### SPEC® CINT2006 Result

**Huawei**

Huawei XH628 V3 (Intel Xeon E5-2650 v4)

<table>
<thead>
<tr>
<th>Specint®2006</th>
<th>SPECint_base2006</th>
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</thead>
<tbody>
<tr>
<td>NC</td>
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</tbody>
</table>

**CPU2006 license:** 3175  
**Test date:** Mar-2016  
**Test sponsor:** Huawei  
**Tested by:** Huawei  

**Hardware**

- **CPU Name:** Intel Xeon E5-2650 v4  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.90 GHz  
- **CPU MHz:** 2200  
- **FPU:** Integrated  
- **CPU(s) enabled:** 24 cores, 2 chips, 12 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:** 30 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)  
- **Disk Subsystem:** 1 x 1000 GB SATA, 7200rpm  
- **Other Hardware:** None

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo)  
- **Compiler:** C/C++: Version 16.0.0.101 of Intel C++ 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

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by [SPEC CPU rule 1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) and the SPEC Open Systems Group policy on [Appendix C](https://www.spec.org/osg/policy.html#AppendixC).**
SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

Results Table

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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
running on localhost.localdomain Sat Jan 18 10:30:16 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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

Huawei XH628 V3 (Intel Xeon E5-2650 v4)

SPECint2006 = NC
SPECint_base2006 = NC

CPU2006 license: 3175
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Hardware Availability: Mar-2016
Software Availability: Mar-2016

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Platform Notes (Continued)

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2650 v4 @ 2.20GHz
2 "physical ids" (chips)
24 "processors"
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 : 12
siblings : 12
physical 0: cores 0 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal: 263570248 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release*/etc/*version*
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jan 17 17:26

SPEC is set to: /spec16
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 913G 94G 773G 11% /

Additional information from dmidecode:

Continued on next page
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Platform Notes (Continued)

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. 7.11 02/14/2016
Memory: 8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

(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 = "24"

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`
- `runcmd --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`
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Base Portability Flags

-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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, -lshm -lmarmtheap64

Base Other Flags

C benchmark:
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
445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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Peak Compiler Invocation (Continued)

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: -D_FILE_OFFSET_BITS=64
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: icpc -m64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
   -ipo(pass 2) -03(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) -03(pass 2) -no-prec-div
   -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
   -opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -03 -no-prec-div -inline-call
   -opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -03 -no-prec-div -parallel
   -opt-prefetch -auto-p32

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**SPECint2006 = NC**

**SPECint_base2006 = NC**

- **Test sponsor:** Huawei
- **Tested by:** Huawei
- **Hardware Availability:** Mar-2016
- **Software Availability:** Mar-2016

**Peak Optimization Flags (Continued)**

- `445.gobmk`: `-xCORE-AVX2(pass 2) prof-gen:threadsafe(pass 1) prof-use(pass 2) par-num-threads=1(pass 1) ansi-alias`
- `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 -32 -Wl, -z muldefs -L/sh -lsmartheap64`
- `483.xalancbmk`: `-xE-AP2 ipo -O3 no-prec-div opt-prefetch ansi-alias -Wl, -z muldefs -L/sh -lsmartheap`

**Peak Other Flags**

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

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)

**Non-Compliant**

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