SPEC® CFP2006 Result
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Acer Incorporated

Acer AT350 F2 (Xeon E5-2640)

$SPECfp^{®}2006 =$ 73.5

$SPECfp\_base2006 =$ 69.9
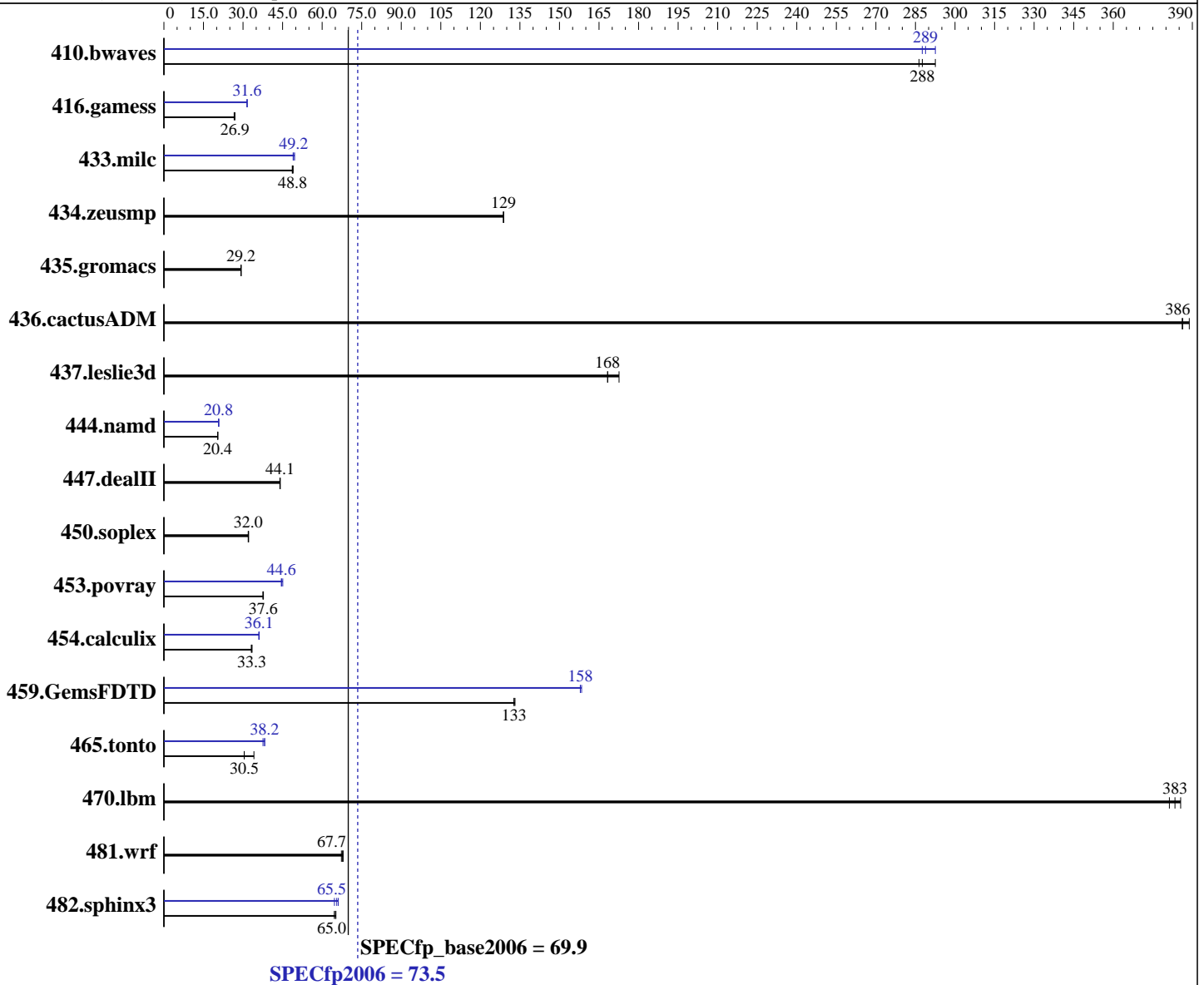
CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: May-2012
Hardware Availability: May-2012
Software Availability: Oct-2011

