



SPEC[®] CFP2006 Result

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Acer Incorporated
Acer AR360 F2 (Xeon E5-2640)

SPECfp[®]_rate2006 = 370

SPECfp_rate_base2006 = 362

CPU2006 license: 97

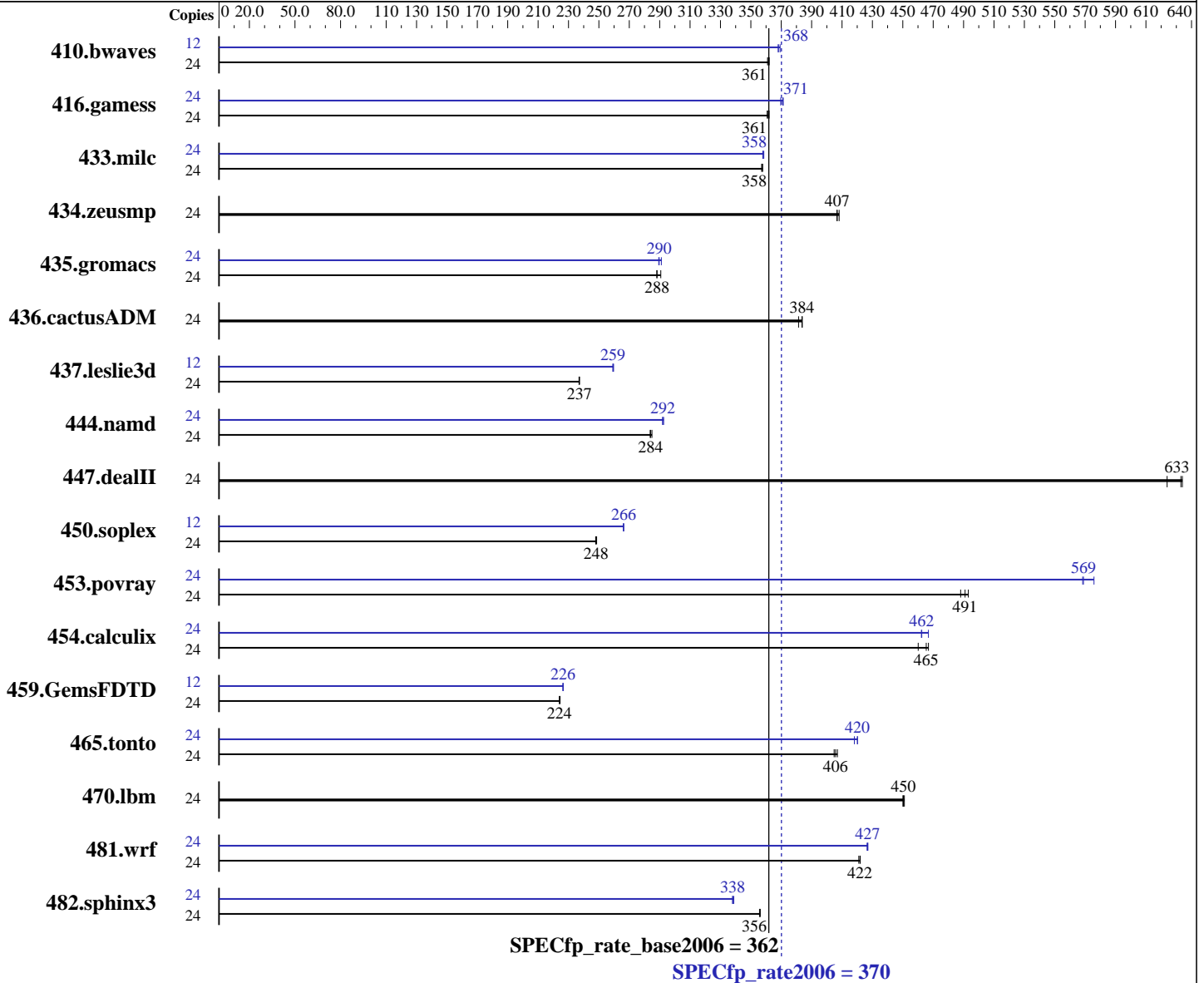
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: May-2012

