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 E5-2660 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz
- **CPU MHz:** 2000
- **FPU:** Integrated
- **CPU(s) enabled:** 28 cores, 2 chips, 14 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:** 35 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 1 T SATA, 7200 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
- **Auto Parallel:** Yes
- **File System:** ext4
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32/64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V10.2
## SPEC CINT2006 Result

**Huawei**

Huawei CH222 V3 (Intel Xeon E5-2660 v4)

### SPECint2006 = NC

### SPECint_base2006 = NC

- **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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</tbody>
</table>

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

### Submit Notes

The config file option 'submit' was used.

### Operating System Notes

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

### Platform Notes

- BIOS configuration:
  - Set Power Efficiency Mode to Custom
  - Set Snooze Mode to ES mode
  - Set Patrol Scrub to Disable
  - Set Hyper-Threading to Disable
- Sysinfo program /speccpu/spec16/config/sysinfo.rev6914
- Rev: 6914 $ $Date:: 2014-06-25 $ $ e3fbb8667b5a285932ceab81e28219e1
- running on localhost.localdomain Tue Mar 15 15:21:46 2016

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: Continued on next page

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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 <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>**
Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v4)

SPECint2006 = NC
SPECint_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 the SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

Platform Notes (Continued)

From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E5-2660 v4@ 2.00GHz
   2 "physical id"s (chips)
   28 "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 : 14
       siblings : 14
       physical 0: cores 0 2 3 4 5 6 7 8 10 11 12 13 14
       physical 1: cores 0 2 3 4 5 6 8 9 10 11 12 13 14
   cache size : 35840 KB

From /proc/meminfo
   MemTotal: 263569784 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"
   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 15 10:09

SPEC is set to: /speccpu/spec16
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/sda2     ext4 865G 111G 711G 14% /
   Additional information from dmidecode:

Continued on next page
# SPEC CINT2006 Result

## Huawei

**Huawei CH222 V3 (Intel Xeon E5-2660 v4)**

<table>
<thead>
<tr>
<th>SPECint2006</th>
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<tr>
<td>SPECint_base2006</td>
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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

---

## Platform Notes (Continued)

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 NO DIMM 3 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:  
- `KMP_AFFINITY = "granularity=fine,compact,1,0"`  
- `LD_LIBRARY_PATH = "/speccpu/spec16/libs/32:/speccpu/spec16/libs/64:/speccpu/spec16/sh"`  
- `OMP_NUM_THREADS = "28"`

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  
runcspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

The Huawei CH121 V3 and Huawei CH222 V3 are electronically equivalent.

The results have been measured on a Huawei CH121 V3 model

---

## Base Compiler Invocation

**C benchmarks:**  
```
icc -m64```

**C++ benchmarks:**  
```
icpc -m64```
Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v4)

SPECint2006 = NC
SPECint_base2006 = NC

CPU2006 license: 3175
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**Base Portability Flags**

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

**Base Optimization Flags**

C benchmarks:
-xCORE-AVX2 -ipo -O3 -nprec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -nprec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs,-sh -L/sh -lsmartheap64

**Base Other Flags**

C benchmark:
403.gcc -Dalloca=_alloca

**Peak Compiler Invocation**

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Continued on next page
Huawei CH222 V3 (Intel Xeon E5-2660 v4)

SPECint2006 = NC
SPECint_base2006 = NC

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

Test date: Mar-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.

Peak Compiler Invocation (Continued)

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -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) -opt-prefetch alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

455.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-opt-prefetch -auto-p32

445.gobmk: basepeak = yes

Continued on next page
### SPEC CINT2006 Result

**Huawei**

Huawei CH222 V3 (Intel Xeon E5-2660 v4)  

<table>
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<th>CPU2006 license: 3175</th>
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**SPECint2006 = NC**  
**SPECint_base2006 = NC**

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.

#### Peak Optimization Flags (Continued)

456.hmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 2)
            -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
            -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

**C++ benchmarks:**

471.omnetpp: -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)
             -opt-ra-region-strategy=block -ansi-alias
             -Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
            -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
                -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

#### Peak Other Flags

**C benchmarks:**

403.gcc: -Dalloca=_alloca

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
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For other inquiries, please contact webmaster@spec.org.

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