# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Huawei

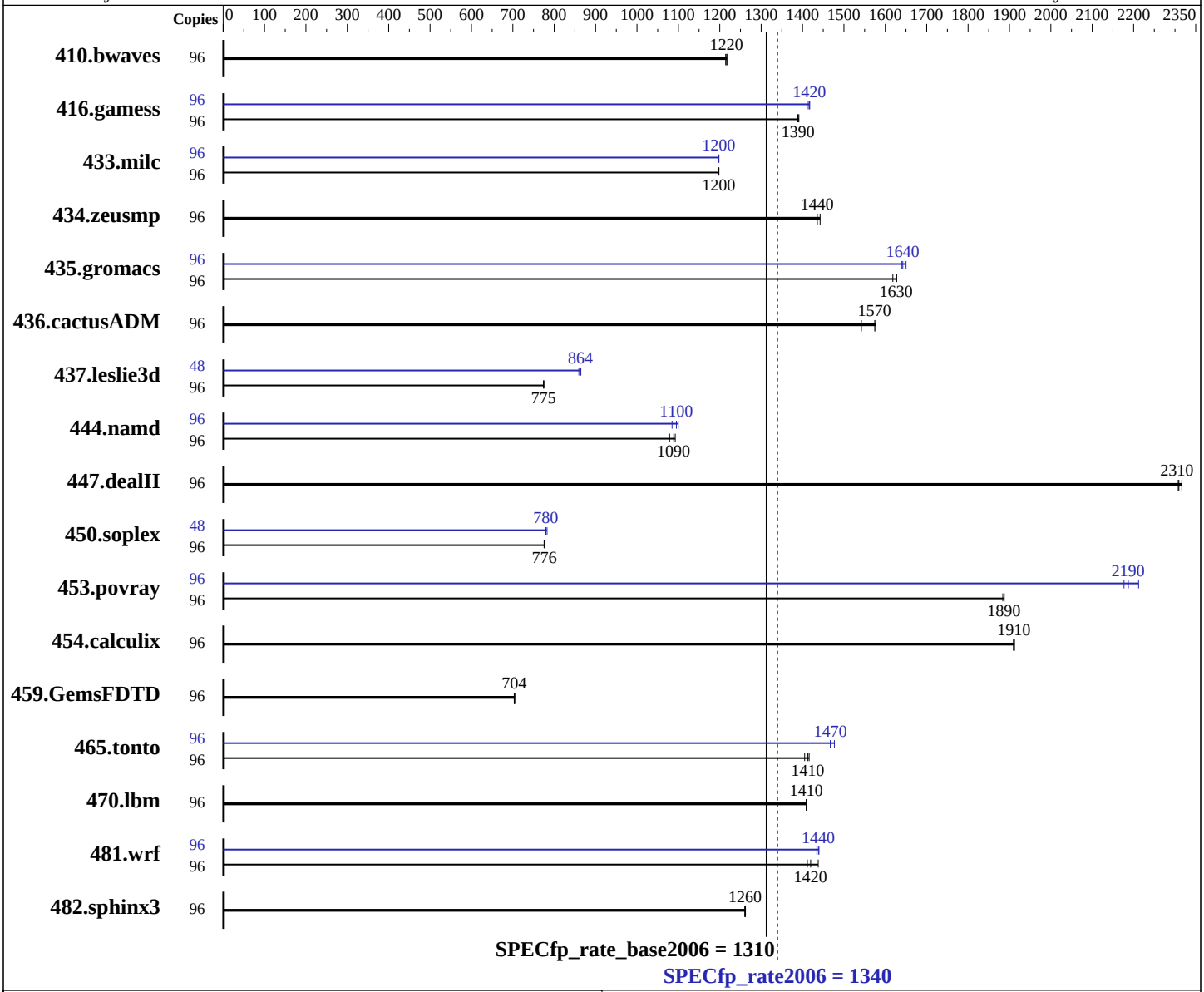
## Huawei RH5885H V3 (Intel Xeon E7-8850 v2)

**SPECfp®_rate2006 = 1340**

**SPECfp_rate_base2006 = 1310**

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

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




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-8850 v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.80 GHz |
| CPU MHz: | 2300 |
| FPU: | Integrated |
| CPU(s) enabled: | 48 cores, 4 chips, 12 cores/chip, 2 threads/core |
| CPU(s) orderable: | 2,4 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 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: | No |
| File System: | ext4 |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Huawei

