Huawei XH321 V3 (Intel Xeon E5-2630L v4)

SPECint®2006 = 59.0
SPECint_base2006 = 56.2

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

CPU Name: Intel Xeon E5-2630L v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz: 1800
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 cores/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 800G 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
Huawei XH321 V3 (Intel Xeon E5-2630L v4)

SPECint2006 = 59.0
SPECint_base2006 = 56.2

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>34.3</td>
<td>284</td>
<td>34.4</td>
<td>285</td>
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<td>401.bzip2</td>
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<td>21.5</td>
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<td>21.4</td>
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<td>456.hmmer</td>
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<td>71.6</td>
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<td>471.omnetpp</td>
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<td>33.0</td>
<td>201</td>
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<td>31.6</td>
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<td>45.3</td>
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<td>473.astar</td>
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<td>223</td>
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<tr>
<td>483.xalancbmk</td>
<td>106</td>
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<td>96.3</td>
<td>71.7</td>
<td>96.0</td>
<td>71.8</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-c3qu Wed Dec 7 04:48:47 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 E5-2630L v4 @ 1.80GHz
  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
Huawei XH321 V3 (Intel Xeon E5-2630L v4)

SPECint2006 = 59.0
SPECint_base2006 = 56.2

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

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: 264061824 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP1

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:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 7 04:45

SPEC is set to: /spec/spec16

filesystem  type  size  used  avail  use% mounted on
/dev/sda3    xfs   641G  8.6G  633G  2% /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 Insysde Corp. 3.31 08/22/2016
Memory:
16x Samsung M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

Continued on next page
### SPEC CINT2006 Result

**Huawei**

**Huawei XH321 V3(Intel Xeon E5-2630L v4)**

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</tr>
<tr>
<td><strong>Software Availability:</strong></td>
<td>Dec-2015</td>
</tr>
</tbody>
</table>

#### Platform Notes (Continued)

(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 = "/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

Continued on next page
## SPEC CINT2006 Result

**Huawei**

Huawei XH321 V3 (Intel Xeon E5-2630L v4)

| SPECint2006 = 59.0 | SPECint_base2006 = 56.2 |

**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Test date:** Dec-2016  
**Tested by:** Huawei  
**Hardware Availability:** Nov-2016  
**Software Availability:** Dec-2015

### Base Optimization Flags (Continued)

- **C++ benchmarks:**
  -xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch  -auto-p32  
  -W1,-z,muldefs  -L/sh  -lsmartheap64

### 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:**
  - Continued on next page
Huawei

Huawei XH321 V3 (Intel Xeon E5-2630L v4)

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

Test date: Dec-2016
Hardware Availability: Nov-2016
Software Availability: Dec-2015

Peak Optimization Flags (Continued)

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

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) -unroll14

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
Huawei

Huawei XH321 V3(Intel Xeon E5-2630L v4)

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Hardware Availability: Nov-2016
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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.

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