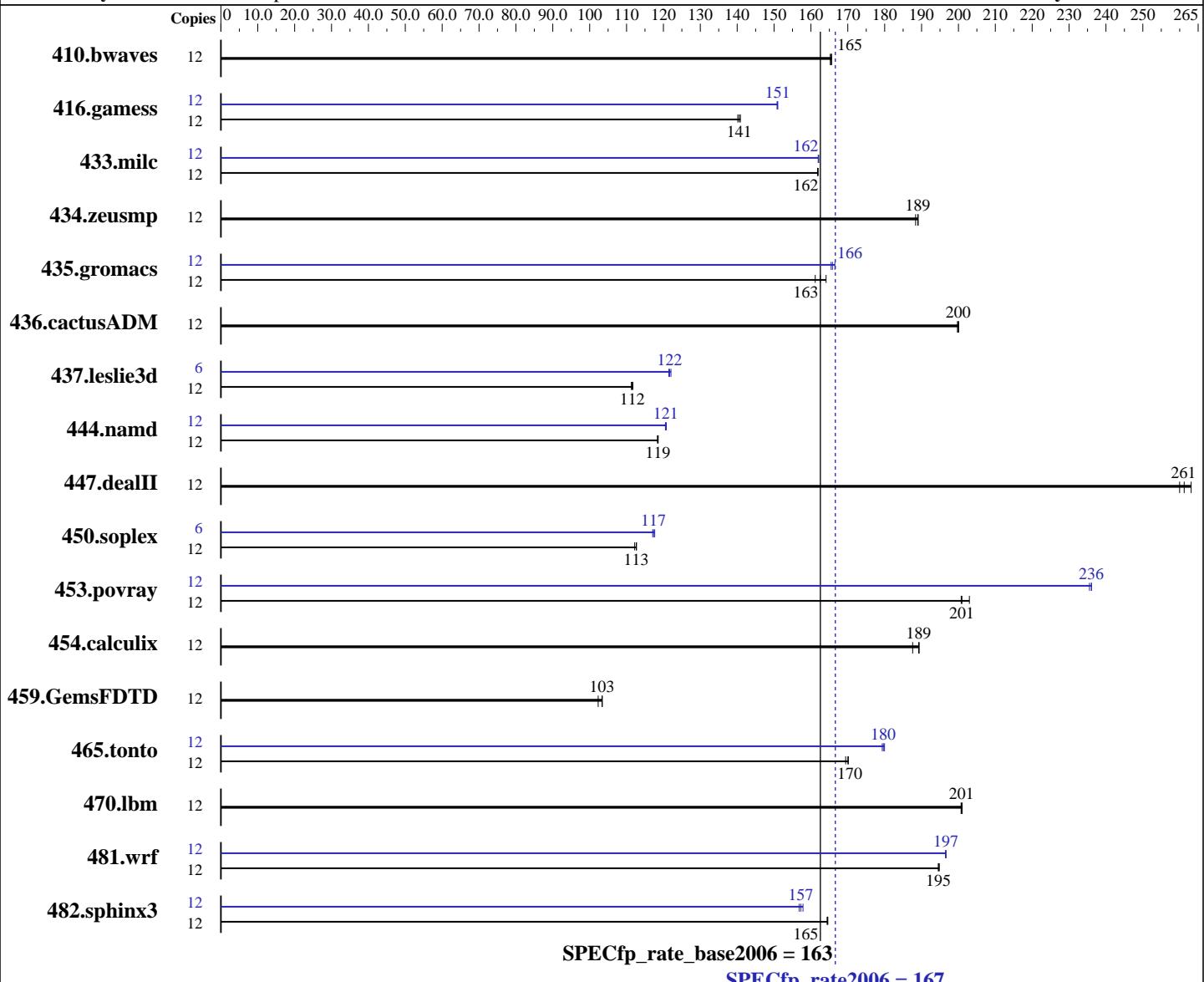
Test date: May-2013

Test sponsor: Acer Incorporated

Hardware Availability: May-2013

Tested by: Acer Incorporated

Software Availability: Jun-2012



## Hardware

CPU Name: Intel Xeon E5-2620  
CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
CPU MHz: 2000  
FPU: Integrated  
CPU(s) enabled: 6 cores, 1 chip, 6 cores/chip, 2 threads/core  
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

