



SPEC® CFP2006 Result

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ACTION S.A.

SPECfp®_rate2006 = 268

ACTINA SOLAR 225 S5 (Intel Xeon E5-2430)

SPECfp_rate_base2006 = 252

CPU2006 license: 9008

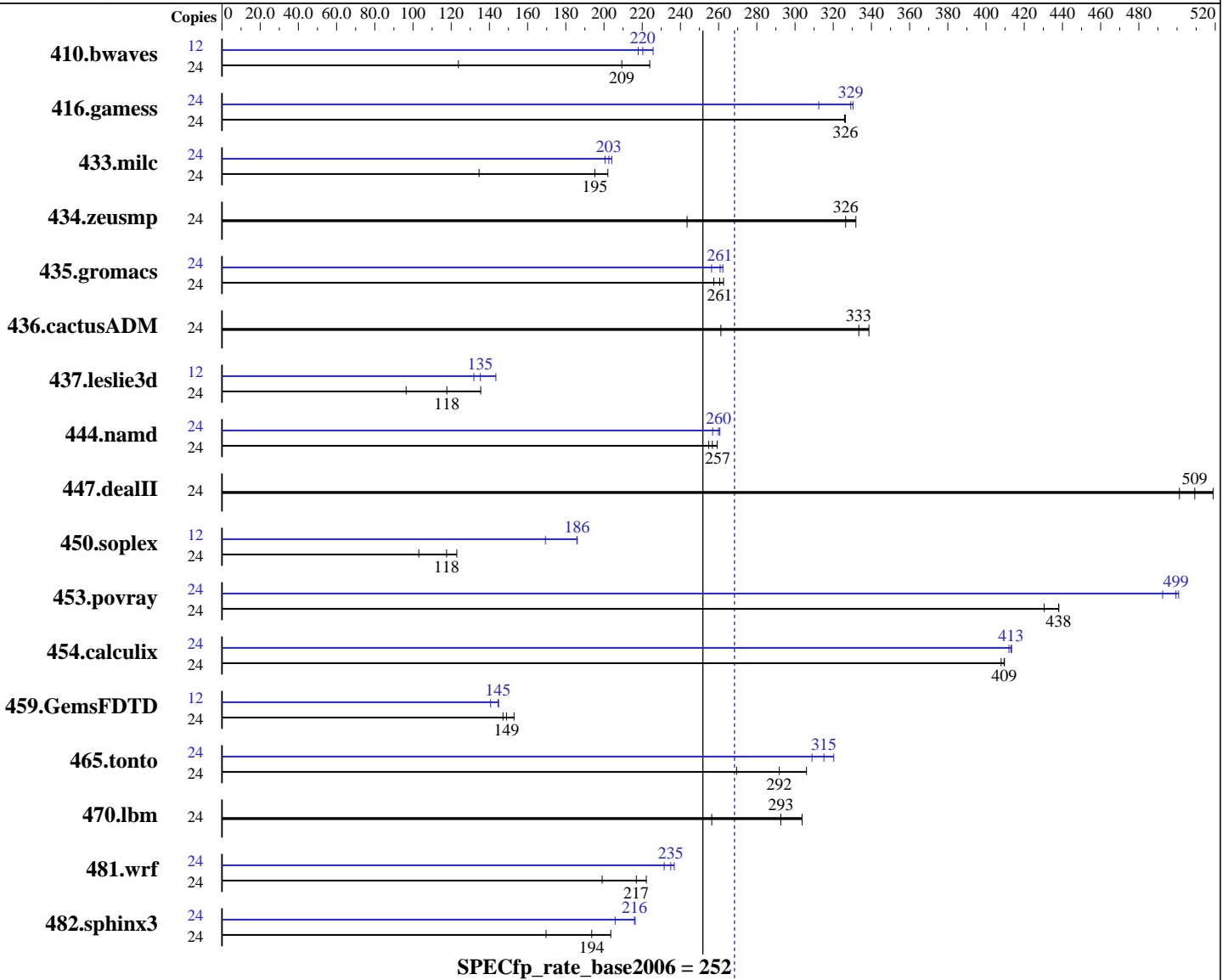
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: May-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2430
 CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz
 CPU MHz: 2200
 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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.27-default
 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: ext3
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 2 TB SATA 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 | 2635 | 124 | <u>1558</u> | <u>209</u> | 1456 | 224 | 12 | 748 | 218 | <u>740</u> | <u>220</u> | 723 | 226 |
| 416.gamess | 24 | 1442 | 326 | 1440 | 326 | <u>1440</u> | <u>326</u> | 24 | <u>1428</u> | <u>329</u> | 1422 | 330 | 1504 | 312 |
| 433.milc | 24 | 1637 | 135 | <u>1129</u> | <u>195</u> | 1091 | 202 | 24 | 1080 | 204 | 1099 | 201 | <u>1088</u> | <u>203</u> |
| 434.zeusmp | 24 | 897 | 243 | <u>669</u> | <u>326</u> | 658 | 332 | 24 | 897 | 243 | <u>669</u> | <u>326</u> | 658 | 332 |
| 435.gromacs | 24 | 653 | 263 | <u>658</u> | <u>261</u> | 666 | 257 | 24 | 653 | 262 | <u>657</u> | <u>261</u> | 669 | 256 |
| 436.cactusADM | 24 | 1098 | 261 | <u>860</u> | <u>333</u> | 847 | 339 | 24 | 1098 | 261 | <u>860</u> | <u>333</u> | 847 | 339 |
| 437.leslie3d | 24 | 2340 | 96.4 | <u>1916</u> | <u>118</u> | 1665 | 135 | 12 | 855 | 132 | <u>834</u> | <u>135</u> | 787 | 143 |
| 444.namd | 24 | 742 | 259 | <u>750</u> | <u>257</u> | 755 | 255 | 24 | 738 | 261 | <u>740</u> | <u>260</u> | 749 | 257 |
| 447.dealII | 24 | 548 | 501 | <u>539</u> | <u>509</u> | 529 | 519 | 24 | 548 | 501 | <u>539</u> | <u>509</u> | 529 | 519 |
| 450.soplex | 24 | 1942 | 103 | <u>1702</u> | <u>118</u> | 1628 | 123 | 12 | 538 | 186 | 591 | 169 | <u>539</u> | <u>186</u> |
| 453.povray | 24 | <u>291</u> | <u>438</u> | 291 | 438 | 297 | 430 | 24 | <u>256</u> | <u>499</u> | 255 | 501 | 259 | 492 |
