## SPEC® CFP2006 Result

**Huawei**

**Huawei CH220 V3 (Intel Xeon E5-2650 v4)**

<table>
<thead>
<tr>
<th>SPECfp®_rate2006</th>
<th>NC</th>
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</thead>
<tbody>
<tr>
<td>SPECfp_rate_base2006</td>
<td>NC</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Test date:** May-2016  
**Hardware Availability:** Mar-2016  
**Software Availability:** Mar-2016

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by [SPEC CPU rule 1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) and the SPEC Open Systems Group policy on [general availability](https://www.spec.org/osg/policy.html#AppendixC).

### Copies

| 410.bwaves |
| 416.gamess |
| 433.milc |
| 434.zeusmp |
| 435.gromacs |
| 436.cactusADM |
| 437.leslie3d |
| 444.namd |
| 447.dealII |
| 450.soplex |
| 453.povray |
| 454.calculix |
| 459.GemsFDTD |
| 465.tonto |
| 481.wrf |
| 482.sphinx3 |

**Non-Compliant**
Huawei

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
CPU2006 license: 3175
Test sponsor: Huawei
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SPEC fp_rate2006 = NC
SPEC fp_rate_base2006 = NC

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Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>HW Name</td>
<td>Intel Xeon E5-2650 v4</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 2.80 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>1800</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
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<td>CPU(s) enabled</td>
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<td>CPU(s) orderable</td>
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<td>Secondary Cache</td>
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<td>L3 Cache</td>
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<td>Other Cache</td>
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<tr>
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<td>Other Hardware</td>
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Software

<table>
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<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 7.2</td>
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<td>Compiler</td>
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<td>Auto Parallel Parallel</td>
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<td>File System</td>
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<tr>
<td>System State</td>
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<td>Peak Pointers</td>
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<td>Other Software</td>
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Results Table

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</tr>
</tbody>
</table>

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"
Huawei

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
Test date: May-2016
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Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Snoop Mode to COD mode
Set Patrol Scrub to Disable
Set Hyper-Threading to enabled
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $ e3fbb3661b3888532ceab81e28219e1
running on localhost.localdomain Mon May 16 00:08:43 2016

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 E5-2650 v4@ 2.20GHz
  2 "physical id"s (chips)
  48 "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
cache size : 15360 KB

From /proc/meminfo
MemTotal: 263565512 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

Non-Compliant
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Platform Notes (Continued)

uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux
run-level 3 May 15 12:23
SPEC is set to: /spec16
Filesystem  Type  Size  Used  Avail  Use%  Mounted on
/dev/sda2      ext4  850G  98G  710G  13%  /
Additional information from dmidecode:
Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.
BIOS Insyde Corp. 3.09 02/22/2016
Memory:
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz
(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
File system page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
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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
440.namd: -DSPEC_CPU_LP64 -nofor_main
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
455.povray: -DSPEC_CPU_LP64
456.calculix: -DSPEC_CPU_LP64 -nofor_main
465.lbm: -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

Continued on next page

SPEC CFP2006 Result

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info@spec.org
http://www.spec.org/
Huawei
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Base Optimization Flags (Continued)
C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -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:
icc   -m64
C++ benchmarks (except as noted below):
icpc  -m64
450.soplex: icpc -ipo -l/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
Fortran benchmarks:
ifort -m64
Benchmarks using both Fortran and C:
icc   -m64 ifort -m64

Peak Portability Flags
410.bwaves: -DSPEC_CPU_LP64
416.tnnsmp: -DSPEC_CPU_LP64
435.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

continued on next page
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Peak Portability Flags (Continued)

- 450.soplex: -D_FILE_OFFSET_BITS=64
- 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: basepeak = yes
- 470.lbm: basepeak = yes
- 482.sphinx3: basepeak = yes

C++ benchmarks:

- 444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -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:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -opt-malloc-options=3

Fortran benchmarks:

- 453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Continued on next page
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Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 1)
-ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2)
-par-num-threads=1 (pass 1) -prof-use (pass 2) -unroll12
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

465.tonto: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 1)
-ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2)
-par-num-threads=1 (pass 1) -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:threadsafe (pass 1)
-ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2)
-par-num-threads=1 (pass 1) -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: basepeak = yes

The flags files that were used to format this result can be browsed at:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/Flags/Huawei-Platform-Settings-BDW-V1.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.xml

Non-Compliant
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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Fri Oct 21 17:35:54 2016 by SPEC CPU2006 PS/PDF formatter v6932.
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