ASUSTeK Computer Inc.

ASUS ESC8000 G4(Z11PG-D24) Server System (3.90 GHz, Intel Xeon Gold 6250)

SPECrate®2017_fp_base = 166
SPECrate®2017_fp_peak = 172

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

Hardware
CPU Name: Intel Xeon Gold 6250
Max MHz: 4500
Nominal: 3900
Enabled: 16 cores, 2 chips, 2 threads/core
Orderable: 1, 2 chip(s)
Cache L1: 32 KB I + 32 KB D on chip per core
L2: 1 MB I+D on chip per core
L3: 35.75 MB I+D on chip per chip
Other: None
Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R)
Storage: 1 x 1 TB SATA SSD
Other: None

Software
OS: SUSE Linux Enterprise Server 15
Kernel 4.12.14-23-default
Compiler: C/C++: Version 19.0.4.227 of Intel C/C++
Compiler Build 20190416 for Linux;
Fortran: Version 19.0.4.227 of Intel Fortran
Compiler Build 20190416 for Linux
Parallel: No
Firmware: Version 6102 released Dec-2019
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: None
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage
SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
ASUS ESC8000 G4(Z11PG-D24) Server System
(3.90 GHz, Intel Xeon Gold 6250)

SPECrate®2017_fp_base = 166
SPECrate®2017_fp_peak = 172

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
<td>621</td>
<td>517</td>
<td>621</td>
<td>517</td>
<td>621</td>
<td>517</td>
<td>32</td>
<td>621</td>
<td>517</td>
<td>621</td>
<td>517</td>
<td></td>
<td></td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
<td>348</td>
<td>116</td>
<td>348</td>
<td>116</td>
<td>348</td>
<td>116</td>
<td>32</td>
<td>347</td>
<td>117</td>
<td>348</td>
<td>116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
<td>642</td>
<td>130</td>
<td>640</td>
<td>131</td>
<td>640</td>
<td>131</td>
<td>32</td>
<td>642</td>
<td>130</td>
<td>640</td>
<td>131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
<td>456</td>
<td>164</td>
<td>456</td>
<td>164</td>
<td>456</td>
<td>164</td>
<td>32</td>
<td>375</td>
<td>199</td>
<td>379</td>
<td>197</td>
<td></td>
<td></td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>32</td>
<td>356</td>
<td>94.8</td>
<td>356</td>
<td>94.8</td>
<td>356</td>
<td>94.8</td>
<td>32</td>
<td>329</td>
<td>102</td>
<td>328</td>
<td>103</td>
<td></td>
<td></td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
<td>386</td>
<td>186</td>
<td>386</td>
<td>186</td>
<td>386</td>
<td>186</td>
<td>32</td>
<td>386</td>
<td>186</td>
<td>386</td>
<td>186</td>
<td></td>
<td></td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
<td>332</td>
<td>147</td>
<td>332</td>
<td>147</td>
<td>332</td>
<td>147</td>
<td>32</td>
<td>331</td>
<td>147</td>
<td>332</td>
<td>147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
<td>348</td>
<td>161</td>
<td>346</td>
<td>162</td>
<td>348</td>
<td>161</td>
<td>32</td>
<td>329</td>
<td>170</td>
<td>331</td>
<td>169</td>
<td></td>
<td></td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
<td>228</td>
<td>236</td>
<td>230</td>
<td>235</td>
<td>225</td>
<td>239</td>
<td>32</td>
<td>228</td>
<td>236</td>
<td>230</td>
<td>235</td>
<td></td>
<td></td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
<td>840</td>
<td>149</td>
<td>844</td>
<td>148</td>
<td>843</td>
<td>148</td>
<td>32</td>
<td>840</td>
<td>149</td>
<td>844</td>
<td>148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
<td>486</td>
<td>105</td>
<td>489</td>
<td>104</td>
<td>493</td>
<td>103</td>
<td>16</td>
<td>219</td>
<td>116</td>
<td>219</td>
<td>116</td>
<td></td>
<td></td>
</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"
OS set to performance mode via cpupower frequency-set -g performance

Environment Variables Notes
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/spec2017_110/lib/intel64"

General Notes
Binaries compiled on a system with 1x Intel Core i9-7900X 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:

(Continued on next page)
ASUSTeK Computer Inc.  
ASUS ESC8000 G4(Z11PG-D24) Server System  
(3.90 GHz, Intel Xeon Gold 6250)  

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>166</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>172</td>
</tr>
</tbody>
</table>

**General Notes (Continued)**

```bash
  sync; echo 3> /proc/sys/vm/drop_caches
```

NA: 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
- Patrol Scrub = Disabled
- ENERGY_PERF_BIAS_CFG mode = performance
- SNC = Enabled
- IMC interleaving = 1-way
- Engine Boost = Level3(Max)
- Enforce POR = Disable
- Memory Frequency = 2933
- LLC dead line alloc = Disabled
- SR-IOV Support = Disabled
- CSM Support = Disabled

Sysinfo program /spec2017_110/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7ed1e646a485a0011
running on linux-gh78 Tue Feb 18 06:12:30 2020

