**SPEC® CFP2006 Result**

**ACTION S.A.**

ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)  

| SPECfp®_rate2006 = 824 | SPECfp_rate_base2006 = 802 |

**CPU2006 license:** 9008  
**Test sponsor:** ACTION S.A.  
**Tested by:** ACTION S.A.  
**Test date:** Sep-2016  
**Software Availability:** Mar-2016

**Hardware**

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**Software**

**Operating System:** Red Hat Enterprise Linux Server release 7.2 (Maipo)  
**Compiler:** C/C++: Version 16.0.3.210 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.3.210 of Intel Fortran Studio XE for Linux  
**Auto Parallel:** No  
**File System:** ext4

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**SPEC CFP2006 Result**

**ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)**

**SPECfp_rate2006 = 824**
**SPECfp_rate_base2006 = 802**

**CPU2006 license:** 9008
**Test date:** Sep-2016
**Test sponsor:** ACTION S.A.
**Hardware Availability:** Mar-2016
**Tested by:** ACTION S.A.
**Software Availability:** Mar-2016

**L3 Cache:** 30 MB I+D on chip per chip
**System State:** Run level 3 (multi-user)
**Other Cache:** None
**Base Pointers:** 32/64-bit
**Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
**Peak Pointers:** 32/64-bit
**Disk Subsystem:** 1 x 240 GB SATA II SSD
**Other Hardware:** None
**Other Software:** None

### Results Table

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</tbody>
</table>

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

**Bios Settings:**
Intel(R) Hyper-Threading Tech = Enabled
ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECfp_rate2006 = 824
SPECfp_rate_base2006 = 802

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

Test date: Sep-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016

Platform Notes (Continued)

Power & Performance = Performance
Enforce POR = Disabled
Memory Operating Speed Selection = Auto
Cluster-on-Die = Enabled
Set FAN Profile = Performance
Fan PWM Offset = 0

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on SUT Thu Sep 15 21:58:59 2016

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 E5-2650 v4 @ 2.20GHz
  2 "physical id"s (chips)
  48 "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 : 12
siblings : 24
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 15360 KB

From /proc/meminfo
MemTotal:       263857684 kB
HugePages_Total:       1
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
os-release.rpmsave:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"

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SPEC CFP2006 Result

ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECfp_rate2006 = 824
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CPU2006 license: 9008
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Platform Notes (Continued)

redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:
   Linux SUT 3.10.0-327.18.2.el7.x86_64 #2 SMP Wed Jun 1 17:37:13 CEST 2016
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 13 14:20
SPEC is set to: /cpu2006.1.2

Filesystem     Type  Size  Used  Avail  Use%  Mounted on
/dev/sda1      ext4  212G  118G   84G  59%  /

Additional information from dmidecode:
   BIOS Intel Corporation SE5C610.86B.11.01.0136.062220161656 06/22/2016
   Memory:
      16x  16 GB
      16x Hynix HMA42GR7AFR4N-UH 16 GB 2400 MHz 2 rank
      8x NO DIMM NO DIMM

(End of data from sysinfo program)
   dmidecode does not properly detect memory modules
   16 modules of 16 GB were used to run the test (256 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 numacl i.e.:
   numacl --interleave=all runspec <etc>
   Binaries compiled on a system with 2x Xeon E5-2650 v4 chips + 256 GB memory
   using RedHat EL 7.2

Base Compiler Invocation

C benchmarks:
   icc  -m64

C++ benchmarks:
   icpc  -m64

Fortran benchmarks:
   ifort -m64

Continued on next page
SPEC CFP2006 Result

ACTION S.A.
ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)

SPECfp_rate2006 = 824
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Base Compiler Invocation (Continued)

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:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
  -ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
  -ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
  -ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:
  icc   -m64

Continued on next page
Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):

```
icpc -m64
```

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/lib/ia32_lin

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
482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

```
433.milc: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3 -unroll2

C++ benchmarks:
ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)

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

SPEC CFP2006 Result

SPECfp_rate2006 = 824
SPECfp_rate_base2006 = 802

Peak Optimization Flags (Continued)

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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: -xCORE-AVX2 -ipo -03 -no-prec-div -auto-ilp32
## SPEC CFP2006 Result

### ACTION S.A.

**ACTINA SOLAR 220 X6 (Intel Xeon E5-2650 v4, 2.20 GHz)**

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**CPU2006 license:** 9008  
**Test sponsor:** ACTION S.A.  
**Tested by:** ACTION S.A.  
**Test date:** Sep-2016  
**Hardware Availability:** Mar-2016  
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You can also download the XML flags sources by saving the following links:


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For other inquiries, please contact webmaster@spec.org.

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