



SPEC® CFP2006 Result

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ACTION S.A.

ACTINA SOLAR 112 S6 (Intel Xeon E3-1220 v3, 3.10 GHz)

SPECfp®_rate2006 = 139

SPECfp_rate_base2006 = 137

CPU2006 license: 9008

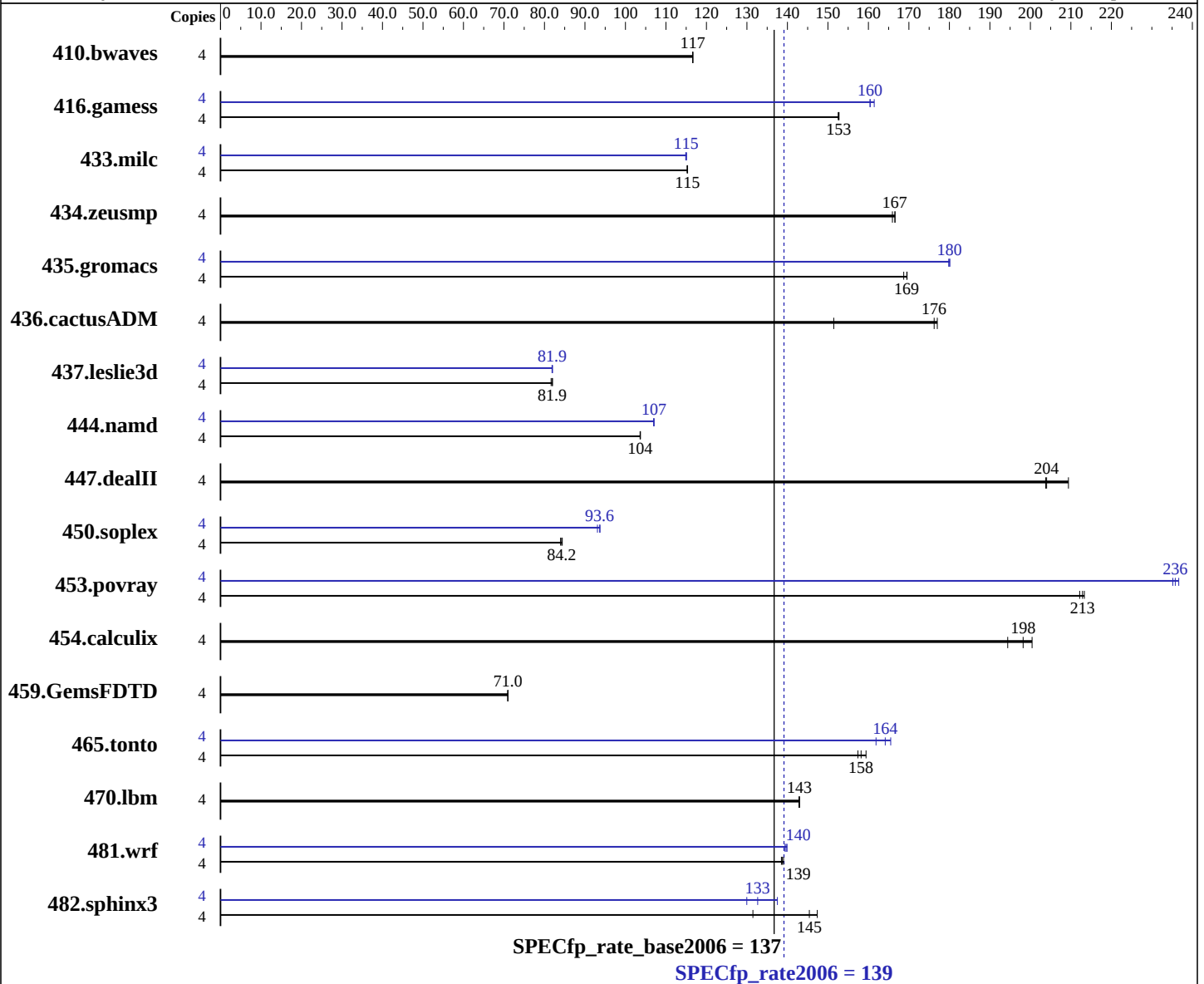
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: May-2014

