Huawei

Huawei RH2288H V3 (Intel Xeon E5-2695 v3)

| SPECint_rate2006 = 1190 | SPECint_rate_base2006 = 1140 |

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

CPU Name: Intel Xeon E5-2695 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2300
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
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

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 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 V10.0

Test date: Dec-2014
Hardware Availability: Sep-2014
Software Availability: Nov-2013

<table>
<thead>
<tr>
<th>SPECint</th>
<th>rate2006</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>400. perlbench</td>
<td>56</td>
<td>1060</td>
</tr>
<tr>
<td>401. bzip2</td>
<td>56</td>
<td>874</td>
</tr>
<tr>
<td>403. gcc</td>
<td>56</td>
<td>587</td>
</tr>
<tr>
<td>429. mcf</td>
<td>56</td>
<td>892</td>
</tr>
<tr>
<td>445. gobmk</td>
<td>56</td>
<td>897</td>
</tr>
<tr>
<td>456. hammer</td>
<td>56</td>
<td>1550</td>
</tr>
<tr>
<td>458. sjeng</td>
<td>56</td>
<td>1610</td>
</tr>
<tr>
<td>462. libquantum</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>464. h264ref</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>471. omnetpp</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>473. astar</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>483. xalancbmk</td>
<td>56</td>
<td>56</td>
</tr>
</tbody>
</table>
Huawei

Huawei RH2288H V3 (Intel Xeon E5-2695 v3)

**SPEC CINT2006 Result**

**Copyright 2006-2015 Standard Performance Evaluation Corporation**

---

**SPECint_rate2006 = 1190**

**SPECint_rate_base2006 = 1140**

---

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

---

### Results Table

<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>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>56</td>
<td>626</td>
<td>873</td>
<td>626</td>
<td>874</td>
<td>624</td>
<td>876</td>
<td>56</td>
<td>498</td>
<td>1100</td>
<td>498</td>
<td>1100</td>
<td>497</td>
<td>1100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>56</td>
<td>920</td>
<td>587</td>
<td><strong>921</strong></td>
<td>587</td>
<td>921</td>
<td>587</td>
<td>56</td>
<td>884</td>
<td>611</td>
<td>885</td>
<td>611</td>
<td><strong>885</strong></td>
<td>611</td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td>56</td>
<td>505</td>
<td>893</td>
<td>510</td>
<td>884</td>
<td><strong>506</strong></td>
<td><strong>892</strong></td>
<td>56</td>
<td><strong>506</strong></td>
<td><strong>892</strong></td>
<td>505</td>
<td>892</td>
<td>506</td>
<td>890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>56</td>
<td>331</td>
<td>1540</td>
<td>329</td>
<td>1550</td>
<td><strong>330</strong></td>
<td><strong>1550</strong></td>
<td>56</td>
<td>331</td>
<td>1540</td>
<td>329</td>
<td>1550</td>
<td><strong>330</strong></td>
<td><strong>1550</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>56</td>
<td>765</td>
<td>766</td>
<td>767</td>
<td>766</td>
<td><strong>766</strong></td>
<td>767</td>
<td>56</td>
<td>754</td>
<td>779</td>
<td>757</td>
<td>776</td>
<td><strong>754</strong></td>
<td>779</td>
<td></td>
<td></td>
</tr>
<tr>
<td>456.hmmer</td>
<td>56</td>
<td><strong>324</strong></td>
<td><strong>1610</strong></td>
<td>324</td>
<td>1610</td>
<td>323</td>
<td>1620</td>
<td>56</td>
<td>300</td>
<td>1740</td>
<td><strong>300</strong></td>
<td><strong>1740</strong></td>
<td>299</td>
<td>1750</td>
<td></td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td>56</td>
<td>788</td>
<td>860</td>
<td>860</td>
<td>788</td>
<td>860</td>
<td>788</td>
<td>56</td>
<td>755</td>
<td>898</td>
<td>755</td>
<td>897</td>
<td><strong>755</strong></td>
<td><strong>897</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>462.libquantum</td>
<td>56</td>
<td>111</td>
<td>10500</td>
<td>110</td>
<td><strong>10500</strong></td>
<td>110</td>
<td><strong>10500</strong></td>
<td>56</td>
<td>111</td>
<td>10500</td>
<td>110</td>
<td>10500</td>
<td><strong>110</strong></td>
<td><strong>10500</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>56</td>
<td>909</td>
<td>1360</td>
<td><strong>928</strong></td>
<td><strong>1340</strong></td>
<td>939</td>
<td>1320</td>
<td>56</td>
<td>898</td>
<td>1380</td>
<td><strong>894</strong></td>
<td><strong>1390</strong></td>
<td>893</td>
<td>1390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>56</td>
<td>569</td>
<td>615</td>
<td><strong>565</strong></td>
<td><strong>620</strong></td>
<td>564</td>
<td>620</td>
<td>56</td>
<td>548</td>
<td>639</td>
<td>546</td>
<td>641</td>
<td><strong>547</strong></td>
<td><strong>640</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>56</td>
<td>624</td>
<td>630</td>
<td>628</td>
<td>626</td>
<td><strong>627</strong></td>
<td><strong>627</strong></td>
<td>56</td>
<td>624</td>
<td>630</td>
<td>628</td>
<td>626</td>
<td><strong>627</strong></td>
<td><strong>627</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>56</td>
<td>328</td>
<td>1180</td>
<td>331</td>
<td>1170</td>
<td><strong>329</strong></td>
<td><strong>1180</strong></td>
<td>56</td>
<td>328</td>
<td>1180</td>
<td>331</td>
<td>1170</td>
<td><strong>329</strong></td>
<td><strong>1180</strong></td>
<td></td>
<td></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 /spec15/config/sysinfo.rev6914
- $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
- running on localhost.localdomain Thu Dec 18 00:56:28 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
- model name : Intel(R) Xeon(R) CPU E5-2695 v3 @ 2.30GHz
- 2 "physical id"s (chips)
- 56 "processors"

