## SPEC® CINT2006 Result

### Huawei

**Huawei XH622 V3 (Intel Xeon E5-2609 v4)**

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

### SPEC CINT2006 Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
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</tbody>
</table>

### Hardware

- **CPU Name**: Intel Xeon E5-2609 v4
- **CPU Characteristics**: 1700 MHz
- **CPU(s) enabled**: 16 cores, 2 chips, 8 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**: 20 MB I+D on chip per chip
- **Memory**: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 1866 MHz)
- **Disk Subsystem**: 1 x 500 GB SATA, 7200 RPM

### 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**: xfs
- **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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**Non-Compliant**

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.
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Other Hardware: None

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 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
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Thu Mar 24 18:07:14 2016

This section contains SUT (System Under Test) info as seen by
Continued on next page
SPEC CINT2006 Result

Huawei
Huawei XH622 V3(Intel Xeon E5-2609 v4)

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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 <a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2"">SPEC CPU rule 1.3.2</a> and the SPEC Open Systems Group policy on general availability.

Platform Notes (Continued)

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 E5-2609 v4 @ 1.70GHz
2 "physical id"s (chips)
16 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 8
siblings : 8
physical 0: cores 0 2 3 4 5 6 7
physical 1: cores 0 2 3 4 5 6

From /proc/meminfo
MemTotal: 263571176 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"
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 Mar 23 15:06

SPEC is set to: /spec16
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 443G 14G 429G 4% /
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 run and reporting rules. Non-compliant SPEC CPU results have been measured on a Huawei XH620 V3 model.

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**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 Insyde Corp. 3.09 02/22/2016

Memory:
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz, configured at 1867 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 1867 MHz

(End of data from sysinfo program)

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**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 = "16"

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
runcase command interleaved 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

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**Base Compiler Invocation**

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64
Huawei

Huawei XH622 V3 (Intel Xeon E5-2609 v4)

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---

**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`

---

**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`

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**Base Other Flags**

C benchmarks:
- `-Dalloca=_alloca`

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**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`
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Peak Compiler Invocation (Continued)

473.astar: icpc -m64

Peak Portability Flags

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<tr>
<td>400.perlbench</td>
<td>-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64</td>
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<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>403.gcc</td>
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<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX</td>
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<td>471.omnetpp</td>
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Peak Optimization Flags

C benchmarks:

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<td>400.perlbench</td>
<td>-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</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-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</td>
</tr>
<tr>
<td>435.gcc</td>
<td>-xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32</td>
</tr>
<tr>
<td>429.mcf</td>
<td>-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32</td>
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<tr>
<td>445.gobmk</td>
<td>basepeak = yes</td>
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Peak Optimization Flags (Continued)

456.hmmer: basepeak = yes
458.sjeng: -xCORE-AVX2 -prof-gen:threadsafe(pass 2) -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 -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

C benchmarks:

493.gcc: -Dalloca=_alloca

Peak Other Flags

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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