



# SPEC® CINT2006 Result

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## Huawei

### SPECint®\_rate2006 = 847

### Huawei CH220 V3(Intel Xeon E5-2618L v4)

### SPECint\_rate\_base2006 = 805

CPU2006 license: 3175

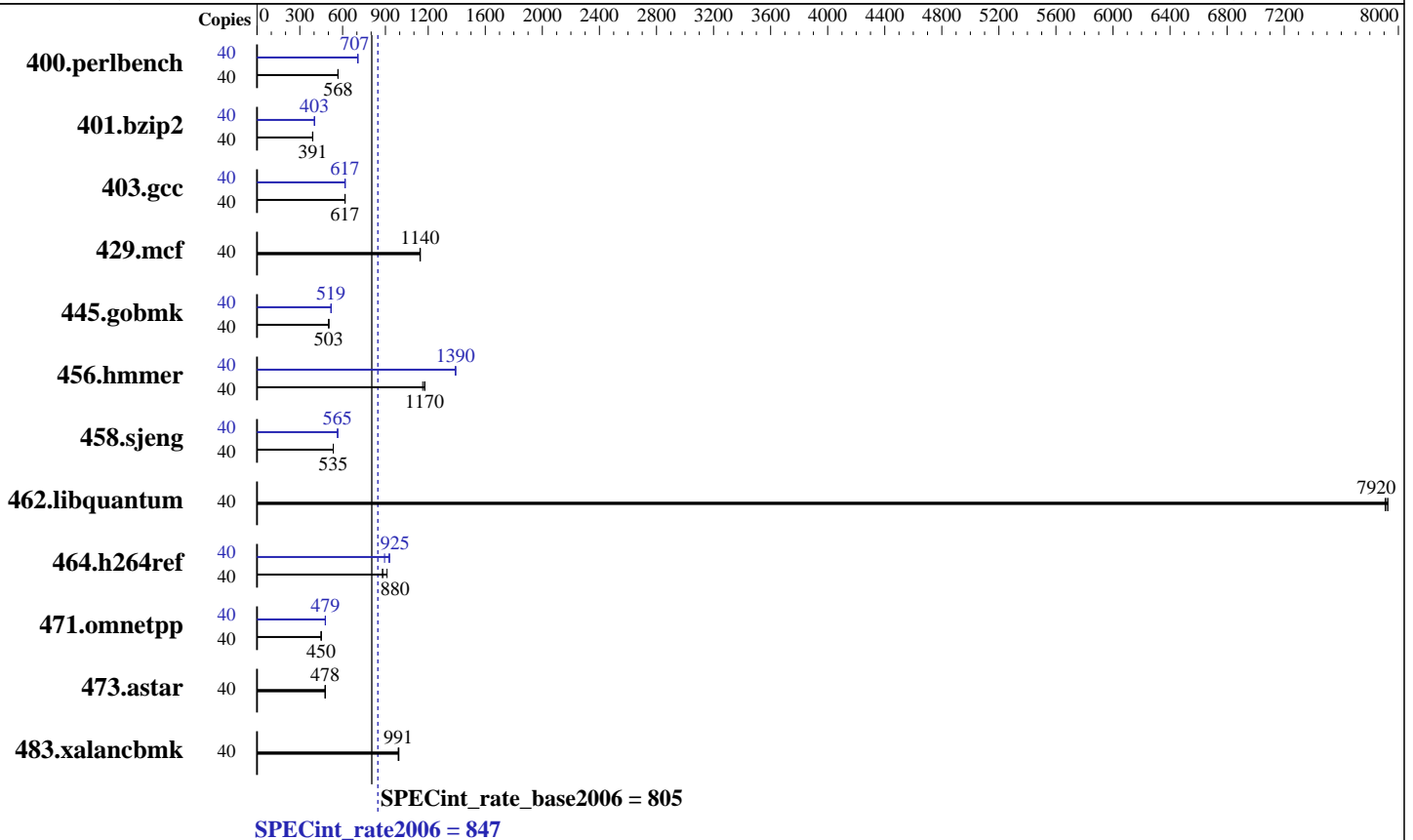
Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Dec-2015



### Hardware

CPU Name: Intel Xeon E5-2618L v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2200  
 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 2Rx8 PC4-2400T-R, running at 2133 MHz)  
 Disk Subsystem: 1 x 8000 GB SSD  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default  
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;  
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-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	40	688	568	688	568	<b>688</b>	<b>568</b>	40	554	705	552	708	<b>552</b>	<b>707</b>
401.bzip2	40	987	391	992	389	<b>987</b>	<b>391</b>	40	<b>958</b>	<b>403</b>	957	403	960	402
403.gcc	40	521	617	<b>522</b>	<b>617</b>	523	616	40	520	619	523	616	<b>522</b>	<b>617</b>
429.mcf	40	319	1140	<b>319</b>	<b>1140</b>	319	1140	40	319	1140	<b>319</b>	<b>1140</b>	319	1140
445.gobmk	40	835	503	<b>835</b>	<b>503</b>	833	504	40	806	520	<b>808</b>	<b>519</b>	809	518
456.hammer	40	317	1180	<b>318</b>	<b>1170</b>	321	1160	40	268	1390	268	1390	<b>268</b>	<b>1390</b>
458.sjeng	40	906	534	905	535	<b>905</b>	<b>535</b>	40	<b>857</b>	<b>565</b>	857	565	856	565
462.libquantum	40	105	7930	<b>105</b>	<b>7920</b>	105	7910	40	105	7930	<b>105</b>	<b>7920</b>	105	7910
464.h264ref	40	971	911	1006	880	<b>1005</b>	<b>880</b>	40	952	930	<b>957</b>	<b>925</b>	990	894
471.omnetpp	40	<b>556</b>	<b>450</b>	556	450	555	450	40	522	479	<b>522</b>	<b>479</b>	522	479
473.astar	40	589	477	<b>587</b>	<b>478</b>	586	479	40	589	477	<b>587</b>	<b>478</b>	586	479
483.xalancbmk	40	<b>278</b>	<b>991</b>	278	994	279	990	40	<b>278</b>	<b>991</b>	278	994	279	990

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.

## 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
Sysinfo program /spec/spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-n8wl Sat Dec 3 00:19:04 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 E5-2618L v4 @ 2.20GHz
 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
caution.)

```

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## Platform Notes (Continued)

```

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:      264054116 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

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"

uname -a:

```

Linux linux-n8wl 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Dec 3 00:13

SPEC is set to: /spec/spec16

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        ext4  632G   65G  565G  11% /spec

```

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. 3.31 08/22/2016

Memory:

16x Samsung M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

(End of data from sysinfo program)



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## General Notes

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



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## 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.xalanbmk: -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

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## 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.hmmr: -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



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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>

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