SPEC® CFP2006 Result

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

$SPECfp^®2006 =$ 111

$SPECfp\_base2006 =$ 106

CPU2006 license: 9008		**Test date:**	Mar-2017
Test sponsor:	ACTION S.A.	**Hardware Availability:**	Mar-2016
Tested by:	ACTION S.A.	**Software Availability:**	Mar-2016

SPECfp_base2006 = 106

SPECfp2006 = 111

Hardware

CPU Name:	Intel Xeon E5-2640 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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 7.2 (Maipo)
	3.10.0-327.18.2.el7.x86_64
Compiler:	C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux;
	Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux
Auto Parallel:	Yes
File System:	ext4

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

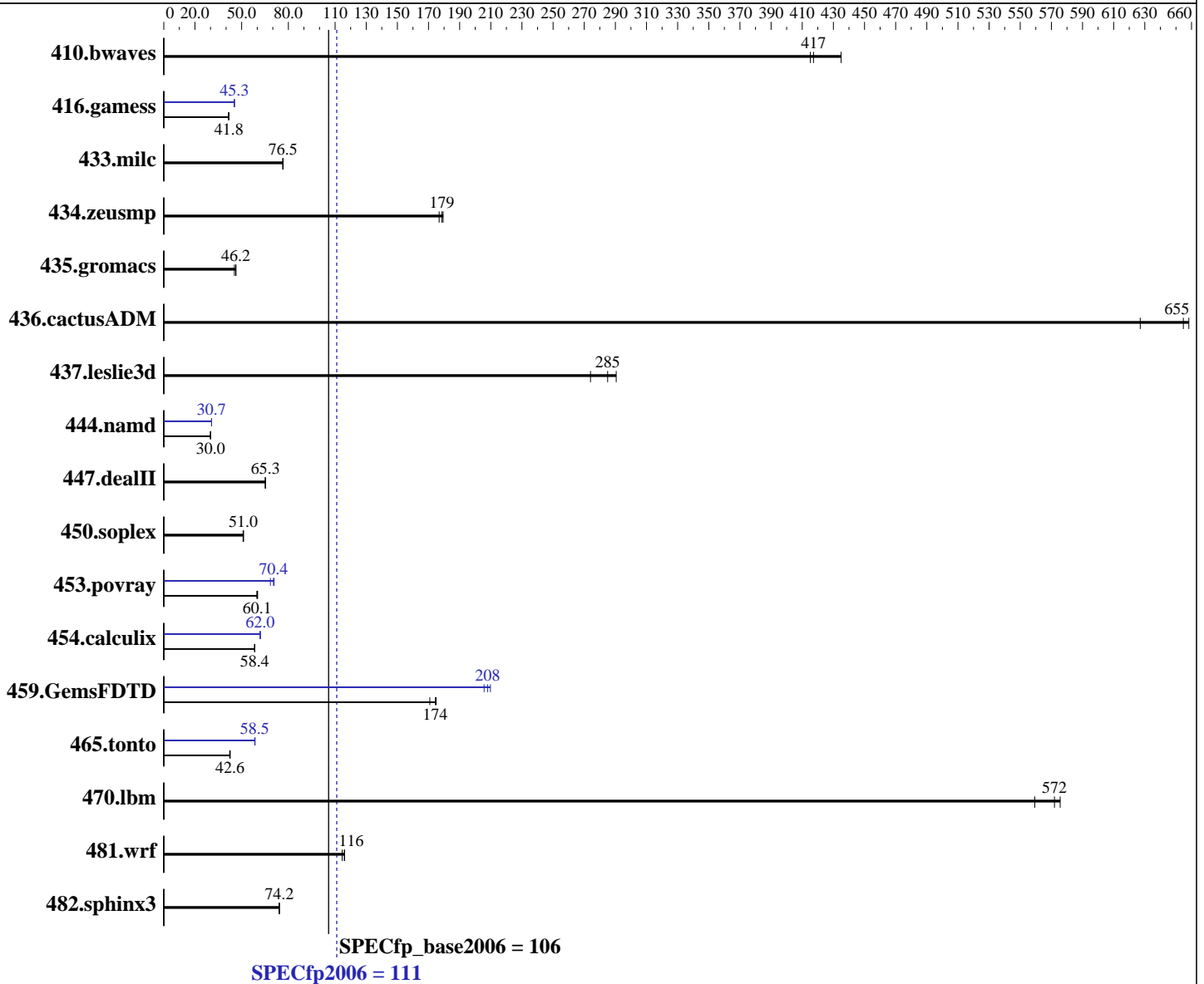|	
SPECfp2006 =	111
SPECfp_base2006 =	106

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

Test date: Mar-2017
Hardware Availability: Mar-2016
Software Availability: Mar-2016

