



SPEC® CFP2006 Result

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Acer Incorporated

SPECfp®2006 = 45.8

Acer AW2000h-AW170h F2 (Intel Xeon E5-2603)

SPECfp_base2006 = 44.2

CPU2006 license: 97

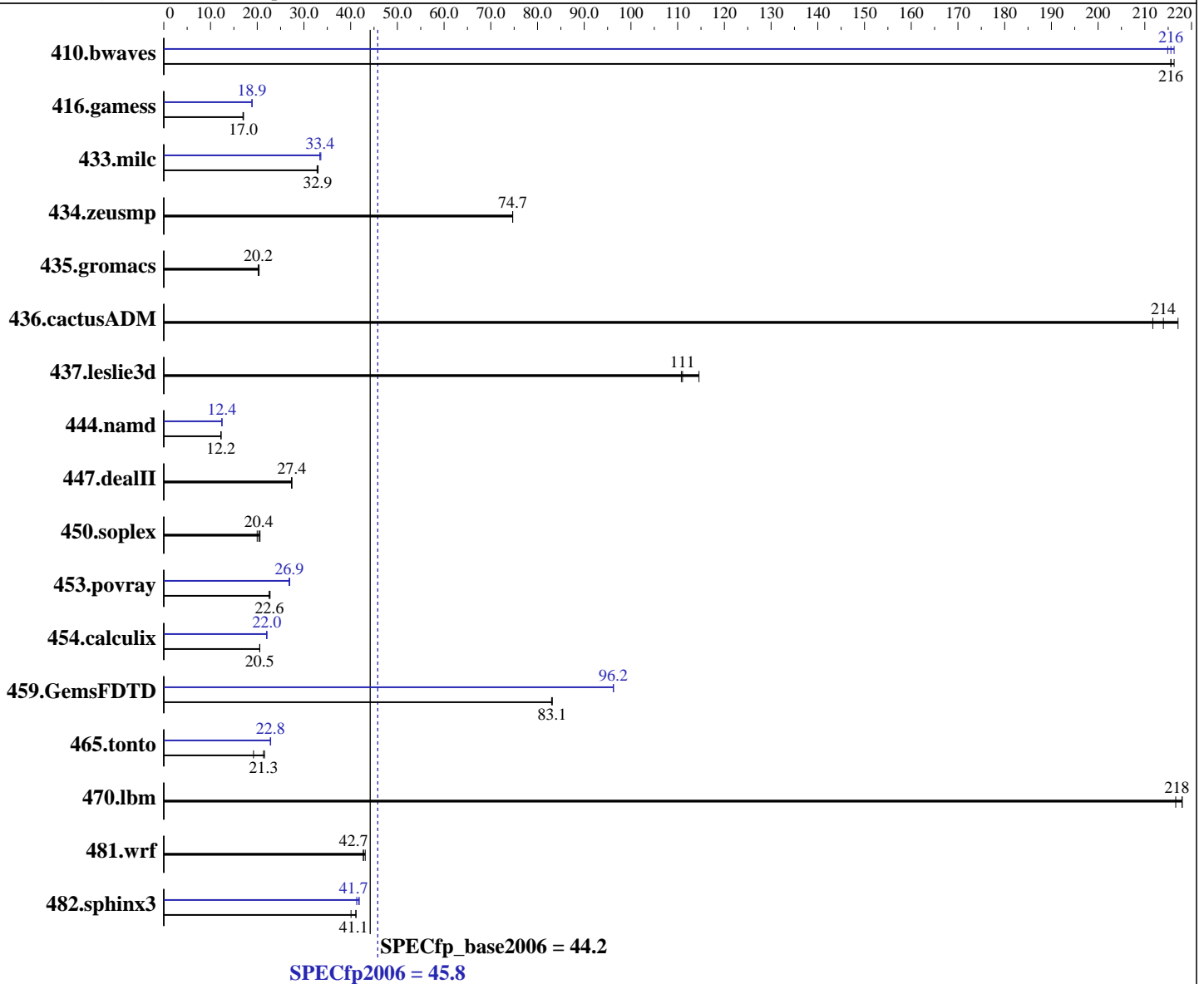
Test date: Sep-2012

Test sponsor: Acer Incorporated

Hardware Availability: Sep-2012

Tested by: Acer Incorporated

Software Availability: Dec-2011



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: Yes
 File System: ext4

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L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (8 x 16 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 500 GB 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 | 63.0 | 216 | 62.8 | 216 | 63.0 | 216 | 62.8 | 216 | 63.2 | 215 | 63.0 | 216 |
| 416.gamess | 1148 | 17.1 | 1150 | 17.0 | 1156 | 16.9 | 1037 | 18.9 | 1037 | 18.9 | 1037 | 18.9 |
| 433.milc | 280 | 32.8 | 278 | 33.0 | 279 | 32.9 | 275 | 33.4 | 274 | 33.4 | 273 | 33.6 |
| 434.zeusmp | 122 | 74.7 | 122 | 74.7 | 122 | 74.7 | 122 | 74.7 | 122 | 74.7 | 122 | 74.7 |
| 435.gromacs | 350 | 20.4 | 353 | 20.2 | 353 | 20.2 | 350 | 20.4 | 353 | 20.2 | 353 | 20.2 |
| 436.cactusADM | 56.4 | 212 | 55.8 | 214 | 55.0 | 217 | 56.4 | 212 | 55.8 | 214 | 55.0 | 217 |
| 437.leslie3d | 84.6 | 111 | 84.9 | 111 | 82.0 | 115 | 84.6 | 111 | 84.9 | 111 | 82.0 | 115 |
| 444.namd | 655 | 12.2 | 655 | 12.2 | 655 | 12.2 | 644 | 12.4 | 645 | 12.4 | 645 | 12.4 |
| 447.dealII | 417 | 27.4 | 418 | 27.4 | 419 | 27.3 | 417 | 27.4 | 418 | 27.4 | 419 | 27.3 |
| 450.soplex | 410 | 20.4 | 405 | 20.6 | 417 | 20.0 | 410 | 20.4 | 405 | 20.6 | 417 | 20.0 |
| 453.povray | 236 | 22.6 | 234 | 22.8 | 236 | 22.6 | 198 | 26.8 | 198 | 26.9 | 197 | 27.0 |
| 454.calculix | 401 | 20.5 | 402 | 20.5 | 401 | 20.5 | 374 | 22.1 | 374 | 22.0 | 375 | 22.0 |
| 459.GemsFDTD | 128 | 83.1 | 128 | 83.0 | 128 | 83.1 | 110 | 96.2 | 110 | 96.2 | 110 | 96.2 |
