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 and the SPEC Open Systems Group policy on general availability.
Huawei RH2288H V3 (Intel Xeon E5-2683 v4)

**SPEC CFP2006 Result**

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| CPU2006 license: | 3175 |
| Test sponsor: | Huawei |
| Tested by: | Huawei |
| Test date: | Feb-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 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
- **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 600GB SAS, 10000 RPM
- **Other Hardware:** None

### Software
- **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:** 64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** None
Huawei RH2288H V3 (Intel Xeon E5-2683 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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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 <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>.

Operating System Notes

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

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Custom
Set Snooping Mode to HS mode
Set Patrol Scrub to Disable
Set Hyper-Threading to Disable
Sysinfo program /spec/spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #s e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Wed Nov 26 17:19:53 2014
Continued on next page
**Huawei RH2288H V3 (Intel Xeon E5-2683 v4)**

**CPU2006 license:** 3175  
**Test date:** Feb-2016  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Hardware Availability:** Mar-2016  
**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: http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
- **model name:** Intel(R) Xeon(R) CPU E5-2683 @ 2.10GHz
- **physical id**s (chips): 2  
- **processors:** 32  
- **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:** 16  
  - **physical 0:** cores 0 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
  - **physical 1:** cores 0 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
  - **cache size:** 40960 KB

From /proc/meminfo
- **MemTotal:** 263569320 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** Nov 26 12:13  
**SPEC is set to:** /spec/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 [general availability](https://www.spec.org/osg/policy.html#AppendixC).**

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**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.

Platform Notes (Continued)

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 549G 12G 537G 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 if there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Insyte Corp. 3.09 02/22/2016
Memory:
8x NO DIMM NO DIMM 3 rank
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=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec/spec16/libs/32:/spec/spec16/libs/64:/spec/spec16/sh"
OMP_NUM_THREADS = "32"

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 RH2288H V3 (Intel Xeon E5-2683 v4)

SPECfp2006 = NC
SPECfp_base2006 = NC

CPUs2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

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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 -nofor_main
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
```
Huawei RH2288H V3 (Intel Xeon E5-2683 v4)

SPECfp2006 = NC
SPECfp_base2006 = NC

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

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) -03(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) -03(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4

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.

Non-Compliant
Huawei

Huawei RH2288H V3 (Intel Xeon E5-2683 v4)

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

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### Peak Optimization Flags (Continued)

- **Fortran benchmarks:**
  - 453.povray (continued):
    - `-ansi-alias`
  - 410.bwaves: basepeak = yes
  - 416.games: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
    - -ipo(pass 2) -O3(pass 1) -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-prefetch -parallel -opt-malloc-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
  - 81.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at:

- [http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html](http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html)
Huawei RH2288H V3 (Intel Xeon E5-2683 v4)  

**SPECfp2006 = NC**  
**SPECfp_base2006 = NC**

**CPU2006 license:** 3175  
**Test date:** Feb-2016  
**Test sponsor:** Huawei  
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You can also download the XML flags sources by saving the following links:

- [Intel-ic16.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml)
- [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.  
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