# SPEC® CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

$SPECint®\_rate2006 =$ 1020

$SPECint\_rate\_base2006 =$ 980

Copies

| Benchmark | Base | Peak |
|---|---|---|
| 400.perlbench | 704 | 868 |
| 401.bzip2 | 472 | 487 |
| 403.gcc | 736 | 735 |
| 429.mcf | 1330 | |
| 445.gobmk | 642 | 650 |
| 456.hmmer | 1420 | 1650 |
| 458.sjeng | 663 | 702 |
| 462.libquantum | 9800 | |
| 464.h264ref | 1160 | 1160 |
| 471.omnetpp | 519 | 549 |
| 473.astar | 567 | |
| 483.xalancbmk | 1190 | |

(all copies = 48)

SPECint_rate_base2006 = 980
SPECint_rate2006 = 1020

## 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, 2 threads/core |
| 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: | 128 GB (8 x 16 GB 2Rx8 PC4-2400T-R) |
| Disk Subsystem: | 1 x 800 GB SATA SSD |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64 |
| Compiler: | C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux |
| Auto Parallel: | No |
| File System: | ext4 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V10.2 |

# SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

SPECint_rate2006 =     1020

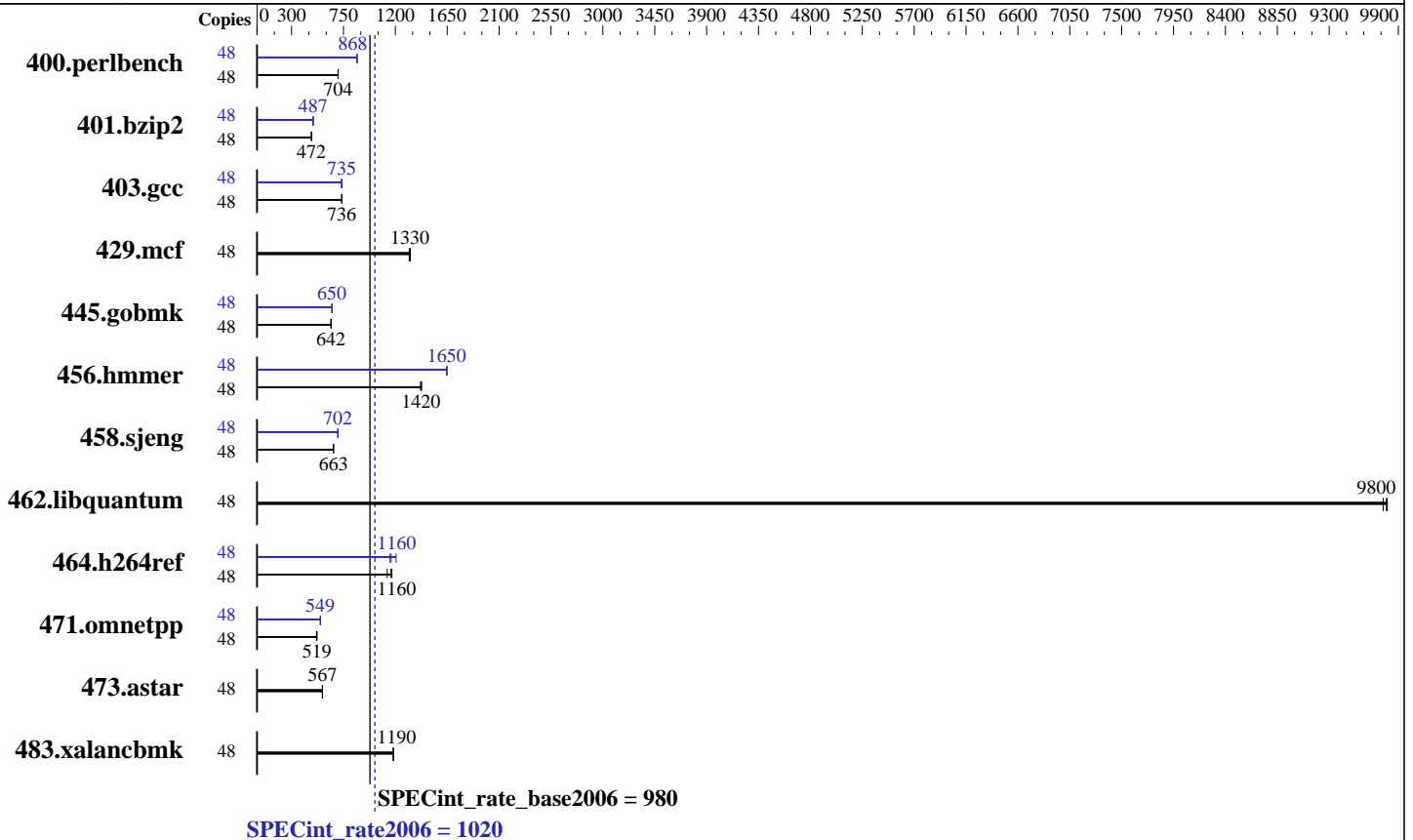SPECint_rate_base2006 =   980

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

**Test date:**     Oct-2016
**Hardware Availability:** Mar-2016
**Software Availability:** Mar-2016

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400.perlbench | 48 | 666 | 704 | 667 | 703 | **667** | **704** | 48 | 541 | 866 | **540** | **868** | 540 | 868 |
| 401.bzip2 | 48 | 983 | 471 | **981** | **472** | 977 | 474 | 48 | 952 | 487 | 950 | 488 | **951** | **487** |
| 403.gcc | 48 | 524 | 737 | **525** | **736** | 526 | 734 | 48 | 528 | 731 | **525** | **735** | 525 | 736 |
| 429.mcf | 48 | 332 | 1320 | 329 | 1330 | **330** | **1330** | 48 | 332 | 1320 | 329 | 1330 | **330** | **1330** |
| 445.gobmk | 48 | 785 | 642 | 784 | 642 | **784** | **642** | 48 | 774 | 650 | **774** | **650** | 774 | 651 |
| 456.hmmer | 48 | 314 | 1430 | **314** | **1420** | 316 | 1420 | 48 | 272 | 1650 | 272 | 1640 | **272** | **1650** |
| 458.sjeng | 48 | 876 | 663 | 876 | 663 | **876** | **663** | 48 | 828 | 701 | **828** | **702** | 828 | 702 |
| 462.libquantum | 48 | 102 | 9770 | 101 | 9800 | **102** | **9800** | 48 | 102 | 9770 | 101 | 9800 | **102** | **9800** |
| 464.h264ref | 48 | **914** | **1160** | 941 | 1130 | 908 | 1170 | 48 | 921 | 1150 | 880 | 1210 | **914** | **1160** |
| 471.omnetpp | 48 | 579 | 518 | **578** | **519** | 578 | 519 | 48 | **546** | **549** | 546 | 549 | 545 | 551 |
| 473.astar | 48 | 595 | 567 | 592 | 569 | **594** | **567** | 48 | 595 | 567 | 592 | 569 | **594** | **567** |
| 483.xalancbmk | 48 | **279** | **1190** | 281 | 1180 | 279 | 1190 | 48 | **279** | **1190** | 281 | 1180 | 279 | 1190 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

    The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.

## Operating System Notes

    Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

    Set Power Efficiency Mode to Peformance
    Set Snoop Mode to COD
    Set Hyper-Threading to enabled
    Sysinfo program /spec16/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on localhost.localdomain Wed Oct 12 17:50:19 2016

    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 E5-2650 v4@ 2.20GHz
          2 "physical id"s (chips)
          48 "processors"
       cores, siblings (Caution: counting these is hw and system dependent.  The
       following excerpts from /proc/cpuinfo might not be reliable.  Use with

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

SPECint_rate2006 =     1020

SPECint_rate_base2006 =  980

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

## Platform Notes (Continued)

```
    caution.)
      cpu cores : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
    cache size : 15360 KB

From /proc/meminfo
    MemTotal:       131453204 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

From /etc/*release* /etc/*version*
    os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.2 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.2"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server

