### SPEC® CINT2006 Result

**Acer Incorporated**

AW2000h-AW370h F3 (Intel Xeon E5-2643 v3)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
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**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated  
**Test date:** Mar-2016  
**Hardware Availability:** May-2015  
**Software Availability:** Aug-2015

<table>
<thead>
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<th>Benchmark</th>
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<tr>
<td>perlbench</td>
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<td>bzip2</td>
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<tr>
<td>gcc</td>
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<tr>
<td>mcf</td>
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<td>gobmk</td>
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<td>hammer</td>
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<tr>
<td>sjeng</td>
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<td>libquantum</td>
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<td>astar</td>
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<tr>
<td>xalanbmk</td>
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</table>

**Hardware**

- **CPU Name:** Intel Xeon E5-2643 v3  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
- **CPU MHz:** 3400  
- **FPU:** Integrated  
- **CPU(s) enabled:** 12 cores, 2 chips, 6 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:** 20 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)  
- **Disk Subsystem:** 1 x 879 GB SATA , 7200 RPM  
- **Other Hardware:** None

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.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

**Acer Incorporated**

AW2000h-AW370h F3 (Intel Xeon E5-2643 v3)

**SPECint_rate2006 = 700**

**SPECint_rate_base2006 = 667**

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### Results Table

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</tr>
</tbody>
</table>

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

Sysinfo program /usr/cpu2006/config/sysinfo.rev6914  
$Rev: 6914 $ $Date: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1  
running on localhost.localdomain Fri Mar 4 14:49:46 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 E5-2643 v3 @ 3.40GHz  
  2 "physical id"s (chips)  
  24 "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 : 6  
siblings : 12

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Platform Notes (Continued)

physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 20480 KB

From /proc/meminfo
MemTotal: 131749224 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release*/etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 4 14:40
SPEC is set to: /usr/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs 879G 72G 807G 9% /

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.01.01.0015.012820160943 01/28/2016
Memory:
8x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 2134 MHz
8x NO DIMM NO DIMM

(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/sh"

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General Notes (Continued)

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.:
umactl --interleave=all runspec <etc>

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
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### 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 -DSPEC_CPU_LP64`
- 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`

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### Peak Optimization Flags (Continued)

- **401.hzip2**: `-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.hmmer**: `-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`
# Acer Incorporated

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The flags files that were used to format this result can be browsed at:
- [http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revB.html](http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revB.html)

You can also download the XML flags sources by saving the following links:
- [http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revB.xml](http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revB.xml)

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For other inquiries, please contact webmaster@spec.org.

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