



# SPEC<sup>®</sup> CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei  
Huawei CH242 v3

SPECint<sup>®</sup>2006 = 49.7  
SPECint\_base2006 = 46.1

CPU2006 license: 3175

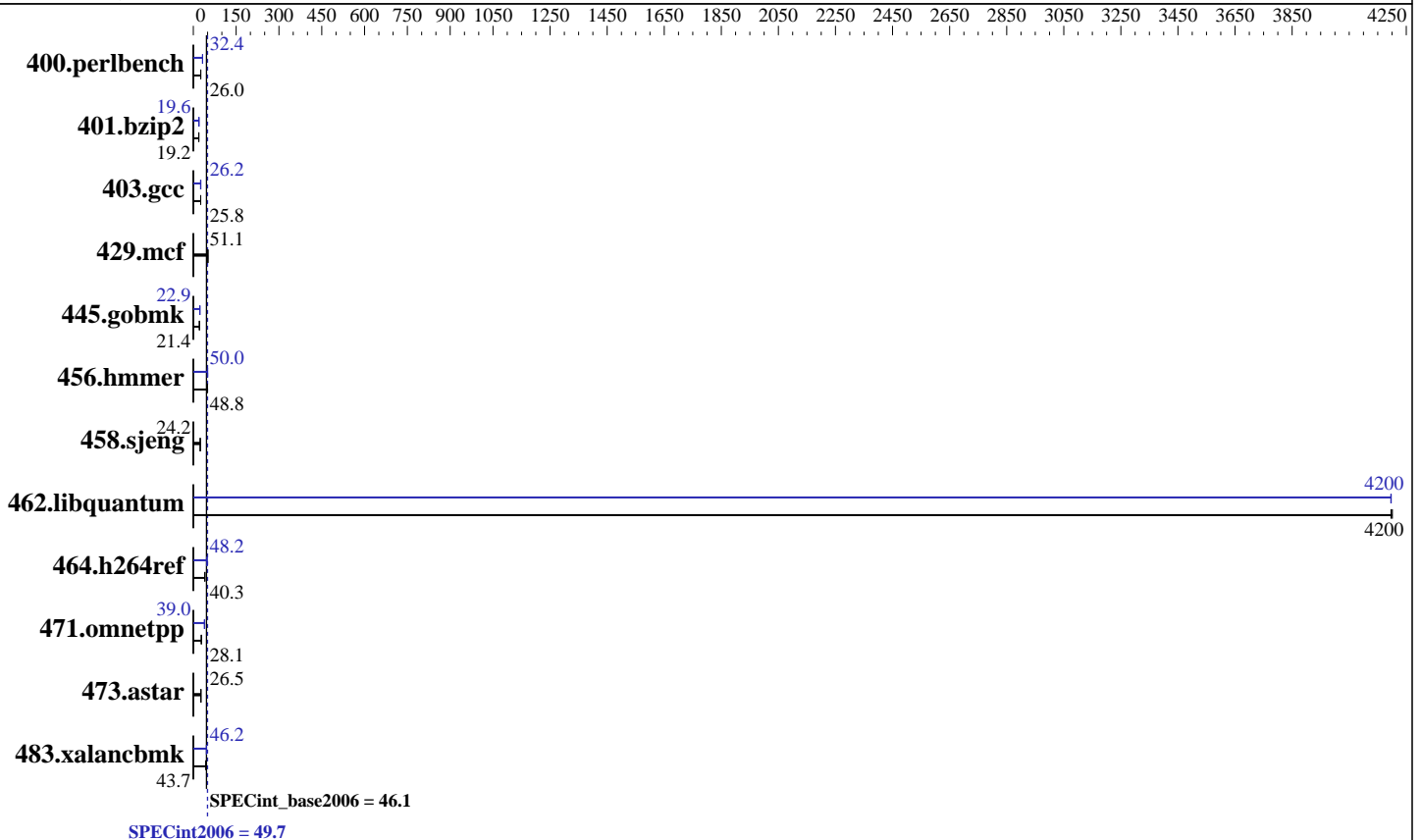
Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Jan-2014

Software Availability: Nov-2013



## Hardware

CPU Name: Intel Xeon E7-4870 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 60 cores, 4 chips, 15 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: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3-10600R-09, ECC)  
 Disk Subsystem: 1 X 300 GB SAS 10000RPM  
 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 12.1.0.225 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 V9.01



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei  
Huawei CH242 v3

SPECint2006 = 49.7  
SPECint\_base2006 = 46.1

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

Test date: May-2014  
Hardware Availability: Jan-2014  
Software Availability: Nov-2013

