



# SPEC<sup>®</sup> CFP2006 Result

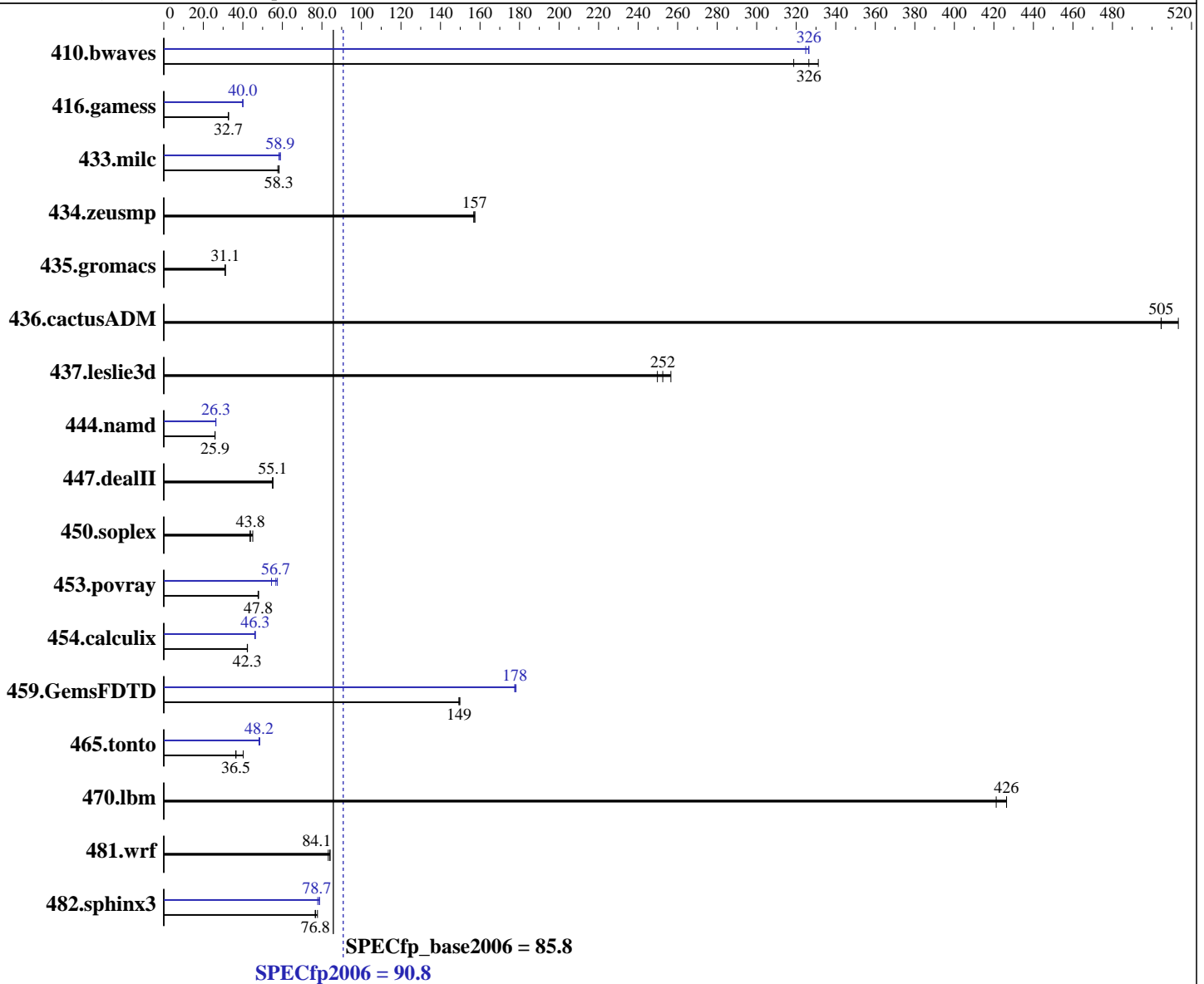
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Acer Incorporated  
Acer AR380 F2 (Xeon E5-2690)

SPECfp<sup>®</sup>2006 = 90.8  
SPECfp\_base2006 = 85.8

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

Test date: Sep-2012  
Hardware Availability: Jun-2012  
Software Availability: Dec-2011



