### Huawei RH2288H v2 SPECint®_rate2006 = 671

| SPECint_rate_base2006 | 648 |

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

#### Hardware

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2650 v2</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.40 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2600</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>16 cores, 2 chips, 8 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>20 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 500 GB SATA, 7200RPM</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Software

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

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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
**SPEC CINT2006 Result**

**Huawei**

Huawei RH2288H v2

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>32</td>
<td>642</td>
<td>487</td>
<td>643</td>
<td>486</td>
<td>32</td>
<td>535</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>32</td>
<td>890</td>
<td>347</td>
<td>895</td>
<td>345</td>
<td>891</td>
<td>347</td>
</tr>
<tr>
<td>403.gcc</td>
<td>32</td>
<td>501</td>
<td>514</td>
<td>504</td>
<td>511</td>
<td>506</td>
<td>509</td>
</tr>
<tr>
<td>429.mcf</td>
<td>32</td>
<td>302</td>
<td>966</td>
<td>303</td>
<td>963</td>
<td>302</td>
<td>966</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>32</td>
<td>699</td>
<td>480</td>
<td>697</td>
<td>481</td>
<td>697</td>
<td>481</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>32</td>
<td>334</td>
<td>894</td>
<td>333</td>
<td>898</td>
<td>335</td>
<td>892</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>32</td>
<td>806</td>
<td>481</td>
<td>811</td>
<td>477</td>
<td>808</td>
<td>479</td>
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<tr>
<td>462.libquantum</td>
<td>32</td>
<td>153</td>
<td>4330</td>
<td>153</td>
<td>4330</td>
<td>153</td>
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</tr>
<tr>
<td>464.h264ref</td>
<td>32</td>
<td>875</td>
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<td>874</td>
<td>810</td>
<td>873</td>
<td>812</td>
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<tr>
<td>471.omnetpp</td>
<td>32</td>
<td>589</td>
<td>339</td>
<td>584</td>
<td>343</td>
<td>586</td>
<td>341</td>
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<tr>
<td>473.astar</td>
<td>32</td>
<td>605</td>
<td>372</td>
<td>606</td>
<td>371</td>
<td>606</td>
<td>371</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>308</td>
<td>716</td>
<td>308</td>
<td>716</td>
<td>308</td>
<td>716</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**

Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on huawei Wed Apr  2 12:31:01 2014

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

test name : Intel(R) Xeon(R) CPU E5-2650 v2 @ 2.60GHz
2 "physical id"s (chips)
32 "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 : 16

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Huawei RH2288H v2

SPEC CINT2006 Result
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Huawei

SPECint_rate2006 = 671
SPECint_rate_base2006 = 648

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

Huawei RH2288H v2

SPECint_rate2006 = 671
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Platform Notes (Continued)

physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

From /proc/meminfo
MemTotal: 132103760 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/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 huawei 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 Apr 2 12:25

SPEC is set to: /spec
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 193G 56G 128G 31% /

Additional information from dmidecode:
BIOS Insyde Corp. RMIBV372 12/21/2013
Memory:
16x NO DIMM NO DIMM
2x Samsung M393B2G70DB0-CMA 16 GB 1866 MHz 2 rank
6x Samsung M393B2G70QH0-CMA 16 GB 1866 MHz 2 rank

(End of data from sysinfo program)

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:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

The Huawei RH2288H v2 and Huawei RH2288 v2 and the Huawei RH1288 v2 models
Continued on next page
Huawei
Huawei RH2288H v2

SPECint_rate2006 = 671
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Apr-2014
Hardware Availability: Sep-2013
Software Availability: Nov-2013

General Notes (Continued)
are electronically equivalent, and the results have been measured on a Huawei RH2288H v2 model.

Base Compiler Invocation

C benchmarks:
 icc -m32

C++ benchmarks:
icpc -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -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
  400.perlbench: icc -m64
  401.bzip2: icc -m64

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Huawei RH2288H v2

SPECint_rate2006 = 671
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Peak Compiler Invocation (Continued)

456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

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

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-1lp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-1lp32 -ansi-alias

403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -03 -no-prec-div -unroll2 -auto-1lp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-1lp32

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

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SPEC CINT2006 Result

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Huawei RH2288H v2

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CPU2006 license: 3175
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Test date: Apr-2014
Hardware Availability: Sep-2013
Software Availability: Nov-2013

Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xSSE4.2(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.xalancbmk: 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

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-V1.0-IVB-RevG.xml

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

Tested with SPEC CPU2006 v1.2.
Originally published on 6 May 2014.