L3 Cache:	25 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	512 GB (16 x 32 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)	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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**32.6**	**417**	32.7	415	31.2	435	**32.6**	**417**	32.7	415	31.2	435
416.gamess	469	41.8	**469**	**41.8**	471	41.6	**432**	**45.3**	432	45.4	432	45.3
433.milc	120	76.4	120	76.6	**120**	**76.5**	120	76.4	120	76.6	**120**	**76.5**
434.zeusmp	**50.9**	**179**	50.7	179	51.5	177	**50.9**	**179**	50.7	179	51.5	177
435.gromacs	**155**	**46.2**	154	46.4	157	45.3	**155**	**46.2**	154	46.4	157	45.3
436.cactusADM	**18.3**	**655**	18.2	658	19.1	627	**18.3**	**655**	18.2	658	19.1	627
437.leslie3d	32.4	291	34.3	274	**33.0**	**285**	32.4	291	34.3	274	**33.0**	**285**
444.namd	268	30.0	**267**	**30.0**	267	30.0	**261**	**30.7**	261	30.7	262	30.7
447.dealII	175	65.3	**175**	**65.3**	175	65.2	175	65.3	**175**	**65.3**	175	65.2
450.soplex	163	51.2	164	50.9	**163**	**51.0**	163	51.2	164	50.9	**163**	**51.0**
453.povray	89.0	59.7	88.3	60.3	**88.6**	**60.1**	**75.6**	**70.4**	77.7	68.5	75.1	70.9
454.calculix	141	58.4	142	58.3	**141**	**58.4**	133	62.0	**133**	**62.0**	133	61.8
459.GemsFDTD	62.1	171	**60.9**	**174**	60.7	175	51.6	206	50.6	210	**51.0**	**208**
465.tonto	233	42.3	**231**	**42.6**	231	42.6	168	58.6	**168**	**58.5**	168	58.4
470.lbm	24.6	559	23.9	576	**24.0**	**572**	24.6	559	23.9	576	**24.0**	**572**
481.wrf	96.3	116	97.5	115	**96.4**	**116**	96.3	116	97.5	115	**96.4**	**116**
482.sphinx3	**263**	**74.2**	263	74.2	263	74.1	**263**	**74.2**	263	74.2	263	74.1

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

    Bios Settings
    Hyper-Threading (All) = Disable
    Power Technology = Energy Efficient
    Enforce POR = Disabled
    Memory Frequency = 2133
    COD Enable = Disable

    BMC Setting

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

$SPECfp2006 =$ 111

$SPECfp\_base2006 =$ 106

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

Test date: Mar-2017
Hardware Availability: Mar-2016
Software Availability: Mar-2016

Platform Notes (Continued)

```
Fan Mode = Full Speed

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on SUT Tue Mar  7 22:05:27 2017

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 v4 @ 2.40GHz
      2 "physical id"s (chips)
      20 "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 : 10
      siblings  : 10
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
   cache size : 25600 KB

From /proc/meminfo
   MemTotal:       528085180 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"
   redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server

uname -a:
```

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

SPECfp2006 = 111

SPECfp_base2006 = 106

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

Test date: Mar-2017
Hardware Availability: Mar-2016
Software Availability: Mar-2016

Platform Notes (Continued)

```
    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 Mar 7 17:11

  SPEC is set to: /cpu2006.1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda1       ext4  212G   81G  120G  41% /
  Additional information from dmidecode:

    Warning: Use caution when you interpret this section. The 'dmidecode' program
    reads system data which is "intended to allow hardware to be accurately
    determined", but the intent may not be met, as there are frequent changes to
    hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS American Megatrends Inc. 2.0 12/17/2015
  Memory:
    16x Hynix Semiconductor HMA84GR7AFR4N-UH 32 GB 2 rank 2400 MHz, configured at
    2133 MHz

 (End of data from sysinfo program)
 16 modules of 32 GB were used to run the test (512 GB total)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/cpu2006.1.2/libs/32:/cpu2006.1.2/libs/64:/cpu2006.1.2/sh10.2"
OMP_NUM_THREADS = "20"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 Transparent Huge Pages enabled by default.
```

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

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

SPECfp2006 = 111

SPECfp_base2006 = 106

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

Test date: Mar-2017
Hardware Availability: Mar-2016
Software Availability: Mar-2016

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 -parallel -qopt-prefetch
```

C++ benchmarks:

```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
```

Fortran benchmarks:

```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
```

Benchmarks using both Fortran and C:

```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
```

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
```

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

$SPECfp2006 =$ 111

$SPECfp\_base2006 =$ 106

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

Test date: Mar-2017
Hardware Availability: Mar-2016
Software Availability: Mar-2016

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

    433.milc: basepeak = yes

    470.lbm: basepeak = yes

    482.sphinx3: basepeak = yes

C++ benchmarks:

    444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -fno-alias -auto-ilp32

    447.dealII: basepeak = yes

    450.soplex: basepeak = yes

    453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

    410.bwaves: basepeak = yes

    416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-

    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

  459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -unroll2 -inline-level=0
        -qopt-prefetch -parallel

    465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
        -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -inline-calloc -qopt-malloc-options=3
        -auto -unroll4

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2640 v4, 2.40 GHz)

SPECfp2006 =   111

SPECfp_base2006 =   106

CPU2006 license: 9008	**Test date:** Mar-2017
Test sponsor: ACTION S.A.	**Hardware Availability:** Mar-2016
Tested by: ACTION S.A.	**Software Availability:** Mar-2016

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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-ic17.0-official-linux64.html
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevD-aug-2015-For-Supermicro-Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevD-aug-2015-For-Supermicro-Platform.xml

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

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Apr 19 10:59:49 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 18 April 2017.