Hardware Availability: May-2012

Software Availability: Oct-2011



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

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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: No
 File System: ext4
 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: 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	24	901	362	<u>902</u>	<u>361</u>	903	361	12	443	368	442	369	<u>443</u>	<u>368</u>
416.gamess	24	<u>1302</u>	<u>361</u>	1298	362	1303	361	24	<u>1267</u>	<u>371</u>	1271	370	1266	371
433.milc	24	617	357	<u>616</u>	<u>358</u>	616	358	24	614	359	<u>615</u>	<u>358</u>	616	358
434.zeusmp	24	<u>537</u>	<u>407</u>	535	408	537	407	24	<u>537</u>	<u>407</u>	535	408	537	407
435.gromacs	24	589	291	<u>594</u>	<u>288</u>	595	288	24	589	291	592	289	<u>592</u>	<u>290</u>
436.cactusADM	24	<u>748</u>	<u>384</u>	747	384	752	381	24	<u>748</u>	<u>384</u>	747	384	752	381
437.leslie3d	24	951	237	<u>951</u>	<u>237</u>	952	237	12	434	260	<u>435</u>	<u>259</u>	435	259
444.namd	24	678	284	676	285	<u>678</u>	<u>284</u>	24	658	293	659	292	<u>659</u>	<u>292</u>
447.dealII	24	<u>434</u>	<u>633</u>	433	634	440	624	24	<u>434</u>	<u>633</u>	433	634	440	624
450.soplex	24	805	249	808	248	<u>807</u>	<u>248</u>	12	376	266	<u>376</u>	<u>266</u>	376	266
453.povray	24	259	493	262	488	<u>260</u>	<u>491</u>	24	<u>224</u>	<u>569</u>	225	568	222	576
454.calculix	24	430	460	424	467	<u>425</u>	<u>465</u>	24	424	467	428	462	<u>428</u>	<u>462</u>
459.GemsFDTD	24	<u>1136</u>	<u>224</u>	1134	224	1137	224	12	<u>562</u>	<u>226</u>	562	227	563	226
465.tonto	24	<u>582</u>	<u>406</u>	580	407	583	405	24	<u>562</u>	<u>420</u>	562	420	565	418
470.lbm	24	731	451	733	450	<u>732</u>	<u>450</u>	24	731	451	733	450	<u>732</u>	<u>450</u>
481.wrf	24	637	421	<u>636</u>	<u>422</u>	635	422	24	629	426	628	427	<u>628</u>	<u>427</u>
482.sphinx3	24	1313	356	1315	356	<u>1314</u>	<u>356</u>	24	<u>1384</u>	<u>338</u>	1381	339	1384	338

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
running on r380f2 Wed May 9 23:05:29 2012

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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      : Intel(R) Xeon(R) CPU E5-2640 0 @ 2.50GHz
 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:      132140584 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 r380f2 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 9 10:38

SPEC is set to: /usr/cpu2006

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_r380f2-lv_root
ext4            962G    66G  847G   8% /
```

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)



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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"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
The Acer AR360 F2 and AR380 F2 are electronically equivalent.
This result was measured on Acer AR380 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.deall: -DSPEC_CPU_LP64
```

```
453.povray: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

454.calculix: -DSPEC_CPU_LP64 -nofor_main
 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) -prof-use(pass 2) -static -auto-ilp32
 -opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

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

447.dealIII: basepeak = yes

450.soplex: -xAVX(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

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(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

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Peak Optimization Flags (Continued)

465.tonto: -xAVX(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

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) -prof-use(pass 2) -opt-prefetch
-static -auto-ilp32 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

481.wrf: Same as 454.calculix

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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