## SPEC® CINT2006 Result

**Huawei**

Huawei CH225 V3 (Intel Xeon E5-2660 v4)  

<table>
<thead>
<tr>
<th>SPECint_rate2006 =</th>
<th>NC</th>
<th>SPECint_rate_base2006 =</th>
<th>NC</th>
</tr>
</thead>
</table>

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

---

**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, 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:** 35 MB I+D on chip per chip  
**Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)  
**Disk Subsystem:** 1 x 500 GB SATA, 7200 RPM

---

**Operating System:** Red Hat Enterprise Linux Server release 7.2 (Maipo)  
**Compiler:** C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux  
**Auto Parallel:** No  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32-bit  
**Peak Pointers:** 32/64-bit  
**Other Software:** Microquill SmartHeap V10.2

---

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.

---

Copies  
- 400.perlbench  
- 401.bzip2  
- 403.gcc  
- 429.mcf  
- 445.gobmk  
- 456.hmmer  
- 458.sjeng  
- 462.libquantum  
- 464.h264ref  
- 471.omnetpp  
- 473.astar  
- 483.xalancbmk
Huawei CH225 V3 (Intel Xeon E5-2660 v4)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
Test date: Jun-2016
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 <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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Copies</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>403.gcc</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>429.mcf</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>473.astar</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>56</td>
<td>NC</td>
<td>NC</td>
</tr>
</tbody>
</table>

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"

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 $e3fbb8667b5a285932ceab81e28219e1

This section contains SUT (System Under Test) info as seen by...
Huawei

Huawei CH225 V3 (Intel Xeon E5-2660 v4)

**SPECint_rate2006 = NC**

**SPECint_rate_base2006 = NC**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-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](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).

---

Platform Notes (Continued)

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 E5-2660 v4@ 2.00GHz
- 2 "physical id"s (chips)
- 56 "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 : 28
- physical 0: cores 0 2 3 4 5 6 8 9 10 11 12 13 14
- physical 1: cores 0 2 3 4 5 6 8 9 10 11 12 13 14
- cache size : 17920 KB

From /proc/meminfo

- MemTotal: 263564516 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

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

- os-release:
  - NAME="Red Hat Enterprise Linux Server"
  - VERSION="7.2 (Maipo)"
  - ID="rhel"
  - ID_LIKE="fedora"
  - VERSION_ID="7.2"
  - PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
  - ANSI_COLOR="0;31"
  - CPE "oMe"="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
  - system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a

- Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 29 11:02

SPEC is set to: /spec16

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 535G 9.9G 526G 2% /
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)

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 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:
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.:
  numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
  icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
C++ benchmarks:
  icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
Huawei
Huawei CH225 V3 (Intel Xeon E5-2660 v4)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Jun-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 <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>.

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX -D_SPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -W1,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
-Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
        400.perlbench: icc -m64

Continued on next page
Huawei

Huawei CH225 V3 (Intel Xeon E5-2660 v4)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>NC</td>
</tr>
</tbody>
</table>

CPU2006 license: 3175

Test sponsor: Huawei

Hardware Availability: Mar-2016

Test date: Jun-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 (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Compiler Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>401.bzip2</td>
<td>icc -m64</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>icc -m64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>icc -m64</td>
</tr>
</tbody>
</table>

C++ benchmarks:

```bash
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

Peak Portability Flags

```bash
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
403.gcc: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

Peak Optimization Flags

```bash
400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipto(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

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

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div
```

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>.

**Peak Optimization Flags (Continued)**

429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
            -prof-use(pass 2) -par-num-thread=1(pass 1) -ansi-alias
            -opt-mem-layout-trans=3
456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll12 -auto-ilp32
458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
            -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
            -par-num-thread=1(pass 1) -prof-use(pass 2) -unroll14
            -auto-ilp32
462.libquantum: basepeak = yes
464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
            -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
            -par-num-thread=1(pass 1) -prof-use(pass 2) -unroll12
            -ansi-alias

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-thread=1(pass 1) -prof-use(pass 2) -ansi-alias
            -opt-ra-region-strategy=block -Wl,-z,muldefs
            -L/shlsmartheap
472.astar: basepeak = yes
492.xmlt: basepeak = yes

**Peak Other Flags**

C benchmarks:

403.gcc: -Dalloca=_alloca
Huawei CH225 V3 (Intel Xeon E5-2660 v4) SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

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

Test date: Jan-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](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).

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 and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Originally published on 26 July 2016.