



# SPEC® CINT2006 Result

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## Acer Incorporated

SPECint®\_rate2006 = 2020

### Altos R380 F4 (Intel Xeon Gold 6152)

SPECint\_rate\_base2006 = 1920

CPU2006 license: 97

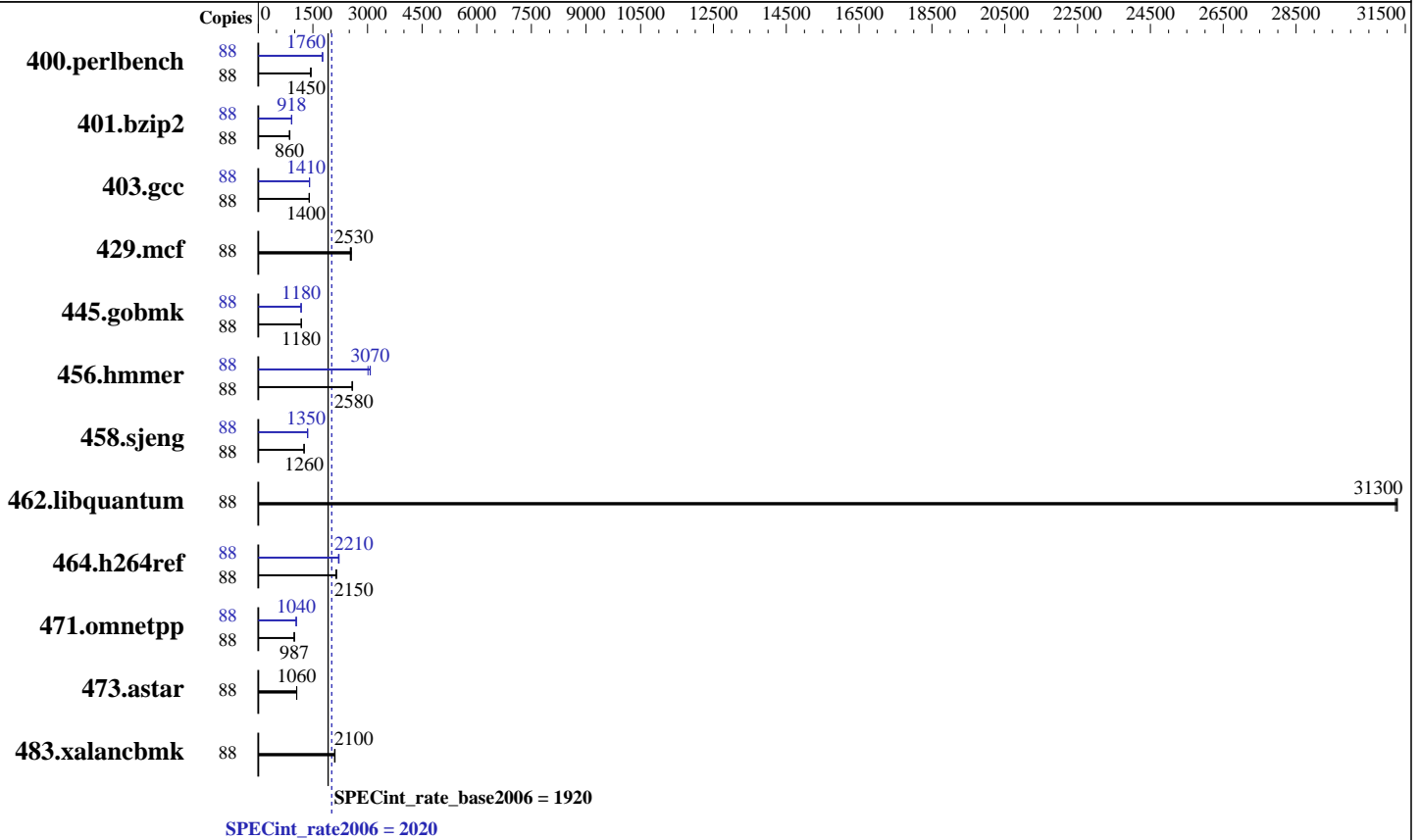
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Jan-2015

