# SPEC® CFP2006 Result
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## ACTION S.A.

$SPECfp^{®}\_rate2006 = $ 265

ACTINA SOLAR 205 S5 (Intel Xeon E5-2430)

$SPECfp\_rate\_base2006 = $ 249

| Benchmark | Copies | Result |
|---|---|---|
| 410.bwaves | 12 | 212 |
| | 24 | 210 |
| 416.gamess | 24 | 328 |
| | 24 | 325 |
| 433.milc | 24 | 201 |
| | 24 | 196 |
| 434.zeusmp | 24 | 319 |
| 435.gromacs | 24 | 258 |
| | 24 | 260 |
| 436.cactusADM | 24 | 338 |
| 437.leslie3d | 12 | 132 |
| | 24 | 117 |
| 444.namd | 24 | 254 |
| | 24 | 257 |
| 447.dealII | 24 | 513 |
| 450.soplex | 12 | 183 |
| | 24 | 118 |
| 453.povray | 24 | 503 |
| | 24 | 435 |
| 454.calculix | 24 | 411 |
| | 24 | 409 |
| 459.GemsFDTD | 12 | 146 |
| | 24 | 147 |
| 465.tonto | 24 | 315 |
| | 24 | 289 |
| 470.lbm | 24 | 280 |
| 481.wrf | 24 | 236 |
| | 24 | 213 |
| 482.sphinx3 | 24 | 204 |
| | 24 | 175 |

SPECfp_rate_base2006 = 249
SPECfp_rate2006 = 265

## 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) |

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SPECfp_rate2006 = 265

SPECfp_rate_base2006 = 249

**CPU2006 license:** 9008　　　　　　　　　　　　　　　　　　　　**Test date:** May-2012
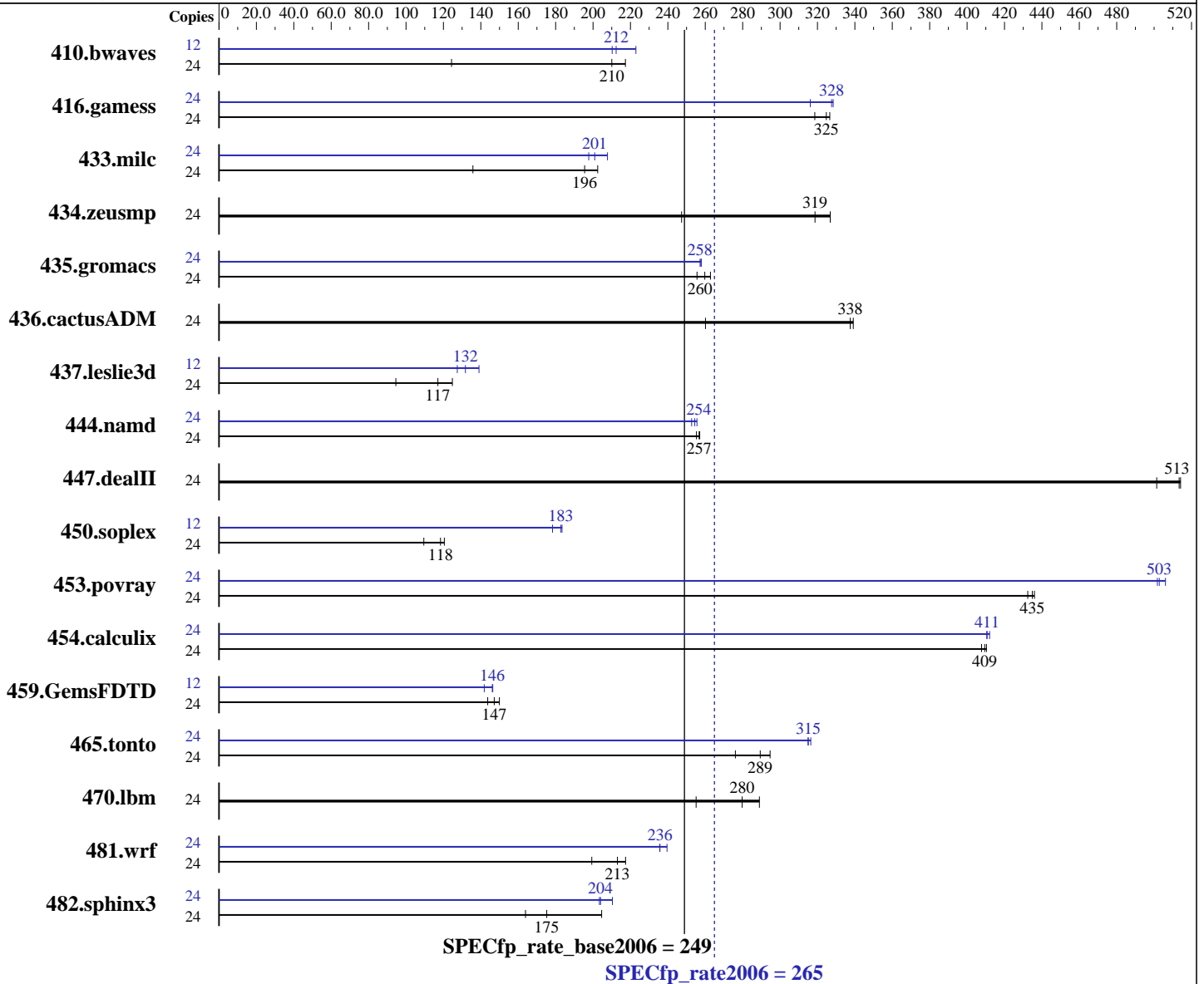**Test sponsor:** ACTION S.A.　　　　　　　　　　　　　　　　**Hardware Availability:** May-2012
**Tested by:** ACTION S.A.　　　　　　　　　　　　　　　　　　**Software Availability:** Feb-2012

