**Huawei**

**Kunlun 9016 (Intel Xeon E7-8870 v4)**

<table>
<thead>
<tr>
<th>SPECint®_rate2006 =</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006 =</td>
<td>11500</td>
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**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Test date:** May-2017  
**Hardware Availability:** Jan-2016  
**Software Availability:** Sep-2016

<table>
<thead>
<tr>
<th>SPECint_rate_base2006 = 11500</th>
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<tr>
<td>0</td>
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<td>6</td>
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<td>8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
</table>
| CPU Name: Intel Xeon E7-8870 v4  
CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
CPU MHz: 2100  
FPU: Integrated  
CPU(s) enabled: 320 cores, 16 chips, 20 cores/chip, 2 threads/core  
CPU(s) orderable: 4.8,16 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: 50 MB I+D on chip per chip  
Other Cache: None  
Memory: 2 TB (128 x 16 GB 2RX4 PC4-2400T-R, running at 1600 MHz)  
Disk Subsystem: 2 x 600 GB SAS, 10K RPM  
Other Hardware: None | Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP2  
4.4.21-69-default  
Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux  
Auto Parallel: No  
File System: btrfs  
System State: Run level 5 (multi-user)  
Base Pointers: 32-bit  
Peak Pointers: 32/64-bit  
Other Software: Microquill SmartHeap V10.2 |
SPEC CINT2006 Result

Huawei
Kunlun 9016(Intel Xeon E7-8870 v4)

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 11500

CPU2006 license: 3175
Test date: May-2017
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Software Availability: Sep-2016

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
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<tbody>
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<td>122000</td>
<td>109</td>
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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 numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Turbo mode set with:
cpupower -c all frequency-set -g performance

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Sysinfo program /root/speccpu/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-ailn Wed May 24 03:54:49 2017

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 E7-8870 v4 @ 2.10GHz
16 "physical id"s (chips)
640 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The Continued on next page
Huawei
Kunlun 9016(Intel Xeon E7-8870 v4)

SPECint_rate2006 = Not Run
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CPU2006 license: 3175
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.

cpu cores : 20
siblings : 40
physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 2: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 3: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 4: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 5: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 6: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 7: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 8: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 9: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 10: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 11: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 12: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 13: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 14: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 15: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
cache size : 51200 KB

From /proc/meminfo
MemTotal:       2112831568 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 2
  # 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-SP2"
  VERSION_ID="12.2"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 5 May 24 03:45
Huawei
Kunlun 9016(Intel Xeon E7-8870 v4)  

**SPECint_rate2006** = Not Run  
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<td>Test date:</td>
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</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2016</td>
</tr>
</tbody>
</table>

**Platform Notes (Continued)**

SPEC is set to: /root/speccpu
Filesystem Type Size Used Avail Use % Mounted on
/dev/sda3 btrfs 1.1T 367G 720G 34% /

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 SMI BIOS" standard.

BIOS American Megatrends Inc. BLXSV207 04/17/2017
Memory:
128x Hynix HMA82GR7AFR8N-UH 16 GB 2 rank 2400 MHz, configured at 1600 MHz
256x NO DIMM NO DIMM

(End of data from sysinfo program)

**General Notes**

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/speccpu/libs/32:/root/speccpu/libs/64:/root/speccpu/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790K CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

**Base Compiler Invocation**

C benchmarks:
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

**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
Huawei
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### Base Portability Flags (Continued)

<table>
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<th>Benchmark</th>
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</thead>
<tbody>
<tr>
<td>456.hmmer</td>
<td>-D_FILE_OFFSET_BITS=64</td>
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<tr>
<td>458.sjeng</td>
<td>-D_FILE_OFFSET_BITS=64</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>-D_FILE_OFFSET_BITS=64, -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>-D_FILE_OFFSET_BITS=64</td>
</tr>
<tr>
<td>471.omnetpp</td>
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<tr>
<td>473.astar</td>
<td>-D_FILE_OFFSET_BITS=64</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-D_FILE_OFFSET_BITS=64, -DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

### Base Optimization Flags

**C benchmarks:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3

**C++ benchmarks:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

### Base 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-ic17.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html)

You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.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.
Originally published on 9 October 2017.