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>
<td>434.zeusmp</td>
</tr>
<tr>
<td>435.gromacs</td>
</tr>
<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>
</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

<table>
<thead>
<tr>
<th>Huawei 5288 V3(Intel Xeon E5-2637 v4)</th>
<th>SPECfp2006 = NC</th>
<th>SPECfp_base2006 = NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2006 license: 3175</td>
<td>Test date:</td>
<td>Mar-2016</td>
</tr>
<tr>
<td>Test sponsor: Huawei</td>
<td>Hardware Avail.</td>
<td>Mar-2016</td>
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<tr>
<td>Tested by: Huawei</td>
<td>Software Avail.</td>
<td>Mar-2016</td>
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</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](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).

**Hardware**

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5-2637 v4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU MHZ:</td>
<td>3500</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>8 cores, 2 chips, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB L1 + 32 KB L2 on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB L2 on chip per core</td>
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<tr>
<td>L3 Cache:</td>
<td>15 MB L3 on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 500 GB SATA, 7200 RPM</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

**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
## Huawei

### Huawei 5288 V3 (Intel Xeon E5-2637 v4)

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>NC</th>
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**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Test date:** Mar-2016  
**Hardware Availability:** Mar-2016  
**Software Availability:** Mar-2016

### Results Table

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<th>Seconds</th>
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<td>NC</td>
<td>NC</td>
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</tr>
</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 Disable
- 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 16:15:17 2016

Continued on next page
Huawei

Huawei 5288 V3(Intel Xeon E5-2637 v4)

SPECfp2006 = NON
SPECfp_base2006 = NON

CPU2006 license: 3175
Test date: Mar-2016
Test sponsor: Huawei
Hardware Availability: Mar-2016
Tested by: Huawei
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 and the SPEC Open Systems Group policy on general availability.

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*
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

run-level 3 Mar 9 11:04
SPEC is set to: /spec16

Continued on next page
Huawei 5288 V3(Intel Xeon E5-2637 v4) SPECfp2006 = NC
SPECfp_base2006 = NC
CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Mar-2016
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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 where 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

General Notes

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

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>

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Continued on next page
**Huawei**

**Huawei 5288 V3(Intel Xeon E5-2637 v4)**

<table>
<thead>
<tr>
<th>SPECfp2006</th>
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</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>NC</td>
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</table>

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

### Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

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

### Base Portability Flags

- 410.bwaves: -DSPEC_CPU_LP64
- 416.games: -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 -no-prec-div
- 447.dealII: -DSPEC_CPU_LP64 -nofor_main
- 450.soplex: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64
- 454.calcultix: -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

### Base Optimization Flags

**C benchmarks:**

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

**C++ benchmarks:**

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

**Fortran benchmarks:**

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

**Benchmarks using both Fortran and C:**

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

Huawei 5288 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
Tested by: Huawei
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 and the SPEC Open Systems Group policy on general availability.

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

Fortran 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) -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) -prof-use(pass 2) -unroll4

Continued on next page
**Huawei**

**Huawei 5288 V3 (Intel Xeon E5-2637 v4)**

<table>
<thead>
<tr>
<th>SPECfp2006</th>
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<tbody>
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**CPU2006 license:** 3175  
**Test date:** Mar-2016  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Hardware Availability:** Mar-2016  
**Software Availability:** Mar-2016

**Peak Optimization Flags (Continued)**

453.povray (continued):
- `-ansi-alias`

Fortran benchmarks:

410.bwaves: `basepeak = yes`
416.games: `-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-all-iplan=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`
481.wrf: `basepeak = yes`

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

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**Non-Compliant**

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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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