## Huawei RH5885H V3 (Intel Xeon E7-8850 v2)

SPECfp_rate2006 = 1340

SPECfp_rate_base2006 = 1310

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

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

L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC3L-10600R-9, ECC, running at 1333 MHz)
Disk Subsystem: 2 x 600 GB SAS, 10K RPM
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 | 96 | 1074 | 1210 | **1072** | **1220** | 1072 | 1220 | 96 | 1074 | 1210 | **1072** | **1220** | 1072 | 1220 |
| 416.gamess | 96 | **1353** | **1390** | 1354 | 1390 | 1351 | 1390 | 96 | **1327** | **1420** | 1330 | 1410 | 1326 | 1420 |
| 433.milc | 96 | **736** | **1200** | 736 | 1200 | 736 | 1200 | 96 | **736** | **1200** | 736 | 1200 | 736 | 1200 |
| 434.zeusmp | 96 | **609** | **1440** | 606 | 1440 | 609 | 1440 | 96 | **609** | **1440** | 606 | 1440 | 609 | 1440 |
| 435.gromacs | 96 | 421 | 1630 | **422** | **1630** | 424 | 1620 | 96 | **417** | **1640** | 415 | 1650 | 418 | 1640 |
| 436.cactusADM | 96 | **729** | **1570** | 744 | 1540 | 728 | 1580 | 96 | **729** | **1570** | 744 | 1540 | 728 | 1580 |
| 437.leslie3d | 96 | **1165** | **775** | 1165 | 775 | 1166 | 774 | 48 | 525 | 860 | 522 | 864 | **522** | **864** |
| 444.namd | 96 | 705 | 1090 | 714 | 1080 | **707** | **1090** | 96 | 700 | 1100 | 710 | 1080 | **703** | **1100** |
| 447.dealII | 96 | 474 | 2320 | **476** | **2310** | 476 | 2310 | 96 | 474 | 2320 | **476** | **2310** | 476 | 2310 |
| 450.soplex | 96 | **1031** | **776** | 1030 | 777 | 1032 | 776 | 48 | **513** | **780** | 511 | 783 | 514 | 779 |
| 453.povray | 96 | 271 | 1880 | **271** | **1890** | 271 | 1890 | 96 | 231 | 2210 | **233** | **2190** | 235 | 2180 |
| 454.calculix | 96 | **414** | **1910** | 414 | 1910 | 415 | 1910 | 96 | **414** | **1910** | 414 | 1910 | 415 | 1910 |
| 459.GemsFDTD | 96 | **1448** | **704** | 1448 | 703 | 1445 | 705 | 96 | **1448** | **704** | 1448 | 703 | 1445 | 705 |
| 465.tonto | 96 | 667 | 1420 | 672 | 1410 | **669** | **1410** | 96 | 640 | 1480 | **644** | **1470** | 644 | 1470 |
| 470.lbm | 96 | 936 | 1410 | 936 | 1410 | **936** | **1410** | 96 | 936 | 1410 | 936 | 1410 | **936** | **1410** |
| 481.wrf | 96 | 760 | 1410 | **755** | **1420** | 746 | 1440 | 96 | 745 | 1440 | **746** | **1440** | 747 | 1430 |
| 482.sphinx3 | 96 | **1484** | **1260** | 1484 | 1260 | 1482 | 1260 | 96 | **1484** | **1260** | 1484 | 1260 | 1482 | 1260 |

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

```
BIOS configuration:
Set Power Efficiency Mode to Performance
Set Lock_step to disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on RH5885HV3 Thu Jul 24 20:21:30 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 E7-8850 v2 @ 2.30GHz
      4 "physical id"s (chips)
      96 "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 : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
   cache size : 24576 KB

From /proc/meminfo
   MemTotal:       529101296 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 RH5885HV3 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 Jul 24 06:06

SPEC is set to: /spec
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda2      ext4  433G   94G  318G  23% /spec

Additional information from dmidecode:
  BIOS American Megatrends Inc. BLISV038 04/24/2014
```

Continued on next page

## Platform Notes (Continued)

```
      Memory:
       32x   16 GB
       64x NO DIMM NO DIMM
       32x Samsung M393B2G70BH0-YH9 16 GB 1333 MHz 2 rank

    (End of data from sysinfo program)
    Regarding the sysinfo display about the memory installed, the correct amount of
    memory is 512 GB and the dmidecode description should have one line reading as:
       32x Samsung M393B2G70BH0-YH9 16 GB 1333 MHz 2 rank
```

## General Notes

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

 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
 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
```

Continued on next page

## Base Portability Flags (Continued)

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 -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

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

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:
icc -m64

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
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

## 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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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: -xAVX(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

Fortran benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

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) -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: -xAVX -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-revC.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-revC.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml


SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.


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 Tue Sep 2 13:40:01 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 September 2014.