



# SPEC® CINT2006 Result

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## Huawei

### SPECint®\_rate2006 = 1310

### Huawei CH242 V3 (Intel Xeon E7-4830 v2)

### SPECint\_rate\_base2006 = 1270

CPU2006 license: 3175

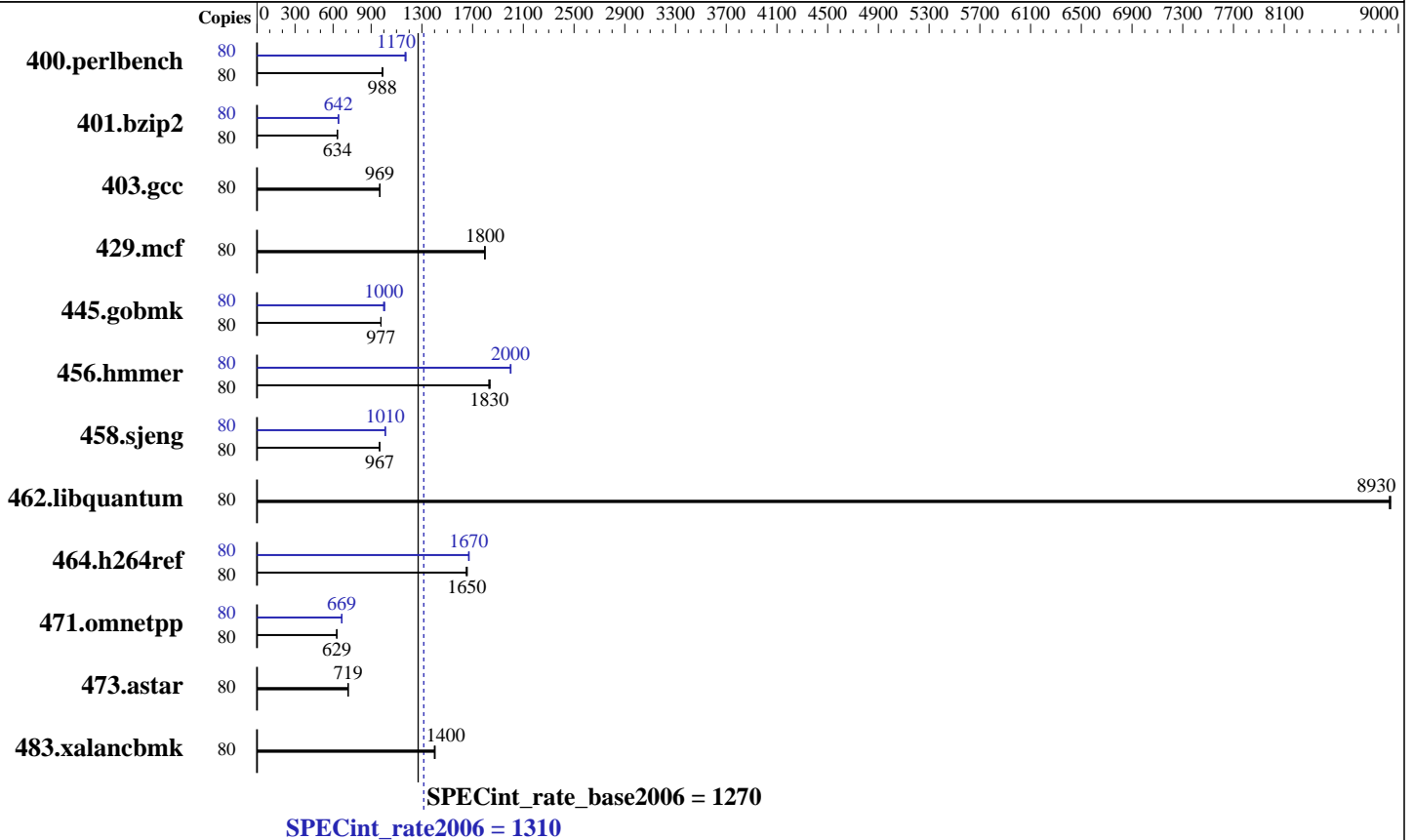
Test date: Sep-2014

Test sponsor: Huawei

Hardware Availability: Feb-2014

Tested by: Huawei

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E7-4830 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core  
 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1066 MHz)  
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM  
 Other Hardware: None

