Huawei XH620 V3 (Intel Xeon E5-2603 v4)

<table>
<thead>
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<th>SPECint_rate2006</th>
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<td>SPECint_rate_base2006</td>
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

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<td>400.perlbench</td>
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<tr>
<td>401.bzip2</td>
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<tr>
<td>403.gcc</td>
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<td>429.mcf</td>
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<td>445.gobmk</td>
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<td>456.hmmer</td>
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<td>458.sjeng</td>
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<td>462.libquantum</td>
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<td>464.h264ref</td>
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<td>471.omnetpp</td>
</tr>
<tr>
<td>473.astar</td>
</tr>
<tr>
<td>483.xalancbmk</td>
</tr>
</tbody>
</table>

| Hardware |
|-----------------|-----------------|
| CPU Name: Intel Xeon E5-2603 v4 |
| CPU Characteristics: |
| CPU MHz: 1700 |
| 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 PC4-2400T-R, running at 1866 MHz) |
| Disk Subsystem: 1 x 500 GB SATA, 7200 RPM |

| Software |
|-----------------|-----------------|
| Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64 |
| Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux |
| Auto Parallel: No |
| File System: xfs |
| System State: Run level 3 (multi-user) |
| Base Pointers: 32/64-bit |
| Peak Pointers: 32/64-bit |
| Other Software: Microquill SmartHeap V10.2 |

Non-Compliant
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**Non-Compliant**

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**Results Table**

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</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 Patrol Scrub to Disable
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab81e28219el

This section contains SUT (System Under Test) info as seen by
Continued on next page
Huawei

Huawei XH620 V3(Intel Xeon E5-2603 v4)

**SPEC CINT2006 Result**

**SPECint_rate2006 = NC**
**SPECint_rate_base2006 = NC**

**CPU2006 license:** 3175  
**Test date:** Mar-2016  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Hardware Availability:** Mar-2016  
**Software Availability:** Mar-2016

---

**Platform Notes (Continued)**

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 E5-2603 v4 @ 1.70GHz
  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
caution.)
  cpu cores : 6
  siblings : 6
  physical 0: cores 0 2 3 4 5
  physical 1: cores 0 2 3 4 5
  cache size : 15360 KB
```

From `/proc/meminfo`

```
MemTotal: 263571640 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"
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
uname --
  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 18 14:14
```

**SPEC is set to:** `/spec16`

<table>
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<th>Filesystem</th>
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<th>Size</th>
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<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
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</thead>
<tbody>
<tr>
<td>/dev/sda3</td>
<td>xfs</td>
<td>443G</td>
<td>23G</td>
<td>420G</td>
<td>6%</td>
<td>/</td>
</tr>
</tbody>
</table>

Non-compliant

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not
Available as required by [SPEC CPU rule 1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) and the SPEC Open Systems Group policy on general availability.

---

Non-compliant
SPEC CINT2006 Result

Huawei
Huawei XH620 V3(Intel Xeon E5-2603 v4)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
Test date: Mar-2016

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Huawei XH620 V3(Intel Xeon E5-2603 v4)

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Platform Notes (Continued)
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. 3.09 02/22/2016
Memory:
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz, configured at 1867 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 1867 MHz

(End of data from sysinfo program)

General Notes
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 1
Transparent HugePages 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>
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 -m32 -L/opt/intel compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
C++ benchmarks:
icpc -m32 -L/opt/intel compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
Huawei

Huawei XH620 V3(Intel Xeon E5-2603 v4)

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Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX -IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trns=5

C++ benchmarks:
-xCORE-AVX2 -ip -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trns=5 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
-Dmalloc=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

400.perlbench: icc -m64
Huawei

Huawei XH620 V3(Intel Xeon E5-2603 v4)

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CPU2006 license: 3175
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Tested by: Huawei

Test date: Mar-2016
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Software Availability: Mar-2016

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Peak Compiler Invocation (Continued)

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

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Peak Optimization Flags

-xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

-out264ref: -D_FILE_OFFSET_BITS=64 -D_FILE_OFFSET_BITS=64
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
-auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div
SPEC CINT2006 Result
Huawei
Huawei XH620 V3(Intel Xeon E5-2603 v4)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 2)
            -prof-use (pass 2) -par-num-threads=1 (pass 1) -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:threadsafe (pass 1)
            -ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2)
            -par-num-threads=1 (pass 1) -prof-use (pass 2) -unroll14
            -auto-ilp32
462.libquantum: basepeak = yes
464.h264ref: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 1)
             -ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2)
             -par-num-threads=1 (pass 1) -prof-use (pass 2) -unroll12
             -ansi-alias

C++ benchmarks:
471.omnetpp: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 1)
          -ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2)
          -par-num-threads=1 (pass 1) -prof-use (pass 2) -ansi-alias
          -opt-mem-layout-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
Non-compliant
Huawei

Huawei XH620 V3 (Intel Xeon E5-2603 v4)

| SPECint_rate2006 = | NC |
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The flags files that were used to format this result can be browsed at:
- http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html

You can also download the XML flags sources by saving the following links:
- http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
- http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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.
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