



# SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Huawei

SPECint®\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 3175

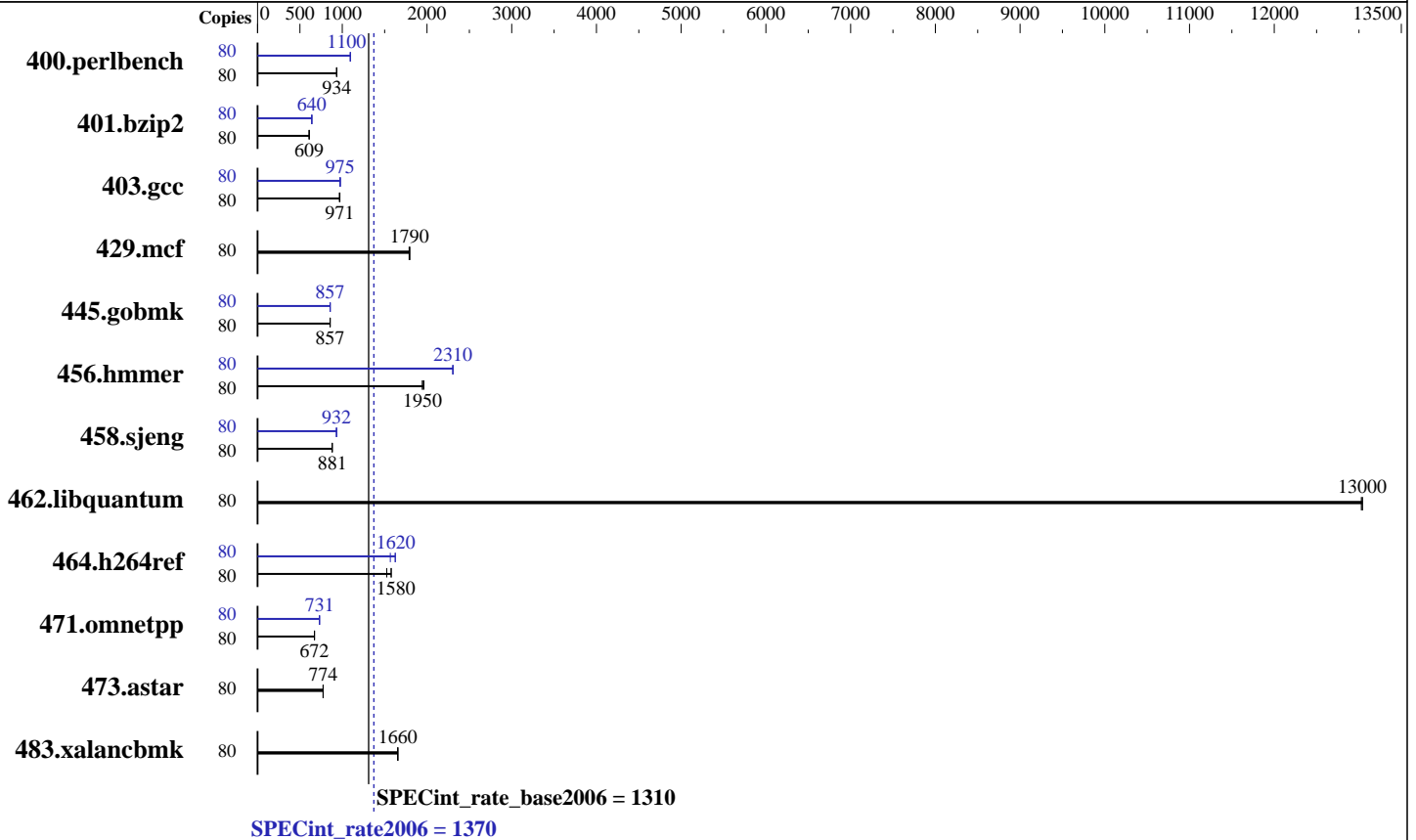
Test date: Jun-2017

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Sep-2016



### Hardware

CPU Name: Intel Xeon E7-4820 v4  
 CPU Characteristics:  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4 chips  
 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: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)  
 Disk Subsystem: 1 x 960 GB SSD  
 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 17.0.0.098 of Intel C/C++ Compiler 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 V10.2



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Huawei

SPECint\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

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

Test date: Jun-2017  
Hardware Availability: Jun-2016  
Software Availability: Sep-2016