Hardware Availability: Oct-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E3-1220 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz: 3100
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
CPU(s) orderable: 1 chip
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 6.4 (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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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)
Disk Subsystem: 1 x 240 GB SATA II SSD
Other Hardware: None

System State: Run level 3 (multi-user)
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	4	466	117	<u>466</u>	<u>117</u>	466	117	4	466	117	<u>466</u>	<u>117</u>	466	117
416.gamess	4	513	153	<u>513</u>	<u>153</u>	513	153	4	488	160	485	161	<u>488</u>	<u>160</u>
433.milc	4	318	115	319	115	<u>318</u>	<u>115</u>	4	319	115	<u>319</u>	<u>115</u>	320	115
434.zeusmp	4	219	167	<u>219</u>	<u>167</u>	219	166	4	219	167	<u>219</u>	<u>167</u>	219	166
435.gromacs	4	169	169	168	170	<u>169</u>	<u>169</u>	4	159	180	<u>159</u>	<u>180</u>	159	180
436.cactusADM	4	270	177	<u>271</u>	<u>176</u>	316	151	4	270	177	<u>271</u>	<u>176</u>	316	151
437.leslie3d	4	<u>459</u>	<u>81.9</u>	459	82.0	461	81.6	4	459	81.9	<u>459</u>	<u>81.9</u>	459	82.0
444.namd	4	<u>310</u>	<u>104</u>	309	104	310	104	4	300	107	<u>300</u>	<u>107</u>	300	107
447.dealII	4	225	204	<u>224</u>	<u>204</u>	219	209	4	225	204	<u>224</u>	<u>204</u>	219	209
450.soplex	4	397	84.0	395	84.4	<u>396</u>	<u>84.2</u>	4	358	93.1	<u>356</u>	<u>93.6</u>	356	93.7
453.povray	4	<u>100</u>	<u>213</u>	99.8	213	100	212	4	90.5	235	<u>90.3</u>	<u>236</u>	89.9	237
454.calculix	4	170	194	165	200	<u>166</u>	<u>198</u>	4	170	194	165	200	<u>166</u>	<u>198</u>
459.GemsFDTD	4	598	71.0	<u>598</u>	<u>71.0</u>	599	70.9	4	598	71.0	<u>598</u>	<u>71.0</u>	599	70.9
465.tonto	4	<u>249</u>	<u>158</u>	247	159	250	157	4	238	166	243	162	<u>240</u>	<u>164</u>
470.lbm	4	385	143	384	143	<u>384</u>	<u>143</u>	4	385	143	384	143	<u>384</u>	<u>143</u>
481.wrf	4	323	139	321	139	<u>322</u>	<u>139</u>	4	<u>320</u>	<u>140</u>	319	140	320	139
482.sphinx3	4	<u>536</u>	<u>145</u>	529	147	593	131	4	600	130	567	138	<u>588</u>	<u>133</u>

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

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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
Power Technology = Custom

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Platform Notes (Continued)

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 Thu May 15 15:06:14 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 E3-1220 v3 @ 3.10GHz
    1 "physical id"s (chips)
    4 "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
  cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal:      16292592 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 May 15 15:05
```

```
SPEC is set to: /cpu2006.1.2
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda1        ext4      193G      56G   128G   31% /
```

Additional information from dmidecode:
BIOS American Megatrends Inc. 2.00 04/24/2014
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Platform Notes (Continued)

Memory:

2x 8 GB

2x 0793 W-MEM1600E38G 8 GB 1600 MHz 2 rank

2x [Empty] [Empty]

(End of data from sysinfo program)

dmidecode does not properly detect memory modules

2 modules of 8 GB were used to run the test (16 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

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

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

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Base Portability Flags (Continued)

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 (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



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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: -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:

444.namd: -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) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: -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)
-opt-malloc-options=3

453.povray: -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) -unroll4
-ansi-alias

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(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: -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)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -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>



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