Huawei

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

| SPECfp®2006 | SPECfp_base2006 |
|-------------|-----------------
| = NC        | = NC |

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 <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>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
</tr>
<tr>
<td>416.gamess</td>
</tr>
<tr>
<td>433.milc</td>
</tr>
<tr>
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<td>435.gromacs</td>
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<tr>
<td>436.cactusADM</td>
</tr>
<tr>
<td>437.leslie3d</td>
</tr>
<tr>
<td>444.namd</td>
</tr>
<tr>
<td>447.dealII</td>
</tr>
<tr>
<td>450.soplex</td>
</tr>
<tr>
<td>453.povray</td>
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<tr>
<td>454.calculix</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
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<td>465.tonto</td>
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<tr>
<td>4.9.lbm</td>
</tr>
<tr>
<td>481.wrf</td>
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<tr>
<td>482.sphinx3</td>
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</table>
## SPEC CFP2006 Result

<table>
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<td>CPU2006 license: 3175</td>
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</tbody>
</table>

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### Hardware
- **CPU Name:** Intel Xeon E5-2650 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.80 GHz
- **CPU MHz:** 1800
- **FPU:** Integrated
- **CPU(s) enabled:** 24 cores, 2 chips, 12 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:** 30 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 1000 GB SATA, 7200 RPM
- **Other Hardware:** None

### Software
- **Operating System:** Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.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:** ext4
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** None
Huawei CH220 V3 (Intel Xeon E5-2650 v4)

**SPEC CFP2006 Result**

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**Huawei**

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Hardware Availability:** Mar-2016

**Test date:** May-2016

**Results Table**

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

**Operating System Notes**

- Platform Notes:
  - BIOS configuration: Mode to Custom, Set Power Efficiency Mode to Custom, Set Patroil to Disable, Set Hot Plug Eff to Disable, Set Hyper-Threading to Disable
  - Sysinfo program /spec16/config/sysinfo.rev6914 running on localhost.localdomain: $Rev: 6914 $ $Date:: 2014-06-25 $e3fbb867b525f33ca8e481c29194a1

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

**Non-Compliant**

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. See [SPEC's run rules](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) and [SPEC's Open Systems policy](https://www.spec.org/osg/policy.html#AppendixC).
## SPEC CFP2006 Result

### Huawei

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

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

### 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:


From `/proc/cpuinfo`

- `model name : Intel(R) Xeon(R) CPU E5-2650 @ 2.20GHz`
- `2 "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 : 12`
  - `siblings : 12`
  - `physical 0: cores 0 2 3 4 5 8 9 10 11 12 13`
  - `physical 1: cores 0 2 3 4 5 8 9 10 11 12 13`
- `cache size : 30720 KB`

From `/proc/meminfo`

- `MemTotal: 263568992 kB`
- `HugePages_Total: 0`
- `Hugepagesize: 2048 kB`

From `/etc/*release* /etc/*version*`

- `NAME="Red Hat Enterprise Linux Server"`
- `VERSION="7.2 (Maipo)"
- `ID="rhel"
- `ID_LIKE="fedora"
- `VERSION_ID="7.2"
- `PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
- `ANSI_COLOR="0;31"
- `CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
- `redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
- `system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

**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 17 15:27

**SPEC is set to:** /spec16

---

**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 [Appendix C](https://www.spec.org/osg/policy.html#general).**
SPEC CFP2006 Result

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

SPECfp2006 = NC
SPECfp_base2006 = NC

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 and the SPEC Open Systems Group policy on general availability.

Platform Notes (Continued)

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:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"
OMP_NUM_THREADS = "24"

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>

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

Base Compiler Invocation

Continued on next page
**SPEC CFP2006 Result**

**Huawei**

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

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**Base Compiler Invocation (Continued)**

Benchmarks using both Fortran and C:

```
icc -m64 ifort -m64```

**Base Portability Flags**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
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<tbody>
<tr>
<td>410.bwaves</td>
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<td>-DSPEC_CPU_LP64</td>
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<tr>
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<td>-nofor_main</td>
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<td>481.wrf</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>-DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

**Base Optimization Flags**

**C benchmarks:**

```
icc -m64 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias``

**C++ benchmarks:**

```
xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias``

**Fortran benchmarks:**

```
xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch``

**Benchmarks using both Fortran and C:**

```
xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias```
SPEC CFP2006 Result

Huawei

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

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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:

```
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 l) -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 l) -prof-use(pass 2) -unroll4
```

Continued on next page
Huawei

Huawei CH220 V3 (Intel Xeon E5-2650 v4)

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: May-2016
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Peak Optimization Flags (Continued)

453.povray (continued):
   - ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: -xCORE-AVX2(pas 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
            Spec-all-options=3 -auto -unroll4

Benchmarks 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

811.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
Huawei
Huawei CH220 V3 (Intel Xeon E5-2650 v4)  SPECfp2006 = NC  SPECfp_base2006 = NC

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You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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 26 July 2016.