Huawei

Huawei XH620 V3 (Intel Xeon E5-2630L v4)

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

SPECint®2006 = 58.9
SPECint_base2006 = 56.1

CPU Name: Intel Xeon E5-2630L v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz: 1800
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB DDR4-2133P-R)
Disk Subsystem: 1 x 1000 GB 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;
Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2
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Results Table

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<tr>
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<td>71.9</td>
<td>96.4</td>
<td>71.6</td>
</tr>
</tbody>
</table>

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 E5-2630L v4 @ 1.80GHz
  - 2 "physical id"s (chips)
  - 20 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
Platform Notes (Continued)

  caution.)
  cpu cores : 10
  siblings : 10
    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
  cache size : 25600 KB

From /proc/meminfo
  MemTotal:       264063872 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 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

run-level 3 Nov 14 09:33

SPEC is set to: /spec16
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda3      ext4  884G  15G  868G   2% /

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 Insyde Corp. 3.31 08/22/2016
  Memory:
    16x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz
Huawei
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Hardware Availability: Mar-2016
Software Availability: Dec-2015

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 = "20"

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.:
    numactl --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 XH620 V3(Intel Xeon E5-2630L v4)**

**SPECint2006 =** 58.9  
**SPECint_base2006 =** 56.1

**CPU2006 license:** 3175  
**Test date:** Nov-2016  
**Test sponsor:** Huawei  
**Hardware Availability:** Mar-2016

**Tested by:** Huawei  
**Software Availability:** Dec-2015

### 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`
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CPU2006 license: 3175
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Tested by: Huawei

Test date: Nov-2016
Hardware Availability: Mar-2016
Software Availability: Dec-2015

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

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) -unroll4

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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

Peak Other Flags

C benchmarks:

Continued on next page
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**Peak Other Flags (Continued)**

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-ic16.0-official-linux64.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/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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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