



# SPEC® CINT2006 Result

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## Huawei

## SPECint®\_rate2006 = 816

### Huawei CH222 (Intel Xeon E5-2670 v2)

## SPECint\_rate\_base2006 = 788

CPU2006 license: 3175

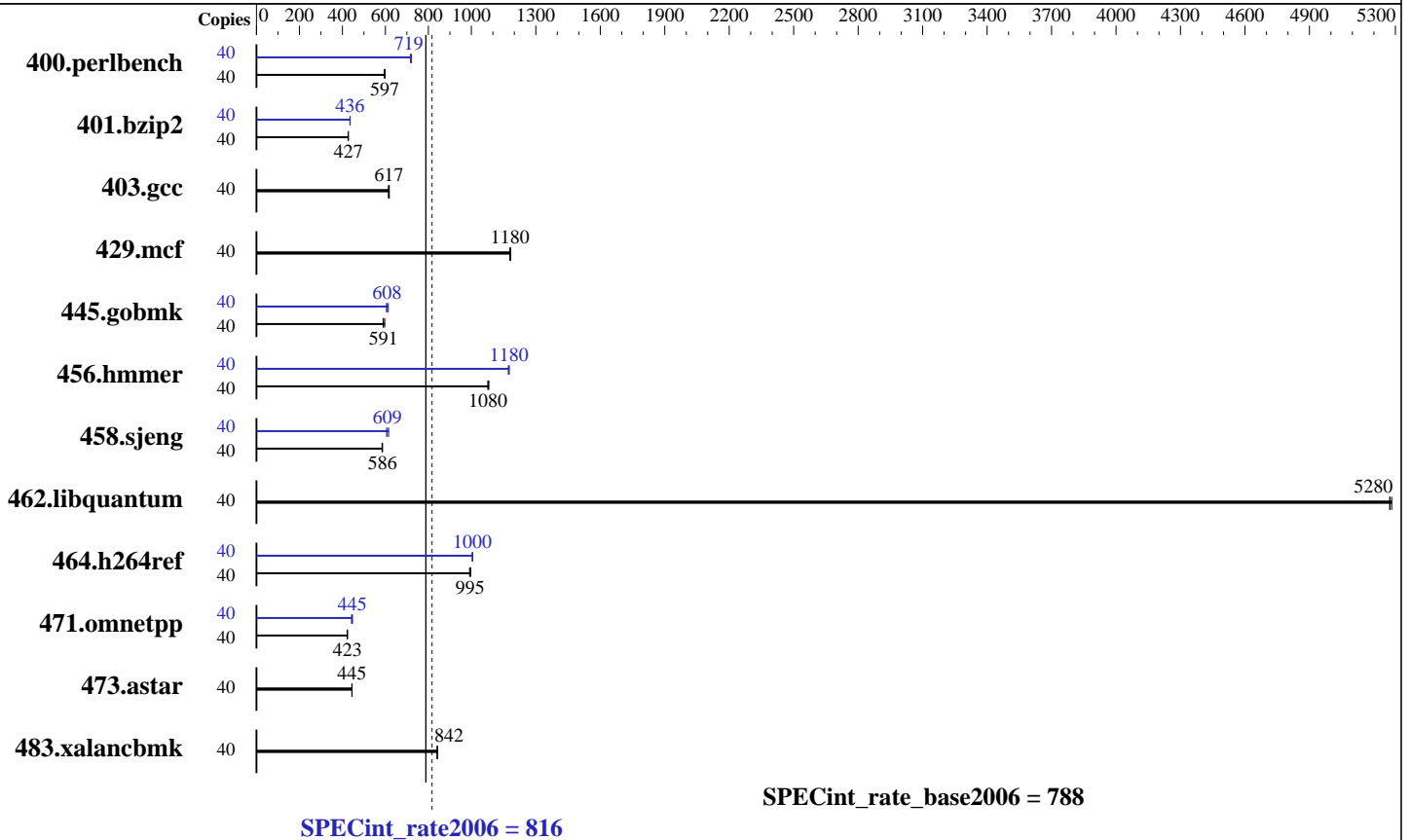
Test date: Jul-2014

Test sponsor: Huawei

Hardware Availability: Sep-2013

Tested by: Huawei

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E5-2670 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core  
 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 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	40	<b>655</b>	<b>597</b>	656	595	653	599	40	<b>543</b>	<b>719</b>	545	717	542	721
401.bzip2	40	905	426	<b>903</b>	<b>427</b>	903	427	40	885	436	<b>886</b>	<b>436</b>	888	435
403.gcc	40	525	614	<b>522</b>	<b>617</b>	521	618	40	525	614	<b>522</b>	<b>617</b>	521	618
429.mcf	40	308	1180	<b>309</b>	<b>1180</b>	309	1180	40	308	1180	<b>309</b>	<b>1180</b>	309	1180
445.gobmk	40	<b>710</b>	<b>591</b>	712	589	703	597	40	694	605	684	613	<b>690</b>	<b>608</b>
456.hammer	40	345	1080	<b>346</b>	<b>1080</b>	346	1080	40	317	1180	<b>318</b>	<b>1180</b>	318	1170
458.sjeng	40	828	584	<b>826</b>	<b>586</b>	825	586	40	799	606	<b>794</b>	<b>609</b>	787	615
462.libquantum	40	<b>157</b>	<b>5280</b>	157	5280	157	5270	40	<b>157</b>	<b>5280</b>	157	5280	157	5270
464.h264ref	40	893	992	888	997	<b>890</b>	<b>995</b>	40	880	1010	882	1000	<b>881</b>	<b>1000</b>
471.omnetpp	40	591	423	<b>591</b>	<b>423</b>	592	423	40	<b>561</b>	<b>445</b>	565	442	560	447
473.astar	40	631	445	<b>631</b>	<b>445</b>	633	444	40	631	445	<b>631</b>	<b>445</b>	633	444
483.xalancbmk	40	<b>328</b>	<b>842</b>	328	841	328	842	40	<b>328</b>	<b>842</b>	328	841	328	842

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 Power Efficiency Mode to Custom  
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 Tue Jul 22 09:56:16 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 E5-2670 v2 @ 2.50GHz  
2 "physical id"s (chips)  
40 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with  
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## Platform Notes (Continued)

```
caution.)
  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
  cache size : 25600 KB
```

```
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 Jul 21 11:35
```

```
SPEC is set to: /spec
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        ext4      272G      28G   230G  11% /
```

```
Additional information from dmidecode:
BIOS Insyde Corp. RMIBV629 05/12/2014
Memory:
4x Hynix HMT42GR7AFR4C-RD 16 GB 1866 MHz 2 rank
8x NO DIMM NO DIMM
12x Samsung M393B2G70DB0-CMA 16 GB 1866 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
runspec command invoked through numactl i.e.:
```

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## General Notes (Continued)

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

456.hmmer: icc -m64

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## Peak Compiler Invocation (Continued)

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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