# SPEC® CINT2006 Result

## Huawei

**Huawei CH121 V3 (Intel Xeon E5-2680 v3)**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>1090</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>1050</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175  
**Test date:** Jan-2015  
**Test sponsor:** Huawei  
**Hardware Availability:** Sep-2014  
**Tested by:** Huawei  
**Software Availability:** Nov-2013

### Hardware

| CPU Name: Intel Xeon E5-2680 v3  
| CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
| CPU MHz: 2500  
| FPU: Integrated  
| CPU(s) enabled: 24 cores, 2 chips, 12 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: 30 MB I+D on chip per chip  
| Other Cache: None  
| Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
| Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
| Other Hardware: None |

### Software

| Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
| Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
| Auto Parallel: No  
| File System: ext4  
| System State: Run level 3 (multi-user)  
| Base Pointers: 32-bit  
| Peak Pointers: 32/64-bit  
| Other Software: Microquill SmartHeap V10.0 |

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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
Huawei

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio</th>
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<td>1110</td>
<td>298</td>
<td>1110</td>
<td>298</td>
<td>1110</td>
</tr>
</tbody>
</table>

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

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 Custom
Set Snoop Mode to COD
Set Patrol Scrub to Disable
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Thu Jan 22 01:33:44 2015

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 E5-2680 v3 @ 2.50GHz
   2 "physical id"s (chips)
   48 "processors"

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**SPECint_rate_base2006 = 1050**

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**Platform Notes (Continued)**

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 : 12
- siblings : 24
- physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
- physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
- cache size : 15360 KB

From /proc/meminfo

- MemTotal: 264272692 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d

- Red Hat Enterprise Linux Server release 6.5 (Santiago)

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

- redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
- system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)

uname -a:

- Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 22 01:31

SPEC is set to: /spec

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda1</td>
<td>ext4</td>
<td>268G</td>
<td>126G</td>
<td>129G</td>
<td>50%</td>
<td>/</td>
</tr>
</tbody>
</table>

Additional information from dmidecode:

- BIOS Insyde Corp. 1.13 08/12/2014
- Memory:
  - 8x NO DIMM NO DIMM  3 rank
  - 8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
  - 8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

(End of data from sysinfo program)

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**General Notes**

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:

- echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Filesystem page cache cleared with:

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### General Notes (Continued)
- echo 1> /proc/sys/vm/drop_caches  
- runspec 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 -m32
- C++ benchmarks:  
  - icpc -m32

### Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-DSPEC_CPU_LINUX_IA32</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

### 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 -Wl,-z,muldefs -L/sh -lsmartheap

### Base Other Flags

- C benchmarks:  
  - 403.gcc: -Dalloca=_alloca

### Peak Compiler Invocation

C benchmarks (except as noted below):  
- icc -m32

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**Peak Compiler Invocation (Continued)**

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458 sjeng: icc -m64
C++ benchmarks:
icc -m32

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**Peak Portability Flags**

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

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**Peak Optimization Flags**

C benchmarks:
400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias
403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3
456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

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Peak Optimization Flags (Continued)

- 462.libquantum: basepeak = yes
- 464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -unroll2 -ansi-alias

C++ benchmarks:

- 471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
  -L/sh -lsmartheap

- 473.astar: basepeak = yes
- 483.xalanchbmk: basepeak = yes

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.html

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

http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml

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