



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Acer Incorporated

**SPECint®\_rate2006 = 1370**

### Altos R360 F3 (Intel Xeon E5-2690 v4)

**SPECint\_rate\_base2006 = 1310**

CPU2006 license: 97

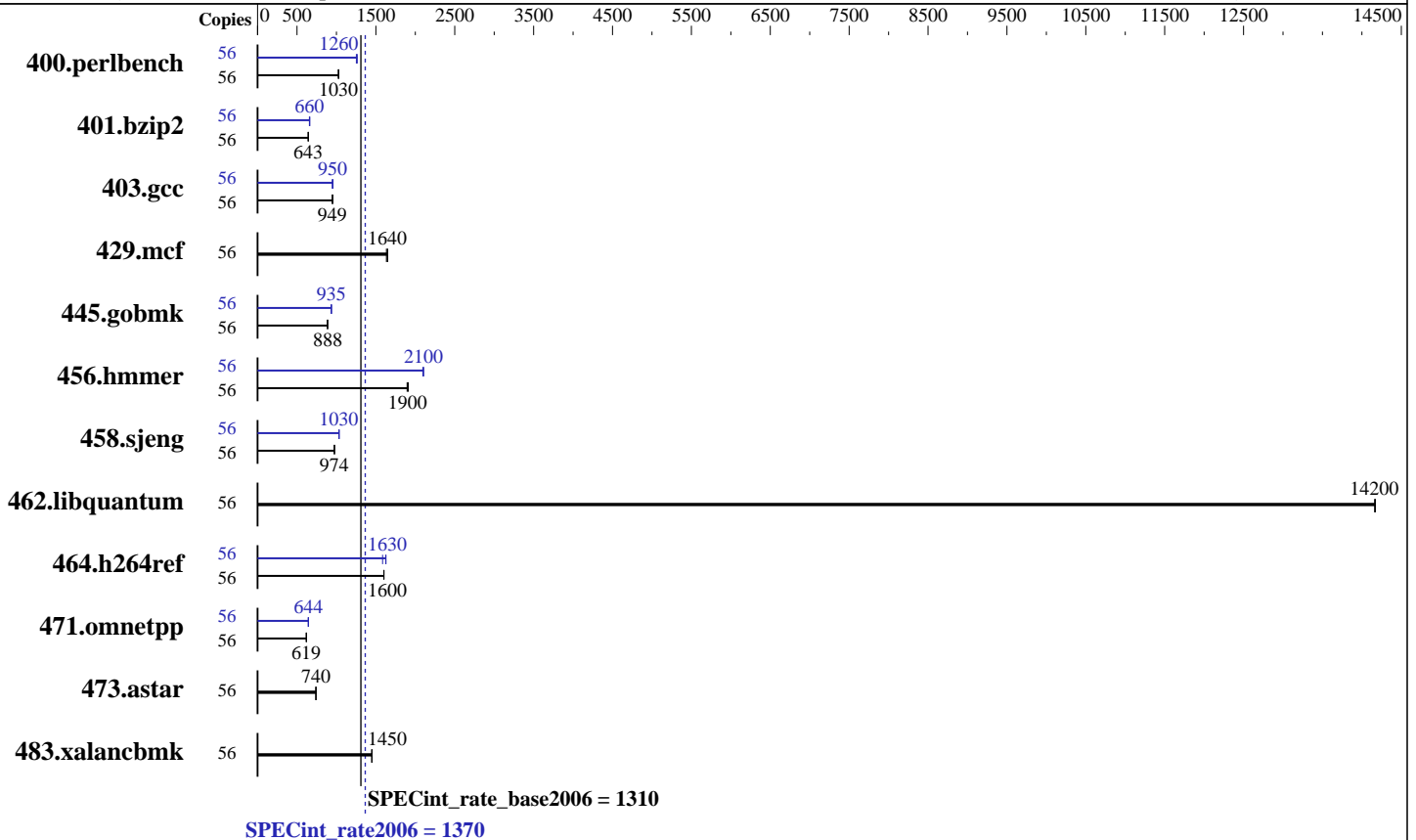
Test date: Aug-2016

Test sponsor: Acer Incorporated

Hardware Availability: Mar-2016

Tested by: Acer Incorporated

Software Availability: Nov-2015



### Hardware

CPU Name: Intel Xeon E5-2690 v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 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: 35 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (8 x 32 GB 2Rx4 PC4-2400T-R, running at 2400 MHz)  
 Disk Subsystem: 1 x 1000 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)  
 3.10.0-327.el7.x86\_64  
 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 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 1370

Altos R360 F3 (Intel Xeon E5-2690 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 97

