Huawei XH628 V3 (Intel Xeon E5-2695 v4)

Huawei

SPECint®2006 = 67.5
SPECint_base2006 = 65.5

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Oct-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016

CPU Name: Intel Xeon E5-2695 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 36 cores, 2 chips, 18 cores/chip
CPU(s) orderable: 1.2 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: 256 GB (8 x 32 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 1 x 1000GB SATA, 7200 RPM
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
Auto Parallel: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2
Huawei XH628 V3 (Intel Xeon E5-2695 v4) SPECint2006 = 67.5
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Results Table

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<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>456.hmmer</td>
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<td>473.astar</td>
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<td>483.xalancbmk</td>
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<td>79.6</td>
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<td>79.6</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 /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1

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 E5-2695 v4 @ 2.10GHz
  2 "physical id"s (chips)
  36 "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

Huawei XH628 V3 (Intel Xeon E5-2695 v4)

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Software Availability: Mar-2016

Test date: Oct-2016

Platform Notes (Continued)

cautions.)
  cpu cores : 18
  siblings : 18
  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
  cache size : 46080 KB

From /proc/meminfo
  MemTotal: 264080128 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
    # 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 Oct 24 12:58 last=5

SPEC is set to: /spec16

Filesystem Type Size Used Avail Use% Mounted on
/dev/md126p2 xfs 455G 11G 444G 3% /

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 SMIOS" standard.

BIOS Insyde Corp. 3.31 08/22/2016
Memory:
  8x Micron 36ASF4G72PZ-2G3A1 32 GB 2 rank 2400 MHz
  8x NO DIMM NO DIMM

Continued on next page
Huawei XH628 V3 (Intel Xeon E5-2695 v4)

Huawei

CPU2006 license: 3175
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SPEC_CINT2006 Result

SPECint2006 = 67.5
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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 = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"
OMP_NUM_THREADS = "36"

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.:
umactl --interleave=all runspec <etc>
The Huawei XH622 V3 and Huawei XH628 V3 and Huawei XH620 V3 are electronically equivalent.
The results have been measured on a Huawei XH620 V3 model.

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
Huawei

Huawei XH628 V3 (Intel Xeon E5-2695 v4)

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Base Optimization Flags

C benchmarks:
 - -xCORE-AVX2
 - -ipo
 - -O3
 - -no-prec-div
 - -parallel
 - -opt-prefetch
 - -auto-p32

C++ benchmarks:
 - -xCORE-AVX2
 - -ipo
 - -O3
 - -no-prec-div
 - -opt-prefetch
 - -auto-p32
 - -Wl,-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
## SPEC CINT2006 Result

**Huawei**

Huawei XH628 V3 (Intel Xeon E5-2695 v4)

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</tr>
</tbody>
</table>

### Peak Optimization Flags

**C benchmarks:**

- **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:**
  - `basepeak = yes`

- **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)
  - `-auto-ilp32`
  - `-opt-prefetch`
  - `-ansi-alias`

- **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:**
  - `basepeak = yes`

### Peak Other Flags

**C benchmarks:**

- **403.gcc:**
  - `-Dalloca=_alloca`
**Huawei**

**Huawei XH628 V3 (Intel Xeon E5-2695 v4)**

<table>
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The flags files that were used to format this result can be browsed at:

- [http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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/Huawei-Platform-Settings-BDW-V1.0.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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