



# SPEC® CINT2006 Result

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## Huawei

**SPECint®2006 = 64.8**

Huawei CH222 V3 (Intel Xeon E5-2667 v3)

**SPECint\_base2006 = 61.4**

CPU2006 license: 3175

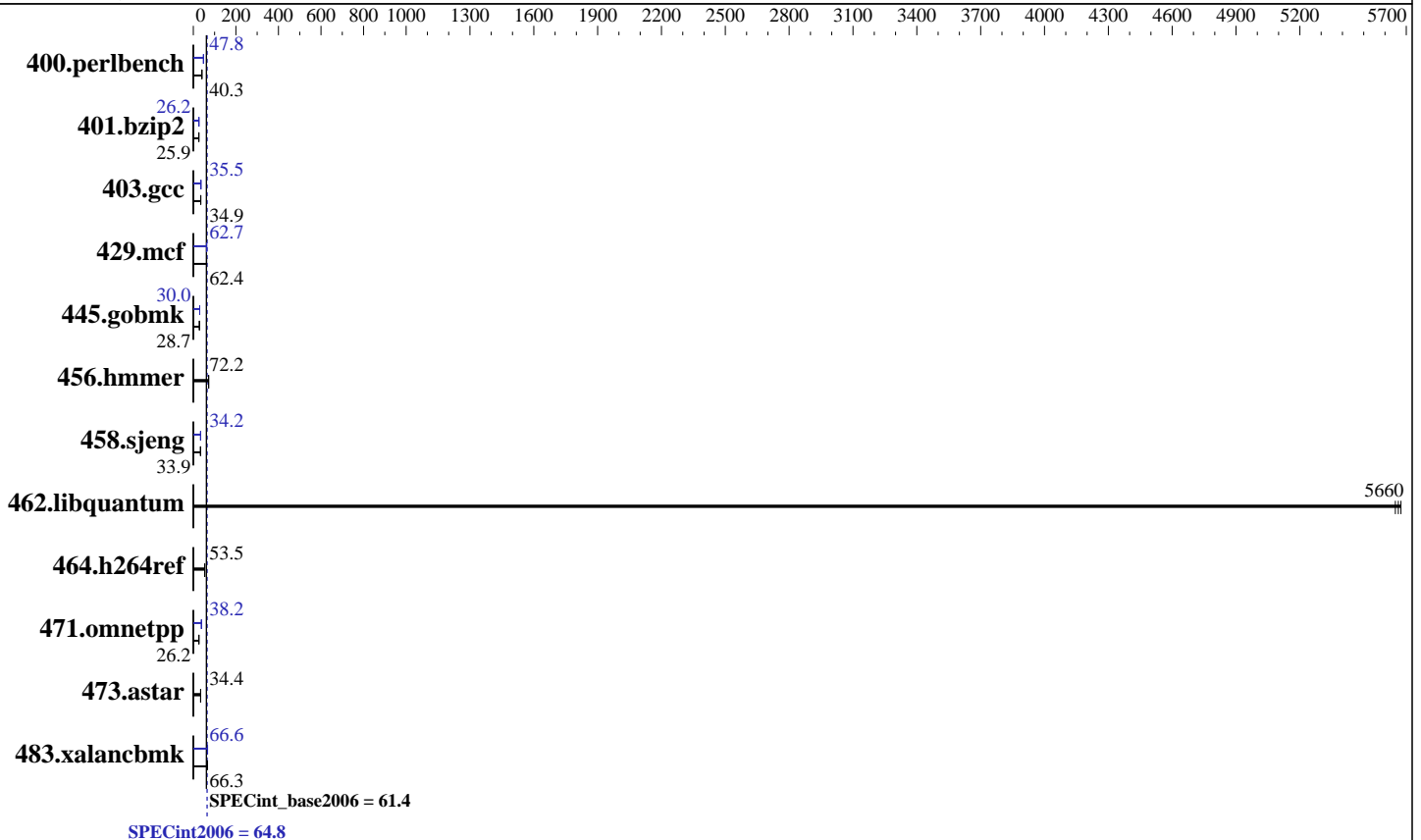
Test date: May-2015

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Jun-2014



### Hardware

CPU Name: Intel Xeon E5-2667 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip  
 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)  
 3.10.0-123.el7.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  
 Other Software: Microquill SmartHeap V10.0



