SPEC® CINT2006 Result

Huawei
Huawei XH628 V3(Intel Xeon E5-2623 v4)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>NC</th>
<th>SPECint_rate_base2006</th>
<th>NC</th>
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</table>

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

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E5-2623 v4</td>
<td>Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz</td>
<td>Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>CPU MHz: 2600</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable: 1,2 chip</td>
<td>Base Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Other Software: Microquill SmartHeap V10.2</td>
</tr>
<tr>
<td>L3 Cache: 10 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td>Other Cache: None</td>
<td></td>
</tr>
<tr>
<td>Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)</td>
<td></td>
</tr>
<tr>
<td>Disk Subsystem: 1 x 500 GB SATA,7200 RPM</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page
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Other Hardware: None

Results Table

<table>
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<tr>
<th>Benchmark</th>
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<th>Seconds</th>
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<td>483.xalancbmk</td>
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<td>NC</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 Patrol Scrub to Disable
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Sun Mar 6 11:29:35 2016

This section contains SUT (System Under Test) info as seen by...
Huawei XH628 V3(Intel Xeon E5-2623 v4)

CPU2006 license: 3175
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Tested by: Huawei
Test date: Mar-2016
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Platform Notes (Continued)

From /proc/cpuinfo

```
model name : Intel(R) Xeon(R) CPU E5-2623 v4 @ 2.60GHz
  2 "physical id"s (chips)
 16 "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 : 4
  siblings : 8
  physical 0: cores 0 1 2 3
  physical 1: cores 0 1 2 3
  cache size : 10240 KB
```

From /proc/meminfo

```
MemTotal:       263571176 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

From /etc/*release* /etc/*version*

```
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:redhat:enterprise_linux:7.0:ga:server"
```

```
run-level 3 Mar 5 04:55
```

SPEC is set to: /spec16

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda3</td>
<td>xfs</td>
<td>443G</td>
<td>25G</td>
<td>418G</td>
<td>6%</td>
<td>/</td>
</tr>
</tbody>
</table>

Continued on next page

Non-compliant
SPEC CINT2006 Result

Huawei

Huawei XH628 V3(Intel Xeon E5-2623 v4)

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SPECint_rate_base2006 = NC

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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 2133 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 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 7.1
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.:
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

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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-trans=5

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

**Base Other Flags**

C benchmarks:
-Dalloca=_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

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Huawei

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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**

```
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
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 -DSPEC_CPU_LP64
458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
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
```

**Peak Optimization Flags**

```
400.perlbench: -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

401.bzip2: -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) -opt-prefetch
    -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div
```

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass2) -prof-gen:threadsafe(pass 1)
           -prof-use(pass2) -par-num-threads=1(pass1) -ansi-alias
           -opt-mem-layout-trans=3
456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xCORE-AVX2(pass2) -prof-gen:threadsafe(pass1)
           -ipo(pass2) -O3(pass2) -no-prec-div(pass2)
           -par-num-threads=1(pass1) -prof-use(pass2) -unroll2
           -auto-ilp32
462.libquantum: basepeak = yes
464.h264ref: -xCORE-AVX2(pass2) -prof-gen:threadsafe(pass1)
             -ipo(pass2) -O3(pass2) -no-prec-div(pass2)
             -par-num-threads=1(pass1) -prof-use(pass2) -unroll2
             -ansi-alias
C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass2) -prof-gen:threadsafe(pass1)
               -ipo(pass2) -O3(pass2) -no-prec-div(pass2)
               -par-num-threads=1(pass1) -prof-use(pass2) -ansi-alias
               -opt-m-field-strategy=block -Wl,-z,muldefs
               -L/shellsmartheap
473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca
Huawei

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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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Fri Oct 21 16:00:42 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 April 2016.