Continued on next page
Huawei RH2288H V3 (Intel Xeon E5-2695 v3) SPECint_rate2006 = 1190
SPECint_rate_base2006 = 1140

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 : 7
  siblings : 14
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  cache size : 17920 KB

From /proc/meminfo
  MemTotal:       263716344 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
  os-release:
    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"
    CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
  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 Dec 17 13:16

SPEC is set to: /spec15
  Filesystem   Type    Size  Used Avail Use% Mounted on
  /dev/sda2    xfs     510G  172G  339G  34% /

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. 1.19 10/10/2014
Memory:
  8x NO DIMM NO DIMM  3 rank
  8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz
  8x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Huawei

Huawei RH2288H V3 (Intel Xeon E5-2695 v3)

| SPECint_rate2006 | 1190 |
| SPECint_rate_base2006 | 1140 |

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

Test date: Dec-2014
Hardware Availability: Sep-2014
Software Availability: Nov-2013

General Notes
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
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/composer_xe_2015/lib/ia32
C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -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 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca
Huawei RH2288H V3 (Intel Xeon E5-2695 v3)

SPECint_rate2006 = 1190
SPECint_rate_base2006 = 1140

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

Peak Compiler Invocation
C benchmarks (except as noted below):
   icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

   400.perlbench: icc -m64
   401.bzip2: icc -m64
   456.hmmer: icc -m64
   458.sjeng: icc -m64

C++ benchmarks:
   icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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: -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: -xCORE-AVX2 -ipo -O3 -no-prec-div

   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

Continued on next page
Huawei RH2288H V3 (Intel Xeon E5-2695 v3)

SPECint_rate2006 = 1190
SPECint_rate_base2006 = 1140

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.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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.20141216.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.20141216.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 13 January 2015.