Huawei XH622 V3(Intel Xeon E5-2603 v4)

SPEC® CINT2006 Result

Copies

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk

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.

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
Huawei

Huawei XH622 V3(Intel Xeon E5-2603 v4)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

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

Other Hardware: None

Results Table

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</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 Patrol Scrub to Disable
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219ef

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

Non-Compliant
Huawei
Huawei XH622 V3(Intel Xeon E5-2603 v4)

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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
cautions.)
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: o:management:"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 -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 18 14:14

SPEC is set to: /spec16

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 443G 23G 420G 6% /

Continued on next page
### Huawei XH622 V3 (Intel Xeon E5-2603 v4)

<table>
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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

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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 system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1  
Transparent Huge Pages enabled with:
- `echo always > /sys/kernel/mm/transparent_hugepage/enabled`
- `echo 1 > /proc/sys/vm/drop_caches`
- `runcmd command linked 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 XH622 V3(Intel Xeon E5-2603 v4)  

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Non-Compliant

---

Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td><code>-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32</code></td>
</tr>
<tr>
<td>401.bzip2</td>
<td><code>-D_FILE_OFFSET_BITS=64</code></td>
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<tr>
<td>403.gcc</td>
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<td>462.libquantum</td>
<td><code>-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX</code></td>
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<td>483.xalancbmk</td>
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Base Optimization Flags

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<td>C benchmarks:</td>
<td><code>-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3</code></td>
</tr>
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<td>C++ benchmarks:</td>
<td><code>-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap</code></td>
</tr>
</tbody>
</table>

Base Other Flags

<table>
<thead>
<tr>
<th>benchmarks</th>
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<tbody>
<tr>
<td>C benchmarks:</td>
<td><code>-Dalloca=_alloca</code></td>
</tr>
</tbody>
</table>

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`
SPEC CINT2006 Result

Huawei
Huawei XH622 V3(Intel Xeon E5-2603 v4)

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Peak Compiler Invocation (Continued)

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<td>icc -m64</td>
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<tr>
<td>456.hmmer</td>
<td>icc -m64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>icc -m64</td>
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</tbody>
</table>

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

Peak Portability Flags

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<td>400.perlbench</td>
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Peak Optimization Flags

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Peak Optimization Flags (Continued)

- 429.mcf: basepeak = yes
- 445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -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) -unroll2 -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) -unroll2 -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-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
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The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
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 other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
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