Huawei

Huawei XH628 V3 (Intel Xeon E5-2637 v4)

<table>
<thead>
<tr>
<th>SPECfp(^\circ) _rate2006</th>
<th>NC</th>
</tr>
</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: 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 <a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU rule 1.3.2</a> and the SPEC Open Systems Group policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">general availability</a>.

<table>
<thead>
<tr>
<th>Copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
</tr>
<tr>
<td>416.gamess</td>
</tr>
<tr>
<td>433.milc</td>
</tr>
<tr>
<td>434.zeusmp</td>
</tr>
<tr>
<td>435.gromacs</td>
</tr>
<tr>
<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
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<tr>
<td>444.namd</td>
</tr>
<tr>
<td>447.dealII</td>
</tr>
<tr>
<td>450.soplex</td>
</tr>
<tr>
<td>453.povray</td>
</tr>
<tr>
<td>454.calculix</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
</tr>
<tr>
<td>465.tonto</td>
</tr>
<tr>
<td>470.lbm</td>
</tr>
<tr>
<td>481.wrf</td>
</tr>
<tr>
<td>482.sphinx3</td>
</tr>
</tbody>
</table>
### SPEC CFP2006 Result

**Huawei**

Huawei XH628 V3(Intel Xeon E5-2637 v4)

| SPECfp_rate2006 = | NC |
| SPECfp_rate_base2006 = | NC |

| CPU2006 license: | 3175 |
| Test sponsor: | Huawei |
| Tested by: | Huawei |
| Test date: | Mar-2016 |
| Hardware Availability: | Mar-2016 |
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<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Operating System:</td>
</tr>
<tr>
<td>Intel Xeon E5-2637 v4</td>
<td>Red Hat Enterprise Linux Server release 7.0 (Maipo)</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>3.3 - 123.17.x86_64</td>
</tr>
<tr>
<td>Intel Turbo Boost Technology up to 3.70 GHz</td>
<td></td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>Compiler:</td>
</tr>
<tr>
<td>3500</td>
<td>C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;</td>
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<tr>
<td>FPU:</td>
<td>Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td>Integrated</td>
<td></td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>Auto Parallel:</td>
</tr>
<tr>
<td>8 cores, 2 chips, 4 cores/chip, 2 threads/core</td>
<td>No</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>File System:</td>
</tr>
<tr>
<td>1.2 chip</td>
<td>xfs</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>System State:</td>
</tr>
<tr>
<td>32 KB I + 32 KB D on chip per core</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>Base Pointers:</td>
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<tr>
<td>256 KB I+D on chip per core</td>
<td>32/64-bit</td>
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<tr>
<td>L3 Cache:</td>
<td>Peak Pointers:</td>
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<td>15 MB I+D on chip per chip</td>
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<tr>
<td>Other Cache:</td>
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<td>Memory:</td>
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<tr>
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<tr>
<td>Disk Subsystem:</td>
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<tr>
<td>1 x 500 GB SATA, 7200 RPM</td>
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</tr>
<tr>
<td>Other Hardware:</td>
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</table>
Huawei XH628 V3 (Intel Xeon E5-2637 v4)

```
Huawei

SPEC CFP2006 Result

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
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Results Table

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<th>Ratio</th>
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<td>481.wrf</td>
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<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

A config file option 'submit' was used.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Snoop Mode to ES mode
Set Patrol Scrub to Disable

continued on next page
SPEC CFP2006 Result

Huawei

Huawei XH628 V3(Intel Xeon E5-2637 v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
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Test date: Mar-2016
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Platform Notes (Continued)

Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5e28597ceab638219e1
running on localhost.localdomain Sun Mar 13 07:17:23 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 E5-2637 v4 @ 3.50GHz
  2 "physical id"s (chips)
  16 "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 : 8
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 15360 KB

From /proc/meminfo
MemTotal: 263571176 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="rhel"
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

Continued on next page
Huawei

Huawei XH628 V3 (Intel Xeon E5-2637 v4)

**SPEC CFP2006 Result**

<table>
<thead>
<tr>
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</tr>
<tr>
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---

**Platform Notes (Continued)**

run-level 3 Mar 11 06:07

SPEC is set to: /spec16

Filesystem | Type | Size | Used | Avail | Use% | Mounted on
---|---|---|---|---|---|---
/dev/sda3 | xfs | 443G | 39G | 404G | 9% | /

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/lib64:/spec16/lib32:/spec16/sh"

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/enable
```

Filesystem page cache cleared with:

```
echo 1 > /proc/sys/vm/drop_caches
```

numactl --interleave=all runspec 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
```
SPEC CFP2006 Result

Huawei

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Base Compiler Invocation (Continued)

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 -nofor_main
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 -nofor_main
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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 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 and the SPEC Open Systems Group policy on general availability.

Base Optimization Flags (Continued)

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:
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:

Non-compliant
Huawei

Huawei XH628 V3 (Intel Xeon E5-2637 v4)

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Peak Optimization Flags (Continued)

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threads=1(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: 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) -opt-mem-layout-trans=3(pass 2)
-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) -opt-use(pass 2) -unroll2
-inl1=-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: 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

Non-Compliant

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Peak Optimization Flags (Continued)

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

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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.
Originally published on 7 April 2016.