SPEC® CFP2006 Result

ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

$SPECfp^{®}\_rate2006 = 260$

$SPECfp\_rate\_base2006 = 258$
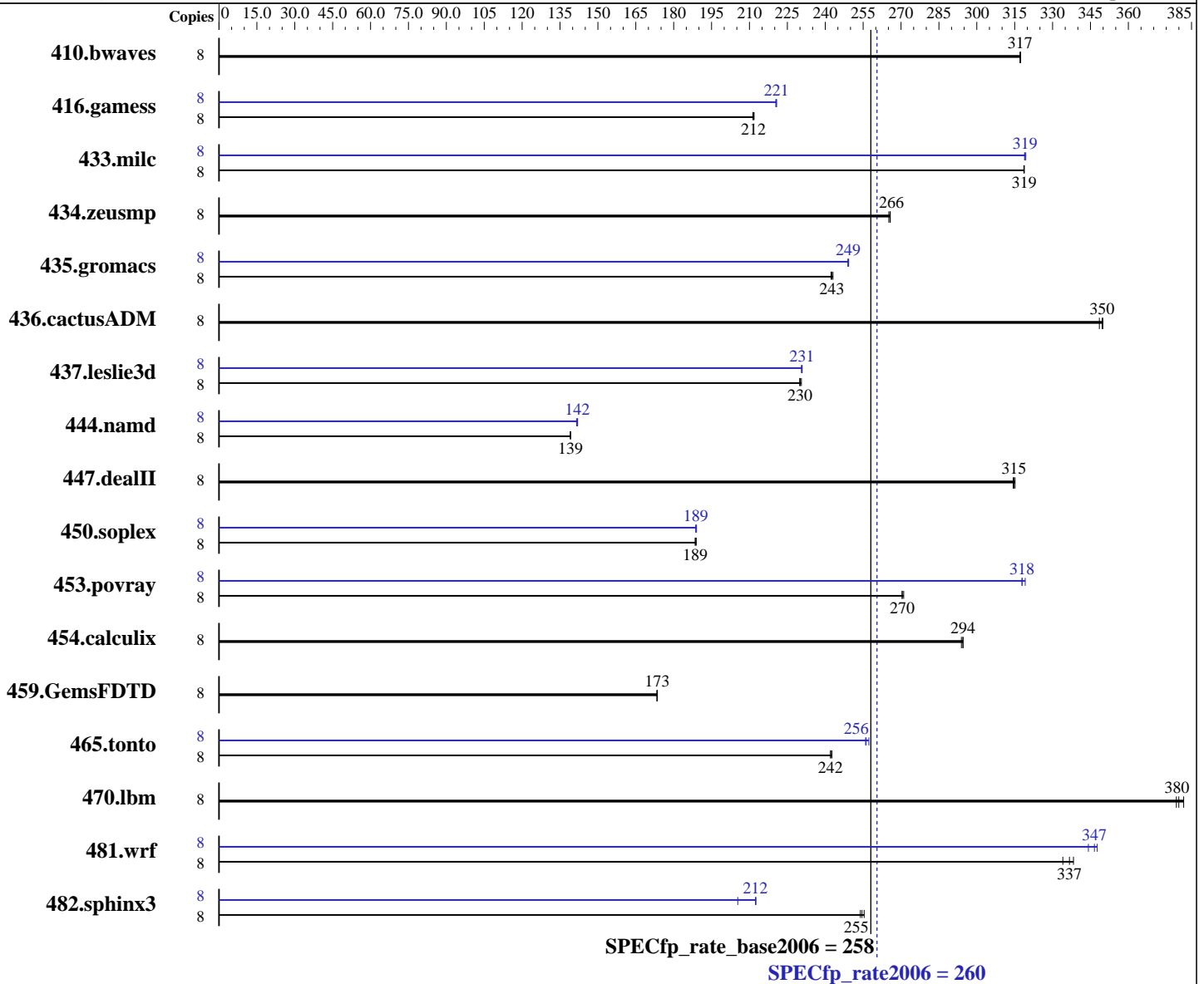
CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Apr-2014

Hardware Availability: Oct-2013

Software Availability: Sep-2013

SPECfp_rate_base2006 = 258

SPECfp_rate2006 = 260

Hardware

CPU Name:	Intel Xeon E5-2609 v2
CPU Characteristics:	
CPU MHz:	2500
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 6.4 (Santiago)
	2.6.32-358.11.1.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
	Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4

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SPEC CFP2006 Result
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ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp_rate2006 =   260

SPECfp_rate_base2006 =   258

CPU2006 license: 9008	**Test date:** Apr-2014
Test sponsor: ACTION S.A.	**Hardware Availability:** Oct-2013
Tested by: ACTION S.A.	**Software Availability:** Sep-2013