## Results Table

| Benchmark      | Base       |             |             |             |            |             | Peak       |             |             |             |            |             |
|----------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
|                | Seconds    | Ratio       | Seconds     | Ratio       | Seconds    | Ratio       | Seconds    | Ratio       | Seconds     | Ratio       | Seconds    | Ratio       |
| 400.perlbench  | <b>376</b> | <b>26.0</b> | 375         | 26.0        | 376        | 26.0        | <b>302</b> | <b>32.4</b> | 302         | 32.4        | 301        | 32.4        |
| 401.bzip2      | <b>502</b> | <b>19.2</b> | 503         | 19.2        | 502        | 19.2        | 492        | 19.6        | <b>492</b>  | <b>19.6</b> | 492        | 19.6        |
| 403.gcc        | 312        | 25.8        | 311         | 25.9        | <b>312</b> | <b>25.8</b> | 320        | 25.2        | 308         | 26.2        | <b>308</b> | <b>26.2</b> |
| 429.mcf        | 178        | 51.2        | 180         | 50.7        | <b>179</b> | <b>51.1</b> | 178        | 51.2        | 180         | 50.7        | <b>179</b> | <b>51.1</b> |
| 445.gobmk      | 490        | 21.4        | 491         | 21.4        | <b>491</b> | <b>21.4</b> | 458        | 22.9        | <b>458</b>  | <b>22.9</b> | 458        | 22.9        |
| 456.hammer     | 191        | 48.8        | 191         | 48.9        | <b>191</b> | <b>48.8</b> | 190        | 49.1        | <b>187</b>  | <b>50.0</b> | 185        | 50.4        |
| 458.sjeng      | <b>499</b> | <b>24.2</b> | 499         | 24.2        | 499        | 24.2        | <b>499</b> | <b>24.2</b> | 499         | 24.2        | 499        | 24.2        |
| 462.libquantum | 4.93       | 4200        | <b>4.93</b> | <b>4200</b> | 4.94       | 4200        | 4.94       | 4200        | <b>4.94</b> | <b>4200</b> | 4.94       | 4200        |
| 464.h264ref    | <b>549</b> | <b>40.3</b> | 549         | 40.3        | 551        | 40.2        | <b>459</b> | <b>48.2</b> | 463         | 47.8        | 459        | 48.3        |
| 471.omnetpp    | 222        | 28.2        | 222         | 28.1        | <b>222</b> | <b>28.1</b> | <b>160</b> | <b>39.0</b> | 159         | 39.4        | 161        | 38.9        |
| 473.astar      | 264        | 26.6        | 265         | 26.5        | <b>265</b> | <b>26.5</b> | 264        | 26.6        | 265         | 26.5        | <b>265</b> | <b>26.5</b> |
| 483.xalancbmk  | 157        | 43.9        | 159         | 43.4        | <b>158</b> | <b>43.7</b> | 149        | 46.2        | 149         | 46.2        | <b>149</b> | <b>46.2</b> |

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

## Operating System Notes

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

## Platform Notes

BIOS configuration:  
Set VMSE LockStep mode disable  
Set Intel HT Technology Disable  
Sysinfo program /spec/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Mon May 12 12:31:31 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 E7-4870 v2 @ 2.30GHz
 4 "physical id"s (chips)
 60 "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 : 15
siblings : 15
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

|                           |                    |      |
|---------------------------|--------------------|------|
| Huawei<br>Huawei CH242 v3 | SPECint2006 =      | 49.7 |
|                           | SPECint_base2006 = | 46.1 |

|                       |                        |          |
|-----------------------|------------------------|----------|
| CPU2006 license: 3175 | Test date:             | May-2014 |
| Test sponsor: Huawei  | Hardware Availability: | Jan-2014 |
| Tested by: Huawei     | Software Availability: | Nov-2013 |

## Platform Notes (Continued)

```
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
cache size : 30720 KB
```

```
From /proc/meminfo
MemTotal:      264356784 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 May 12 10:59
```

```
SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  265G  228G   24G  91% /
```

Additional information from dmidecode:

```
Memory:
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:

```
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "60"
```

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

## Base Compiler Invocation

C benchmarks:  
icc -m64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

|                 |                    |      |
|-----------------|--------------------|------|
| Huawei          | SPECint2006 =      | 49.7 |
| Huawei CH242 v3 | SPECint_base2006 = | 46.1 |

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

Test date: May-2014  
 Hardware Availability: Jan-2014  
 Software Availability: Nov-2013

## Base Compiler Invocation (Continued)

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.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/smartheap -lsmartheap64

## 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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

|                        |                           |             |
|------------------------|---------------------------|-------------|
| <b>Huawei</b>          | <b>SPECint2006 =</b>      | <b>49.7</b> |
| <b>Huawei CH242 v3</b> | <b>SPECint_base2006 =</b> | <b>46.1</b> |

|                              |  |
|------------------------------|--|
| <b>CPU2006 license:</b> 3175 | <b>Test date:</b> May-2014             |
| <b>Test sponsor:</b> Huawei  | <b>Hardware Availability:</b> Jan-2014 |
| <b>Tested by:</b> Huawei     | <b>Software Availability:</b> Nov-2013 |

## 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: -xAVX -ipo -O3 -no-prec-div -inline-calloc  
 -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

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

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
 -ansi-alias

458.sjeng: basepeak = yes

462.libquantum: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch  
 -auto-p32

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

|                           |                    |      |
|---------------------------|--------------------|------|
| Huawei<br>Huawei CH242 v3 | SPECint2006 =      | 49.7 |
|                           | SPECint_base2006 = | 46.1 |

|                       |                        |          |
|-----------------------|------------------------|----------|
| CPU2006 license: 3175 | Test date:             | May-2014 |
| Test sponsor: Huawei  | Hardware Availability: | Jan-2014 |
| Tested by: Huawei     | Software Availability: | Nov-2013 |

## Peak Optimization Flags (Continued)

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

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-ra-region-strategy=block -ansi-alias  
 -Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

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

## 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-ic12.1-official-linux64.20120425.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-ic12.1-official-linux64.20120425.xml>  
<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.  
 Report generated on Thu Jul 24 23:36:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
 Originally published on 19 June 2014.