



# SPEC® CINT2006 Result

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## Acer Incorporated

SPECint®\_rate2006 = 1540

### Altos R380 F4 (Intel Xeon Gold 6130)

SPECint\_rate\_base2006 = 1450

CPU2006 license: 97

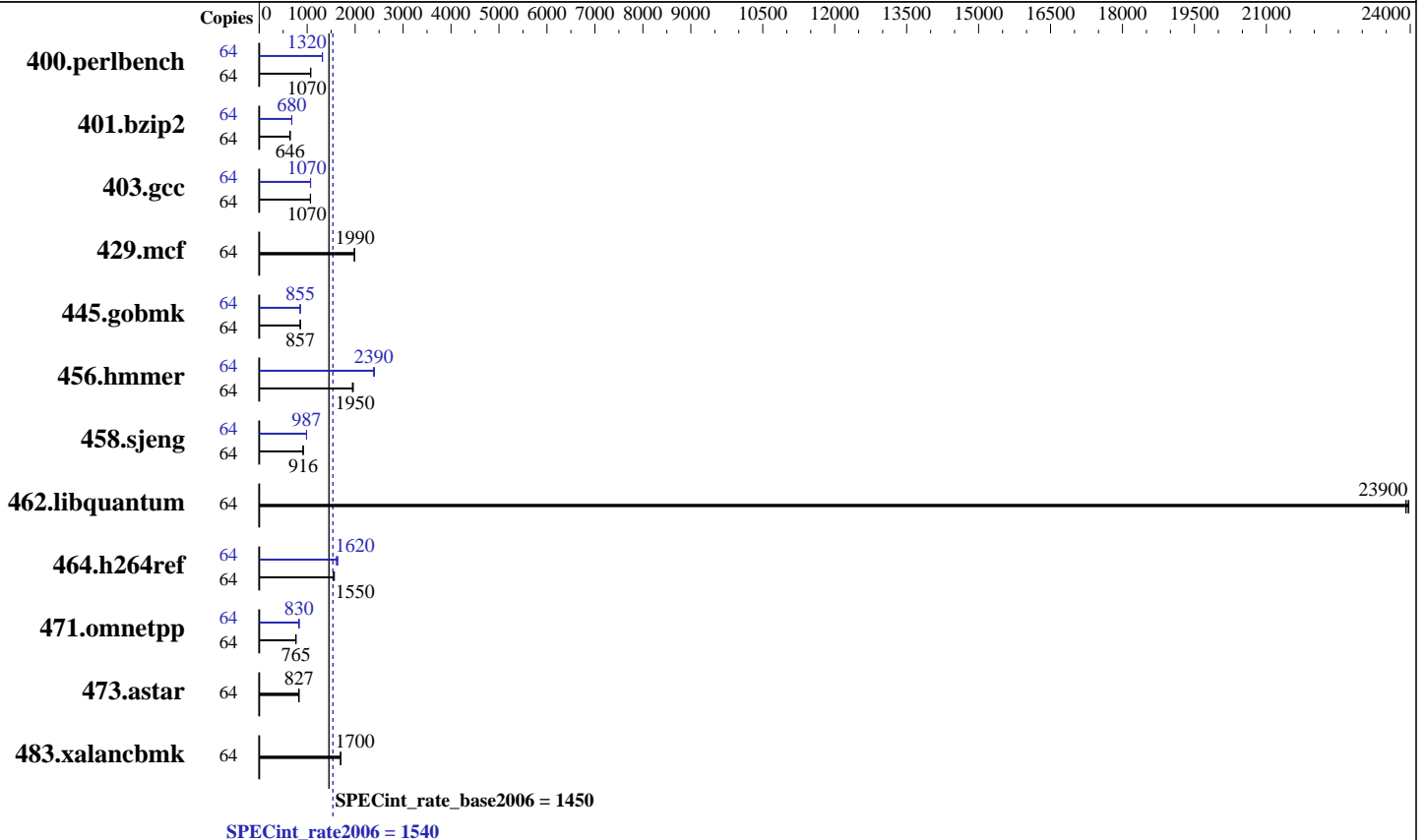
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Sep-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Gold 6130  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 2 chips, 16 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: 22 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	64	582	1070	<b><u>583</u></b>	<b><u>1070</u></b>	583	1070	64	475	1320	<b><u>474</u></b>	<b><u>1320</u></b>	474	1320
401.bzip2	64	967	639	956	646	<b><u>956</u></b>	<b><u>646</u></b>	64	<b><u>908</u></b>	<b><u>680</u></b>	909	679	908	680
403.gcc	64	481	1070	<b><u>483</u></b>	<b><u>1070</u></b>	483	1070	64	481	1070	<b><u>482</u></b>	<b><u>1070</u></b>	482	1070
429.mcf	64	294	1980	<b><u>294</u></b>	<b><u>1990</u></b>	293	1990	64	294	1980	<b><u>294</u></b>	<b><u>1990</u></b>	293	1990
445.gobmk	64	783	857	784	857	<b><u>783</u></b>	<b><u>857</u></b>	64	785	855	<b><u>785</u></b>	<b><u>855</u></b>	785	855
456.hammer	64	307	1950	<b><u>307</u></b>	<b><u>1950</u></b>	304	1960	64	250	2390	<b><u>250</u></b>	<b><u>2390</u></b>	248	2400
458.sjeng	64	846	915	844	918	<b><u>845</u></b>	<b><u>916</u></b>	64	784	988	785	986	<b><u>784</u></b>	<b><u>987</u></b>
462.libquantum	64	55.3	24000	<b><u>55.4</u></b>	<b><u>23900</u></b>	55.5	23900	64	55.3	24000	<b><u>55.4</u></b>	<b><u>23900</u></b>	55.5	23900
464.h264ref	64	<b><u>912</u></b>	<b><u>1550</u></b>	915	1550	903	1570	64	864	1640	879	1610	<b><u>875</u></b>	<b><u>1620</u></b>
471.omnetpp	64	522	766	<b><u>523</u></b>	<b><u>765</u></b>	523	765	64	481	831	482	829	<b><u>482</u></b>	<b><u>830</u></b>
473.astar	64	<b><u>543</u></b>	<b><u>827</u></b>	541	830	544	826	64	<b><u>543</u></b>	<b><u>827</u></b>	541	830	544	826
483.xalancbmk	64	260	1700	<b><u>260</u></b>	<b><u>1700</u></b>	260	1700	64	260	1700	<b><u>260</u></b>	<b><u>1700</u></b>	260	1700

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 Sep 14 12:16:27 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 6130 CPU @ 2.10GHz

2 "physical id"s (chips)

64 "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
cache size : 22528 KB
```

```
From /proc/meminfo
MemTotal:      791025268 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 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 Sep 14 12:14
```

```
SPEC is set to: /usr/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda3        btrfs    930G  232G  697G  25% /
```

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 Intel Corporation SE5C620.86B.00.01.0004.071220170215 07/12/2017  
Memory:

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## Platform Notes (Continued)

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

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