L3 Cache:	10 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x 240 GB SATA II SSD		
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	**343**	**317**	343	317	343	317	8	**343**	**317**	343	317	343	317
416.gamess	8	741	211	**740**	**212**	739	212	8	710	221	711	220	**710**	**221**
433.milc	8	230	319	**230**	**319**	230	319	8	**230**	**319**	230	319	230	319
434.zeusmp	8	**274**	**266**	274	266	275	265	8	**274**	**266**	274	266	275	265
435.gromacs	8	**235**	**243**	235	243	236	242	8	229	249	229	249	**229**	**249**
436.cactusADM	8	273	350	274	349	**273**	**350**	8	273	350	274	349	**273**	**350**
437.leslie3d	8	326	231	**327**	**230**	327	230	8	326	231	**326**	**231**	326	231
444.namd	8	**461**	**139**	461	139	461	139	8	452	142	**452**	**142**	453	142
447.dealII	8	**291**	**315**	291	314	290	315	8	**291**	**315**	291	314	290	315
450.soplex	8	354	189	**354**	**189**	353	189	8	353	189	**353**	**189**	353	189
453.povray	8	**157**	**270**	157	271	157	270	8	134	318	133	319	**134**	**318**
454.calculix	8	224	295	225	294	**224**	**294**	8	224	295	225	294	**224**	**294**
459.GemsFDTD	8	490	173	489	174	**489**	**173**	8	490	173	489	174	**489**	**173**
465.tonto	8	324	243	325	242	**325**	**242**	8	308	256	306	257	**307**	**256**
470.lbm	8	288	382	**289**	**380**	290	379	8	288	382	**289**	**380**	290	379
481.wrf	8	267	334	264	338	**265**	**337**	8	260	344	**258**	**347**	257	348
482.sphinx3	8	**613**	**255**	610	255	614	254	8	733	213	**734**	**212**	759	205

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"

SPEC CFP2006 Result

ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp_rate2006 =   260

SPECfp_rate_base2006 =   258

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Apr-2014

Hardware Availability: Oct-2013

Software Availability: Sep-2013

Platform Notes

```
Bios Settings
Power Technology = Custom
Energy Performance = Performance
Turbo Mode = Enabled
C1E Support = Disabled
CPU C3 Report = Disabled
CPU C6 Report = Disabled
Package C State Limit = No Limit

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Fri Apr  4 00:46:36 2014

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 E5-2609 v2 @ 2.50GHz
      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:      132128584 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux localhost.localdomain 2.6.32-358.11.1.el6.x86_64 #1 SMP Tue Nov 19
   17:43:04 CET 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 3 15:28

SPEC is set to: /cpu2006.1.2
   Filesystem     Type     Size   Used Avail Use% Mounted on
```

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SPEC CFP2006 Result

ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

$SPECfp\_rate2006 =$ 260

$SPECfp\_rate\_base2006 =$ 258

CPU2006 license: 9008
Test sponsor: ACTION S.A.
Tested by: ACTION S.A.

Test date: Apr-2014
Hardware Availability: Oct-2013
Software Availability: Sep-2013

Platform Notes (Continued)

```
    /dev/sda1     ext4    193G    69G  115G  38% /

  Additional information from dmidecode:
    BIOS American Megatrends Inc. 3.0a 02/13/2014
    Memory:
    16x   8 GB
    14x Hynix Semiconducto HMT31GR7EFR4C 8 GB 1333 MHz 2 rank
    2x Hynix Semiconductor HMT31GR7EFR4C- 8 GB 1333 MHz 2 rank

  (End of data from sysinfo program)
  dmidecode does not properly detect memory modules
  16 modules of 8 GB were used to run the test (128 GB total)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006.1.2/libs/32:/cpu2006.1.2/libs/64:/cpu2006.1.2/sh"

  Transparent Huge Pages enabled with:
  echo always > /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>
  Binaries compiled on a system with 2x Xeon E5-2650 v2 chips + 256 GB memory
  using RedHat EL 6.4
```

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
```

ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp_rate2006 =   260

SPECfp_rate_base2006 =   258

CPU2006 license: 9008　　　　　　　　　　　　　　　　　　　**Test date:**　　Apr-2014
Test sponsor:　ACTION S.A.　　　　　　　　　　　　　**Hardware Availability:** Oct-2013
Tested by:　　ACTION S.A.　　　　　　　　　　　　　**Software Availability:** Sep-2013

Base Portability Flags (Continued)

```
  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 -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

C++ benchmarks:

```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch
```

Benchmarks using both Fortran and C:

```
-xAVX -ipo -O3 -no-prec-div -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
```

SPEC CFP2006 Result
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ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp_rate2006 = 260

SPECfp_rate_base2006 = 258

CPU2006 license: 9008
Test sponsor: ACTION S.A.
Tested by: ACTION S.A.

Test date: Apr-2014
Hardware Availability: Oct-2013
Software Availability: Sep-2013

Peak Compiler Invocation (Continued)

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
```

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

   470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
            -unroll2
```

C++ benchmarks:

```
  444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
            -prof-use(pass 2) -fno-alias -auto-ilp32

 447.dealII: basepeak = yes

 450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
            -prof-use(pass 2) -opt-malloc-options=3
```

Continued on next page

ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp_rate2006 =   260

SPECfp_rate_base2006 =   258

CPU2006 license:	9008	**Test date:**	Apr-2014
Test sponsor:	ACTION S.A.	**Hardware Availability:**	Oct-2013
Tested by:	ACTION S.A.	**Software Availability:**	Sep-2013

Peak Optimization Flags (Continued)

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

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

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevB-apr-2014-For-Supermicro-Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevB-apr-2014-For-Supermicro-Platform.xml

ACTION S.A.

ACTINA SOLAR 222 S5 (Intel Xeon E5-2609 v2, 2.50 GHz)

$SPECfp\_rate2006 =$ 260

$SPECfp\_rate\_base2006 =$ 258

CPU2006 license: 9008
Test sponsor: ACTION S.A.
Tested by: ACTION S.A.

Test date: Apr-2014
Hardware Availability: Oct-2013
Software Availability: Sep-2013

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

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