Huawei

Huawei XH628 V3 (Intel Xeon E5-2698 v3)

SPECint®2006 = 65.6
SPECint_base2006 = 63.3

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

Test date: Mar-2015
Hardware Availability: Sep-2014

Software Availability: Sep-2014

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
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

Hardware

CPU Name: Intel Xeon E5-2698 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 32 cores, 2 chips, 16 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: 40 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
Huawei

Huawei XH628 V3 (Intel Xeon E5-2698 v3)

SPECint2006 = 65.6
SPECint_base2006 = 63.3

CPU2006 license: 3175
Test date: Mar-2015
Test sponsor: Huawei
Hardware Availability: Sep-2014
Tested by: Huawei
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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.perlbench</td>
<td>240</td>
<td>40.7</td>
<td>239</td>
<td>40.9</td>
<td>241</td>
<td>40.6</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>396</td>
<td>24.4</td>
<td>394</td>
<td>24.5</td>
<td>394</td>
<td>24.5</td>
</tr>
<tr>
<td>403.gcc</td>
<td>231</td>
<td>34.9</td>
<td>231</td>
<td>34.8</td>
<td>231</td>
<td>34.8</td>
</tr>
<tr>
<td>429.mcf</td>
<td>152</td>
<td>60.1</td>
<td>150</td>
<td>60.8</td>
<td>149</td>
<td>61.0</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>360</td>
<td>29.1</td>
<td>358</td>
<td>29.3</td>
<td>357</td>
<td>29.4</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>131</td>
<td>71.1</td>
<td>131</td>
<td>71.0</td>
<td>132</td>
<td>70.8</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>340</td>
<td>35.6</td>
<td>340</td>
<td>35.6</td>
<td>341</td>
<td>35.5</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>3.04</td>
<td>6810</td>
<td>3.02</td>
<td>6860</td>
<td>3.16</td>
<td>6560</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>526</td>
<td>42.1</td>
<td>523</td>
<td>42.3</td>
<td>524</td>
<td>42.2</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>148</td>
<td>42.3</td>
<td>150</td>
<td>41.7</td>
<td>149</td>
<td>41.9</td>
</tr>
<tr>
<td>473.astar</td>
<td>213</td>
<td>33.0</td>
<td>213</td>
<td>33.0</td>
<td>213</td>
<td>32.9</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>104</td>
<td>66.7</td>
<td>103</td>
<td>66.8</td>
<td>104</td>
<td>66.6</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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 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 Performance
Set Snoop Mode to ES mode
Set Intel Hyper-threading Technology to Disable
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Sat Mar 21 02:40:43 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 E5-2698 v3 @ 2.30GHz
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.)

Continued on next page
Huawei

Huawei XH628 V3 (Intel Xeon E5-2698 v3)

SPECint2006 = 65.6
SPECint_base2006 = 63.3

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

Platform Notes (Continued)

- cpu cores : 16
- siblings : 16
- physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
- physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
- cache size : 40960 KB

From /proc/meminfo
- MemTotal: 263577516 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 Mar 20 18:51

SPEC is set to: /spec15
- Filesystem Type Size Used Avail Use% Mounted on
  /dev/mapper/rhel-root ext4 241G 22G 207G 10% /

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. 1.20 10/25/2014
- Memory:
  - 8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz
  - 8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Huawei

Huawei XH628 V3 (Intel Xeon E5-2698 v3)

SPECint2006 = 65.6
SPECint_base2006 = 63.3

CPU2006 license: 3175
Test date: Mar-2015
Test sponsor: Huawei
Hardware Availability: Sep-2014
Tested by: Huawei
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 = "32"

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 are electronically equivalent.
The results have been measured on a Huawei XH628 V3 model.

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Base Portability Flags

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.h264ref: -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
Huawei

Huawei XH628 V3 (Intel Xeon E5-2698 v3)

| SPECint2006 = | 65.6 |
| SPECint_base2006 = | 63.3 |

CPU2006 license: 3175
Test sponsor: Huawei
Test date: Mar-2015
Hardware Availability: Sep-2014
Tested by: Huawei
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 -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

473.astar: `icpc -m64`

## 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_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 E5-2698 v3)**

**SPECint2006 =** 65.6

**SPECint_base2006 =** 63.3

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Test date:** Mar-2015

**Tested by:** Huawei

**Software Availability:** Sep-2014

**Hardware Availability:** Sep-2014

---

**Peak Optimization Flags (Continued)**

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

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

---

**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
## Huawei

**Huawei XH628 V3 (Intel Xeon E5-2698 v3)**

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>65.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>63.3</td>
</tr>
</tbody>
</table>

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

**Test date:** Mar-2015  
**Hardware Availability:** Sep-2014  
**Software Availability:** Sep-2014

---

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 21 April 2015.