# SPEC® CFP2006 Result

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## Acer Incorporated

Acer AW2000h-AW170h F1 (Intel Xeon E5603, 1.60GHz)

$SPECfp®\_rate2006 =$ 112

$SPECfp\_rate\_base2006 =$ 107
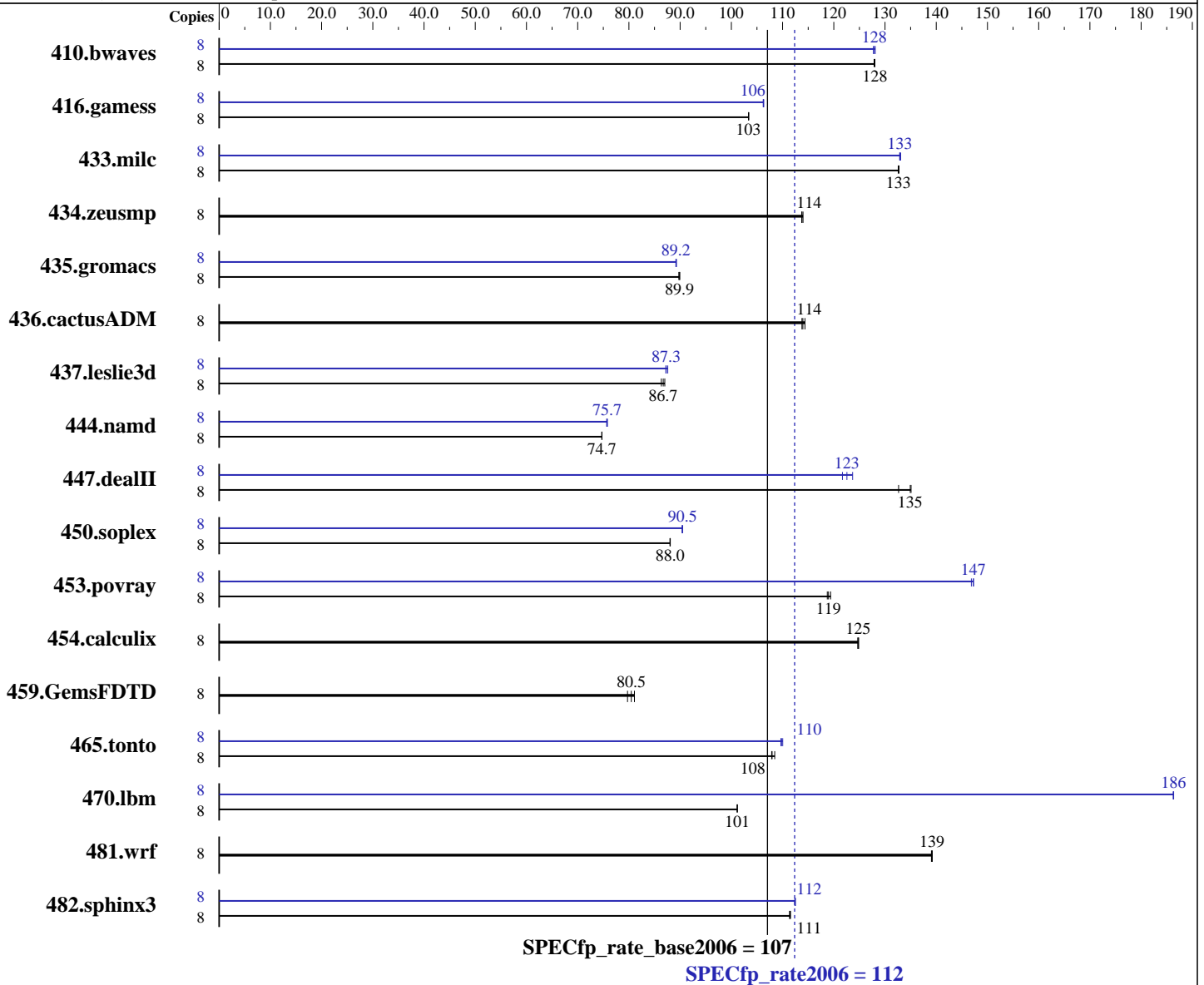
**CPU2006 license:** 97
**Test sponsor:** Acer Incorporated
**Tested by:** Acer Incorporated

**Test date:** Jun-2011
**Hardware Availability:** Feb-2011
**Software Availability:** Jan-2011



SPECfp_rate_base2006 = 107

SPECfp_rate2006 = 112

## Hardware

CPU Name: Intel Xeon E5603
CPU Characteristics:
CPU MHz: 1600
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: SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-default
Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
Auto Parallel: No
File System: ReiserFS
System State: Run level 3 (multi-user)
Base Pointers: 64-bit

