



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

## SPECint®\_rate2006 = 742

### Huawei CH222 V3 (Intel Xeon E5-2643 v4)

## SPECint\_rate\_base2006 = 704

CPU2006 license: 3175

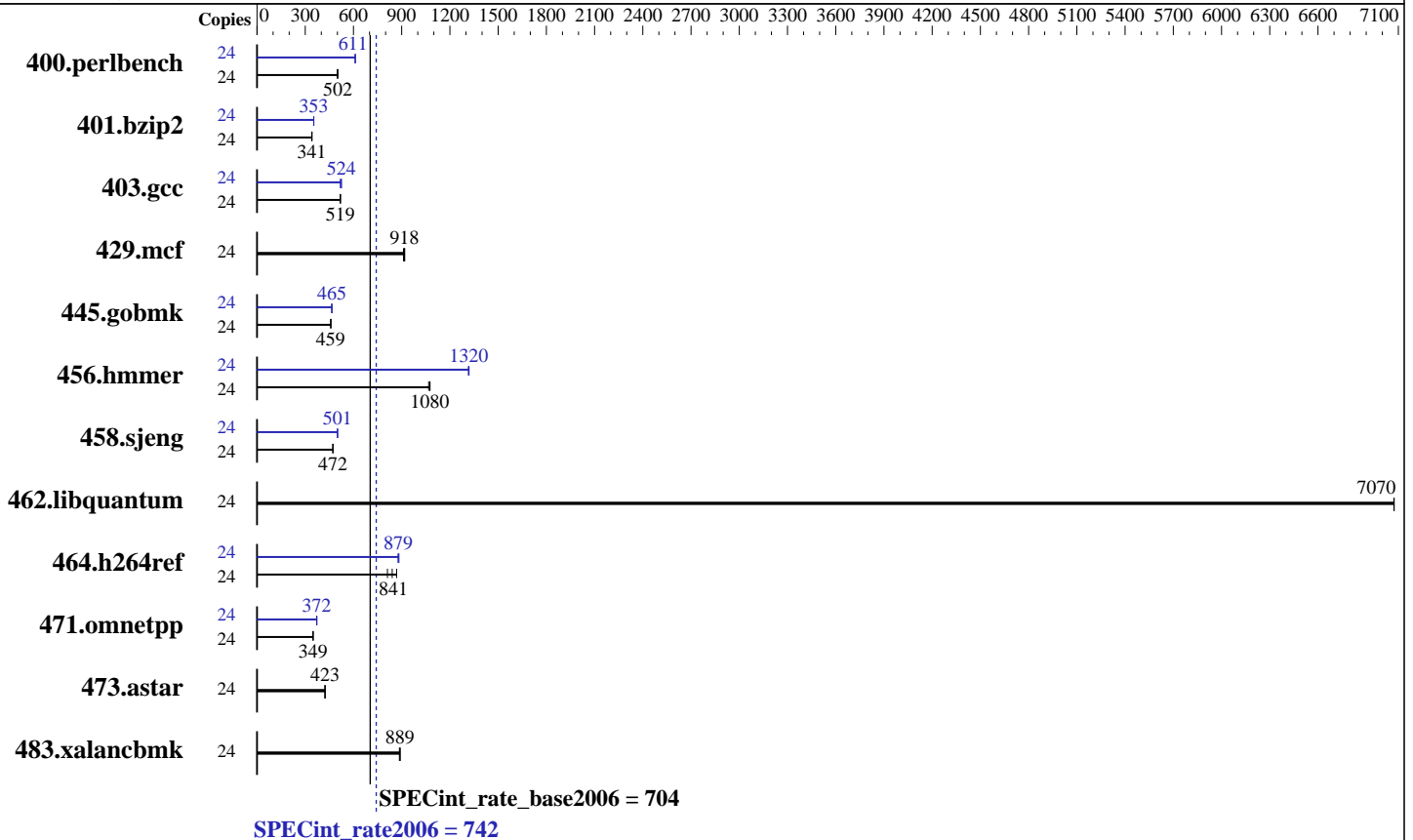
Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015



### Hardware

CPU Name: Intel Xeon E5-2643 v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)  
 Disk Subsystem: 1 x 1000 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)  
 3.10.0-327.el7.x86\_64  
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

SPECint\_rate2006 = 742

Huawei CH222 V3 (Intel Xeon E5-2643 v4)

SPECint\_rate\_base2006 = 704

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

Test date: Dec-2016  
Hardware Availability: Mar-2016  
Software Availability: Nov-2015

