



# SPEC<sup>®</sup> CINT2006 Result

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Huawei

SPECint<sup>®</sup>\_rate2006 = NC

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECint\_rate\_base2006 = NC

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-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.**

- |                | Copies |
|----------------|--------|
| 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, 2 threads/core  
 CPU(s) orderable: 2,4 chips  
 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

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### 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: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit

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Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC)  
Disk Subsystem: 2 x 1000 GB SATA, 7.5K RPM  
Other Hardware: None

Other Software: Mellinoc SmartHeap V10.0

## Results Table

| Benchmark      | Base   |         |       |         |       |         |       |        | Peak    |       |         |       |         |       |  |  |
|----------------|--------|---------|-------|---------|-------|---------|-------|--------|---------|-------|---------|-------|---------|-------|--|--|
|                | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |  |  |
| 400.perlbench  | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 401.bzip2      | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 403.gcc        | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 429.mcf        | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 445.gobmk      | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 456.hmmer      | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 458.sjeng      | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 462.libquantum | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 464.h264ref    | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 471.omnetpp    | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 473.astar      | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |
| 483.xalanbmk   | 64     | NC      | NC    | NC      | NC    | NC      | NC    | 64     | NC      | NC    | NC      | NC    | NC      | NC    |  |  |

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

## Submit Notes

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"



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## Platform Notes

BIOS configuration:

Set Power Efficiency Mode to Performance

Set Lock\_step to disabled

Baseboard Management Controller used to adjust the fan speed to 100%

Sysinfo program /spec/config/sysinfo\_rev0.2

\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e6d10252650a6e4d596a3cee98f191

running on rh5885v3 Tue Jun 3 17:08:56 2014

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 E7-4820 v2 @ 2.00GHz

4 "physical id"s (chips)

64 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpt from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores :

siblings :

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

264356452 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

/usr/bin/dmccsb\_release -d

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)

system-release-cpe: cpe:/o:redhat:enterprise\_linux:6server:ga:server

uname -a:

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## Platform Notes (Continued)

```
Linux rh5885v3 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 Jun 3 06:24
```

```
SPEC is set to: /spec
```

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        ext4  534G  25G  489G   5% /
```

```
Additional information from dmidecode:
```

```
BIOS American Megatrends, Inc. BLISV015 03/7/2014
```

```
Memory:
```

```
16x 16 GB
```

```
16x Hynix HMT42GR7AFR4C-PE 1333 MHz 2 rank
```

```
32x NO DIMM NO DIMM
```

```
(End of data from sysinfo program)
```

```
Regarding the sysinfo display about the memory installed, the correct amount of memory is 256 GB and the dmidecode description should have one line reading as:
```

```
16x Hynix HMT42GR7AFR4C-PE 16 GB 1333 MHz 2 rank
```

## General Notes

```
Environment variable set by runspec before the start of the run:
```

```
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
```

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
```

```
RedHat EL 6.4
```

```
Transparent Huge Pages enabled with:
```

```
echo always > /sys/kernel/mm/redhat_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>
```





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## Peak Compiler Invocation (Continued)

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LINUX

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbenc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32

401.bzip2: -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 -auto-ilp32 -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 -opt-mem-layout-flags=3

456.hmmcr: -xSSE4.2 -ipo -O3 -no-prec-div -unroll12 -auto-ilp32

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 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/sr -lsmalloc -heap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## 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-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 sources by saving 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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Fri Sep 19 16:07:01 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 1 July 2014.