# SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Huawei

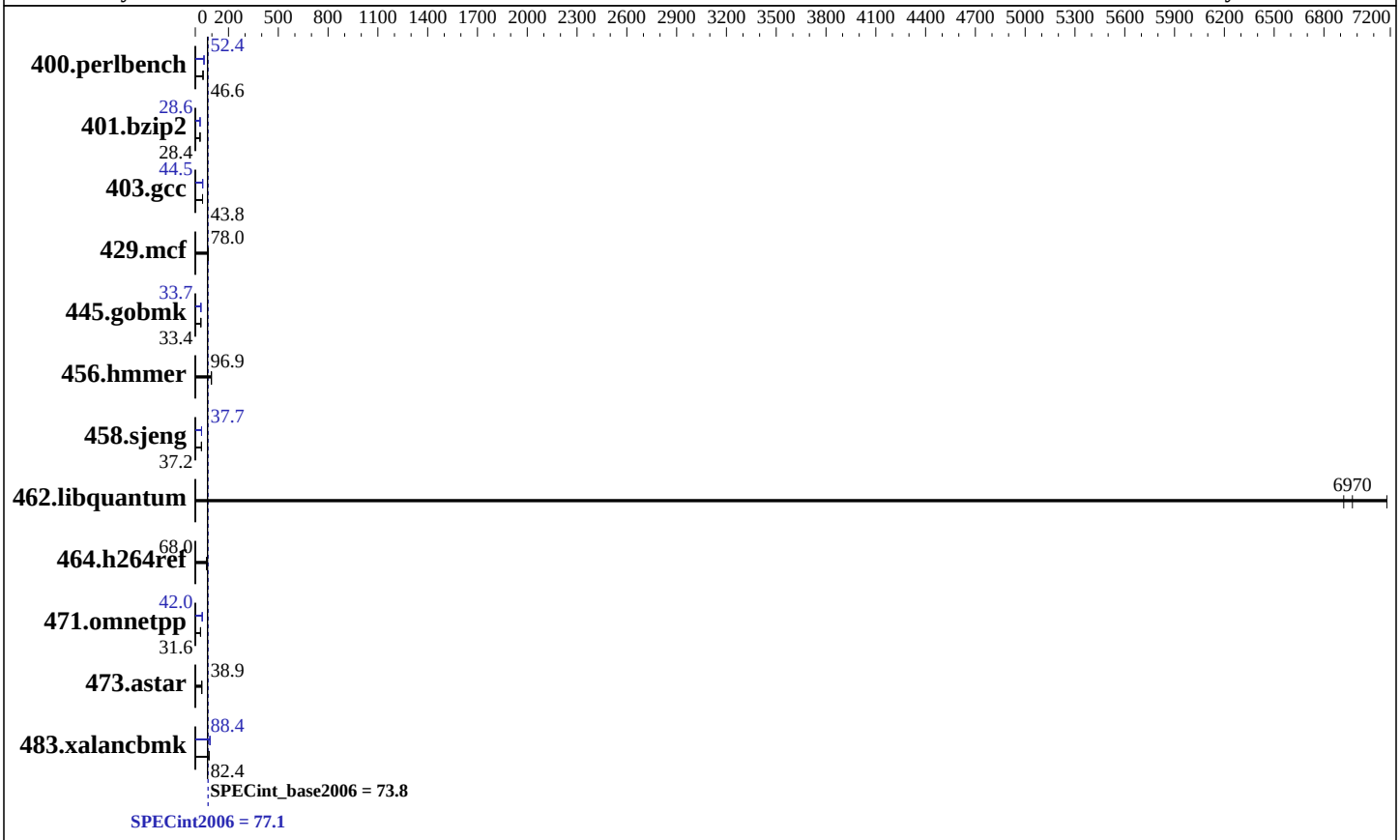
## Huawei CH121 V5 (Intel Xeon Gold 6132)

SPECint®2006 = 77.1

SPECint_base2006 = 73.8

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

**Test date:** Jun-2017
**Hardware Availability:** Aug-2017
**Software Availability:** Nov-2016




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon Gold 6132 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.70 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 28 cores, 2 chips, 14 cores/chip |
| CPU(s) orderable: | 1,2 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 1 MB I+D on chip per core |
| L3 Cache: | 19.25 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R) |
| Disk Subsystem: | 1 x 1200 GB SAS, 10000 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 7.3 (Maipo)<br>3.10.0-514.el7.x86_64 |
| Compiler: | C/C++: Version 17.0.0.098 of Intel C/C++ Compiler 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 |

# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Huawei

## Huawei CH121 V5 (Intel Xeon Gold 6132)

SPECint2006 = 77.1

SPECint_base2006 = 73.8

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

**Test date:** Jun-2017
**Hardware Availability:** Aug-2017
**Software Availability:** Nov-2016

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 208 | 46.9 | **210** | **46.6** | 210 | 46.5 | 187 | 52.3 | **187** | **52.4** | 185 | 52.9 |
| 401.bzip2 | 340 | 28.4 | **340** | **28.4** | 340 | 28.4 | **337** | **28.6** | 337 | 28.6 | 337 | 28.6 |
| 403.gcc | 184 | 43.6 | **184** | **43.8** | 184 | 43.9 | **181** | **44.5** | 181 | 44.5 | 181 | 44.6 |
| 429.mcf | 117 | 78.2 | **117** | **78.0** | 118 | 77.1 | 117 | 78.2 | **117** | **78.0** | 118 | 77.1 |
| 445.gobmk | **314** | **33.4** | 315 | 33.4 | 314 | 33.4 | 311 | 33.7 | **311** | **33.7** | 311 | 33.7 |
| 456.hmmer | **96.3** | **96.9** | 96.2 | 96.9 | 96.5 | 96.7 | **96.3** | **96.9** | 96.2 | 96.9 | 96.5 | 96.7 |
| 458.sjeng | **325** | **37.2** | 325 | 37.2 | 325 | 37.2 | 321 | 37.7 | **321** | **37.7** | 321 | 37.7 |
| 462.libquantum | 2.89 | 7180 | 2.99 | 6920 | **2.97** | **6970** | 2.89 | 7180 | 2.99 | 6920 | **2.97** | **6970** |
| 464.h264ref | 325 | 68.1 | 326 | 67.8 | **326** | **68.0** | 325 | 68.1 | 326 | 67.8 | **326** | **68.0** |
| 471.omnetpp | 198 | 31.5 | 198 | 31.6 | **198** | **31.6** | 149 | 42.0 | **149** | **42.0** | 149 | 41.9 |
| 473.astar | **181** | **38.9** | 181 | 38.8 | 180 | 38.9 | **181** | **38.9** | 181 | 38.8 | 180 | 38.9 |
| 483.xalancbmk | **83.7** | **82.4** | 83.9 | 82.3 | 83.6 | 82.5 | 78.4 | 88.0 | 77.9 | 88.5 | **78.1** | **88.4** |

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 Hyper-Threading to Disable
Sysinfo program /spec17/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on localhost.localdomain Mon Jun 26 13:07:51 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) Gold 6132 CPU @ 2.60GHz
      2 "physical id"s (chips)
      28 "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 : 14
```

Continued on next page

## Platform Notes (Continued)

```
        siblings  : 14
        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
     cache size : 19712 KB

  From /proc/meminfo
     MemTotal:       394145204 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  From /etc/*release* /etc/*version*
     os-release:
        NAME="Red Hat Enterprise Linux Server"
        VERSION="7.3 (Maipo)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="7.3"
        PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
        ANSI_COLOR="0;31"
        CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
     redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
     system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

  uname -a:
     Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
     EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Jun 26 08:03

  SPEC is set to: /spec17
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda2      xfs   262G   87G  175G  34% /
  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. 0.10 02/14/2017
    Memory:
     24x Samsung M393A2K43BB1-CTD 16 GB 2 rank 2666 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"
LD_LIBRARY_PATH = "/spec17/libs/32:/spec17/libs/64:/spec17/sh10.2"
```

Continued on next page

## General Notes (Continued)

```
OMP_NUM_THREADS = "28"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 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>
```

## 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

## Base Optimization Flags

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

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh10.2 -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_2017/linux/lib/ia32`

445.gobmk: `icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

C++ benchmarks (except as noted below):
`icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

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: `-DSPEC_CPU_LP64`
483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xCORE-AVX2`(pass 2)
`-par-num-threads=1`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-qopt-prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xCORE-AVX2`(pass 2)
`-par-num-threads=1`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div -auto-ilp32 -qopt-prefetch`

Continued on next page

## Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-qopt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2)

456.hmmer: basepeak = yes

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -qopt-ra-region-strategy=block
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

## Peak 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
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.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-SKL-V1.6.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.


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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Jul 25 15:52:28 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 July 2017.