



# SPEC® CINT2006 Result

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## Sugon

**SPECint®2006 = 74.6**

## W760-G30 (Intel Xeon Gold 6132)

**SPECint\_base2006 = 71.4**

CPU2006 license: 9046

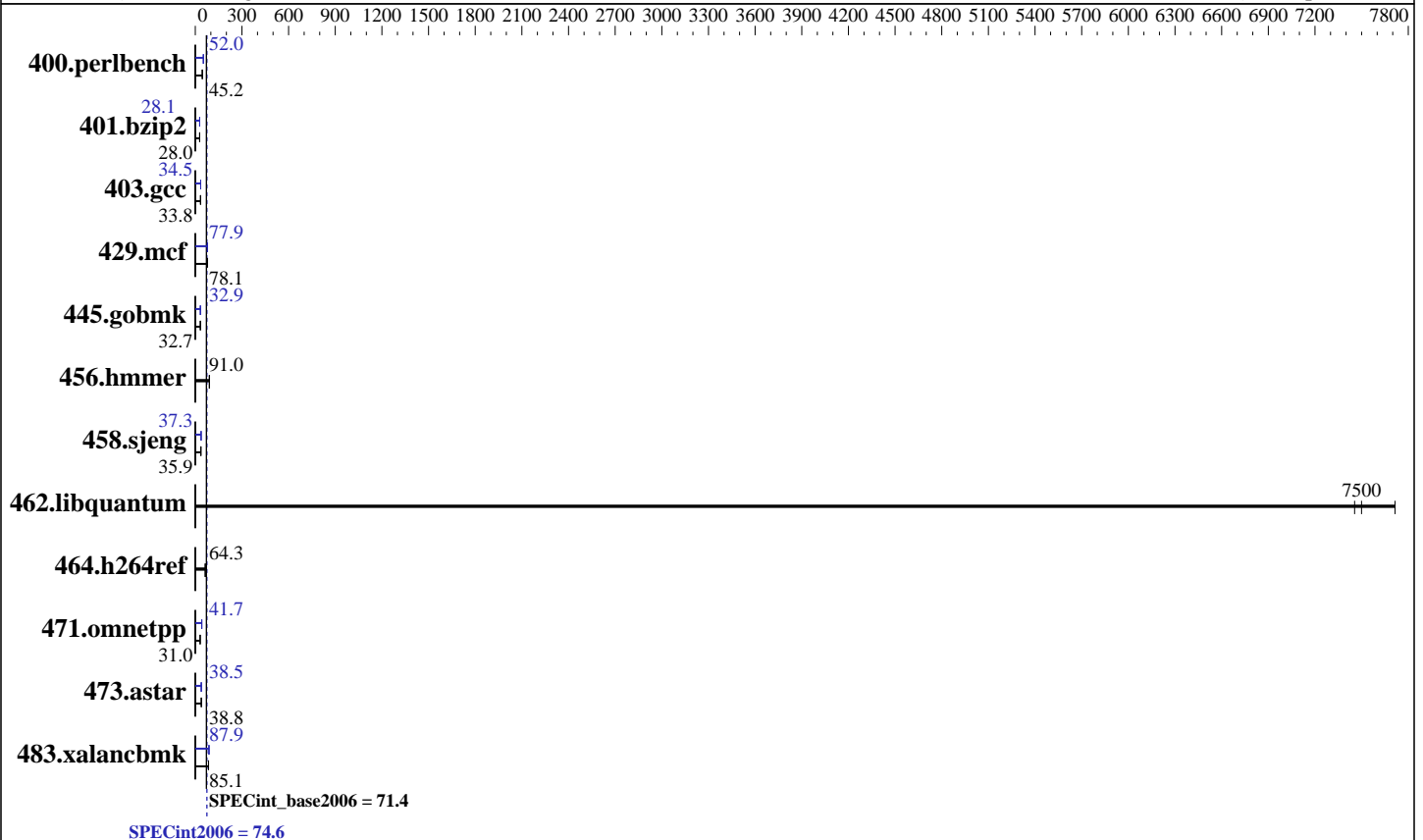
Test date: Dec-2017

Test sponsor: Sugon

Hardware Availability: Dec-2017

Tested by: Sugon

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Gold 6132  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: 19.25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2667V-R)  
 Disk Subsystem: 1 x 4.0 TB SATA, 10K RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 12 SP2  
 4.4.21-69-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++  
 Compiler for Linux  
 Auto Parallel: Yes  
 File System: xfs  
 System State: Run level 5 (Multi User with GUI)  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	216	45.1	<b><u>216</u></b>	<b><u>45.2</u></b>	216	45.3	188	52.0	188	52.0	<b><u>188</u></b>	<b><u>52.0</u></b>
401.bzip2	345	28.0	343	28.1	<b><u>344</u></b>	<b><u>28.0</u></b>	343	28.1	<b><u>343</u></b>	<b><u>28.1</u></b>	343	28.1
403.gcc	238	33.8	238	33.8	<b><u>238</u></b>	<b><u>33.8</u></b>	232	34.8	<b><u>233</u></b>	<b><u>34.5</u></b>	233	34.5
429.mcf	119	76.4	<b><u>117</u></b>	<b><u>78.1</u></b>	116	78.9	<b><u>117</u></b>	<b><u>77.9</u></b>	117	77.9	116	78.5
445.gobmk	320	32.7	321	32.7	<b><u>321</u></b>	<b><u>32.7</u></b>	319	32.9	319	32.9	<b><u>319</u></b>	<b><u>32.9</u></b>
456.hammer	104	90.1	102	91.1	<b><u>103</u></b>	<b><u>91.0</u></b>	104	90.1	102	91.1	<b><u>103</u></b>	<b><u>91.0</u></b>
458.sjeng	<b><u>337</u></b>	<b><u>35.9</u></b>	338	35.8	336	36.0	325	37.3	325	37.3	<b><u>325</u></b>	<b><u>37.3</u></b>
462.libquantum	2.78	7450	2.69	7710	<b><u>2.76</u></b>	<b><u>7500</u></b>	2.78	7450	2.69	7710	<b><u>2.76</u></b>	<b><u>7500</u></b>
464.h264ref	<b><u>344</u></b>	<b><u>64.3</u></b>	344	64.3	344	64.3	<b><u>344</u></b>	<b><u>64.3</u></b>	344	64.3	344	64.3
471.omnetpp	<b><u>201</u></b>	<b><u>31.0</u></b>	199	31.4	202	31.0	<b><u>150</u></b>	<b><u>41.7</u></b>	150	41.7	151	41.5
473.astar	<b><u>181</u></b>	<b><u>38.8</u></b>	181	38.8	180	38.9	183	38.5	181	38.8	<b><u>182</u></b>	<b><u>38.5</u></b>
483.xalancbmk	81.4	84.8	<b><u>81.1</u></b>	<b><u>85.1</u></b>	80.8	85.4	78.1	88.4	<b><u>78.5</u></b>	<b><u>87.9</u></b>	78.6	87.8

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

Sysinfo program /home/tianyan/benchmarks/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on localhost Sun Mar 5 00:29:25 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) Gold 6132 CPU @ 2.60GHz
 2 "physical id"s (chips)
 28 "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 : 14
siblings : 14
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
```

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## Platform Notes (Continued)

cache size : 19712 KB

From /proc/meminfo

MemTotal: 394873700 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb\_release -d

SUSE Linux Enterprise Server 12 SP2

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

SuSE-release:

SUSE Linux Enterprise Server 12 (x86\_64)