| | |
|---|---|
| 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 | 2623 | 124 | **1553** | **210** | 1501 | 217 | 12 | 776 | 210 | **768** | **212** | 732 | 223 |
| 416.gamess | 24 | 1439 | 327 | 1475 | 319 | **1447** | **325** | 24 | 1431 | 328 | 1486 | 316 | **1435** | **328** |
| 433.milc | 24 | 1623 | 136 | **1127** | **196** | 1088 | 202 | 24 | 1114 | 198 | **1097** | **201** | 1061 | 208 |
| 434.zeusmp | 24 | 883 | 247 | **685** | **319** | 668 | 327 | 24 | 883 | 247 | **685** | **319** | 668 | 327 |
| 435.gromacs | 24 | 652 | 263 | 670 | 256 | **660** | **260** | 24 | **665** | **258** | 666 | 257 | 665 | 258 |
| 436.cactusADM | 24 | 1103 | 260 | **850** | **338** | 846 | 339 | 24 | 1103 | 260 | **850** | **338** | 846 | 339 |
| 437.leslie3d | 24 | 2386 | 94.6 | **1927** | **117** | 1808 | 125 | 12 | 885 | 127 | **856** | **132** | 811 | 139 |
| 444.namd | 24 | 749 | 257 | **750** | **257** | 754 | 255 | 24 | **757** | **254** | 762 | 253 | 753 | 256 |
| 447.dealII | 24 | 548 | 501 | **535** | **513** | 534 | 514 | 24 | 548 | 501 | **535** | **513** | 534 | 514 |
| 450.soplex | 24 | 1828 | 110 | **1690** | **118** | 1661 | 120 | 12 | 561 | 178 | **547** | **183** | 546 | 183 |
| 453.povray | 24 | 293 | 436 | 295 | 432 | **294** | **435** | 24 | 252 | 506 | 254 | 502 | **254** | **503** |
| 454.calculix | 24 | **484** | **409** | 486 | 408 | 483 | 410 | 24 | 481 | 412 | **482** | **411** | 482 | 411 |
| 459.GemsFDTD | 24 | 1772 | 144 | **1730** | **147** | 1698 | 150 | 12 | 898 | 142 | **871** | **146** | 870 | 146 |
| 465.tonto | 24 | 855 | 276 | **816** | **289** | 801 | 295 | 24 | 746 | 316 | 750 | 315 | **749** | **315** |
| 470.lbm | 24 | 1293 | 255 | **1179** | **280** | 1141 | 289 | 24 | 1293 | 255 | **1179** | **280** | 1141 | 289 |
| 481.wrf | 24 | 1345 | 199 | **1258** | **213** | 1233 | 217 | 24 | **1137** | **236** | 1119 | 240 | 1138 | 236 |
| 482.sphinx3 | 24 | 2854 | 164 | **2669** | **175** | 2286 | 205 | 24 | 2224 | 210 | 2300 | 203 | **2293** | **204** |

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 Tue May  1 01:42:10 2012
```

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# SPEC CFP2006 Result
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## ACTION S.A.

ACTINA SOLAR 205 S5 (Intel Xeon E5-2430)

SPECfp_rate2006 = 265

SPECfp_rate_base2006 = 249

**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

## 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 Apr 30 11:44 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"
```

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## ACTION S.A.

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SPECfp_rate2006 = 265

SPECfp_rate_base2006 = 249

**CPU2006 license:** 9008
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**Test date:** May-2012
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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.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
```

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$SPECfp\_rate2006 = $ 265

$SPECfp\_rate\_base2006 = $ 249

| | |
|---|---|
| **CPU2006 license:** 9008 | **Test date:** May-2012 |
| **Test sponsor:** ACTION S.A. | **Hardware Availability:** May-2012 |
| **Tested by:** ACTION S.A. | **Software Availability:** Feb-2012 |

## 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.dealII: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
```

Continued on next page

## ACTION S.A.

ACTINA SOLAR 205 S5 (Intel Xeon E5-2430)

SPECfp_rate2006 =    265

SPECfp_rate_base2006 =    249

| | | | |
|---|---|---|---|
| **CPU2006 license:** 9008 | | **Test date:** | May-2012 |
| **Test sponsor:** ACTION S.A. | | **Hardware Availability:** | May-2012 |
| **Tested by:** ACTION S.A. | | **Software Availability:** | Feb-2012 |

# 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.dealII: 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`

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

Tested with SPEC CPU2006 v1.2.
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