



# SPEC<sup>®</sup> CINT2006 Result

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## Huawei Huawei CH242 v3

SPECint<sup>®</sup>\_rate2006 = 2050

SPECint\_rate\_base2006 = 1990

CPU2006 license: 3175

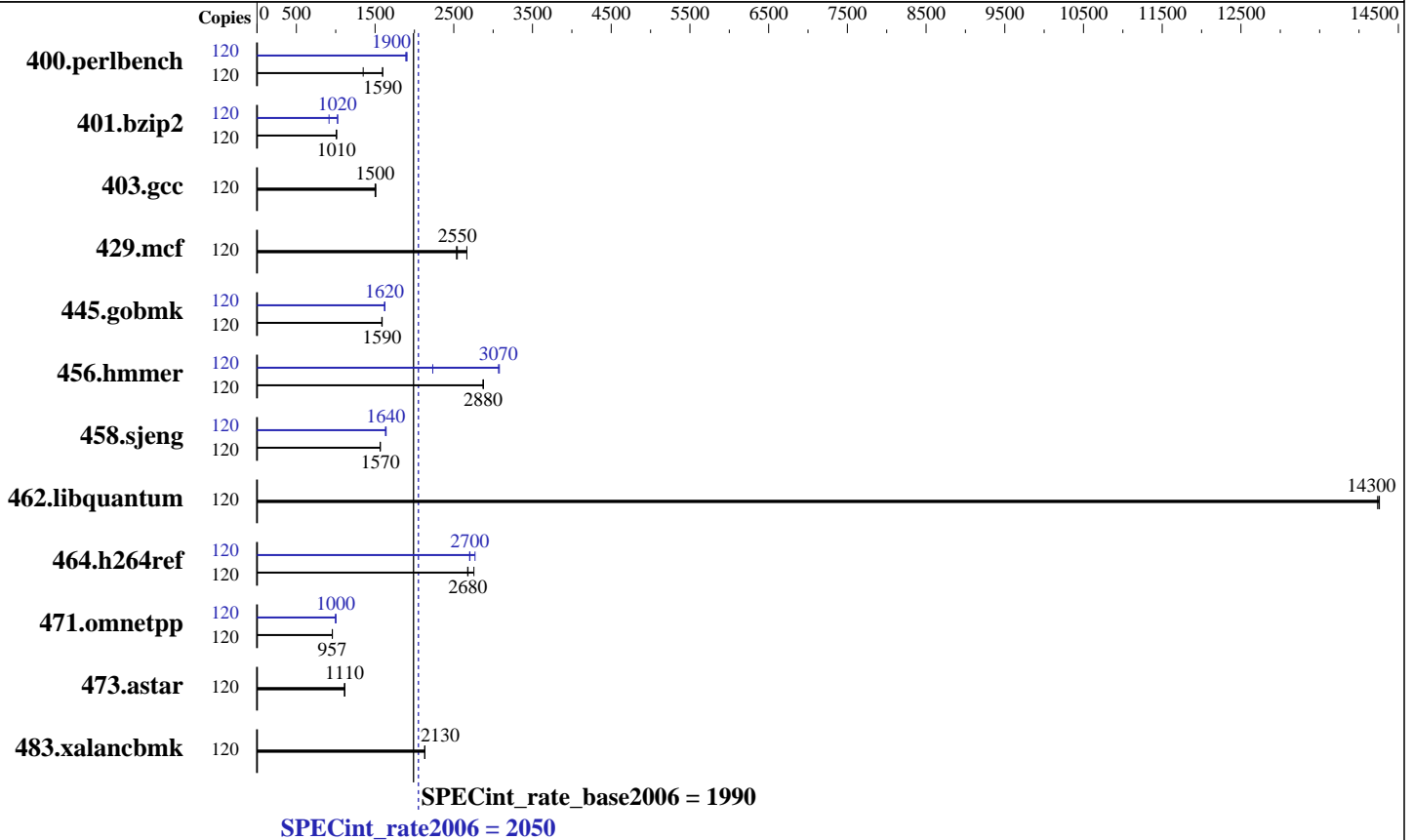
Test sponsor: Huawei

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, 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: 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 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	120	<b>735</b>	<b>1590</b>	734	1600	869	1350	120	615	1910	620	1890	<b>618</b>	<b>1900</b>
401.bzip2	120	<b>1146</b>	<b>1010</b>	1146	1010	1151	1010	120	1130	1020	<b>1133</b>	<b>1020</b>	1265	915
403.gcc	120	640	1510	644	1500	<b>643</b>	<b>1500</b>	120	640	1510	644	1500	<b>643</b>	<b>1500</b>
429.mcf	120	411	2670	<b>430</b>	<b>2550</b>	432	2530	120	411	2670	<b>430</b>	<b>2550</b>	432	2530
445.gobmk	120	794	1590	791	1590	<b>793</b>	<b>1590</b>	120	775	1630	777	1620	<b>776</b>	<b>1620</b>
456.hammer	120	389	2880	<b>389</b>	<b>2880</b>	390	2870	120	364	3080	501	2230	<b>365</b>	<b>3070</b>
458.sjeng	120	927	1570	928	1560	<b>927</b>	<b>1570</b>	120	<b>888</b>	<b>1640</b>	889	1630	885	1640
462.libquantum	120	175	14200	<b>174</b>	<b>14300</b>	174	14300	120	175	14200	<b>174</b>	<b>14300</b>	174	14300
464.h264ref	120	992	2680	<b>991</b>	<b>2680</b>	964	2760	120	<b>982</b>	<b>2700</b>	959	2770	983	2700
471.omnetpp	120	784	957	784	957	<b>784</b>	<b>957</b>	120	750	1000	<b>750</b>	<b>1000</b>	751	999
473.astar	120	757	1110	756	1110	<b>757</b>	<b>1110</b>	120	757	1110	756	1110	<b>757</b>	<b>1110</b>
483.xalancbmk	120	388	2130	<b>388</b>	<b>2130</b>	389	2130	120	388	2130	<b>388</b>	<b>2130</b>	389	2130

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 disable  
Sysinfo program /spec/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Thu May 8 15:08:50 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)  
120 "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 : 15
siblings  : 30
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
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:      264349344 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 8 13:22

SPEC is set to: /spec

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  265G  15G  237G   6% /

```

Additional information from dmidecode:

BIOS American Megatrends Inc. BLISV033 02/27/2014

Memory:

```

32x 8 GB
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:

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.hmmr: 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.hmmr: -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.hmmr: -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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