



# SPEC<sup>®</sup> CINT2006 Result

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Huawei  
Huawei CH242 v3

SPECint<sup>®</sup>2006 = **NC**  
SPECint\_base2006 = **NC**

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

Test date: Apr-2014  
Hardware Availability: Feb-2014  
Software Availability: Nov-2013

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Huawei or Intel.**

- 400.perlbench
- 401.bzip2
- 403.gcc
- 429.mcf
- 445.gobmk
- 456.hmmer
- 458.sjeng
- 462.libquantum
- 464.h264ref
- 471.omnetpp
- 473.astar
- 483.xalancbmk

**Non-Compliant**

### Hardware

CPU Name: Intel Xeon E7-4820 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip  
 CPU(s) orderable: 2,4 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: 16 MB I+D on chip per chip  
 Other Cache: None

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
 2.6.32-431.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 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

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Memory: 256 GB (32 x 8 GB 2Rx4 PC3-10600R-09, ECC)  
Disk Subsystem: 1 X 300 GB SAS 10000RPM  
Other Hardware: None

Other Software: Monoquill SmartHeap V10.0

## Results Table

| Benchmark      | Base    |       |         |       |         |       | Peak    |       |         |       |         |       |
|----------------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
|                | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench  | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 401.bzip2      | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 403.gcc        | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 429.mcf        | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 445.gobmk      | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 456.hmmer      | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 458.sjeng      | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 462.libquantum | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 464.h264ref    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 471.omnetpp    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 473.astar      | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |
| 483.xalancbmk  | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    | NC      | NC    |

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

## Operating System Notes

Set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS configuration:  
Set VMST LockStep mode disable  
Set Intel HT Technology Disable  
Sysinfo program /spec/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Mon Apr 28 17:26:24 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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## Platform Notes (Continued)

[http://www.spec.org/cpu2006/Docs/config.html#s\\_cinfo](http://www.spec.org/cpu2006/Docs/config.html#s_cinfo)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E7-4820 v2 @ 2.00GHz
 4 "physical id"s (chips)
 32 "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 : 8
siblings : 8
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7
cache size : 16384 KB

```

```

From /proc/meminfo
MemTotal: 2643280 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

```

```

/usr/bin/lshw -c release -g
Red Hat Enterprise Linux Server release 6.5 (Santiago)

```

```

From /etc/*release*/etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
base-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
EST 2013 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Apr 28 13:13

```

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  265G   99G  153G  40% /

```

Additional information from dmidecode:

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## Platform Notes (Continued)

BIOS American Megatrends Inc. BLISV033 02/27/2014  
Memory:  
32x 8 GB  
8x Samsung M393B1K70CH0-CH9 8 GB 1333 MHz 2 rank  
24x Samsung M393B1K70DH0-CH9 8 GB 1333 MHz 2 rank

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"  
OMP\_NUM\_THREADS = "32"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

## Base Compiler Invocation

C benchmarks:  
icc -m64  
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

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## Base Portability Flags (Continued)

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:  
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/shlib -smarthheap64

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmark (except as noted below):  
icc -m64  
400.perlbench: icc -m32  
445.gobmk: icc -m32

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## Peak Compiler Invocation (Continued)

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32  
-opt-prefetch -ansi-alias

403.gcc: basepeak = yes

429.mcf: basepeak = yes

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## Peak Optimization Flags (Continued)

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmr: -xSSE4.2 -ipo -O3 -no-prec-div -unroll12 -auto-ilp32  
-ansi-alias

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll14

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll12 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalanrmbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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The flags files that were used to format this result can be browsed at  
<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-20140128.html>  
<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html>

You can also download the XML flags source files using the following links:  
<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-20140128.xml>  
<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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