## 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: 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: 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 PC3L-10600R-9, ECC)  
 Disk Subsystem: 1 x 600 GB SAS, 10K 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	<b><u>41.6</u></b>	<b><u>326</u></b>	42.6	319	41.0	331	41.6	326	41.8	325	<b><u>41.6</u></b>	<b><u>326</u></b>
416.gamess	<b><u>599</u></b>	<b><u>32.7</u></b>	597	32.8	600	32.6	490	40.0	489	40.0	<b><u>490</u></b>	<b><u>40.0</u></b>
433.milc	<b><u>158</u></b>	<b><u>58.3</u></b>	157	58.3	159	57.7	<b><u>156</u></b>	<b><u>58.9</u></b>	158	58.3	156	59.0
434.zeusmp	58.0	157	57.8	157	<b><u>57.8</u></b>	<b><u>157</u></b>	58.0	157	57.8	157	<b><u>57.8</u></b>	<b><u>157</u></b>
435.gromacs	<b><u>230</u></b>	<b><u>31.1</u></b>	229	31.1	230	31.0	<b><u>230</u></b>	<b><u>31.1</u></b>	229	31.1	230	31.0
436.cactusADM	<b><u>23.7</u></b>	<b><u>505</u></b>	23.3	513	23.7	505	<b><u>23.7</u></b>	<b><u>505</u></b>	23.3	513	23.7	505
437.leslie3d	36.6	257	37.6	250	<b><u>37.2</u></b>	<b><u>252</u></b>	36.6	257	37.6	250	<b><u>37.2</u></b>	<b><u>252</u></b>
444.namd	309	25.9	310	25.9	<b><u>309</u></b>	<b><u>25.9</u></b>	<b><u>305</u></b>	<b><u>26.3</u></b>	305	26.3	304	26.3
447.dealII	208	55.0	207	55.2	<b><u>208</u></b>	<b><u>55.1</u></b>	208	55.0	207	55.2	<b><u>208</u></b>	<b><u>55.1</u></b>
450.soplex	185	45.0	<b><u>190</u></b>	<b><u>43.8</u></b>	191	43.6	185	45.0	<b><u>190</u></b>	<b><u>43.8</u></b>	191	43.6
453.povray	112	47.7	111	48.0	<b><u>111</u></b>	<b><u>47.8</u></b>	92.6	57.5	<b><u>93.8</u></b>	<b><u>56.7</u></b>	97.6	54.5
454.calculix	195	42.3	195	42.3	<b><u>195</u></b>	<b><u>42.3</u></b>	<b><u>178</u></b>	<b><u>46.3</u></b>	178	46.3	179	46.0
459.GemsFDTD	71.0	149	70.8	150	<b><u>71.0</u></b>	<b><u>149</u></b>	59.7	178	<b><u>59.7</u></b>	<b><u>178</u></b>	59.5	178
465.tonto	270	36.5	<b><u>270</u></b>	<b><u>36.5</u></b>	245	40.2	<b><u>204</u></b>	<b><u>48.2</u></b>	203	48.6	204	48.2
470.lbm	32.6	421	32.2	426	<b><u>32.2</u></b>	<b><u>426</u></b>	32.6	421	32.2	426	<b><u>32.2</u></b>	<b><u>426</u></b>
481.wrf	<b><u>133</u></b>	<b><u>84.1</u></b>	134	83.2	133	84.1	<b><u>133</u></b>	<b><u>84.1</u></b>	134	83.2	133	84.1
482.sphinx3	<b><u>254</u></b>	<b><u>76.8</u></b>	251	77.8	254	76.6	250	77.9	247	78.8	<b><u>248</u></b>	<b><u>78.7</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 spec Thu Sep 20 09:26:15 2012

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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<b>CPU2006 license:</b> 97	<b>Test date:</b> Sep-2012
<b>Test sponsor:</b> Acer Incorporated	<b>Hardware Availability:</b> Jun-2012
<b>Tested by:</b> Acer Incorporated	<b>Software Availability:</b> Dec-2011

## 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:      132269584 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 spec 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 Sep 18 18:41

SPEC is set to: /usr/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sdal       ext4      424G      89G  314G  23% /

Additional information from dmidecode:
Memory:
14x Hynix Semiconducto HMT31GR7CFR4A 8 GB 1333 MHz 1 rank
2x Hynix Semiconductor HMT31GR7CFR4A- 8 GB 1333 MHz 1 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>
```

## 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 -parallel -opt-prefetch
  -ansi-alias

C++ benchmarks:
  -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

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## Base Optimization Flags (Continued)

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:

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

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## Peak Optimization Flags (Continued)

447.dealIII: 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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