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	470	499	467	503	<b><u>467</u></b>	<b><u>502</u></b>	24	384	611	383	611	<b><u>384</u></b>	<b><u>611</u></b>
401.bzip2	24	678	342	679	341	<b><u>678</u></b>	<b><u>341</u></b>	24	656	353	<b><u>656</u></b>	<b><u>353</u></b>	655	354
403.gcc	24	373	518	372	519	<b><u>373</u></b>	<b><u>519</u></b>	24	373	518	368	525	<b><u>369</u></b>	<b><u>524</u></b>
429.mcf	24	240	911	<b><u>238</u></b>	<b><u>918</u></b>	238	918	24	240	911	<b><u>238</u></b>	<b><u>918</u></b>	238	918
445.gobmk	24	<b><u>549</u></b>	<b><u>459</u></b>	549	459	548	459	24	541	465	540	466	<b><u>541</u></b>	<b><u>465</u></b>
456.hammer	24	210	1070	<b><u>208</u></b>	<b><u>1080</u></b>	208	1080	24	170	1320	<b><u>170</u></b>	<b><u>1320</u></b>	170	1320
458.sjeng	24	<b><u>615</u></b>	<b><u>472</u></b>	615	472	615	472	24	<b><u>580</u></b>	<b><u>501</u></b>	580	501	580	500
462.libquantum	24	70.3	7070	<b><u>70.3</u></b>	<b><u>7070</u></b>	70.3	7070	24	70.3	7070	<b><u>70.3</u></b>	<b><u>7070</u></b>	70.3	7070
464.h264ref	24	655	811	<b><u>632</u></b>	<b><u>841</u></b>	612	868	24	602	883	605	878	<b><u>604</u></b>	<b><u>879</u></b>
471.omnetpp	24	430	349	430	349	<b><u>430</u></b>	<b><u>349</u></b>	24	403	372	<b><u>403</u></b>	<b><u>372</u></b>	404	371
473.astar	24	398	423	398	423	<b><u>398</u></b>	<b><u>423</u></b>	24	398	423	398	423	<b><u>398</u></b>	<b><u>423</u></b>
483.xalancbmk	24	<b><u>186</u></b>	<b><u>889</u></b>	186	890	187	886	24	<b><u>186</u></b>	<b><u>889</u></b>	186	890	187	886

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 Performance  
Set Snoop Mode to ES mode  
Set Patrol Scrub to Disable  
Baseboard Management Controller used to adjust the fan speed to 100%  
Sysinfo program /spec16/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb8667b5a285932ceab81e28219e1  
running on localhost.localdomain Tue Dec 6 19:32:06 2016

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 E5-2643 v4 @ 3.40GHz  
2 "physical id"s (chips)  
24 "processors"

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 742

Huawei CH222 V3 (Intel Xeon E5-2643 v4)

SPECint\_rate\_base2006 = 704

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

## Platform Notes (Continued)

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 : 6
siblings  : 12
physical 0: cores 0 1 2 3 6 7
physical 1: cores 0 1 2 3 6 7
cache size : 20480 KB
```

From /proc/meminfo

```
MemTotal:      527793608 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

From /etc/\*release\* /etc/\*version\*

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server
```

uname -a:

```
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
EDT 2015 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Dec 6 17:25

SPEC is set to: /spec16

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        xfs   911G  155G  756G  17% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Insyde Corp. 3.32 09/14/2016

Memory:

```
8x NO DIMM NO DIMM
16x Samsung M393A4K40BB1-CRC 32 GB 2 rank 2400 MHz
```

(End of data from sysinfo program)



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 742

Huawei CH222 V3 (Intel Xeon E5-2643 v4)

SPECint\_rate\_base2006 = 704

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

## Base Compiler Invocation

C benchmarks:

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmarheap



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 742

Huawei CH222 V3 (Intel Xeon E5-2643 v4)

SPECint\_rate\_base2006 = 704

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

Test date: Dec-2016  
Hardware Availability: Mar-2016  
Software Availability: Nov-2015

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 742

Huawei CH222 V3 (Intel Xeon E5-2643 v4)

SPECint\_rate\_base2006 = 704

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

## Peak Optimization Flags (Continued)

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch  
-auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias  
-opt-mem-layout-trans=3

456.hmmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4  
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 742

Huawei CH222 V3 (Intel Xeon E5-2643 v4)

SPECint\_rate\_base2006 = 704

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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 Wed Dec 28 10:51:41 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 27 December 2016.