**SPEC® CINT2006 Result**

**Huawei**

Huawei CH226 V3 (Intel Xeon E5-2667 v4)

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>NC</th>
</tr>
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<tbody>
<tr>
<td>SPECint_base2006</td>
<td>NC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2006 license: 3175</th>
<th>Test date:</th>
<th>Jan-2016</th>
</tr>
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<tbody>
<tr>
<td>Test sponsor: Huawei</td>
<td>Hardware Availability:</td>
<td>Mar-2016</td>
</tr>
<tr>
<td>Tested by: Huawei</td>
<td>Software Availability:</td>
<td>Mar-2016</td>
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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 SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

### Hardware

- **CPU Name:** Intel Xeon E5-2667 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.60 GHz
- **CPU MHz:** 3200
- **FPU:** Integrated
- **CPU(s) enabled:** 16 cores, 2 chips, 8 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:**
  - 25 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 500 GB SATA, 7200 RPM
- **Other Hardware:** None

### Software

- **Operating System:** Red Hat Enterprise Linux Server release 7.2 (Maipo)
  - 3.10.0-327.el7.x86_64
- **Compiler:** C/C++: Version 16.0.0.101 of Intel C++ 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:** Microquill SmartHeap V10.2

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Non-Compliant
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Results Table

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<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
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<tbody>
<tr>
<td></td>
<td>Seconds</td>
<td>Ratio</td>
</tr>
<tr>
<td>400.perlbench</td>
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<td>NC</td>
</tr>
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<td>NC</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>NC</td>
<td>NC</td>
</tr>
</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 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 Thu Jun 23 05:49:30 2016

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Huawei CH226 V3 (Intel Xeon E5-2667 v4)

SPEC CINT2006 Result

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Huawei

Huawei CH226 V3 (Intel Xeon E5-2667 v4)

SPECint2006 = NC

SPECint_base2006 = NC

CPU2006 license: 3175
Test date: Jun-2016
Test sponsor: Huawei
Hardware Availability: Mar-2016
CPU2006 license: 3175
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Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2667 v4 @ 3.20GHz
2 "physical id"s (chips)
16 "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 : 8
siblings : 8
physical 0: cores 0 2 3 4 8 10 11 12
physical 1: cores 0 2 3 4 8 10 11 12

From /proc/meminfo

MemTotal: 263569980 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:/o:redhat:enterprise_linux:7.2:GA:server
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
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 23 05:48

SPEC is set to: /spec16

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 535G 9.8G 526G 2% /

Non-Compliant
Huawei CH226 V3 (Intel Xeon E5-2667 v4)

| SPECint2006 =     | NC     |
| SPECint_base2006 | NC     |

CPU2006 license: 3175
Test sponsor: Huawei
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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 = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"
OMP_NUM_THREADS = "16"

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>

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64
SPEC CINT2006 Result

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SPECint2006 = NC
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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
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 -no-prec-div -parallel -opt-prefetch -auto-p32
C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs: /sh -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
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
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Peak Compiler Invocation (Continued)

473.astar: icpc -m64

Peak Portability Flags

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</thead>
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<tr>
<td>400.perlbench</td>
<td>-D_FILE_OFFSET_BITS=64, -DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>403.gcc</td>
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<td>-DSPEC_CPU_LP64</td>
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<td>445.gobmk</td>
<td>-DSPEC_CPU_LP64</td>
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<td>-DSPEC_CPU_LP64</td>
</tr>
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<td>458.sjeng</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>-DSPEC_CPU_LP64, -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>-D_FILE_OFFSET_BITS=64</td>
</tr>
<tr>
<td>473.astar</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-D_FILE_OFFSET_BITS=64, -DSPEC_CPU_LINUX</td>
</tr>
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</table>

Peak Optimization Flags

C benchmarks:

- **400.perlbench**: -xCORE-AVX2(pass 2) -prof-gen:threadsafepass 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:threadsafepass 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
- **456.hmmer**: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32
- **464.h264ref**: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
- **445.gobmk**: basepeak = yes
### SPEC CINT2006 Result

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<td>456.hmmer</td>
<td>basepeak = yes</td>
<td>-XCORE-AVX2 (pass 2)</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>-xCORE-AVX2 (pass 2)</td>
<td>-prof-gen:threadsafe (pass 1)</td>
</tr>
<tr>
<td></td>
<td>-ipo (pass 2)</td>
<td>-O3 (pass 2)</td>
</tr>
<tr>
<td></td>
<td>-no-prec-div (pass 2)</td>
<td>-par-num-threads=1 (pass 1)</td>
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<td></td>
<td>-prof-use (pass 2)</td>
<td>-unroll4</td>
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</tr>
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<td>464.h264ref</td>
<td>-XCORE-AVX2 (pass 2)</td>
<td>-prof-gen:threadsafe (pass 1)</td>
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<td>473.su2q</td>
<td>-XCORE-AVX2</td>
<td>-prof-gen:threadsafe (pass 1)</td>
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<td>-XCORE-AVX2 (pass 2)</td>
</tr>
<tr>
<td>485.astar</td>
<td>-XCORE-AVX2</td>
<td>-ipo (pass 2)</td>
</tr>
<tr>
<td></td>
<td>-O3</td>
<td>-no-prec-div</td>
</tr>
<tr>
<td></td>
<td>-opt-prefetch</td>
<td>-auto-p32</td>
</tr>
<tr>
<td></td>
<td>-ansi-alias</td>
<td>-Wl,-z,muldefs</td>
</tr>
<tr>
<td></td>
<td>-L/sh -lsmartheap64</td>
<td>-L/sh -lsmartheap</td>
</tr>
</tbody>
</table>

### Peak Optimization Flags (Continued)

- **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/Intel-ic16.0-official-linux64.html) and [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).

You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/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 more information, see [http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) and [https://www.spec.org/osg/policy.html#AppendixC](https://www.spec.org/osg/policy.html#AppendixC).
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