Huawei
Kunlun 9016 (Intel Xeon E7-4830 v4)

<table>
<thead>
<tr>
<th>SPECint®_rate2006 = Not Run</th>
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<tr>
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<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
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<tbody>
<tr>
<td>Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP1 3.12.49-11-default</td>
<td>CPU Name: Intel Xeon E7-4830 v4</td>
</tr>
<tr>
<td>Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux</td>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz</td>
</tr>
<tr>
<td>Auto Parallel: No</td>
<td>CPU MHz: 2000</td>
</tr>
<tr>
<td>File System: ext4</td>
<td>FPU: Integrated</td>
</tr>
<tr>
<td>System State: Run level 5 (multi-user)</td>
<td>CPU(s) enabled: 224 cores, 16 chips, 14 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>Base Pointers: 32-bit</td>
<td>CPU(s) orderable: 4.8.16 chip</td>
</tr>
<tr>
<td>Peak Pointers: 32/64-bit</td>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Other Software: Microquill SmartHeap V10.2</td>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
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| 400.perlbench | 448 |
| 401.bzip2 | 448 |
| 403.gcc | 448 |
| 429.mcf | 448 |
| 445.gobmk | 448 |
| 456.hmmer | 448 |
| 458.sjeng | 448 |
| 462.libquantum | 448 |
| 464.h264ref | 448 |
| 471.omnetpp | 448 |
| 473.astar | 448 |
| 483.xalancbmk | 448 |

```
Copies 3000 7000 11000 15000 19000 23000 27000 31000 35000 39000 43000 47000 51000 55000 59000 63000 67000 71000 75000 79000
| SPECint_rate_calculated | 7560 |
```

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

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<tr>
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<td>Other Software: Microquill SmartHeap V10.2</td>
</tr>
<tr>
<td>L3 Cache: 35 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td>Other Cache: None</td>
<td></td>
</tr>
<tr>
<td>Memory: 2 TB (128 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)</td>
<td></td>
</tr>
<tr>
<td>Disk Subsystem: 2 x 600 GB SAS, 10K RPM</td>
<td></td>
</tr>
<tr>
<td>Other Hardware: None</td>
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</tr>
</tbody>
</table>
**Huawei**

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**SPECint_rate2006 = Not Run**

| SPECint_rate_base2006 = 7560 |

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Tested by:** Huawei

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<td>Jan-2016</td>
<td>Sep-2016</td>
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**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>Base</td>
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<td>3580</td>
<td>1203</td>
<td>3590</td>
<td>1205</td>
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<td>403.gcc</td>
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<td>713</td>
<td>5060</td>
<td>707</td>
<td>5100</td>
<td>703</td>
<td>5130</td>
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<tr>
<td>429.mcf</td>
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<td>413</td>
<td>9890</td>
<td>411</td>
<td>9940</td>
<td>412</td>
<td>9910</td>
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<tr>
<td>445.gobmk</td>
<td>448</td>
<td>965</td>
<td>4870</td>
<td>958</td>
<td>4910</td>
<td>956</td>
<td>4920</td>
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<tr>
<td>456.hmmer</td>
<td>448</td>
<td>362</td>
<td>11500</td>
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<td>11700</td>
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<td>9710</td>
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<td>471.omnetpp</td>
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<td>791</td>
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<td>3550</td>
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<tr>
<td>473.astar</td>
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<td>711</td>
<td>4420</td>
<td>711</td>
<td>4420</td>
<td>710</td>
<td>4430</td>
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<tr>
<td>483.xalancbmk</td>
<td>448</td>
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<td>343</td>
<td>9010</td>
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</table>

**Results Table**

<table>
<thead>
<tr>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-ew80 Thu May 11 08:48:27 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 E7-4830 v4 @ 2.00GHz
16 "physical id"s (chips)
448 "processors"
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Platform Notes (Continued)
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 14
  siblings : 28
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 8: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 9: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 10: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 11: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 12: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 13: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 14: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 15: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  cache size : 35840 KB

From /proc/meminfo
  MemTotal: 2117105068 kB
  HugePages_Total: 153600
  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

Continued on next page
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Platform Notes (Continued)

run-level 5 May 11 07:58

SPEC is set to: /spec
Filesystem     Type  Size  Used  Avail  Use% Mounted on
/dev/sda3     ext4   1.1T   95G   961G   9%   /

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:
128x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1333 MHz
256x NO DIMM NO DIMM

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/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.:
    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

Continued on next page
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Base Portability Flags (Continued)

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

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/Huawei-Platform-Settings-V1.2-BDW-RevG.20170404.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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