Huawei
Kunlun 9016(Intel Xeon E7-8867 v4)

SPECint®_rate2006 = Not Run
SPECint_rate_base2006 = 10100

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

Test date: May-2017
Hardware Availability: Jan-2016
Software Availability: Sep-2016

400.perlbench 576 8970
401.bzip2 576 5160
403.gcc 576 6600
429.mcf 576 10900
445.gobmk 576 7990
456.hmmer 576 13700
458.sjeng 576 8740
462.libquantum 576
464.h264ref 576 15300
471.omnetpp 576 3850
473.astar 576 5200
483.xalancbmk 576 9240

SPECint_rate_base2006 = 10100

Hardware
CPU Name: Intel Xeon E7-8867 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 288 cores, 16 chips, 18 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: 45 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

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

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</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:
cputpower -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 Sun May 21 02:11:32 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 E7-8867 v4 @ 2.40GHz
16 "physical id"s (chips)
576 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Huawei

Kunlun 9016(Intel Xeon E7-8867 v4)

**SPECint_rate2006** = Not Run
**SPECint_rate_base2006** = 10100

CPU2006 license: 3175
Test sponsor: Huawei
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Test date: May-2017
Hardware Availability: Jan-2016
Software Availability: Sep-2016

Platform Notes (Continued)

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

```
cpu cores : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 8: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 9: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 10: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 11: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 12: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 13: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 14: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 15: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
```
cache size : 46080 KB

From /proc/meminfo
MemTotal: 2046772088 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 21 02:07

Continued on next page
Huawei
Kunlun 9016(Intel Xeon E7-8867 v4)

SPEC CINT2006 Result

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 10100

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

Platform Notes (Continued)

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 American Megatrends Inc. BLXSV207 04/17/2017
Memory:
124x Hynix HMA82GR7AFR8N-UH 16 GB 2 rank 2400 MHz, configured at 1600 MHz
256x NO DIMM NO DIMM
4x NO DIMM NO DIMM 2400 MHz

(End of data from sysinfo program)
Because there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard,
The 'dmidecode' read system data with a DIMM count mismatch, the accurate data is:
Memory:
128x Hynix HMA82GR7AFR8N-UH 16 GB 2 rank 2400 MHz, configured at 1600 MHz
256x NO DIMM NO DIMM

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/spec/cpu/libs/32:/root/spec/cpu/libs/64:/root/spec/cpu/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
Huawei
Kunlun 9016(Intel Xeon E7-8867 v4)

| SPECint_rate2006 = Not Run | SPECint_rate_base2006 = 10100 |

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### 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`

### 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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Kunlun 9016(Intel Xeon E7-8867 v4)  

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