Hardware Availability: Oct-2017

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Gold 6152  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 44 cores, 2 chips, 22 cores/chip, 2 threads/core  
 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: 30.25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2666V-R)  
 Disk Subsystem: 1 x 1000 GB SATA, 7200 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: btrfs  
 System State: Run level 3 (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	88	599	1440	<u>595</u>	<u>1450</u>	594	1450	88	487	1770	<u>487</u>	<u>1760</u>	488	1760
401.bzip2	88	979	868	<u>988</u>	<u>860</u>	994	854	88	<u>925</u>	<u>918</u>	923	920	933	910
403.gcc	88	507	1400	<u>506</u>	<u>1400</u>	504	1400	88	503	1410	<u>503</u>	<u>1410</u>	504	1410
429.mcf	88	317	2530	<u>317</u>	<u>2530</u>	314	2560	88	317	2530	<u>317</u>	<u>2530</u>	314	2560
445.gobmk	88	<u>782</u>	<u>1180</u>	782	1180	781	1180	88	784	1180	785	1180	<u>784</u>	<u>1180</u>
456.hammer	88	319	2570	<u>318</u>	<u>2580</u>	317	2590	88	267	3080	<u>267</u>	<u>3070</u>	273	3010
458.sjeng	88	<u>846</u>	<u>1260</u>	846	1260	847	1260	88	<u>786</u>	<u>1350</u>	786	1350	787	1350
462.libquantum	88	58.3	31300	58.4	31200	<u>58.3</u>	<u>31300</u>	88	58.3	31300	58.4	31200	<u>58.3</u>	<u>31300</u>
464.h264ref	88	907	2150	<u>908</u>	<u>2150</u>	913	2130	88	878	2220	<u>881</u>	<u>2210</u>	885	2200
471.omnetpp	88	<u>557</u>	<u>987</u>	557	987	555	991	88	528	1040	527	1040	<u>528</u>	<u>1040</u>
473.astar	88	<u>586</u>	<u>1060</u>	585	1060	587	1050	88	<u>586</u>	<u>1060</u>	585	1060	587	1050
483.xalancbmk	88	<u>289</u>	<u>2100</u>	289	2100	288	2110	88	<u>289</u>	<u>2100</u>	289	2100	288	2110

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:

CPU Power and Performance Policy set to Performance

IMC set to 1-way interleaving

Sub\_NUMA Cluster set to enabled

Set Fan Profile set to Performance

Sysinfo program /usr/cpu2006/config/sysinfo.rev6993

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)

running on linux-4jae Thu Jan 1 08:05:19 2015

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 6152 CPU @ 2.10GHz

2 "physical id"s (chips)

88 "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 : 22
siblings  : 44
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
cache size : 30976 KB
```

```
From /proc/meminfo
MemTotal:      791025300 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lbs_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 linux-4jae 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 3 Jan 1 08:03
```

```
SPEC is set to: /usr/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda3       btrfs    930G     132G   797G   15% /
```

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.

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## Platform Notes (Continued)

BIOS Intel Corporation SE5C620.86B.00.01.0004.071220170215 07/12/2017

Memory:

24x Micron 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz

(End of data from sysinfo program)

## General Notes

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

LD\_LIBRARY\_PATH = "/usr/cpu2006/lib/ia32:/usr/cpu2006/lib/intel64:/usr/cpu2006/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 by default

Filesystem page cache cleared with:

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

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

Altos R360 F4 and Altos R380 F4 are electronically equivalent.

This result was measured on Altos R380 F4.

## 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



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## Base Optimization Flags

C benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

## 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

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## Peak Portability Flags (Continued)

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) -auto-ilp32 -qopt-mem-layout-trans=3

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(pass 2) -qopt-prefetch -auto-ilp32  
-qopt-mem-layout-trans=3

403.gcc: -xCORE-AVX512 -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-AVX512(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-AVX512 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-qopt-mem-layout-trans=3

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 -auto-ilp32  
-qopt-mem-layout-trans=3

462.libquantum: basepeak = yes

464.h264ref: -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) -unroll2 -qopt-mem-layout-trans=3

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  
-qopt-mem-layout-trans=3 -Wl,-z,muldefs  
-L/sh10.2 -lsmartheap

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## Peak Optimization Flags (Continued)

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## 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/Acer-Platform-Settings-V1.3-revC.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/Acer-Platform-Settings-V1.3-revC.xml>

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