ASUSTeK Computer Inc.
ASUS RS300-E10(P11C-C/4L) Server System
(3.80 GHz, Intel Xeon E-2174G)

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>8</td>
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<td>8.93</td>
</tr>
<tr>
<td>gcc_s</td>
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<td>12.5</td>
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<tr>
<td>mcf_s</td>
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<td>15.5</td>
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<td>omnetpp_s</td>
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<td>17.0</td>
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<tr>
<td>xalancbmk</td>
<td>8</td>
<td>15.4</td>
<td>17.1</td>
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<tr>
<td>x264_s</td>
<td>8</td>
<td>6.79</td>
<td>17.1</td>
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<tr>
<td>deepsjeng</td>
<td>8</td>
<td>5.68</td>
<td>16.9</td>
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<tr>
<td>leela_s</td>
<td>8</td>
<td>12.4</td>
<td>16.9</td>
</tr>
<tr>
<td>exchange2</td>
<td>8</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td>xz_s</td>
<td>8</td>
<td>14.9</td>
<td></td>
</tr>
</tbody>
</table>

Hardware

CPU Name: Intel Xeon E-2174G
Max MHz.: 4700
Nominal: 3800
Enabled: 4 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 32 KB I + 32 KB D on chip per core
L2: 256 KB I+D on chip per core
L3: 8 MB I+D on chip per chip
Other: None
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)
Storage: 1 x 500 GB SATA HDD, 7200RPM
Other: None

Software

OS: SUSE Linux Enterprise Server 12 (x86_64) SP3
Kernel 4.4.120-94.17-default
Compiler: C/C++: Version 19.0.1.144 of Intel C/C++
Compiler for Linux:
Fortran: Version 19.0.1.144 of Intel Fortran
Compiler for Linux:
Parallel: Yes
Firmware: Version 0303 released Aug-2018
File System: btrfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc: jemalloc memory allocator library V5.0.1
SPEC CPU2017 Integer Speed Result

ASUSTeK Computer Inc.
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(3.80 GHz, Intel Xeon E-2174G)

SPECspeed2017_int_base = 10.5
SPECspeed2017_int_peak = 10.9

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Ratio</th>
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<tr>
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<td>6.79</td>
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<td>6.79</td>
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<td>641.leela_s</td>
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<td>5.67</td>
<td>301</td>
<td>5.68</td>
</tr>
<tr>
<td>648.exchange2_s</td>
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<td>174</td>
<td>16.9</td>
<td>173</td>
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<td>174</td>
<td>16.9</td>
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<td>657.xz_s</td>
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<td>498</td>
<td>12.4</td>
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<td>12.9</td>
<td>479</td>
<td>12.9</td>
<td>479</td>
<td>12.9</td>
</tr>
</tbody>
</table>

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

Operating System Notes

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

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
OMP_STACKSIZE = "192M"

Binaries compiled on a system with 1x Intel Core i7-6700K CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
 sync; echo 3> /proc/sys/vm/drop_caches
jemalloc: configured and built at default for
32bit (i686) and 64bit (x86_64) targets;
jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;
jemalloc: sources available from jemalloc.net or
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: 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.
Yes: 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.
Platform Notes

BIOS Configuration:
VT-d = Disabled
Software Guard Extensions (SGX) = Disabled
AES = Disabled

Sysinfo program /spec2017_2019u1/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-pmm5 Wed Jan 23 09:54:10 2019

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) E-2174G CPU @ 3.80GHz
  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
physical 0: cores 0 1 2 3

From lscpu:
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                8
On-line CPU(s) list:   0-7
Thread(s) per core:    2
Core(s) per socket:    4
Socket(s):             1
NUMA node(s):          1
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 158
Model name:            Intel(R) Xeon(R) E-2174G CPU @ 3.80GHz
Stepping:              10
CPU MHz:               4695.431
CPU max MHz:           4700.000
CPU min MHz:           800.0000
BogoMIPS:              7583.17
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              256K
L3 cache:              8192K
NUMA node0 CPU(s):     0-7

(Continued on next page)
**SPEC CPU2017 Integer Speed Result**

**ASUSTeK Computer Inc.**  
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<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>10.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>10.9</td>
</tr>
</tbody>
</table>

| CPU2017 License: | 9016 |
| Test Sponsor: | ASUSTeK Computer Inc. |
| Tested by: | ASUSTeK Computer Inc. |
| Test Date: | Jan-2019 |
| Hardware Availability: | Sep-2018 |
| Software Availability: | Nov-2018 |

**Platform Notes (Continued)**

Flags: 
- fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtrr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epb invpcid_single pln pts dtherm hwp hwp_notify hwp_act_window hwp_epp intel_pt rsb_ctxsw spec_ctrl stibp retpoline kaiser tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erts invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1

/proc/cpuinfo cache data
- cache size: 8192 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
- available: 1 nodes (0)
- node 0 cpus: 0 1 2 3 4 5 6 7
- node 0 size: 64315 MB
- node 0 free: 63789 MB
- node distances:
  - node 0: 10

