



# SPEC® CINT2006 Result

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## Huawei

**SPECint®2006 = 62.7**

Huawei RH2288H v2 (Intel Xeon E5-2690 v2)

**SPECint\_base2006 = 57.6**

CPU2006 license: 3175

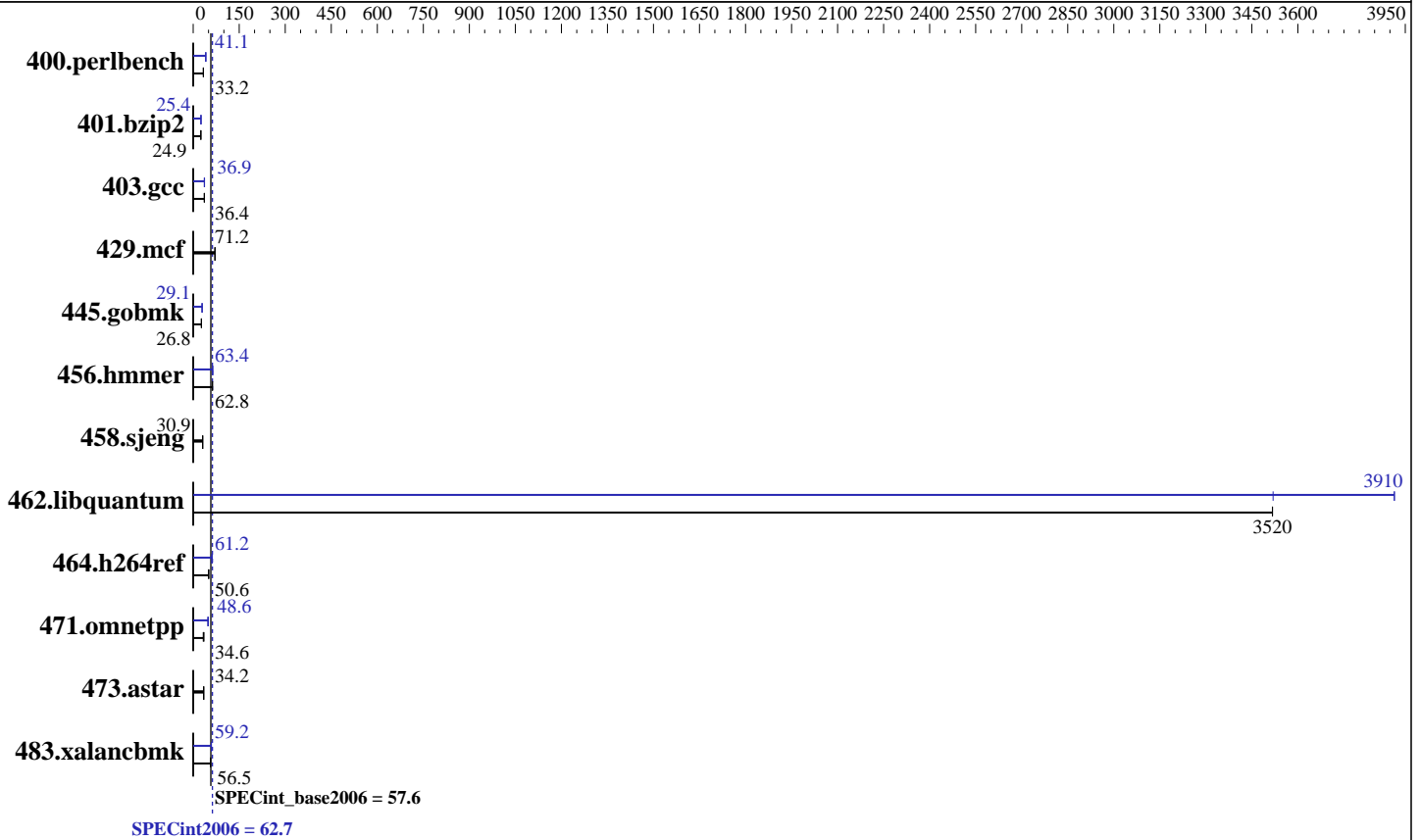
Test sponsor: Huawei

Tested by: Huawei

Test date: Aug-2014

Hardware Availability: Sep-2013

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E5-2690 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)  
 Disk Subsystem: 1 x 300 GB SAS, 10000 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 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



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	294	33.2	<b><u>294</u></b>	<b><u>33.2</u></b>	294	33.2	<b><u>238</u></b>	<b><u>41.1</u></b>	237	41.2	240	40.8
401.bzip2	387	24.9	388	24.9	<b><u>388</u></b>	<b><u>24.9</u></b>	380	25.4	380	25.4	<b><u>380</u></b>	<b><u>25.4</u></b>
403.gcc	<b><u>221</u></b>	<b><u>36.4</u></b>	221	36.4	221	36.3	<b><u>218</u></b>	<b><u>36.9</u></b>	218	36.9	223	36.1
429.mcf	<b><u>128</u></b>	<b><u>71.2</u></b>	129	70.6	128	71.3	<b><u>128</u></b>	<b><u>71.2</u></b>	129	70.6	128	71.3
445.gobmk	392	26.7	<b><u>392</u></b>	<b><u>26.8</u></b>	391	26.8	361	29.1	<b><u>361</u></b>	<b><u>29.1</u></b>	360	29.1
456.hammer	149	62.8	<b><u>149</u></b>	<b><u>62.8</u></b>	149	62.8	<b><u>147</u></b>	<b><u>63.4</u></b>	148	62.9	146	63.7
458.sjeng	391	30.9	391	30.9	<b><u>391</u></b>	<b><u>30.9</u></b>	391	30.9	391	30.9	<b><u>391</u></b>	<b><u>30.9</u></b>
462.libquantum	5.89	3520	5.89	3520	<b><u>5.89</u></b>	<b><u>3520</u></b>	5.89	3520	5.29	3910	<b><u>5.29</u></b>	<b><u>3910</u></b>
464.h264ref	437	50.7	441	50.2	<b><u>438</u></b>	<b><u>50.6</u></b>	362	61.2	<b><u>362</u></b>	<b><u>61.2</u></b>	362	61.2
471.omnetpp	191	32.8	180	34.6	<b><u>181</u></b>	<b><u>34.6</u></b>	<b><u>129</u></b>	<b><u>48.6</u></b>	127	49.2	131	47.8
473.astar	204	34.3	<b><u>205</u></b>	<b><u>34.2</u></b>	206	34.1	204	34.3	<b><u>205</u></b>	<b><u>34.2</u></b>	206	34.1
483.xalancbmk	<b><u>122</u></b>	<b><u>56.5</u></b>	122	56.7	123	56.1	116	59.4	117	59.2	<b><u>117</u></b>	<b><u>59.2</u></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 Power Efficiency Mode to Custom

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

Sysinfo program /spec/config/sysinfo.rev6800

\$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3

running on localhost Fri Aug 1 09:39:23 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 E5-2690 v2 @ 3.00GHz

2 "physical id"s (chips)

20 "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 : 10

siblings : 10

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

cache size : 25600 KB

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## Platform Notes (Continued)

```

From /proc/meminfo
MemTotal:      264478184 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 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 Aug 1 09:10

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  272G   32G  226G  13% /

Additional information from dmidecode:
Memory:
4x Hynix HMT42GR7AFR4C-RD 16 GB 1867 MHz 2 rank
12x Samsung M393B2G70DB0-CMA 16 GB 1867 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 = "20"

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

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## 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.hmmmer: -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

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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: -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

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## 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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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