| 465.tonto | 456 | 21.6 | 461 | 21.3 | 512 | 19.2 | 431 | 22.8 | 430 | 22.9 | 431 | 22.8 |
| 470.lbm | 63.4 | 217 | 63.0 | 218 | 63.0 | 218 | 63.4 | 217 | 63.0 | 218 | 63.0 | 218 |
| 481.wrf | 261 | 42.7 | 261 | 42.7 | 259 | 43.1 | 261 | 42.7 | 261 | 42.7 | 259 | 43.1 |
| 482.sphinx3 | 486 | 40.1 | 473 | 41.2 | 474 | 41.1 | 472 | 41.3 | 466 | 41.9 | 468 | 41.7 |

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

BIOS Settings:
 CPU Power and Performance Policy set to Performance
 Sysinfo program /usr/cpu2006/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on localhost.localdomain Mon Sep 17 17:08:16 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>

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Platform Notes (Continued)

```

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:      132105372 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 Sep 14 18:09

SPEC is set to: /usr/cpu2006
  Filesystem      Type      Size  Used Avail Use% Mounted on
  /dev/mapper/VolGroup-lv_root
                  ext4      394G   71G  304G  19% /

Additional information from dmidecode:
Memory:
  8x Hynix HMT42GR7MFR4C-PB 16 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 = "8"

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB

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General Notes (Continued)

memory using RHEL5.5
Transparent Huge Pages enabled with:
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.deallI: -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.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 files that were used to format this result can be browsed at

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

<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-aw170hf2-revA.html>

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

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

<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-aw170hf2-revA.xml>



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