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 the SPEC website for the rules: http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2 and general availability policy: http://www.spec.org/osg/policy.html#AppendixC.
Huawei RH2288 V3 (Intel Xeon E5-2630 v4)

| SPECfp2006 = | NC |
| SPECfp_base2006 = | NC |

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

---

### Hardware

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<thead>
<tr>
<th>Specification</th>
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<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2630 v4</td>
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<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.10 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
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<td>FPU</td>
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<td>Secondary Cache</td>
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<td>L3 Cache</td>
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<td>Other Cache</td>
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<td>Memory</td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)</td>
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<td>Disk Subsystem</td>
<td>1 x 500 GB SATA, 7200 RPM</td>
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<td>Other Hardware</td>
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### Software

<table>
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<th>Value</th>
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<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64</td>
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<tr>
<td>Compiler</td>
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<td>Auto Parallel</td>
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<td>File System</td>
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<td>System State</td>
<td>Run level 3 (multi-user)</td>
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<td>Base Pointers</td>
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<td>Peak Pointers</td>
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**Huawei**

Huawei RH2288 V3 (Intel Xeon E5-2630 v4)

**SPECfp2006 = NC**

**SPECfp_base2006 = NC**

---

**CPU2006 license:** 3175  
**Test date:** Feb-2016

**Test sponsor:** Huawei  
**Hardware Availability:** Mar-2016

**Tested by:** Huawei  
**Software Availability:** Mar-2016

---

### Results Table

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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 Mon Feb 15 13:08:31 2016

Continued on next page
Huawei
Huawei RH2288 V3(Intel Xeon E5-2630 v4)

SPECfp2006 = NC
SPECfp_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
Test date: Feb-2016
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 E5-2630  8 2.20GHz
  2 "physical id"s (chips)
  20 "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 : 10
siblings : 10
physical 0: cores 0 2 3 4 8 9 10 11 12
physical 1: cores 0 1 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal:  263570712 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

run-level 3 Feb 15 12:57
SPEC is set to: /spec16

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.

Platform Notes (Continued)

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 443G 9.6G 433G 3% /

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, for there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Insyde Corp. 7.11 02/14/2016
Memory:
8x Samsung M393A2G40EB1-CEC 16 GB 1 rank 2400 MHz, configured at 2133 MHz
8x Samsung M393A2G40EB1-CEC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

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 = "10"

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
runcmp command invoked through numactl 1.e:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
ice -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Non-compliant
Huawei RH2288 V3(Intel Xeon E5-2630 v4)

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.

Base Compiler Invocation (Continued)

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
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 -nofor_main
450.soplex: -DSPEC_CPU_LP64
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
```

Base Optimization Flags

C benchmarks:
```
-xCORE-AVX2 -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 RH2288 V3(Intel Xeon E5-2630 v4)

<table>
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<tr>
<th>SPECfp2006</th>
<th>SPECfp_base2006</th>
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CPU2006 license: 3175  
Test sponsor: Huawei  
Hardware Availability: Mar-2016  
Tested by: Huawei  
Software Availability: Mar-2016  
Test date: Feb-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

<table>
<thead>
<tr>
<th>C benchmarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>433.milc: basepeak = yes</td>
</tr>
<tr>
<td>470.lbm: basepeak = yes</td>
</tr>
<tr>
<td>482.sphinx3: basepeak = yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fortran benchmarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
</tr>
<tr>
<td>447.dealII: basepeak = yes</td>
</tr>
<tr>
<td>450.soplex: basepeak = yes</td>
</tr>
<tr>
<td>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</td>
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Non-Compliant
Huawei RH2288 V3 (Intel Xeon E5-2630 v4)

<table>
<thead>
<tr>
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<td>SPECfp_base2006</td>
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CPU2006 license: 3175

Test date: Feb-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

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.

Peak Optimization Flags (Continued)

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

Fortran benchmarks:

410.bwaves: basepeak = yes

416.games: -xCORE-AVX2(pass 2) -prof-gen:threadsafety(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:threadsafety(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:threadsafety(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-ailloptions=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

48.cactusADM: basepeak = yes

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

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 RH2288 V3 (Intel Xeon E5-2630 v4)

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 the SPEC CPU rule 1.3.2. 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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.