uname -a:
    Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
    EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 12 17:24

SPEC is set to: /spec16
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       ext4  729G  9.4G  683G   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. 3.25 06/18/2016
  Memory:
  8x Hynix HMA82GR7AFR8N-UH 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)
```

# SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

SPECint_rate2006 =     1020

SPECint_rate_base2006 =   980

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

**Test date:** Oct-2016
**Hardware Availability:** Mar-2016
**Software Availability:** Mar-2016

## General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

 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
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

## Base Compiler Invocation

C benchmarks:
```
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

C++ benchmarks:
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

## Base Portability Flags

```
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
   401.bzip2: -D_FILE_OFFSET_BITS=64
     403.gcc: -D_FILE_OFFSET_BITS=64
     429.mcf: -D_FILE_OFFSET_BITS=64
   445.gobmk: -D_FILE_OFFSET_BITS=64
   456.hmmer: -D_FILE_OFFSET_BITS=64
   458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
  464.h264ref: -D_FILE_OFFSET_BITS=64
  471.omnetpp: -D_FILE_OFFSET_BITS=64
   473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

## Base Optimization Flags

C benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
```

# SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

SPECint_rate2006 =     1020

SPECint_rate_base2006 =   980

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

**Test date:** Oct-2016
**Hardware Availability:** Mar-2016
**Software Availability:** Mar-2016

## Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
        icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

        400.perlbench: icc -m64

        401.bzip2: icc -m64

        456.hmmer: icc -m64

        458.sjeng: icc -m64

C++ benchmarks:
        icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

## Peak Portability Flags

        400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
        401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
        403.gcc: -D_FILE_OFFSET_BITS=64
        429.mcf: -D_FILE_OFFSET_BITS=64
        445.gobmk: -D_FILE_OFFSET_BITS=64
        456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
        458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
        462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
        464.h264ref: -D_FILE_OFFSET_BITS=64
        471.omnetpp: -D_FILE_OFFSET_BITS=64
        473.astar: -D_FILE_OFFSET_BITS=64
        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) -O3(pass 2) -no-prec-div(pass 2)
                       -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

Continued on next page

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

SPECint_rate2006 =      1020

SPECint_rate_base2006 =   980

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

# Peak Optimization Flags (Continued)

401.bzip2: -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
-auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias
-opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -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) -unroll2
-ansi-alias

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) -ansi-alias
-opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

# Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

# SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

Huawei CH140 V3 (Intel Xeon E5-2650 v4)

SPECint_rate2006 =     1020

SPECint_rate_base2006 =   980

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

**Test date:** Oct-2016
**Hardware Availability:** Mar-2016
**Software Availability:** Mar-2016

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

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 Thu Nov  3 10:37:09 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on  2 November 2016.