



# SPEC<sup>®</sup> CINT2006 Result

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## Acer Incorporated

SPECint<sup>®</sup>\_rate2006 = 197

### Altos AT 350 F3 (Intel Xeon E5-2623 v4)

SPECint\_rate\_base2006 = 186

CPU2006 license: 97

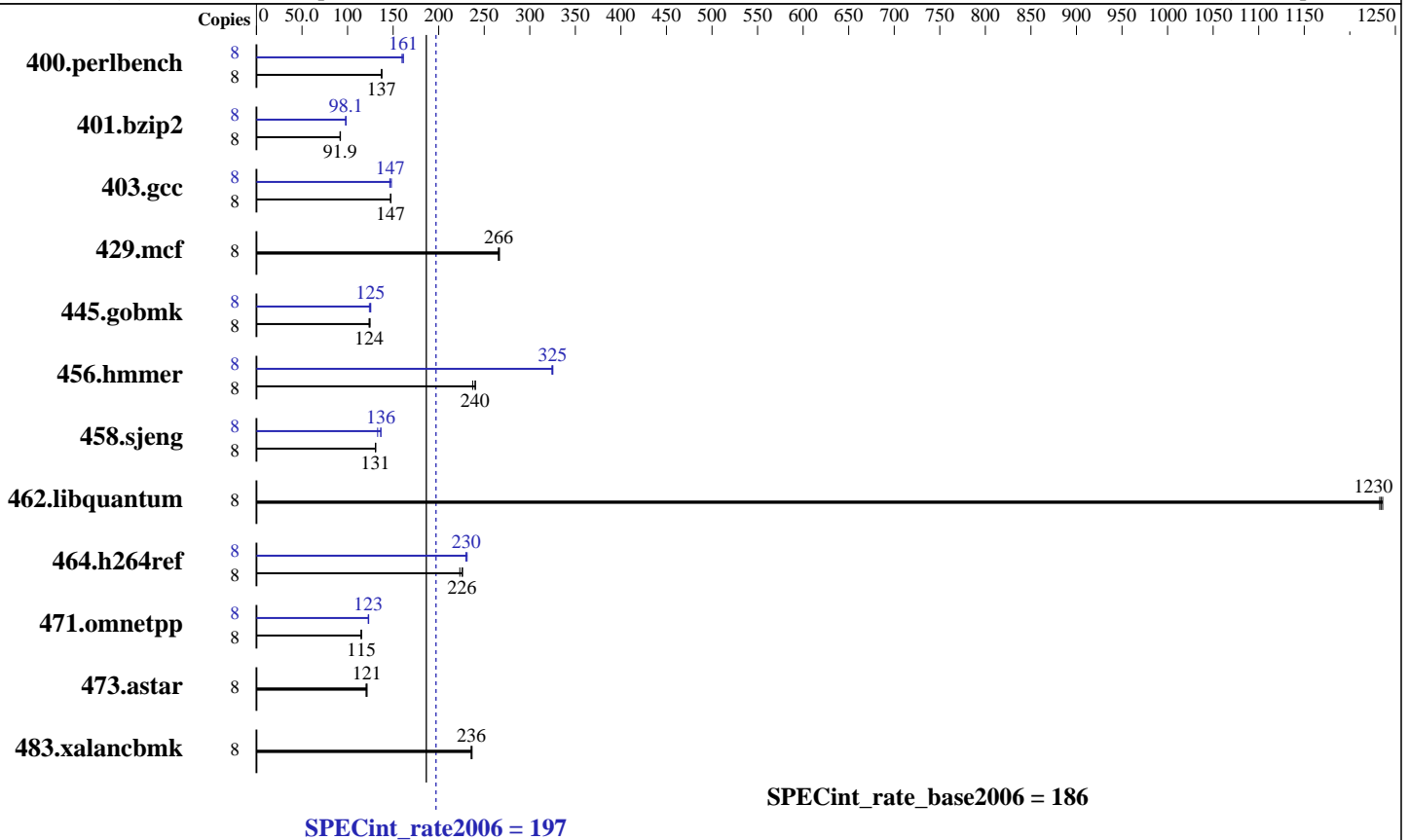
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Apr-2017