## Software

Operating System: Red Hat Enterprise Linux Server release 6.3 (Santiago)  
Compiler: 2.6.32-279.el6.x86\_64  
C/C++: Version 13.0.0.133 of Intel C++ Studio XE for Linux;  
Fortran: Version 13.0.0.133 of Intel Fortran Studio XE for Linux  
Auto Parallel: No  
File System: ext4

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L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 64 GB (8 x 8 GB 1Rx4 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: 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	12	985	166	987	165	<b>985</b>	<b>165</b>	12	985	166	987	165	<b>985</b>	<b>165</b>
416.gamess	12	1668	141	1676	140	<b>1671</b>	<b>141</b>	12	1556	151	<b>1556</b>	<b>151</b>	1558	151
433.milc	12	680	162	681	162	<b>680</b>	<b>162</b>	12	<b>680</b>	<b>162</b>	680	162	680	162
434.zeusmp	12	577	189	580	188	<b>578</b>	<b>189</b>	12	577	189	580	188	<b>578</b>	<b>189</b>
435.gromacs	12	522	164	<b>527</b>	<b>163</b>	532	161	12	<b>517</b>	<b>166</b>	518	165	515	166
436.cactusADM	12	717	200	718	200	<b>717</b>	<b>200</b>	12	717	200	718	200	<b>717</b>	<b>200</b>
437.leslie3d	12	1010	112	1013	111	<b>1011</b>	<b>112</b>	6	464	121	<b>464</b>	<b>122</b>	462	122
444.namd	12	813	118	<b>812</b>	<b>119</b>	812	119	12	797	121	<b>798</b>	<b>121</b>	798	121
447.dealII	12	<b>526</b>	<b>261</b>	522	263	528	260	12	<b>526</b>	<b>261</b>	522	263	528	260
450.soplex	12	892	112	<b>889</b>	<b>113</b>	888	113	6	<b>427</b>	<b>117</b>	425	118	427	117
453.povray	12	318	201	<b>318</b>	<b>201</b>	315	203	12	<b>270</b>	<b>236</b>	270	236	271	236
454.calculix	12	523	189	528	188	<b>523</b>	<b>189</b>	12	523	189	528	188	<b>523</b>	<b>189</b>
459.GemsFDTD	12	1245	102	<b>1232</b>	<b>103</b>	1231	103	12	1245	102	<b>1232</b>	<b>103</b>	1231	103
465.tonto	12	694	170	697	169	<b>695</b>	<b>170</b>	12	<b>657</b>	<b>180</b>	658	179	656	180
470.lbm	12	<b>821</b>	<b>201</b>	820	201	821	201	12	<b>821</b>	<b>201</b>	820	201	821	201
481.wrf	12	689	195	688	195	<b>689</b>	<b>195</b>	12	682	197	<b>682</b>	<b>197</b>	682	196
482.sphinx3	12	<b>1422</b>	<b>165</b>	1421	165	1423	164	12	<b>1492</b>	<b>157</b>	<b>1487</b>	<b>157</b>	1482	158

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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.rev6818  
 \$Rev: 6818 \$ \$Date::: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
 running on altosr380f2 Fri May 17 04:53:19 2013

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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 : Genuine Intel(R) CPU @ 2.00GHz
  1 "physical id"s (chips)
  12 "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 : 6
  siblings : 12
  physical 0: cores 0 1 2 3 4 5
  cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:       65922972 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 May 16 12:48 last=5
```

```
SPEC is set to: /usr/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/vg_altosr380f2-lv_root
              ext4   243G   45G  186G  20%  /
```

```
Additional information from dmidecode:
BIOS Intel Corp. SE5C600.86B.01.06.0002.110120121539 11/01/2012
Memory:
 8x 8 GB
16x NO DIMM NO DIMM
8x Nanya NT8GC72B4PB0NL-DI 8 GB 1600 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:/usr/cpu2006/sh"

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

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.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.dealII: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

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:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -static -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3  
-unroll2

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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

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## Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

```
465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -prof-use(pass 2) -unroll14 -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) -opt-mem-layout-trans=3(pass 2)
              -prof-use(pass 2) -opt-prefetch -static -auto-ilp32
```

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

```
481.wrf: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
```

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.html>  
<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-revA.20130423.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml>  
<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-revA.20130423.xml>

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

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