Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

SPECint®_rate2006 = 308
SPECint_rate_base2006 = 298

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
CPU Name: Intel Xeon E5-2609 v3
CPU Characteristics:
CPU MHz: 1900
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 256 GB SATA, SSD
Other Hardware: None

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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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>12</td>
<td>507</td>
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<td>508</td>
<td>231</td>
<td>506</td>
<td>232</td>
</tr>
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<td>401.bzip2</td>
<td>12</td>
<td>852</td>
<td>136</td>
<td>852</td>
<td>136</td>
<td>852</td>
<td>136</td>
</tr>
<tr>
<td>403.gcc</td>
<td>12</td>
<td>444</td>
<td>217</td>
<td>438</td>
<td>221</td>
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<tr>
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<td>12</td>
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<td>178</td>
<td>706</td>
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</tr>
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<td>445.gobmk</td>
<td>12</td>
<td>260</td>
<td>421</td>
<td>258</td>
<td>424</td>
<td>260</td>
<td>421</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>12</td>
<td>271</td>
<td>414</td>
<td>272</td>
<td>411</td>
<td>271</td>
<td>414</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>12</td>
<td>696</td>
<td>209</td>
<td>697</td>
<td>208</td>
<td>695</td>
<td>209</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>12</td>
<td>78.0</td>
<td>3190</td>
<td>78.4</td>
<td>3170</td>
<td>78.1</td>
<td>3180</td>
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<td>464.h264ref</td>
<td>12</td>
<td>683</td>
<td>389</td>
<td>674</td>
<td>394</td>
<td>675</td>
<td>393</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>12</td>
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<tr>
<td>473.astar</td>
<td>12</td>
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<td>163</td>
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<tr>
<td>483.xalancbmk</td>
<td>12</td>
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<td>360</td>
<td>231</td>
<td>359</td>
<td>229</td>
<td>361</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 HS
Set Hyper-Threading to Disabled
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 xjt Thu Jul 24 10:38:27 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 E5-2609 v3 @ 1.90GHz
2 "physical id"s (chips)
12 "processors"

Continued on next page
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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 : 6
  siblings : 6
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
  cache size : 15360 KB

From /proc/meminfo
  MemTotal: 131928996 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 xjt 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 Jul 24 10:36

SPEC is set to: /spec
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda1 ext4 222G 34G 177G 16% /

Additional information from dmidecode:
  BIOS Insyde Corp. 8.09 07/14/2014
  Memory:
    8x Micron 18ASF1G72PDZ-2G1A1 8 GB 1600 MHz 1 rank
    8x Micron 18ASF1G72PDZ-2G1A1 8 GB 1600 MHz 2 rank
    8x NO DIMM NO DIMM 3 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:

Continued on next page
Huawei

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

General Notes (Continued)

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

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:
- `-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:
- `403.gcc -Dalloca=_alloca`

Peak Compiler Invocation

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

- `400.perlbench: icc -m64`

Continued on next page
Huawei

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

**Peak Compiler Invocation (Continued)**

401.bzip2: 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
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: 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: basepeak = yes
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
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

Continued on next page
SPEC CINT2006 Result

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Software Availability: Nov-2013

Peak Optimization Flags (Continued)

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-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 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 22 October 2014.