Benchmark	Value
410.bwaves	289 / 288
416.gamess	31.6 / 26.9
433.milc	49.2 / 48.8
434.zeusmp	129
435.gromacs	29.2
436.cactusADM	386
437.leslie3d	168
444.namd	20.8 / 20.4
447.dealII	44.1
450.soplex	32.0
453.povray	44.6 / 37.6
454.calculix	36.1 / 33.3
459.GemsFDTD	158 / 133
465.tonto	38.2 / 30.5
470.lbm	383
481.wrf	67.7
482.sphinx3	65.5 / 65.0

SPECfp_base2006 = 69.9
SPECfp2006 = 73.5

Hardware

CPU Name: Intel Xeon E5-2640
CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz: 2500
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.1 2.6.32-131.0.15.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: ext3
System State: Run level 3 (multi-user)

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L3 Cache:	15 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 2 TB SAS, 7200 RPM
Other Hardware:	None
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	46.5	293	**47.3**	**288**	47.5	286	46.5	293	47.3	288	**47.1**	**289**
416.gamess	735	26.6	728	26.9	**729**	**26.9**	620	31.6	**620**	**31.6**	622	31.5
433.milc	187	49.0	**188**	**48.8**	189	48.7	**187**	**49.2**	185	49.6	187	49.0
434.zeusmp	70.7	129	70.7	129	**70.7**	**129**	70.7	129	70.7	129	**70.7**	**129**
435.gromacs	**244**	**29.2**	244	29.3	244	29.2	**244**	**29.2**	244	29.3	244	29.2
436.cactusADM	**30.9**	**386**	30.7	389	30.9	386	**30.9**	**386**	30.7	389	30.9	386
437.leslie3d	**55.9**	**168**	54.5	173	55.9	168	**55.9**	**168**	54.5	173	55.9	168
444.namd	393	20.4	393	20.4	**393**	**20.4**	386	20.8	386	20.8	**386**	**20.8**
447.dealII	**260**	**44.1**	259	44.1	260	44.0	**260**	**44.1**	259	44.1	260	44.0
450.soplex	260	32.1	261	32.0	**261**	**32.0**	260	32.1	261	32.0	**261**	**32.0**
453.povray	**141**	**37.6**	141	37.7	142	37.6	**119**	**44.6**	118	45.1	119	44.5
454.calculix	247	33.4	249	33.1	**247**	**33.3**	229	36.0	**228**	**36.1**	228	36.1
459.GemsFDTD	79.9	133	79.7	133	**79.9**	**133**	67.2	158	**67.2**	**158**	67.0	158
465.tonto	323	30.4	**323**	**30.5**	288	34.1	258	38.2	**258**	**38.2**	262	37.6
470.lbm	35.6	386	36.0	381	**35.8**	**383**	35.6	386	36.0	381	**35.8**	**383**
481.wrf	164	68.0	**165**	**67.7**	166	67.3	164	68.0	**165**	**67.7**	166	67.3
482.sphinx3	**300**	**65.0**	302	64.6	299	65.2	**297**	**65.5**	295	66.1	301	64.7

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

```
Sysinfo program /usr/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Fri May 11 14:20:32 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 E5-2640 0 @ 2.50GHz
```

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Platform Notes (Continued)

```
      2 "physical id"s (chips)
     24 "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
      physical 1: cores 0 1 2 3 4 5
   cache size : 15360 KB

 From /proc/meminfo
    MemTotal:       132140812 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.1 (Santiago)

 From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
    Linux localhost.localdomain 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10
    15:42:40 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 May 11 14:18 last=5

 SPEC is set to: /usr/cpu2006
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/mapper/VolGroup-lv_root
                   ext3    962G   84G  830G  10% /

 Additional information from dmidecode:
   Memory:
    8x Hynix Semiconductor HMT31GR7BFR4A-H9 8 GB 1333 MHz 1 rank
    8x Hynix Semiconductor HMT31GR7CFR4A-H9 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,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "12"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

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General Notes (Continued)

```
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.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
```

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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:

Continued on next page

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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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