Test date: Aug-2016

Test sponsor: Acer Incorporated

Hardware Availability: Mar-2016

Tested by: Acer Incorporated

Software Availability: Nov-2015

## Results Table

| Benchmark      | Base   |             |              |            |             |            |            | Peak   |             |              |            |             |            |             |
|----------------|--------|-------------|--------------|------------|-------------|------------|------------|--------|-------------|--------------|------------|-------------|------------|-------------|
|                | Copies | Seconds     | Ratio        | Seconds    | Ratio       | Seconds    | Ratio      | Copies | Seconds     | Ratio        | Seconds    | Ratio       | Seconds    | Ratio       |
| 400.perlbench  | 56     | 532         | 1030         | <u>533</u> | <u>1030</u> | 534        | 1020       | 56     | 433         | 1260         | <u>435</u> | <u>1260</u> | 437        | 1250        |
| 401.bzip2      | 56     | 842         | 642          | 840        | 643         | <u>840</u> | <u>643</u> | 56     | 822         | 657          | <u>819</u> | <u>660</u>  | 816        | 662         |
| 403.gcc        | 56     | 476         | 947          | <u>475</u> | <u>949</u>  | 472        | 954        | 56     | <u>474</u>  | <u>950</u>   | 476        | 948         | 471        | 956         |
| 429.mcf        | 56     | <u>311</u>  | <u>1640</u>  | 313        | 1630        | 310        | 1650       | 56     | <u>311</u>  | <u>1640</u>  | 313        | 1630        | 310        | 1650        |
| 445.gobmk      | 56     | <u>661</u>  | <u>888</u>   | 661        | 888         | 663        | 886        | 56     | 626         | 938          | 629        | 933         | <u>628</u> | <u>935</u>  |
| 456.hammer     | 56     | <u>274</u>  | <u>1900</u>  | 276        | 1900        | 274        | 1910       | 56     | 249         | 2100         | 248        | 2100        | <u>248</u> | <u>2100</u> |
| 458.sjeng      | 56     | 696         | 974          | 695        | 975         | <u>695</u> | <u>974</u> | 56     | 656         | 1030         | <u>656</u> | <u>1030</u> | 656        | 1030        |
| 462.libquantum | 56     | <u>81.9</u> | <u>14200</u> | 81.9       | 14200       | 81.9       | 14200      | 56     | <u>81.9</u> | <u>14200</u> | 81.9       | 14200       | 81.9       | 14200       |
| 464.h264ref    | 56     | <u>774</u>  | <u>1600</u>  | 774        | 1600        | 774        | 1600       | 56     | 782         | 1590         | <u>762</u> | <u>1630</u> | 761        | 1630        |
| 471.omnetpp    | 56     | 565         | 619          | <u>566</u> | <u>619</u>  | 566        | 618        | 56     | <u>543</u>  | <u>644</u>   | 544        | 644         | 543        | 644         |
| 473.astar      | 56     | 530         | 742          | <u>531</u> | <u>740</u>  | 532        | 740        | 56     | 530         | 742          | <u>531</u> | <u>740</u>  | 532        | 740         |
| 483.xalancbmk  | 56     | 267         | 1450         | <u>266</u> | <u>1450</u> | 266        | 1450       | 56     | 267         | 1450         | <u>266</u> | <u>1450</u> | 266        | 1450        |

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

C1E Autopromote set to Disabled

Set Fan Profile set to Performance

Sysinfo program /usr/cpu2006/config/sysinfo.rev6914

\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1

running on localhost.localdomain Mon Aug 8 08:44:13 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 E5-2690 v4@ 2.60GHz

2 "physical id"s (chips)

56 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

<http://www.spec.org/>

Page 2



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**Acer Incorporated**

**SPECint\_rate2006 = 1370**

**Altos R360 F3 (Intel Xeon E5-2690 v4)**

**SPECint\_rate\_base2006 = 1310**

**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated

**Test date:** Aug-2016  
**Hardware Availability:** Mar-2016  
**Software Availability:** Nov-2015

## Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores : 14
siblings  : 28
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
cache size : 17920 KB
```

```
From /proc/meminfo
MemTotal:      263858476 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server
```

```
uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
EDT 2015 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Aug 8 08:33

```
SPEC is set to: /usr/cpu2006
Filesystem      Type Size  Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs  373G  181G  193G   49% /
```

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 SE5C610.86B.01.01.0016.033120161139 03/31/2016

Memory:  
8x Samsung M393A4K40BB1-CRC 32 GB 2 rank 2400 MHz

(End of data from sysinfo program)



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**Acer Incorporated**

**SPECint\_rate2006 = 1370**

**Altos R360 F3 (Intel Xeon E5-2690 v4)**

**SPECint\_rate\_base2006 = 1310**

**CPU2006 license:** 97

**Test sponsor:** Acer Incorporated

**Tested by:** Acer Incorporated

**Test date:** Aug-2016

**Hardware Availability:** Mar-2016

**Software Availability:** Nov-2015

## General Notes

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

LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/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>

Altos R360 F3 and Altos R380 F3 are electronically equivalent.

This result was measured on Altos R380 F3.

## 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 -lsmartheap



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 1370

Altos R360 F3 (Intel Xeon E5-2690 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Aug-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

## 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.xalancbmk: -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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 1370

Altos R360 F3 (Intel Xeon E5-2690 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Aug-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

## 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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 1370

Altos R360 F3 (Intel Xeon E5-2690 v4)

SPECint\_rate\_base2006 = 1310

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Aug-2016

Hardware Availability: Mar-2016

Software Availability: Nov-2015

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/Acer-Platform-Settings-V1.3-revA.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/Acer-Platform-Settings-V1.3-revA.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 Tue Nov 29 19:07:47 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 29 November 2016.