| 454.calculix | 24 | 485 | 408 | 483 | 410 | <u>484</u> | <u>409</u> | 24 | 481 | 412 | <u>479</u> | <u>413</u> | 479 | 413 |
| 459.GemsFDTD | 24 | 1731 | 147 | <u>1709</u> | <u>149</u> | 1665 | 153 | 12 | 905 | 141 | <u>881</u> | <u>145</u> | 879 | 145 |
| 465.tonto | 24 | 877 | 269 | 772 | 306 | <u>809</u> | <u>292</u> | 24 | 737 | 320 | 765 | 309 | <u>749</u> | <u>315</u> |
| 470.lbm | 24 | 1286 | 256 | <u>1127</u> | <u>293</u> | 1086 | 304 | 24 | 1286 | 256 | <u>1127</u> | <u>293</u> | 1086 | 304 |
| 481.wrf | 24 | 1347 | 199 | <u>1236</u> | <u>217</u> | 1207 | 222 | 24 | 1132 | 237 | 1158 | 232 | <u>1141</u> | <u>235</u> |
| 482.sphinx3 | 24 | 2757 | 170 | 2298 | 204 | <u>2416</u> | <u>194</u> | 24 | <u>2166</u> | <u>216</u> | 2273 | 206 | 2163 | 216 |

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 /cpu2006.1.2/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
running on linux-zwpf Sat May 5 03:31:51 2012

Continued on next page



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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 E5-2430 0 @ 2.20GHz
 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:      65925688 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 2

```

```

uname -a:
Linux linux-zwpf 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
(d73692b) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 May 4 13:40 last=S

```

SPEC is set to: /cpu2006.1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  1.8T   51G  1.8T   3% /

```

Additional information from dmidecode:

(End of data from sysinfo program)

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"

Continued on next page



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General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/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>

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.deallI: -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.deallI: -DSPEC_CPU_LP64`

`453.povray: -DSPEC_CPU_LP64`

Continued on next page

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Page 5



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

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