Huawei

Kunlun 9008 (Intel Xeon E7-4820 v4)

**SPECint**\(^\circ\) \text{rate2006} = \text{Not Run}

**SPECint\_rate\_base2006 = 2600**

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>3175</th>
</tr>
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<tbody>
<tr>
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<td>Huawei</td>
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<td>Tested by:</td>
<td>Huawei</td>
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<td>Test date:</td>
<td>Jun-2017</td>
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<td>Hardware Availability:</td>
<td>Jan-2016</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2016</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon E7-4820 v4
- **CPU Characteristics:**
  - **CPU MHz:** 2000
  - **FPU:** Integrated
  - **CPU(s) enabled:** 80 cores, 8 chips, 10 cores/chip, 2 threads/core
  - **CPU(s) orderable:** 4.8 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:** 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
  - **Disk Subsystem:** 2 x 600 GB SAS, 10K RPM
  - **Other Hardware:** None

**Software**

- **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
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
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<th>Peak Ratio</th>
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<td>3230</td>
<td></td>
<td></td>
</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:
cupower -c all frequency-set -g performance

Platform Notes
Sysinfo program /root/spec/cpu/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-ailn Thu Jun 15 21:05:53 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 E7-4820 v4 @ 2.00GHz
  8 "physical id"s (chips)
  160 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

Continued on next page
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Platform Notes (Continued)

cpu cores : 10
siblings : 20
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
physical 2: cores 0 1 2 3 4 8 9 10 11 12
physical 3: cores 0 1 2 3 4 8 9 10 11 12
physical 4: cores 0 1 2 3 4 8 9 10 11 12
physical 5: cores 0 1 2 3 4 8 9 10 11 12
physical 6: cores 0 1 2 3 4 8 9 10 11 12
physical 7: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal: 1055873644 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 Jun 15 17:50

SPEC is set to: /root/speccpu
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 btrfs 1.1T 381G 711G 35% /

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.

Continued on next page
SPEC CINT2006 Result

Huawei
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Platform Notes (Continued)

BIOS American Megatrends Inc. BLXSV208 05/23/2017
Memory:
64x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1333 MHz
128x 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
runcspec command invoked through numactl i.e.:
numactl --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
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
## SPEC CINT2006 Result

\[ \text{Huawei} \]

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### 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)