## SPEC® CFP2006 Result

### Huawei

**Huawei XH628 V3 (Intel Xeon E5-2637 v4)**

<table>
<thead>
<tr>
<th>SPECfp®2006 =</th>
<th>NC</th>
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<tbody>
<tr>
<td>SPECfp_base2006 =</td>
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**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei

**CPU2006 license:** 3175  
**Test date:** Mar-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).

### Supported Benchmarks

- 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
- 470.lbm
- 481.wrf
- 482.sphinx3
**SPEC CFP2006 Result**

**Huawei**

Huawei XH628 V3 (Intel Xeon E5-2637 v4)

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

**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.**

CPU Name: Intel Xeon E5-2637 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3500
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1.2 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
Compiler:
- C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
- Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

Hardware

Software

Non-Compliant
Huawei

Huawei XH628 V3(Intel Xeon E5-2637 v4)

SPECfp2006 = NC
SPECfp_base2006 = NC

CPU2006 license: 3175
Test date: Mar-2016

Test sponsor: Huawei
Hardware Availability: Mar-2016

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Software Availability: Mar-2016

Results Table

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</tbody>
</table>

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 Power Efficiency Mode to Custom
Set SnooP Mode to ES mode
Set Patrol Scrub to ES mode
Set Hyper-Threading to Disable
 Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Wed Mar  9 20:31:45 2016

Non-Compliant

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SPEC CFP2006 Result

Huawei

Huawei XH628 V3 (Intel Xeon E5-2637 v4)

SPECfp2006 = NC
SPECfp_base2006 = NC

CPU2006 license: 3175
Test date: Mar-2016
Test sponsor: Huawei
Hardware Availability: Mar-2016
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Software Availability: Mar-2016

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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 E5-2637 v4 @ 3.50GHz
  2 "physical id"s (chips)
  8 "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 : 4
siblings : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 15360 KB

From /proc/meminfo
MemTotal: 263572104 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="fedora"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 9 11:04
SPEC is set to: /spec16
Huawei XH628 V3 (Intel Xeon E5-2637 v4)

**SPECfp2006** = NC
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CPU2006 license: 3175
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Platform Notes (Continued)

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda3</td>
<td>xfs</td>
<td>443G</td>
<td>12G</td>
<td>431G</td>
<td>3%</td>
<td>/</td>
</tr>
</tbody>
</table>

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)

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"
OMP_NUM_THREADS = "8"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always >> /sys/kernel/mm/transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
The Huawei XH622 V3 and Huawei XH628 V3 and Huawei XH620 V3 are electronically equivalent.
The results have been measured on a Huawei XH620 V3 model

Base Compiler Invocation

C benchmarks:
  icc  -m64
C++ benchmarks:
  icpc  -m64

Continued on next page
Huawei

Huawei XH628 V3 (Intel Xeon E5-2637 v4)

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### SPEC Compiler Invocation (Continued)

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<tr>
<th>Base Optimization Flags</th>
<th>Base Portability Flags</th>
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<tbody>
<tr>
<td>Fortran benchmarks:</td>
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</tr>
<tr>
<td>- ifort -m64</td>
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<tr>
<td>- xCORE-AVX2</td>
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<td>- ipo -o3</td>
<td>- ipo -o3</td>
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<tr>
<td>- no-prec-div</td>
<td>- no-prec-div</td>
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<tr>
<td>- parallel -opt-prefetch</td>
<td>- parallel -opt-prefetch</td>
</tr>
<tr>
<td>- ans-alias</td>
<td>- ans-alias</td>
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### 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        |
| 436.cactusADM         | -DSPEC_CPU_LP64        |
| 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        |
| 459.GemsFDTD          | -DSPEC_CPU_LP64        |
| 465.tonto             | -DSPEC_CPU_LP64        |
| 470.lbm               | -DSPEC_CPU_LP64        |
| 481.wrf               | -DSPEC_CPU_LP64        |
| 482.sphinx3           | -DSPEC_CPU_LP64        |

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Non-Compliant
SPEC CFP2006 Result

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CPU2006 license: 3175
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**Base Optimization Flags (Continued)**

Benchmarks using both Fortran and C:
- `-xCORE-AVX2`
- `-ipo -O3 -no-prec-div -parallel -opt-prefetch`
- `-ansi-alias`

**Peak Compile 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: 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) -03(pass 2) -no-prec-div(pass 2)
- par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias
- auto-ilp32`
Huawei

Huawei XH628 V3(Intel Xeon E5-2637 v4)

**SPEC CFP2006 Result**

**Huawei**

**Huawei XH628 V3 (Intel Xeon E5-2637 v4)**

**SPECfp2006 =**

**SPECfp_base2006 =**

NC

CPU2006 license: 3175

Test date: Mar-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**Peak Optimization Flags (Continued)**

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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) -prof-use(pass 2) -unroll4 
-ansi-alias

Fortran benchmarks:

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) -unroll2 
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: 
-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) -unroll2 
-inline-level=0 -opt-prefetch -parallel

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) -inline-calloc 
-opt-malloc-options=3 -auto -unroll4

Benchmarking using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: 
-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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Peak Optimization Flags (Continued)

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

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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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