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) Gold 6250 CPU @ 3.90GHz
- 2 "physical id"s (chips)
- 32 "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 : 8
  - siblings : 16
  - physical 0: cores 2 3 6 13 18 19 24 28
  - physical 1: cores 1 2 3 5 6 18 19 29

From lscpu:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian

(Continued on next page)
ASUSTeK Computer Inc.  
ASUS ESC8000 G4(Z11PG-D24) Server System  
(3.90 GHz, Intel Xeon Gold 6250)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>166</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>172</td>
</tr>
</tbody>
</table>

CPU2017 License: 9016  
Test Sponsor: ASUSTeK Computer Inc.  
Test Date: Feb-2020  
Hardware Availability: Feb-2020  
Tested by: ASUSTeK Computer Inc.  
Software Availability: May-2019

Platform Notes (Continued)

- CPU(s): 32
- On-line CPU(s) list: 0-31
- Thread(s) per core: 2
- Core(s) per socket: 8
- Socket(s): 2
- NUMA node(s): 4
- Vendor ID: GenuineIntel
- CPU family: 6
- Model: 85
- Model name: Intel(R) Xeon(R) Gold 6250 CPU @ 3.90GHz
- Stepping: 7
- CPU MHz: 3900.000
- CPU max MHz: 4500.0000
- CPU min MHz: 1200.0000
- BogoMIPS: 7800.00
- Virtualization: VT-x
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 1024K
- L3 cache: 36608K
- NUMA node0 CPU(s): 0,1,4,6,16,17,20,22
- NUMA node1 CPU(s): 2,3,5,7,18,19,21,23
- NUMA node2 CPU(s): 8-10,13,24-26,29
- NUMA node3 CPU(s): 11,12,14,15,27,28,30,31
- Flags: fpu vme de pse tec mr mce sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3 invpcid_single intel_pmic mba tpr_shadow vmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512vd avx512bw avx512vl xsaveopt xsave xsavec xsaes xsavec llc cqm_occcpu llc cqm_mbb_total cqm_mbb_local ibpb ibrs stibp dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req pku ospke avx512_vnni arch_capabilities ssbd

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.  
available: 4 nodes (0-3)  
node 0 cpus: 0 1 4 6 16 17 20 22  
node 0 size: 192041 MB  
node 0 free: 191307 MB  
node 1 cpus: 2 3 5 7 18 19 21 23

(Continued on next page)
ASUSTeK Computer Inc.  
ASUS ESC8000 G4(Z11PG-D24) Server System  
(3.90 GHz, Intel Xeon Gold 6250)  

SPECrate\textsuperscript{\textregistered}2017\textsuperscript{\textregistered}_\textit{fp}\_base = 166  
SPECrate\textsuperscript{\textregistered}2017\textsuperscript{\textregistered}_\textit{fp}\_peak = 172

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2017 License:</td>
<td>9016</td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>ASUSTeK Computer Inc.</td>
</tr>
<tr>
<td>Tested by:</td>
<td>ASUSTeK Computer Inc.</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Feb-2020</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Feb-2020</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>May-2019</td>
</tr>
</tbody>
</table>

### Platform Notes (Continued)

- node 1 size: 193523 MB  
- node 1 free: 192905 MB  
- node 2 cpus: 8 9 10 13 24 25 26 29  
- node 2 size: 193523 MB  
- node 2 free: 192877 MB  
- node 3 cpus: 11 12 14 15 27 28 30 31  
- node 3 size: 193521 MB  
- node 3 free: 192897 MB  
- node distances:  
  - node 0: 10 11 21 21  
  - node 1: 11 10 21 21  
  - node 2: 21 21 10 11  
  - node 3: 21 21 11 10

From /proc/meminfo:

- MemTotal: 791153828 kB  
- HugePages_Total: 0  
- Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*:

- NAME="SLES"  
- VERSION="15"  
- VERSION_ID="15"  
- PRETTY_NAME="SUSE Linux Enterprise Server 15"  
- ID="sles"  
- ID_LIKE="suse"  
- ANSI_COLOR="0;32"  
- CPE_NAME="cpe:/o:suse:sles:15"

uname -a:

- Linux linux-gh78 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b)  
- x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

- CVE-2018-3620 (L1 Terminal Fault): No status reported
- Microarchitectural Data Sampling:  
  - CVE-2017-5754 (Meltdown): Not affected  
- CVE-2018-3639 (Speculative Store Bypass):  
  - Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- CVE-2017-5753 (Spectre variant 1):  
  - Mitigation: __user pointer sanitization
- CVE-2017-5715 (Spectre variant 2):  
  - Mitigation: Indirect Branch Restricted Speculation, IBPB, IBRS_FW

run-level 3 Feb 17 10:03

(Continued on next page)
ASUSTeK Computer Inc.
ASUS ESC8000 G4(Z11PG-D24) Server System
(3.90 GHz, Intel Xeon Gold 6250)

SPECrate®2017_fp_base = 166
SPECrate®2017_fp_peak = 172

CPP2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Platform Notes (Continued)