Hardware Availability: Mar-2016

Software Availability: Sep-2016



### Hardware

CPU Name: Intel Xeon E5-2623 v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: 256 KB I+D on chip per core  
 L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)  
 Disk Subsystem: 1 x 4000 GB SATA , 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
 3.10.0-514.el7.x86\_64  
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler 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



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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	8	<b>569</b>	<b>137</b>	570	137	568	138	8	<b>486</b>	<b>161</b>	489	160	485	161
401.bzip2	8	837	92.2	841	91.8	<b>840</b>	<b>91.9</b>	8	788	98.0	786	98.2	<b>787</b>	<b>98.1</b>
403.gcc	8	438	147	<b>437</b>	<b>147</b>	436	148	8	<b>438</b>	<b>147</b>	435	148	440	146
429.mcf	8	275	265	<b>274</b>	<b>266</b>	274	267	8	275	265	<b>274</b>	<b>266</b>	274	267
445.gobmk	8	673	125	<b>678</b>	<b>124</b>	678	124	8	669	125	<b>670</b>	<b>125</b>	677	124
456.hammer	8	315	237	<b>311</b>	<b>240</b>	311	240	8	230	324	229	325	<b>230</b>	<b>325</b>
458.sjeng	8	740	131	<b>741</b>	<b>131</b>	741	131	8	<b>709</b>	<b>136</b>	728	133	709	137
462.libquantum	8	<b>134</b>	<b>1230</b>	134	1240	134	1230	8	<b>134</b>	<b>1230</b>	134	1240	134	1230
464.h264ref	8	<b>785</b>	<b>226</b>	793	223	783	226	8	766	231	770	230	<b>769</b>	<b>230</b>
471.omnetpp	8	435	115	<b>435</b>	<b>115</b>	434	115	8	<b>407</b>	<b>123</b>	406	123	407	123
473.astar	8	463	121	467	120	<b>464</b>	<b>121</b>	8	463	121	467	120	<b>464</b>	<b>121</b>
483.xalancbmk	8	234	236	233	237	<b>234</b>	<b>236</b>	8	234	236	233	237	<b>234</b>	<b>236</b>

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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

Sysinfo program /usr/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on localhost.localdomain Mon Apr 17 05:37:49 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) CPU E5-2623 v4@ 2.60GHz
 1 "physical id"s (chips)
 8 "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 : 4
siblings  : 8
```

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## Platform Notes (Continued)

physical 0: cores 0 1 2 3  
cache size : 10240 KB

From /proc/meminfo  
MemTotal: 131752932 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

From /etc/\*release\* /etc/\*version\*  
os-release:  
NAME="Red Hat Enterprise Linux Server"  
VERSION="7.3 (Maipo)"  
ID="rhel"  
ID\_LIKE="fedora"  
VERSION\_ID="7.3"  
PRETTY\_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"  
ANSI\_COLOR="0;31"  
CPE\_NAME="cpe:/o:redhat:enterprise\_linux:7.3:GA:server"  
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
system-release-cpe: cpe:/o:redhat:enterprise\_linux:7.3:ga:server

uname -a:  
Linux localhost.localdomain 3.10.0-514.el7.x86\_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016 x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Apr 17 05:15

SPEC is set to: /usr/cpu2006  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/mapper/rhel-root xfs 3.7T 5.4G 3.7T 1% /

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. 2.1 09/13/2016

Memory:

8x NO DIMM NO DIMM

8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 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/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM

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## General Notes (Continued)

memory using Redhat Enterprise Linux 7.2  
Transparent Huge Pages enabled by default

## 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

## Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3  
-Wl,-z,muldefs -L/shl0.2 -lsmarheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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## 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`

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) -xAVX(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) -xAVX(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: `-xAVX -ipo -O3 -no-prec-div -qopt-mem-layout-trans=3`

429.mcf: `basepeak = yes`

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## Peak Optimization Flags (Continued)

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(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.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-qopt-mem-layout-trans=3

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(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) -xAVX(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) -xAVX(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

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.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-ic17.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revA.xml>



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