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.
Huawei CH226 V3 (Intel Xeon E5-2683 v4)

<table>
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<tr>
<th>CPU2006 license: 3175</th>
<th>Test date: Jun-2016</th>
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<tr>
<td>Test sponsor: Huawei</td>
<td>Hardware Availability: Mar-2016</td>
</tr>
<tr>
<td>Tested by: Huawei</td>
<td>Software Availability: Aug-2015</td>
</tr>
</tbody>
</table>

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.

### Hardware

- **CPU Name:** Intel Xeon E5-2683 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.00 GHz
- **CPU MHz:** 2100
- **FPU:** Integrated
- **CPU(s) enabled:** 32 cores, 2 chips, 16 cores/chip, 2 threads/core
- **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:** 40 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, 10000 RPM
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default
- **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:** No
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32/64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** None
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>.

### 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.

### 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 CH226 V3 (Intel Xeon E5-2683 v4)

**SPEC fp rate2006 = NC**

**SPEC fp rate base2006 = NC**

CPU2006 license: 3175
Test date: Jun-2016
Test sponsor: Huawei
Tested by: Huawei

Hardware Availability: Mar-2016
Software Availability: Aug-2015

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**

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Snoop Mode to COD mode
Set Patrol Scrub to Disable
Sysinfo program /spec16/config/sysinfo.rev6914

$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb86b1c8a285f82ceab81e28219e1
running on linux-lybt Sun Jun 19 09:00:51 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 E5-2683 v4 @ 2.10GHz
2 "physical id"s (chips)
64 "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 : 16
siblings : 32
physical 0: cores 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB

From /proc/meminfo

MemTotal: 640598364 kB
HugePages_Total:   0
HugePages_Free:   0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP1

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

SUSE-release:
NAME "SLES" 
VERSION "12-SP1"

Non-compliant


SPEC CFP2006 Result

Huawei
Huawei CH226 V3 (Intel Xeon E5-2683 v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
Test date: Jun-2016
Test sponsor: Huawei
Hardware Availability: Mar-2016
Tested by: Huawei
Software Availability: Aug-2015

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)

VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jun 17 10:09 last=5

SPEC is set to: /spec16
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      xfs   456G  126G  330G  28% /

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 NO DIMM (2) NO DIMM (1) rank
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 memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
Huawei

Huawei CH226 V3 (Intel Xeon E5-2683 v4)

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

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

Test date: Jun-2016
Hardware Availability: Mar-2016
Software Availability: Aug-2015

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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
333.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 -nofor_main
438.namd: -DSPEC_CPU_LP64 -nofor_main
447.dealII: -DSPEC_CPU_LP64 -nofor_main
450.soplex: -DSPEC_CPU_LP64 -nofor_main
453.povray: -DSPEC_CPU_LP64 -nofor_main
454.calculix: -DSPEC_CPU_LP64 -nofor_main
465.tonto: -DSPEC_CPU_LP64 -nofor_main
470.lbm: -DSPEC_CPU_LP64 -nofor_main
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
Huawei CH226 V3 (Intel Xeon E5-2683 v4)

SPEC CFP2006 Result

**SPECfp_rate2006** = NC

**SPECfp_rate_base2006** = NC

**CPU2006 license:** 3175

**Test date:** Jun-2016

**Test sponsor:** Huawei

**Hardware Availability:** Mar-2016

**Software Availability:** Aug-2015

**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](https://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).

---

**Peak Portability Flags**

**Peak Compiler Invocation**

C benchmarks:

```
iCC -m64
```

Fortran benchmarks:

```
i Fortran -m64
```

C++ benchmarks:

```
-CORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-p32
```

**Fortran benchmarks using both Fortran and C:**

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

**Fortran benchmarks using both Fortran and C:**

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

**Base Optimization Flags (Continued)**

**C++ benchmarks:**

````
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-p32
```

**Fortran benchmarks:**

````
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-p32
```

**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
```

---

**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.
Huawei CH226 V3 (Intel Xeon E5-2683 v4)

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CPU2006 license: 3175
Test sponsor: Huawei
Test date: Jun-2016
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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).

### 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`
- 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) -unroll14 -ansi-alias`

#### Fortran benchmarks:

Continued on next page
Huawei

Huawei CH226 V3 (Intel Xeon E5-2683 v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

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

Test date: Jun-2016
Hardware Availability: Mar-2016
Software Availability: Aug-2015

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.

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
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) -unroll14 -auto
            -inline-calloc -opt-calloc-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
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).