Huawei

Huawei XH628 V3 (Intel Xeon E5-2620 v3)

SPECint®2006 = 56.9
SPECint_base2006 = 54.7

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

Hardware

CPU Name: Intel Xeon E5-2620 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz: 2400
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: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Software

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: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0

Test date: Jun-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

400.perlbench 43.3 36.9
401.bzip2 23.3 23.6
403.gcc 32.7 33.5
429.mcf 62.8 63.5
445.gobmk 26.5 26.5
456.hmmer 11.7 11.7
458.sjeng 31.5 31.5
462.libquantum 33.0 37.5
464.h264ref 32.7 33.5
471.omnetpp 24.5 24.5
473.astar 30.8 31.7
483.xalancbmk 61.7 61.7

SPECint_base2006 = 54.7
SPECint2006 = 56.9
Huawei

Huawei XH628 V3 (Intel Xeon E5-2620 v3)

SPECint2006 = 56.9
SPECint_base2006 = 54.7

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

Test date: Jun-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Results Table

<table>
<thead>
<tr>
<th>Benchmark</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>Base</td>
<td></td>
<td></td>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.perlbench</td>
<td>261</td>
<td>37.5</td>
<td>261</td>
<td>37.4</td>
<td>261</td>
<td>37.4</td>
<td>227</td>
<td>43.0</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>413</td>
<td>23.3</td>
<td>412</td>
<td>23.4</td>
<td>413</td>
<td>23.3</td>
<td>409</td>
<td>23.6</td>
</tr>
<tr>
<td>403.gcc</td>
<td>246</td>
<td>32.7</td>
<td>247</td>
<td>32.6</td>
<td>246</td>
<td>32.7</td>
<td>240</td>
<td>33.5</td>
</tr>
<tr>
<td>429.mcf</td>
<td>145</td>
<td>63.0</td>
<td>147</td>
<td>62.2</td>
<td>145</td>
<td>62.8</td>
<td>145</td>
<td>62.2</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>396</td>
<td>26.5</td>
<td>396</td>
<td>26.5</td>
<td>396</td>
<td>26.5</td>
<td>395</td>
<td>26.5</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>147</td>
<td>63.6</td>
<td>147</td>
<td>63.5</td>
<td>147</td>
<td>63.4</td>
<td>147</td>
<td>63.5</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>384</td>
<td>31.5</td>
<td>384</td>
<td>31.5</td>
<td>384</td>
<td>31.5</td>
<td>382</td>
<td>31.7</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>5.48</td>
<td>3780</td>
<td>5.71</td>
<td>3630</td>
<td>5.49</td>
<td>3770</td>
<td>5.48</td>
<td>3780</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>517</td>
<td>42.8</td>
<td>516</td>
<td>42.9</td>
<td>515</td>
<td>42.9</td>
<td>517</td>
<td>42.8</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>256</td>
<td>24.4</td>
<td>255</td>
<td>24.5</td>
<td>255</td>
<td>24.5</td>
<td>193</td>
<td>32.4</td>
</tr>
<tr>
<td>473.astar</td>
<td>228</td>
<td>30.8</td>
<td>225</td>
<td>31.2</td>
<td>230</td>
<td>30.6</td>
<td>228</td>
<td>30.8</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>112</td>
<td>61.8</td>
<td>112</td>
<td>61.6</td>
<td>112</td>
<td>61.7</td>
<td>112</td>
<td>61.6</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 Intel HT Technology to Disable
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Mon Jun 29 16:18:29 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 E5-2620 v3 @ 2.40GHz
  2 "physical id"s (chips)
  12 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with
Continued on next page
Huawei
Huawei XH628 V3 (Intel Xeon E5-2620 v3)

SPECint2006 = 56.9
SPECint_base2006 = 54.7

CPU2006 license: 3175
Test date: Jun-2015
Test sponsor: Huawei
Hardware Availability: Sep-2014
Tested by: Huawei
Software Availability: Sep-2014

Platform Notes (Continued)

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: 263579840 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 Jun 29 16:10

SPEC is set to: /spec15

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. 1.36 04/09/2015
Memory:
8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz, configured at 1867 MHz
8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1867 MHz

(End of data from sysinfo program)
Huawei

Huawei XH628 V3 (Intel Xeon E5-2620 v3)

**SPECint2006 =** 56.9

**SPECint_base2006 =** 54.7

**CPU2006 license:** 3175

**Test date:** Jun-2015

**Test sponsor:** Huawei

**Tested by:** Huawei

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

---

### General Notes

Environment variables set by runspec before the start of the run:
- `KMP_AFFINITY = "granularity=fine,compact,1,0"
- `LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"
- `OMP_NUM_THREADS = "12"

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`
- `runspec command invoked through numactl i.e.: numactl --interleave=all runspec <etc>`

The Huawei XH622 V3 and Huawei XH628 V3 and Huawei XH620 V3 are electronically equivalent.

The results have been measured on a Huawei XH620 V3 model.

---

### Base Compiler Invocation

- **C benchmarks:**
  - `icc -m64`

- **C++ benchmarks:**
  - `icpc -m64`

---

### Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
</table>
| 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`
| 464.hmmerref | `-DSPEC_CPU_LP64`
| 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 -L/sh -lsmartheap64`
# SPEC CINT2006 Result

## Huawei

Huawei XH628 V3 (Intel Xeon E5-2620 v3)

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>56.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>54.7</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Tested by:** Huawei

**Test date:** Jun-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

### 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/composer_xe_2015/lib/ia32`

- 445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks (except as noted below):

- `icpc -m64`

- 471.omnetpp: `icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

### Peak Portability Flags

- 400.perlbench: `-DSPEC_CPU_LINUX_IA32`

- 401.bzip2: `-DSPEC_CPU_LP64`

- 403.gcc: `-DSPEC_CPU_LP64`

- 429.mcf: `-DSPEC_CPU_LP64`

- 456.hmmer: `-DSPEC_CPU_LP64`

- 458.sjeng: `-DSPEC_CPU_LP64`

- 462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

- 464.h264ref: `-DSPEC_CPU_LP64`

- 473.astar: `-DSPEC_CPU_LP64`

- 483.xalancbmk: `-DSPEC_CPU_LP64 -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) -opt-prefetch -ansi-alias`

- 401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias`

Continued on next page
Huawei

Huawei XH628 V3 (Intel Xeon E5-2620 v3)

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

Huawei

SPECint2006 = 56.9
SPECint_base2006 = 54.7

Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)
-opt-ra-region-strategy=block -ansi-alias
-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-V1.4.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-V1.4.xml
## SPEC CINT2006 Result

**Huawei**

Huawei XH628 V3 (Intel Xeon E5-2620 v3)

<table>
<thead>
<tr>
<th>SPECint2006 =</th>
<th>56.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006 =</td>
<td>54.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>3175</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test date:</td>
<td>Jun-2015</td>
</tr>
<tr>
<td>Test sponsor:</td>
<td>Huawei</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Sep-2014</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Huawei</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2014</td>
</tr>
</tbody>
</table>

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 28 July 2015.

---

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