Huawei

Huawei CH220 V3(Intel Xeon E5-2618L v4)

SPECint®2006 = 64.7
SPECint_base2006 = 61.4

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

CPU Name: Intel Xeon E5-2618L v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 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 2Rx8 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 1 x 8000 GB SSD
Other Hardware: None

Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default
Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
Fortran: Version 16.0.0.101 of Intel Fortran 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

0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000 4200 4400 4600 4800 5000

SPECint2006 = 64.7
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**SPEC CINT2006 Result**

SPECint2006 = 64.7  
SPECint_base2006 = 61.4

<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>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>259</td>
<td>37.8</td>
<td>259</td>
<td>37.7</td>
<td>259</td>
<td>37.8</td>
<td>237</td>
<td>41.2</td>
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<tr>
<td>401.bzip2</td>
<td>413</td>
<td>23.4</td>
<td>414</td>
<td>23.3</td>
<td>413</td>
<td>23.3</td>
<td>405</td>
<td>23.8</td>
</tr>
<tr>
<td>403.gcc</td>
<td>224</td>
<td>36.0</td>
<td>224</td>
<td>35.9</td>
<td>224</td>
<td>35.9</td>
<td>224</td>
<td>35.9</td>
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<tr>
<td>429.mcf</td>
<td>144</td>
<td>63.4</td>
<td>143</td>
<td>63.6</td>
<td>144</td>
<td>63.5</td>
<td>140</td>
<td>64.9</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>380</td>
<td>27.6</td>
<td>381</td>
<td>27.6</td>
<td>380</td>
<td>27.6</td>
<td>380</td>
<td>27.6</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
<td>78.8</td>
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<tr>
<td>458.sjeng</td>
<td>379</td>
<td>31.9</td>
<td>379</td>
<td>31.9</td>
<td>379</td>
<td>31.9</td>
<td>375</td>
<td>32.3</td>
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<tr>
<td>462.libquantum</td>
<td>4.06</td>
<td>5100</td>
<td>4.06</td>
<td>5110</td>
<td>4.05</td>
<td>5120</td>
<td>4.06</td>
<td>5100</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>428</td>
<td>51.7</td>
<td>427</td>
<td>51.9</td>
<td>424</td>
<td>52.2</td>
<td>428</td>
<td>51.7</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>180</td>
<td>34.7</td>
<td>191</td>
<td>32.7</td>
<td>193</td>
<td>32.4</td>
<td>131</td>
<td>47.5</td>
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<tr>
<td>473.astar</td>
<td>205</td>
<td>34.2</td>
<td>207</td>
<td>34.0</td>
<td>205</td>
<td>34.2</td>
<td>205</td>
<td>34.2</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>97.7</td>
<td>70.6</td>
<td>98.6</td>
<td>70.0</td>
<td>99.6</td>
<td>69.3</td>
<td>88.1</td>
<td>78.3</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 Custom
- Set SnooP Mode to ES mode
- Set Patrol Scrub to Disable
- Set Hyper-Threading to Disable
- Sysinfo program /spec/spec16/config/sysinfo.rev6914
  $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
  running on linux-n8wl Fri Dec 2 13:57:54 2016

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 E5-2618L v4 @ 2.20GHz
  2 "physical id"s (chips)
  20 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with
Continued on next page
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Hardware Availability: Mar-2016
Software Availability: Dec-2015

Platform Notes (Continued)

cautions.

cpu cores : 10
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 : 25600 KB

From /proc/meminfo
MemTotal: 264056708 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
Linux linux-n8wl 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 2 13:53

SPEC is set to: /spec/spec16
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 632G 65G 565G 11% /spec

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. 3.31 08/22/2016
Memory:
16x Samsung M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

(End of data from sysinfo program)
SPEC CINT2006 Result

Huawei

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General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec/spec16/libs/32:/spec/spec16/libs/64:/spec/spec16/sh"
OMP_NUM_THREADS = "20"

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>

Base Compiler Invocation

C benchmarks:
   icc  -m64

C++ benchmarks:
   icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
   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: -DSPEC_CPU_LP64
   473.astar: -DSPEC_CPU_LP64
   483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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 -L/sh -ismartheap64
SPEC CINT2006 Result

Huawei

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

Base Other Flags

C benchmarks:

403.gcc: -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

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) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
-ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

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Software Availability: Dec-2015

Peak Optimization Flags (Continued)

403.gcc: basepeak = yes
429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
         -opt-prefetch -auto-p32
445.gobmk: basepeak = yes
456.hmmer: basepeak = yes
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) -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: basepeak = yes
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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- **CPU2006 license**: 3175
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- **Test date**: Dec-2016
- **Hardware Availability**: Mar-2016
- **Software Availability**: Dec-2015

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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.
Originally published on 27 December 2016.