SPEC is set to: /spec2017_110
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 929G 23G 906G 3% /

From /sys/devices/virtual/dmi/id
BIOS: American Megatrends Inc. 6102 12/19/2019
Vendor: ASUSTeK COMPUTER INC.
Product: Z11PG-D24 Series
Product Family: Server
Serial: System Serial Number

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.
Memory:
24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933

Compiler Version Notes

==============================================================================
C                | 519.lbm_r(base, peak) 538.imagick_r(base, peak)
| 544.nab_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
C++              | 508.namd_r(base, peak) 510.parest_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
C++, C            | 511.povray_r(base, peak) 526.blender_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

(Continued on next page)
ASUSTeK Computer Inc.
ASUS ESC8000 G4(Z11PG-D24) Server System
(3.90 GHz, Intel Xeon Gold 6250)

SPECrate®2017_fp_base = 166
SPECrate®2017_fp_peak = 172

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

Compiled on: Feb-2019
Compiled by: ASUSTeK Computer Inc.

Compiler Version Notes (Continued)

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

------------------------------------------------------------------

C++, C, Fortran | 507.cactuBSSN_r(base, peak)

------------------------------------------------------------------

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

------------------------------------------------------------------

Fortran         | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)
                | 554.roms_r(base, peak)

------------------------------------------------------------------

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

------------------------------------------------------------------

Fortran, C      | 521.wrf_r(base, peak) 527.cam4_r(base, peak)

------------------------------------------------------------------

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

------------------------------------------------------------------

Base Compiler Invocation

C benchmarks:
    icc -m64 -std=c11

C++ benchmarks:
    icpc -m64
Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ifort -m64 icc -m64 -std=c11

Benchmarks using both C and C++:
icpc -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.libm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
ASUSTeK Computer Inc.  
ASUS ESC8000 G4(Z11PG-D24) Server System  
(3.90 GHz, Intel Xeon Gold 6250)  

SPECrate®2017_fp_base = 166  
SPECrate®2017_fp_peak = 172  

CPU2017 License: 9016  
Test Sponsor: ASUSTeK Computer Inc.  
Test Date: Feb-2020  
Tested by: ASUSTeK Computer Inc.  
Hardware Availability: Feb-2020  
Software Availability: May-2019

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs
-align array32byte

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs
-align array32byte

Benchmarks using both C and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs
-align array32byte

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ifort -m64 icc -m64 -std=c11

Benchmarks using both C and C++:
icpc -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64

Peak Portability Flags

Same as Base Portability Flags
## SPEC CPU®2017 Floating Point Rate Result

**ASUSTeK Computer Inc.**

ASUS ESC8000 G4(Z11PG-D24) Server System  
(3.90 GHz, Intel Xeon Gold 6250)

<table>
<thead>
<tr>
<th>CPU2017 License: 9016</th>
<th>Test Date: Feb-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: ASUSTeK Computer Inc.</td>
<td>Hardware Availability: Feb-2020</td>
</tr>
<tr>
<td>Tested by: ASUSTeK Computer Inc.</td>
<td>Software Availability: May-2019</td>
</tr>
</tbody>
</table>

### SPECrate®2017_fp_base = 166

### SPECrate®2017_fp_peak = 172

**Peak Optimization Flags**

C benchmarks:

- `519.lbm_r`: `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`
- `538.imagick_r`: `basepeak = yes`
- `544.nab_r`: `basepeak = yes`

C++ benchmarks:

- `508.namd_r`: `basepeak = yes`
- `510.parest_r`: `basepeak = yes`

Fortran benchmarks:

- `503.bwaves_r`: `basepeak = yes`
- `549.fotonik3d_r`: `basepeak = yes`
- `554.roms_r`: `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs -align array32byte`

Benchmarks using both Fortran and C:

- `521.wrf_r`: `basepeak = yes`
- `527.cam4_r`: `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs -align array32byte`

Benchmarks using both C and C++:

- `511.povray_r`: `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`
- `526.blender_r`: `-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

ASUSTeK Computer Inc.  
ASUS ESC8000 G4(Z11PG-D24) Server System  
(3.90 GHz, Intel Xeon Gold 6250)

<table>
<thead>
<tr>
<th>Test Date</th>
<th>Feb-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability</td>
<td>Feb-2020</td>
</tr>
<tr>
<td>Software Availability</td>
<td>May-2019</td>
</tr>
</tbody>
</table>

**SPECrate®2017_fp_base** = 166  
**SPECrate®2017_fp_peak** = 172

---

**Peak Optimization Flags (Continued)**

Benchmarks using Fortran, C, and C++:

- xCORE-AVX2  
-ipo  
-no-prec-div  
-qopt-prefetch  
-ffinite-math-only  
-qopt-mem-layout-trans=4  
-auto  
-nostandard-realloc-lhs  
-align array32byte

---

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:


---

SPEC CPU and SPECrate 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 info@spec.org.

Tested with SPEC CPU®2017 v1.1.0 on 2020-02-17 17:12:30-0500.  
Originally published on 2020-03-17.