



# SPEC® CINT2006 Result

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## Huawei

## SPECint®\_rate2006 = Not Run

## Kunlun 9016 (Intel Xeon E7-8860 v3)

## SPECint\_rate\_base2006 = 9340

CPU2006 license: 3175

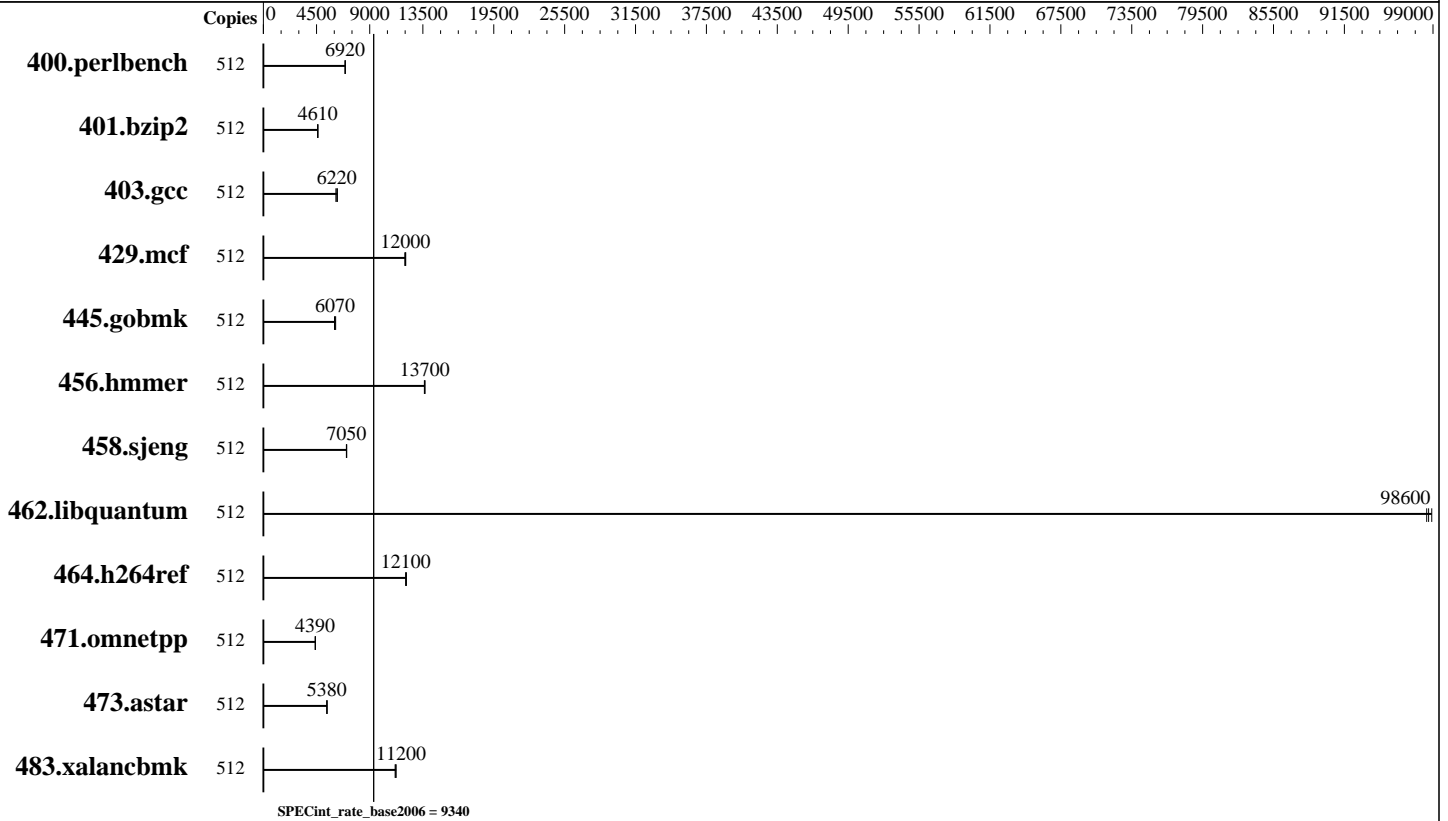
Test sponsor: Huawei

Tested by: Huawei

Test date: Apr-2017

Hardware Availability: Jan-2016

Software Availability: Dec-2015



### Hardware

CPU Name: Intel Xeon E7-8860 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 256 cores, 16 chips, 16 cores/chip, 2 threads/core  
 CPU(s) orderable: 4,8,16 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: 40 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 2 TB (128 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)  
 Disk Subsystem: 2 x 600 GB SAS, 10K RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 12 (x86\_64) SP1  
 Kernel 3.12.49-11-default  
 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 5 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



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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	512	723	6920	722	6930	<u>722</u>	<u>6920</u>							
401.bzip2	512	<u>1072</u>	<u>4610</u>	1074	4600	1072	4610							
403.gcc	512	658	6270	672	6140	<u>663</u>	<u>6220</u>							
429.mcf	512	390	12000	<u>388</u>	<u>12000</u>	388	12000							
445.gobmk	512	878	6120	892	6020	<u>885</u>	<u>6070</u>							
456.hammer	512	<u>350</u>	<u>13700</u>	349	13700	351	13600							
458.sjeng	512	<u>879</u>	<u>7050</u>	882	7030	879	7050							
462.libquantum	512	<u>108</u>	<u>98600</u>	108	98500	107	98900							
464.h264ref	512	940	12000	<u>940</u>	<u>12100</u>	936	12100							
471.omnetpp	512	727	4400	728	4390	<u>728</u>	<u>4390</u>							
473.astar	512	<u>668</u>	<u>5380</u>	669	5370	667	5390							
483.xalancbmk	512	317	11200	<u>315</u>	<u>11200</u>	314	11200							

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"  
Turbo mode set with:  
cpupower -c all frequency-set -g performance

### Platform Notes

BIOS configuration:  
Set Power Efficiency Mode to Performance  
Baseboard Management Controller used to adjust the fan speed to 100%  
Sysinfo program /home/spec/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on linux-v9m3 Tue Apr 11 20:08:53 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 E7-8860 v3 @ 2.20GHz  
16 "physical id"s (chips)  
512 "processors"

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## 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 : 16
siblings  : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 4: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 5: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 6: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 7: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 8: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 9: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 10: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 11: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 12: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 13: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 14: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 15: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB

```

From /proc/meminfo

```

MemTotal:      2117339308 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

/usr/bin/lsc\_release -d

SUSE Linux Enterprise Server 12 SP1

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

```

SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.

```

os-release:

```

NAME="SLES"
VERSION="12-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"
sgi-accelerate-release: SGI Accelerate 1.12, Build
714r18.sles12sp1-1604041900

```

uname -a:

Linux linux-v9m3 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015

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## Platform Notes (Continued)

(8d714a0) x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 5 Apr 11 20:08

SPEC is set to: /home/spec

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda4	xfs	1.1T	351G	724G	33%	/home

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. 5.11 02/21/2017

Memory:

128x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1600 MHz  
256x NO DIMM NO DIMM

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

LD\_LIBRARY\_PATH = "/home/spec/libs/32:/home/spec/libs/64:/home/spec/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

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## Base Portability Flags (Continued)

```

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 -lsmartheap

```

## Base 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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.2-BDW-RevG.20170404.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-V1.2-BDW-RevG.20170404.xml>



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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 Oct 4 12:40:06 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 3 October 2017.