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### Results Table

| Benchmark      | Base               |                    |                   |                    |                   |                    | Peak               |                    |                   |                    |                   |                    |
|----------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|
|                | Seconds            | Ratio              | Seconds           | Ratio              | Seconds           | Ratio              | Seconds            | Ratio              | Seconds           | Ratio              | Seconds           | Ratio              |
| 400.perlbench  | 244                | 40.0               | <b><u>243</u></b> | <b><u>40.3</u></b> | 242               | 40.3               | 204                | 47.8               | 205               | 47.7               | <b><u>204</u></b> | <b><u>47.8</u></b> |
| 401.bzip2      | 372                | 25.9               | 372               | 25.9               | <b><u>372</u></b> | <b><u>25.9</u></b> | 369                | 26.2               | <b><u>369</u></b> | <b><u>26.2</u></b> | 369               | 26.2               |
| 403.gcc        | 230                | 35.0               | <b><u>231</u></b> | <b><u>34.9</u></b> | 231               | 34.8               | 227                | 35.5               | 226               | 35.6               | <b><u>226</u></b> | <b><u>35.5</u></b> |
| 429.mcf        | 145                | 62.8               | 147               | 62.2               | <b><u>146</u></b> | <b><u>62.4</u></b> | 146                | 62.5               | <b><u>145</u></b> | <b><u>62.7</u></b> | 145               | 62.8               |
| 445.gobmk      | <b><u>366</u></b>  | <b><u>28.7</u></b> | 366               | 28.7               | 366               | 28.7               | 349                | 30.0               | <b><u>350</u></b> | <b><u>30.0</u></b> | 350               | 29.9               |
| 456.hammer     | 129                | 72.2               | <b><u>129</u></b> | <b><u>72.2</u></b> | 131               | 71.4               | 129                | 72.2               | <b><u>129</u></b> | <b><u>72.2</u></b> | 131               | 71.4               |
| 458.sjeng      | 358                | 33.8               | 357               | 33.9               | <b><u>357</u></b> | <b><u>33.9</u></b> | <b><u>354</u></b>  | <b><u>34.2</u></b> | 354               | 34.2               | 354               | 34.2               |
| 462.libquantum | <b><u>3.66</u></b> | <b><u>5660</u></b> | 3.65              | 5670               | 3.67              | 5650               | <b><u>3.66</u></b> | <b><u>5660</u></b> | 3.65              | 5670               | 3.67              | 5650               |
| 464.h264ref    | 415                | 53.3               | <b><u>413</u></b> | <b><u>53.5</u></b> | 413               | 53.6               | 415                | 53.3               | <b><u>413</u></b> | <b><u>53.5</u></b> | 413               | 53.6               |
| 471.omnetpp    | 238                | 26.3               | <b><u>239</u></b> | <b><u>26.2</u></b> | 241               | 26.0               | 163                | 38.3               | 164               | 38.2               | <b><u>164</u></b> | <b><u>38.2</u></b> |
| 473.astar      | <b><u>204</u></b>  | <b><u>34.4</u></b> | 205               | 34.3               | 204               | 34.4               | <b><u>204</u></b>  | <b><u>34.4</u></b> | 205               | 34.3               | 204               | 34.4               |
| 483.xalancbmk  | 104                | 66.1               | 104               | 66.4               | <b><u>104</u></b> | <b><u>66.3</u></b> | 103                | 67.1               | <b><u>104</u></b> | <b><u>66.6</u></b> | 104               | 66.5               |

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 Snoop Mode to HS  
Set Hyper-Threading to Disabled  
Baseboard Management Controller used to adjust the fan speed to 100%  
Sysinfo program /spec/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Sun May 10 03:05:55 2015

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 E5-2667 v3 @ 3.20GHz  
2 "physical id"s (chips)  
16 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with  
Continued on next page



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## Platform Notes (Continued)

```
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
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      263721488 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

```
uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 May 10 02:59
```

```
SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda2        ext4     259G  133G  113G  55% /
```

```
Additional information from dmidecode:
BIOS Insyde Corp. 1.16 09/02/2014
Memory:
8x NO DIMM NO DIMM      3 rank
8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank
```

(End of data from sysinfo program)

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
OMP_NUM_THREADS = "16"
```

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|  |                           |             |
|--|---------------------------|-------------|
| <b>Huawei</b>                                  | <b>SPECint2006 =</b>      | <b>64.8</b> |
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|                              |  |
|------------------------------|--|
| <b>CPU2006 license:</b> 3175 | <b>Test date:</b> May-2015             |
| <b>Test sponsor:</b> Huawei  | <b>Hardware Availability:</b> Sep-2014 |
| <b>Tested by:</b> Huawei     | <b>Software Availability:</b> Jun-2014 |

## General Notes (Continued)

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>  
The Huawei CH121 V3 and Huawei CH222 V3 are electronically equivalent.  
The results have been measured on a Huawei CH121 V3 model

## 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.xalanbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

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

C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64



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## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: 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  
464.h264ref: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(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: -xCORE-AVX2(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

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## Peak Optimization Flags (Continued)

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

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel  
-opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmmer: basepeak = yes

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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmarheap

473.astar: basepeak = yes

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-ansi-alias -Wl,-z,muldefs -L/sh -lsmarheap

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

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