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| L3 Cache: | 4 MB I+D on chip per chip | Peak Pointers: | 32/64-bit |
|---|---|---|---|
| Other Cache: | None | Other Software: | None |
| Memory: | 48 GB (12 x 4 GB 2Rx8 PC3-10600R-9, ECC) | | |
| Disk Subsystem: | 1 x 1000 GB SATA 7200RPM | | |
| Other Hardware: | None | | |

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | 849 | 128 | **849** | **128** | 850 | 128 | 8 | 849 | 128 | 851 | 128 | **850** | **128** |
| 416.gamess | 8 | **1515** | **103** | 1516 | 103 | 1515 | 103 | 8 | 1475 | 106 | 1473 | 106 | **1474** | **106** |
| 433.milc | 8 | 553 | 133 | **554** | **133** | 554 | 133 | 8 | 552 | 133 | **553** | **133** | 553 | 133 |
| 434.zeusmp | 8 | 639 | 114 | **640** | **114** | 640 | 114 | 8 | 639 | 114 | **640** | **114** | 640 | 114 |
| 435.gromacs | 8 | 636 | 89.7 | 635 | 89.9 | **635** | **89.9** | 8 | **640** | **89.2** | 640 | 89.3 | 641 | 89.2 |
| 436.cactusADM | 8 | **839** | **114** | 836 | 114 | 840 | 114 | 8 | **839** | **114** | 836 | 114 | 840 | 114 |
| 437.leslie3d | 8 | 871 | 86.3 | **867** | **86.7** | 864 | 87.0 | 8 | 859 | 87.6 | **861** | **87.3** | 862 | 87.2 |
| 444.namd | 8 | 859 | 74.7 | 859 | 74.7 | **859** | **74.7** | 8 | **847** | **75.7** | 846 | 75.8 | 848 | 75.7 |
| 447.dealII | 8 | **678** | **135** | 690 | 133 | 677 | 135 | 8 | 752 | 122 | **747** | **123** | 740 | 124 |
| 450.soplex | 8 | 757 | 88.1 | **758** | **88.0** | 758 | 88.0 | 8 | 738 | 90.4 | 737 | 90.5 | **738** | **90.5** |
| 453.povray | 8 | **358** | **119** | 357 | 119 | 358 | 119 | 8 | **289** | **147** | 290 | 147 | 289 | 147 |
| 454.calculix | 8 | 529 | 125 | **529** | **125** | 529 | 125 | 8 | 529 | 125 | **529** | **125** | 529 | 125 |
| 459.GemsFDTD | 8 | **1055** | **80.5** | 1047 | 81.1 | 1065 | 79.7 | 8 | **1055** | **80.5** | 1047 | 81.1 | 1065 | 79.7 |
| 465.tonto | 8 | 730 | 108 | 726 | 108 | **729** | **108** | 8 | 715 | 110 | 718 | 110 | **717** | **110** |
| 470.lbm | 8 | 1087 | 101 | **1087** | **101** | 1087 | 101 | 8 | 590 | 186 | 590 | 186 | **590** | **186** |
| 481.wrf | 8 | 642 | 139 | **642** | **139** | 643 | 139 | 8 | 642 | 139 | **642** | **139** | 643 | 139 |
| 482.sphinx3 | 8 | **1399** | **111** | 1398 | 112 | 1400 | 111 | 8 | **1387** | **112** | 1387 | 112 | 1386 | 113 |

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

## Submit Notes

    The config file option 'submit' was used.
     numactl was used to bind copies to the cores

## Operating System Notes

    'ulimit -s unlimited' was used to set environment stack size
    Large pages were disabled for this run

## Platform Notes

    BIOS Settings:
    Fan speed = full speed (Default = Balanced)
    Data Reuse = Disabled (Default = Enabled)

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## General Notes

```
Binaries compiled on RHEL5.5

 The Acer AW2000h-AW170h F1, Gateway GW2000h-GW170h F1, Acer AW2000ht-AW170ht F1  and Gateway GW2000ht-GW170ht F1
  are electronically equivalent.  This result was measured on Gateway GW2000ht-GW170ht F1.
```

## 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:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

C++ benchmarks:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

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## Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias
```

## 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`
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`

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# Peak Optimization Flags

C benchmarks:

> 433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

> 470.lbm: -xSSE4.2(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
> -ansi-alias -opt-prefetch -static -auto-ilp32

> 482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

> 444.namd: -xSSE4.2(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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

> 450.soplex: -xSSE4.2(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
> -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

> 453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
> -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

> 410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -static

> 416.gamess: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div
> -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

> 465.tonto: -xSSE4.2(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
> -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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# Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
435.gromacs: -xSSE4.2(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

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Acer-Intel-Linux-Settings-flags.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Acer-Intel-Linux-Settings-flags.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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