VERSION = 12

PATCHLEVEL = 2

# 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-SP2"

VERSION\_ID="12.2"

PRETTY\_NAME="SUSE Linux Enterprise Server 12 SP2"

ID="sles"

ANSI\_COLOR="0;32"

CPE\_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:

Linux localhost 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016 (9464f67) x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 5 Mar 2 13:46

SPEC is set to: /home/tianyan/benchmarks/cpu2006

Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda5 xfs 3.6T 348G 3.3T 10% /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. 0JGST023 11/06/2017

Memory:

24x Samsung M393A2K43CB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

The Hyper Threading is Disabled.



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## General Notes

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

KMP\_AFFINITY = "granularity=fine,scatter"

LD\_LIBRARY\_PATH = "/home/tianyan/benchmarks/cpu2006/lib/ia32:/home/tianyan/benchmarks/cpu2006/lib/intel64:/home/tianyan/benchmarks/cpu2006/sh10.2"

OMP\_NUM\_THREADS = "28"

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 by default.

Filesystem page cache cleared with:

shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -parallel -qopt-prefetch  
-auto-p32

C++ benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64



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## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

445.gobmk: icc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

C++ benchmarks (except as noted below):

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

445.gobmk: -D\_FILE\_OFFSET\_BITS=64

456.hmmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

464.h264ref: -DSPEC\_CPU\_LP64

471.omnetpp: -D\_FILE\_OFFSET\_BITS=64

473.astar: -DSPEC\_CPU\_LP64

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-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -qopt-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div -auto-ilp32 -qopt-prefetch

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## Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX512 -ipo -O3 -no-prec-div -inline-calloc  
-qopt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX512 -ipo -O3 -no-prec-div -parallel  
-qopt-prefetch -auto-p32

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2)

456.hmmcr: basepeak = yes

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -qopt-ra-region-strategy=block  
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

473.astar: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64

483.xalancbmk: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

## 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-ic17.0-official-linux64-revF.html>

<http://www.spec.org/cpu2006/flags/Sugon-Purley-Platform-Settings-revA-I.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-revF.xml>

<http://www.spec.org/cpu2006/flags/Sugon-Purley-Platform-Settings-revA-I.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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