# Huawei XH620 V3 (Intel Xeon E5-2650 v3)

| Test date: | May-2015 |
| Test sponsor: | Huawei |
| Tested by: | Huawei |
| Hardware Availability: | Sep-2014 |
| Software Availability: | Sep-2014 |

## SPECint®_rate2006 = 859

| SPECint_rate_base2006 = 823 |

### Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2650 v3</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.00 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2300</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>20 cores, 2 chips, 10 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>25 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 500 GB SATA, 7200 RPM</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 15.0.0.090 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>
Huawei
Huawei XH620 V3 (Intel Xeon E5-2650 v3)

SPECint_rate2006 = 859
SPECint_rate_base2006 = 823

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>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.perlbench</td>
<td>40</td>
<td>675</td>
<td>579</td>
<td>958</td>
<td>567</td>
<td>667</td>
<td>585</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>40</td>
<td>959</td>
<td>403</td>
<td>653</td>
<td>497</td>
<td>492</td>
<td>654</td>
</tr>
<tr>
<td>403.gcc</td>
<td>40</td>
<td>493</td>
<td>653</td>
<td>319</td>
<td>1170</td>
<td>319</td>
<td>1170</td>
</tr>
<tr>
<td>429.mcf</td>
<td>40</td>
<td>315</td>
<td>1160</td>
<td>317</td>
<td>1150</td>
<td>313</td>
<td>1170</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>40</td>
<td>772</td>
<td>543</td>
<td>771</td>
<td>544</td>
<td>772</td>
<td>543</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>40</td>
<td>319</td>
<td>1170</td>
<td>319</td>
<td>1170</td>
<td>319</td>
<td>1170</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>40</td>
<td>841</td>
<td>575</td>
<td>842</td>
<td>575</td>
<td>842</td>
<td>575</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>40</td>
<td>102</td>
<td>8130</td>
<td>102</td>
<td>8130</td>
<td>102</td>
<td>8130</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>40</td>
<td>948</td>
<td>934</td>
<td>960</td>
<td>922</td>
<td>963</td>
<td>919</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>40</td>
<td>533</td>
<td>469</td>
<td>530</td>
<td>472</td>
<td>531</td>
<td>471</td>
</tr>
<tr>
<td>473.astar</td>
<td>40</td>
<td>607</td>
<td>463</td>
<td>608</td>
<td>462</td>
<td>606</td>
<td>464</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>40</td>
<td>305</td>
<td>906</td>
<td>304</td>
<td>907</td>
<td>304</td>
<td>908</td>
</tr>
<tr>
<td>Peak</td>
<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 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 Performance
Set Snoop Mode to COD mode
Set Patrol Scrub to Disable
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Fri May 15 14:43:13 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 E5-2650 v3 @ 2.30GHz
  2 "physical id"s (chips)
  40 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The Continued on next page
Huawei

Huawei XH620 V3 (Intel Xeon E5-2650 v3)

SPECint\_rate2006 = 859
SPECint\_rate\_base2006 = 823

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

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

Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 5
siblings : 10
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 12800 KB

From /proc/meminfo
MemTotal: 263576084 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 May 15 14:31

SPEC is set to: /spec15
Filesystem Type Size Used Avail Use\% Mounted on
/dev/sda2 ext4 448G 109G 317G 26\% /

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. 1.26 12/22/2014
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 XH620 V3 (Intel Xeon E5-2650 v3)

SPECint_rate2006 = 859
SPECint_rate_base2006 = 823

CPU2006 license: 3175
Test date: May-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:
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.:
umactl --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
Peak Compiler Invocation

C benchmarks (except as noted below):
  icc -m32 -L/opt/intel/compiler_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/compiler_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: 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: -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
SPEC CINT2006 Result

Huawei
Huawei XH620 V3 (Intel Xeon E5-2650 v3)

SPECint_rate2006 = 859
SPECint_rate_base2006 = 823

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

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

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-V1.4.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 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.