### 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  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

| Benchmark      | Base   |             |             |            |            |             |             | Peak   |             |             |             |             |            |             |
|----------------|--------|-------------|-------------|------------|------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|------------|-------------|
|                | Copies | Seconds     | Ratio       | Seconds    | Ratio      | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds    | Ratio       |
| 400.perlbench  | 80     | 792         | 987         | 788        | 992        | <u>791</u>  | <u>988</u>  | 80     | 669         | 1170        | <u>669</u>  | <u>1170</u> | 665        | 1180        |
| 401.bzip2      | 80     | 1218        | 634         | 1217       | 634        | <u>1218</u> | <u>634</u>  | 80     | 1201        | 643         | <u>1202</u> | <u>642</u>  | 1202       | 642         |
| 403.gcc        | 80     | 666         | 967         | 665        | 969        | <u>665</u>  | <u>969</u>  | 80     | 666         | 967         | 665         | 969         | <u>665</u> | <u>969</u>  |
| 429.mcf        | 80     | 407         | 1790        | 406        | 1800       | <u>406</u>  | <u>1800</u> | 80     | 407         | 1790        | 406         | 1800        | <u>406</u> | <u>1800</u> |
| 445.gobmk      | 80     | <u>859</u>  | <u>977</u>  | 858        | 978        | 859         | 977         | 80     | <u>838</u>  | <u>1000</u> | 841         | 998         | 833        | 1010        |
| 456.hammer     | 80     | 406         | 1840        | 408        | 1830       | <u>408</u>  | <u>1830</u> | 80     | 373         | 2000        | <u>373</u>  | <u>2000</u> | 374        | 2000        |
| 458.sjeng      | 80     | <u>1001</u> | <u>967</u>  | 1001       | 967        | 1003        | 965         | 80     | 956         | 1010        | 958         | 1010        | <u>956</u> | <u>1010</u> |
| 462.libquantum | 80     | 185         | 8940        | 186        | 8930       | <u>186</u>  | <u>8930</u> | 80     | 185         | 8940        | 186         | 8930        | <u>186</u> | <u>8930</u> |
| 464.h264ref    | 80     | <u>1070</u> | <u>1650</u> | 1073       | 1650       | 1068        | 1660        | 80     | <u>1059</u> | <u>1670</u> | 1062        | 1670        | 1058       | 1670        |
| 471.omnetpp    | 80     | 794         | 629         | 795        | 629        | <u>794</u>  | <u>629</u>  | 80     | 747         | 669         | <u>748</u>  | <u>669</u>  | 749        | 668         |
| 473.astar      | 80     | 782         | 718         | <u>781</u> | <u>719</u> | 781         | 719         | 80     | 782         | 718         | <u>781</u>  | <u>719</u>  | 781        | 719         |
| 483.xalancbmk  | 80     | <u>394</u>  | <u>1400</u> | 393        | 1400       | 395         | 1400        | 80     | <u>394</u>  | <u>1400</u> | 393         | 1400        | 395        | 1400        |

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

BIOS configuration:  
Set VMSE Lockstep mode to Disable  
Sysinfo program /spec/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Sun Sep 28 18:15:15 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 E7-4830 v2 @ 2.20GHz  
4 "physical id"s (chips)  
80 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

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## Platform Notes (Continued)

```

cpu cores : 10
siblings  : 20
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
physical 2: cores 0 1 2 3 4 8 9 10 11 12
physical 3: cores 0 1 2 3 4 8 9 10 11 12
cache size : 20480 KB

```

From /proc/meminfo

```

MemTotal:      264353068 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

```

/usr/bin/lsb\_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:

```

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 Sep 28 17:39

SPEC is set to: /spec

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  255G   26G  216G  11% /

```

Additional information from dmidecode:

BIOS American Megatrends Inc. BLISV302 09/03/2014

Memory:

```

32x      8 GB
32x Micron 36KSF1G72PZ-1G6K1 8 GB 1066 MHz 2 rank

```

(End of data from sysinfo program)

The system use 256 GB memory

## General Notes

Environment variables 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  
memory using 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

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## General Notes (Continued)

runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

## Base Compiler Invocation

C benchmarks:

icc -m32

C++ benchmarks:

icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/sh -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

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## Peak Compiler Invocation (Continued)

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.perlbench: -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

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -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)  
-unroll4 -auto-ilp32

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)  
-unroll2 -ansi-alias

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## Peak Optimization Flags (Continued)

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/sh -lsmartheap

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).

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