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	<b>836</b>	<b>934</b>	836	935	838	933	80	<b>714</b>	<b>1100</b>	714	1100	714	1100
401.bzip2	80	<b>1267</b>	<b>609</b>	1267	610	1267	609	80	1205	641	<b>1206</b>	<b>640</b>	1206	640
403.gcc	80	667	965	663	972	<b>663</b>	<b>971</b>	80	658	979	663	971	<b>661</b>	<b>975</b>
429.mcf	80	408	1790	<b>406</b>	<b>1790</b>	406	1800	80	408	1790	<b>406</b>	<b>1790</b>	406	1800
445.gobmk	80	979	857	980	857	<b>980</b>	<b>857</b>	80	980	857	979	858	<b>979</b>	<b>857</b>
456.hmmer	80	<b>383</b>	<b>1950</b>	383	1950	380	1960	80	324	2300	324	2310	<b>324</b>	<b>2310</b>
458.sjeng	80	1098	881	1100	880	<b>1098</b>	<b>881</b>	80	1039	932	1039	932	<b>1039</b>	<b>932</b>
462.libquantum	80	<b>127</b>	<b>13000</b>	127	13000	127	13000	80	<b>127</b>	<b>13000</b>	127	13000	127	13000
464.h264ref	80	1161	1530	<b>1123</b>	<b>1580</b>	1123	1580	80	<b>1090</b>	<b>1620</b>	1130	1570	1089	1630
471.omnetpp	80	<b>745</b>	<b>672</b>	745	671	743	673	80	<b>684</b>	<b>731</b>	683	732	685	730
473.astar	80	<b>726</b>	<b>774</b>	725	775	726	773	80	<b>726</b>	<b>774</b>	725	775	726	773
483.xalancbmk	80	333	1660	334	1650	<b>333</b>	<b>1660</b>	80	333	1660	334	1650	<b>333</b>	<b>1660</b>

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 Lock\_step to disabled  
Baseboard Management Controller used to adjust the fan speed to 100%  
Set C-State to C0/C1  
Set COD Mode to enabled  
Sysinfo program /spec/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on localhost.localdomain Thu Sep 21 16:53:17 2017

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 E7-4820 v4 @ 2.00GHz  
4 "physical id"s (chips)

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2017

Hardware Availability: Jun-2016

Software Availability: Sep-2016

## Platform Notes (Continued)

80 "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  : 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
physical 2: cores 0 1 2 3 4 8 9 10 11 12
physical 3: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB
```

From /proc/meminfo

```
MemTotal:      528077560 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 Sep 21 16:45

SPEC is set to: /spec

```
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        ext4     796G     7.4G  748G   1% /
```

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 American Megatrends Inc. BLISV796 03/10/2017

Memory:

32x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1333 MHz

(End of data from sysinfo program)



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2017

Hardware Availability: Jun-2016

Software Availability: Sep-2016

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM  
memory using Redhat Enterprise Linux 7.2  
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_2017/linux/lib/ia32
```

C++ benchmarks:

```
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

## 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 -qopt-prefetch
-qopt-mem-layout-trans=3
```

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap
```



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

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

Test date: Jun-2017  
Hardware Availability: Jun-2016  
Software Availability: Sep-2016

## 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\_2017/linux/lib/ia32

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\_2017/linux/lib/ia32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -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: -DSPEC\_CPU\_LP64

458.sjeng: -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: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)

-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)

-no-prec-div(pass 2) -auto-ilp32 -qopt-mem-layout-trans=3

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2017

Hardware Availability: Jun-2016

Software Availability: Sep-2016

## Peak Optimization Flags (Continued)

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -qopt-prefetch -auto-ilp32  
-qopt-mem-layout-trans=3

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3

429.mcf: basepeak = yes

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -qopt-mem-layout-trans=3

456.hmmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-qopt-mem-layout-trans=3

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll4 -auto-ilp32  
-qopt-mem-layout-trans=3

462.libquantum: basepeak = yes

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll2 -qopt-mem-layout-trans=3

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2)  
-qopt-ra-region-strategy=block  
-qopt-mem-layout-trans=3 -Wl,-z,muldefs  
-L/sh10.2 -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



# SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECint\_rate2006 = 1370

Huawei CH242 V3 (Intel Xeon E7-4820 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2017

Hardware Availability: Jun-2016

Software Availability: Sep-2016

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-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-ic17.0-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 Jul 12 12:13:03 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 11 July 2017.