# SPEC® CINT2006 Result

## ASUSTeK Computer Inc.

ASUS RS700-E9(Z11PP-D24) Server System (2.70 GHz, Intel Xeon Gold 6150)

| SPECint®2006 | 79.9 |
| SPECint_base2006 | 76.7 |

| Test sponsor: | ASUSTeK Computer Inc. |
| Tested by: | ASUSTeK Computer Inc. |
| CPU2006 license: | 9016 |
| Test date: | Dec-2017 |
| Hardware Availability: | Jul-2017 |
| Software Availability: | Apr-2017 |

### SPECint Results

<table>
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<th>Benchmark</th>
<th>SPECint®2006</th>
<th>SPECint_base2006</th>
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<tr>
<td>bzip2</td>
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<tr>
<td>gcc</td>
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<td>mcf</td>
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<td>gobmk</td>
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<td>hmmer</td>
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<td>sjeng</td>
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<tr>
<td>libquantum</td>
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<td>h264ref</td>
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<td></td>
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<tr>
<td>xalanbmk</td>
<td>483.1</td>
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</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 6150
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz
- **CPU MHz:** 2700
- **FPU:** Integrated
- **CPU(s) enabled:** 36 cores, 2 chips, 18 cores/chip
- **CPU(s) orderable:** 1, 2 chip(s)
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 1 MB I+D on chip per core
- **L3 Cache:** 24.75 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 240 GB SATA SSD
- **Other Hardware:** None

### Software

- **Operating System:** Red Hat Enterprise Linux Server release (x86_64) 7.3 (Maipo) Kernel 3.10.0-514.el7.x86_64
- **Compiler:** C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux
- **Auto Parallel:** Yes
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32/64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V10.2
ASUSTeK Computer Inc.
ASUS RS700-E9(Z11PP-D24) Server System
(2.70 GHz, Intel Xeon Gold 6150)

**SPEC CINT2006 Result**

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio</th>
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<td>76.2</td>
<td>90.5</td>
</tr>
</tbody>
</table>

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

**Submit Notes**

The config file option 'submit' was used.

**Operating System Notes**

Stack size set to unlimited using "$ulimit -s unlimited"

**Platform Notes**

BIOS Configuration:
- SNC = Disabled
- IMC interleaving = AUTO
- Patrol Scrub = Disabled
- VT-d = Disabled
- HyperThreading = Disabled

Sysinfo program /spec2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
runtime on localhost.localdomain Sun Dec 10 17:30:15 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 6150 CPU @ 2.70GHz
- 2 "physical id"s (chips)
- 36 "processors"
- cores, siblings (Caution: counting these is hw and system dependent. The results may be system dependent.)

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**SPECint2006** = 79.9
SPECint_base2006 = 76.7

CPU2006 license: 9016
Test date: Dec-2017
Test sponsor: ASUSTeK Computer Inc.
Hardware Availability: Jul-2017
Tested by: ASUSTeK Computer Inc.
Software Availability: Apr-2017
ASUSTeK Computer Inc.  
ASUS RS700-E9(Z11PP-D24) Server System  
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 18  
  siblings : 18  
  physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27  
  physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27  
  cache size : 25344 KB

From /proc/meminfo  
MemTotal: 790962964 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)  

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 Dec 8 11:27

SPEC is set to: /spec2006  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda3 xfs 220G 27G 194G 12% /

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. 0601 10/17/2017  
Memory: 24x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666 MHz

(End of data from sysinfo program)
SPEC CINT2006 Result

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General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,3"
LD_LIBRARY_PATH = "/spec2006/lib/ia32:/spec2006/lib/intel64:/spec2006/sh10.2"
OMP_NUM_THREADS = "36"

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
No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, http://www.spec.org/osg/policy.html

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.cce: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

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Base Portability Flags (Continued)

458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.hm264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64
400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks (except as noted below):
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

- 403.gcc: -DSPEC_CPU_LP64
- 429.mcf: -DSPEC_CPU_LP64
- 445.gobmk: -D_FILE_OFFSET_BITS=64
- 456.hmmer: -DSPEC_CPU_LP64
- 458.sjeng: -DSPEC_CPU_LP64
- 462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
- 464.h264ref: -DSPEC_CPU_LP64
- 471.omnetpp: -D_FILE_OFFSET_BITS=64
- 473.astar: -DSPEC_CPU_LP64
- 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-AVX2(pass 2)
- par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
- no-prec-div(pass 2) -qopt-prefetch

- 401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
- par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
- no-prec-div -auto-ilp32 -qopt-prefetch

- 403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
- qopt-malloc-options=3 -auto-ilp32

- 429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
- qopt-prefetch -auto-p32

- 445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
- par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
- no-prec-div(pass 2)

- 456.hmmer: basepeak = yes

- 458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
- par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
- no-prec-div(pass 2) -unroll4

- 462.libquantum: basepeak = yes

- 464.h264ref: basepeak = yes

C++ benchmarks:

- 471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
- par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
- no-prec-div(pass 2) -qopt-ra-region-strategy=block
- Wl,-z,muldefs -L/sh10.2 -lsmartheap

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http://www.spec.org/
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Peak Optimization Flags (Continued)

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

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/ASUSTeKPlatform-Settings-z11-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/ASUSTeKPlatform-Settings-z11-V1.3-revC.xml

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

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