From /proc/meminfo
- MemTotal: 65859104 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
- SuSE-release:
  - SUSE Linux Enterprise Server 12 (x86_64)
  - VERSION = 12
  - PATCHLEVEL = 3
  - # 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-SP3"
  - VERSION_ID="12.3"
  - PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
  - ID="sles"
  - ANSI_COLOR="0;32"
  - CPE_NAME="cpe:/o:suse:sles:12:sp3"

uname -a:
- Linux linux-pmm5 4.4.120-94.17-default #1 SMP Wed Mar 14 17:23:00 UTC 2018 (cf3a7bb)
- x86_64 x86_64 x86_64 GNU/Linux

(Continued on next page)
SPEC CPU2017 Integer Speed Result

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SPECspeed2017_int_base = 10.5
SPECspeed2017_int_peak = 10.9

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
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Platform Notes (Continued)

Kernel self-reported vulnerability status:
CVE-2017-5754 (Meltdown): Mitigation: PTI
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS+IBPB

run-level 3 Jan 23 09:48
SPEC is set to: /spec2017_2019u1
Additional information from dmidecode follows. 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. 0303 08/07/2018
Memory:
4x Samsung M391A2K43BB1-CTD 16 GB 2 rank 2667, configured at 2666

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CC  600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base, peak) 657.xz_s(base)
==============================================================================
iccc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
CC  600.perlbench_s(peak) 602.gcc_s(peak) 605.mcf_s(peak) 625.x264_s(peak)
iccc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
CXXC 620.omnetpp_s(base, peak) 623.xalancbmk_s(base) 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
icpc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
(Continued on next page)
SPEC CPU2017 Integer Speed Result

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CPU2017 License: 9016  
Test Sponsor: ASUSTeK Computer Inc.  
Test Date: Jan-2019  
Hardware Availability: Sep-2018  
Tested by: ASUSTeK Computer Inc.  
Software Availability: Nov-2018

Compiler Version Notes (Continued)

CXXC 623.xalancbmk_s(peak)

icpc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 648.exchange2_s(base, peak)

ifort (IFORT) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64
SPEC CPU2017 Integer Speed Result

ASUSTeK Computer Inc.
ASUS RS300-E10(P11C-C/4L) Server System
(3.80 GHz, Intel Xeon E-2174G)

SPECspeed2017_int_base = 10.5
SPECspeed2017_int_peak = 10.9

ASUSTeK Computer Inc.

Base Optimization Flags

C benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

Fortran benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs
-L/usr/local/je5.0.1-64/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks (except as noted below):
icpc -m64

623.xalancbmk_s: icpc -m32 -L/home/prasadj/specdev/IC18u2_Internal/lin_18_0_20180210/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64

Peak Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -D_FILE_OFFSET_BITS=64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64
ASUSTeK Computer Inc.  
ASUS RS300-E10(P11C-C/4L) Server System  
(3.80 GHz, Intel Xeon E-2174G)

**SPEC CPU2017 Integer Speed Result**

**Copyright 2017-2019 Standard Performance Evaluation Corporation**

**SPECspeed2017_int_base = 10.5**  
**SPECspeed2017_int_peak = 10.9**

**CPU2017 License:** 9016  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Jan-2019  
**Hardware Availability:** Sep-2018  
**Software Availability:** Nov-2018

### Peak Optimization Flags

#### C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2  
-xCORE-AVX2 -qopt-prefetch -ipo -O3  
-qopt-mem-layout-trans=3 -no-prec-div  
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP  
-fno-strict-overflow -L/usr/local/je5.0.1-64/lib  
-ljemalloc

602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2  
-xCORE-AVX2 -qopt-prefetch -ipo -O3  
-qopt-mem-layout-trans=3 -no-prec-div  
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP  
-L/usr/local/je5.0.1-64/lib -ljemalloc

605.mcf_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp  
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

625.x264_s: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-prefetch -qopt-mem-layout-trans=3 -qopenmp  
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

657.xz_s: Same as 602.gcc_s

#### C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp  
-DSPEC_OPENMP -L/usr/local/je5.0.1-32/lib -ljemalloc

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

#### Fortran benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs  
-L/usr/local/je5.0.1-64/lib -ljemalloc
<table>
<thead>
<tr>
<th>SPEC CPU2017 Integer Speed Result</th>
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<tbody>
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<td>(3.80 GHz, Intel Xeon E-2174G)</td>
</tr>
</tbody>
</table>

**ASUSTeK Platform-Settings-p11-V2.0-revA.xml**

**Intel-ic18.0-official-linux64.2017-12-21.xml**

Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.
CPU2017 License: 9016
Test Date: Jan-2019
Hardware Availability: Sep-2018
Software Availability: Nov-2018

The flags files that were used to format this result can be browsed at:

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU2017 v1.0.5 on 2019-01-22 20:54:10-0500.
Originally published on 2019-04-16.