Huawei

Huawei CH121 V3 (Intel Xeon E5-2667 v4)

SPECint®2006 = NC
SPECint_base2006 = NC

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

SPE 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 E5-2667 v4
- CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
- CPU MHz: 3200
- FPU: Integrated
- CPU(s) enabled: 16 cores, 2 chips, 8 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: 25 MB I+D on chip per chip
- Other Cache: None
- Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
- Disk Subsystem: 1 x 1 T SATA, 7200 RPM
- Other Hardware: None

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: 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 V10.2
SPEC CINT2006 Result

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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>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
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<tr>
<td>400.perlbench</td>
<td>NC</td>
<td>NC</td>
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<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<td>NC</td>
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<tr>
<td>429.mcf</td>
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<td>NC</td>
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<td>NC</td>
<td>NC</td>
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<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>456.hmmer</td>
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<td>NC</td>
<td>NC</td>
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<td>NC</td>
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<tr>
<td>458.sjeng</td>
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<td>NC</td>
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<td>NC</td>
<td>NC</td>
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<tr>
<td>462.libquantum</td>
<td>NC</td>
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<tr>
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<tr>
<td>471.omnetpp</td>
<td>NC</td>
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<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>473.astar</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<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

<table>
<thead>
<tr>
<th>BIOS configuration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Power Efficiency Mode to Custom</td>
</tr>
<tr>
<td>Set Snooze Mode to ES mode</td>
</tr>
<tr>
<td>Set Patrol Scrub to Disable</td>
</tr>
<tr>
<td>Set Hyper-Threading to Disable</td>
</tr>
<tr>
<td>Sysinfo program /spec/cpu/spec16/config/sysinfo.rev6914</td>
</tr>
<tr>
<td>$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1</td>
</tr>
<tr>
<td>running on localhost.localdomain Thu Mar 31 10:38:49 2016</td>
</tr>
</tbody>
</table>

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: Continued on next page
Huawei

Huawei CH121 V3 (Intel Xeon E5-2667 v4)

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Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2667 v4 @ 3.20GHz
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 : 8
siblings : 8
physical 0: cores 0 3 4 8 10 11 12
physical 1: cores 0 3 4 8 10 11 12
cache size : 25600 KB

From /proc/meminfo

MemTotal: 263571176 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 31 05:59

SPEC is set to: /speccpu/spec16

filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 865G 70G 752G 9% /

Additional information from dmidecode:

Continued on next page
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Platform Notes (Continued)

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 NO DIMM NO DIMM 3 rank
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/speccpu/spec16/libs/32:/speccpu/spec16/libs/64:/speccpu/spec16/sh"
OMP_NUM_THREADS = "16"

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
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
The Huawei CH121 V3 and Huawei CH222 V3 are electronically equivalent.
The results have been measured on a Huawei CH121 V3 model

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Non-Compliant
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### Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-DSPEC_CPU_LP64</td>
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<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LP64</td>
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<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

### 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 -Wl,-L/sh -L/sh/smarteap64

### Base Other Flags

C benchmarks:
- Dalloca=_alloca

### Peak Compiler Invocation

C benchmarks (except as noted below):
- icc -m64

400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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

Continued on next page
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SPEC CINT2006 Result

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Peak Compiler Invocation (Continued)

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
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: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch alias
401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -03(pass 2) -no-prec-div -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alisa
431.gcc: -xCORE-AVX2 -ipo -03 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32
429.mcf: -xCORE-AVX2 -ipo -03 -no-prec-div -parallel -opt-prefetch -auto-p32
445.gobmk: basepeak = yes

Continued on next page
SPEC CINT2006 Result

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Peak Optimization Flags (Continued)

456.hmmer: basepeak = yes
458.sjeng: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 2) -ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2) -par-num-threads=1 (pass 1) -prof-use (pass 2) -unroll4
462.libquantum: basepeak = yes
464.h264ref: basepeak = yes

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) -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-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.
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