# SPEC® CFP2006 Result



## Huawei

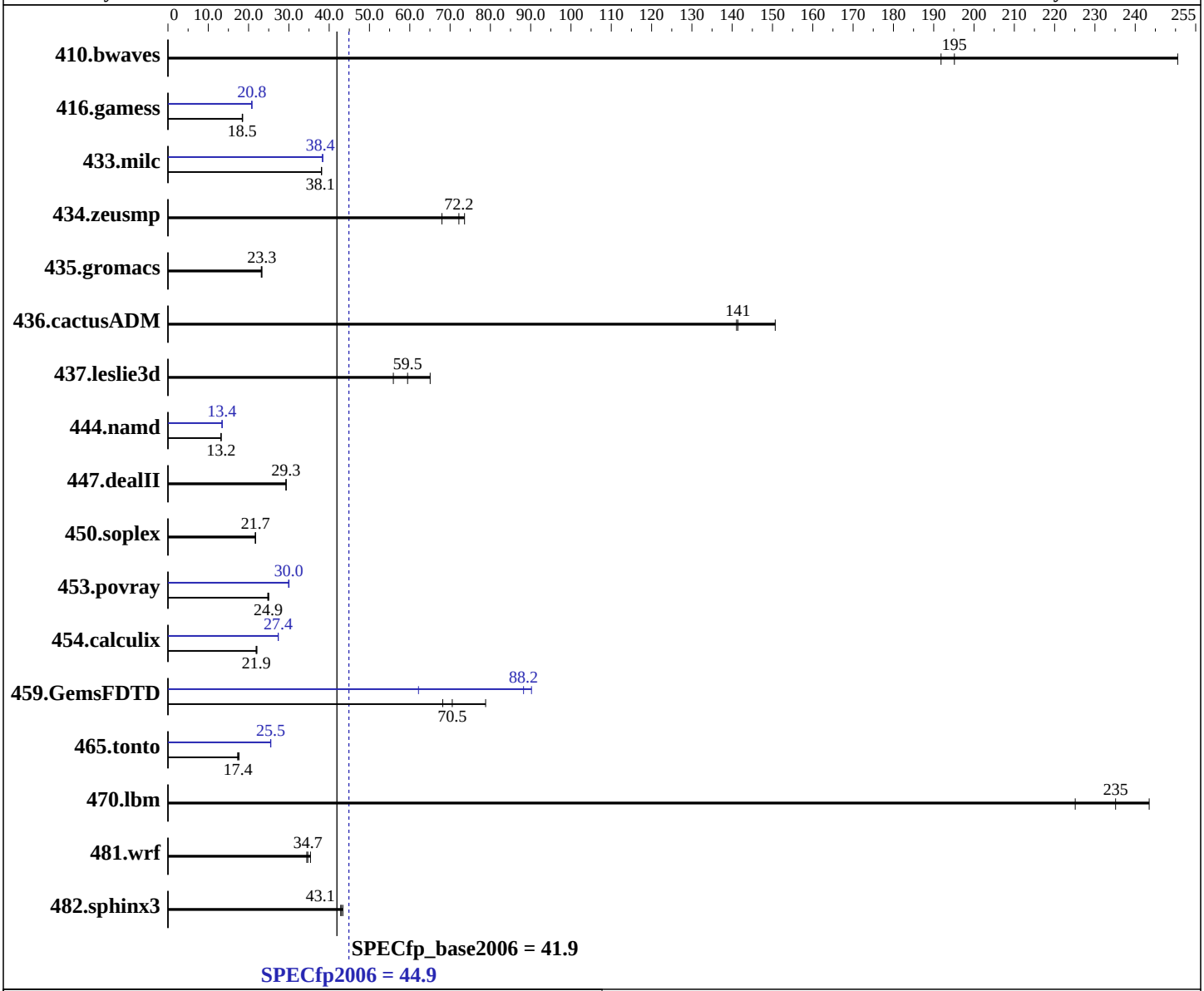
## Huawei CH242 v3 (E7-4809 v2)

SPECfp®2006 = 44.9

SPECfp_base2006 = 41.9

**CPU2006 license:** 3175
**Test sponsor:** Huawei
**Tested by:** Huawei

**Test date:** Oct-2014
**Hardware Availability:** Feb-2014
**Software Availability:** Nov-2013




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-4809 v2 |
| CPU Characteristics: | |
| CPU MHz: | 1900 |
| FPU: | Integrated |
| CPU(s) enabled: | 24 cores, 4 chips, 6 cores/chip |
| CPU(s) orderable: | 2,4 chip |
| 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 6.5 (Santiago)<br>2.6.32-431.el6.x86_64 |
| Compiler: | C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;<br>Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |

Continued on next page

# SPEC CFP2006 Result



## Huawei

## Huawei CH242 v3 (E7-4809 v2)

SPECfp2006 = 44.9

SPECfp_base2006 = 41.9

**CPU2006 license:** 3175
**Test sponsor:** Huawei
**Tested by:** Huawei

**Test date:** Oct-2014
**Hardware Availability:** Feb-2014
**Software Availability:** Nov-2013

L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1066 MHz)
Disk Subsystem: 1 X 300 GB SATA 7200RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 70.8 | 192 | 54.2 | 251 | **69.6** | **195** | 70.8 | 192 | 54.2 | 251 | **69.6** | **195** |
| 416.gamess | 1062 | 18.4 | **1061** | **18.5** | 1056 | 18.5 | 942 | 20.8 | 940 | 20.8 | **940** | **20.8** |
| 433.milc | 241 | 38.1 | **241** | **38.1** | 241 | 38.1 | 239 | 38.4 | 239 | 38.4 | **239** | **38.4** |
| 434.zeusmp | **126** | **72.2** | 134 | 68.0 | 124 | 73.6 | **126** | **72.2** | 134 | 68.0 | 124 | 73.6 |
| 435.gromacs | **307** | **23.3** | 308 | 23.2 | 307 | 23.3 | **307** | **23.3** | 308 | 23.2 | 307 | 23.3 |
| 436.cactusADM | 79.3 | 151 | 84.7 | 141 | **84.5** | **141** | 79.3 | 151 | 84.7 | 141 | **84.5** | **141** |
| 437.leslie3d | **158** | **59.5** | 168 | 55.9 | 144 | 65.1 | **158** | **59.5** | 168 | 55.9 | 144 | 65.1 |
| 444.namd | 609 | 13.2 | **609** | **13.2** | 609 | 13.2 | 597 | 13.4 | 597 | 13.4 | **597** | **13.4** |
| 447.dealII | **390** | **29.3** | 391 | 29.3 | 390 | 29.3 | **390** | **29.3** | 391 | 29.3 | 390 | 29.3 |
| 450.soplex | **384** | **21.7** | 385 | 21.7 | 383 | 21.8 | **384** | **21.7** | 385 | 21.7 | 383 | 21.8 |
| 453.povray | 215 | 24.8 | **214** | **24.9** | 213 | 25.0 | **177** | **30.0** | 177 | 30.0 | 178 | 29.9 |
| 454.calculix | **376** | **21.9** | 374 | 22.1 | 377 | 21.9 | **302** | **27.4** | 301 | 27.4 | 302 | 27.3 |
| 459.GemsFDTD | 156 | 68.2 | **150** | **70.5** | 135 | 78.8 | 118 | 90.2 | 171 | 62.2 | **120** | **88.2** |
| 465.tonto | **567** | **17.4** | 568 | 17.3 | 558 | 17.6 | **386** | **25.5** | 387 | 25.5 | 386 | 25.5 |
| 470.lbm | 61.0 | 225 | **58.4** | **235** | 56.4 | 243 | 61.0 | 225 | **58.4** | **235** | 56.4 | 243 |
| 481.wrf | 324 | 34.4 | 316 | 35.4 | **322** | **34.7** | 324 | 34.4 | 316 | 35.4 | **322** | **34.7** |
| 482.sphinx3 | 455 | 42.9 | **452** | **43.1** | 449 | 43.4 | 455 | 42.9 | **452** | **43.1** | 449 | 43.4 |

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 configuration:
Set VMSE LockStep mode disable
Set Hyper Threading to disable
Sysinfo program /spec14/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Oct 29 03:19:53 2014

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

Continued on next page

## Platform Notes (Continued)

```
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E7-4809 v2 @ 1.90GHz
          4 "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  : 6
          physical 0: cores 0 1 2 3 4 5
          physical 1: cores 0 1 2 3 4 5
          physical 2: cores 0 1 2 3 4 5
          physical 3: cores 0 1 2 3 4 5
       cache size : 12288 KB

    From /proc/meminfo
       MemTotal:       264360008 kB
       HugePages_Total:       0
       Hugepagesize:       2048 kB

    /usr/bin/lsb_release -d
       Red Hat Enterprise Linux Server release 6.5 (Santiago)

    From /etc/*release* /etc/*version*
       redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
       system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
       system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

    uname -a:
       Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
       EST 2013 x86_64 x86_64 x86_64 GNU/Linux

    run-level 3 Oct 28 16:47

    SPEC is set to: /spec14
       Filesystem     Type  Size  Used Avail Use% Mounted on
       /dev/sda2      ext4  255G  139G  104G  58% /

    Additional information from dmidecode:
      BIOS American Megatrends Inc. BLISV302 09/03/2014
      Memory:
       32x   8 GB
       32x Micron 36KSF1G72PZ-1G6K1 8 GB 1066 MHz 2 rank

    (End of data from sysinfo program)
     The system use 256 GB memory
```

## General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec14/libs/32:/spec14/libs/64:/spec14/sh"
OMP_NUM_THREADS = "24"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 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

## Base Optimization Flags

C benchmarks:
`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:
`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

## 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`

## Peak Portability Flags

`Same as Base Portability Flags`

## 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) `-auto-ilp32` `-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

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: basepeak = yes

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: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.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/Huawei-Platform-Settings-V1.0-IVB-RevG.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 Dec 3 10:28:49 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 December 2014.