## CPU2017 Floating Point Rate Result

**Epsylon Sp. z o.o. Sp. Komandytowa**

**Eterio 210 RE1 (Intel Xeon Gold 6134, 3.20 GHz)**

**SPECrate2017_fp_base = 113**

**SPECrate2017_fp_peak = 114**

### Hardware

- **CPU Name:** Intel Xeon Gold 6134
- **Max MHz.:** 3700
- **Nominal:** 3200
- **Enabled:** 16 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 chips
- **Cache L1:** 32 KB I + 32 KB D on chip per core
- **L2:** 1 MB I+D on chip per core
- **L3:** 24.75 MB I+D on chip per chip
- **Memory:** 128 GB (8 x 16 GB 2Rx4 PC4-2666V-R)
- **Storage:** 1 x 960 GB SSD SATA III
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux Server release 7.4 (Maipo)
- **Compiler:** C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux;
  Fortran: Version 18.0.0.128 of Intel Fortran Compiler for Linux
- **Parallel:** No
- **Firmware:** Version BIOS 2.0b released Mar-2018
- **File System:** ext4
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** None

### Test Details

- **CPU2017 License:** 9081
- **Test Sponsor:** Epsylon Sp. z o.o. Sp. Komandytowa
- **Tested by:** Epsylon Sp. z o.o. Sp. Komandytowa
- **Test Date:** Apr-2018
- **Hardware Availability:** Sep-2017
- **Software Availability:** Mar-2018

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<thead>
<tr>
<th>Name</th>
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<th>SPECrate2017_fp_base</th>
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Note: Copies indicate the number of tests run for each benchmark.
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Epsylon Sp. z o.o. Sp. Komandytowa

Eterio 210 RE1 (Intel Xeon Gold 6134, 3.20 GHz)

SPECrate2017_fp_base = 113
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results table

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SPECrate2017_fp_base = 113
SPECrate2017_fp_peak = 114

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"

General Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/cpu2017.1.0/lib/ia32:/cpu2017.1.0/lib/intel64:/cpu2017.1.0/je5.0.1-32:/cpu2017.1.0/je5.0.1-64"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32 GB RAM memory using Redhat Enterprise Linux 7.4

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.

(Continued on next page)
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**eterio 210 RE1 (Intel Xeon Gold 6134, 3.20 GHz)**

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**CPU2017 License:** 9081  
**Test Sponsor:** Epsylon Sp. z o.o. Sp. Komandytowa  
**Tested by:** Epsylon Sp. z o.o. Sp. Komandytowa  
**Test Date:** Apr-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** Mar-2018

---

#### General Notes (Continued)

- Transparent Huge Pages enabled by default
- Prior to runcpu invocation
- Filesystem page cache synced and cleared with:
  ```bash
  sync; echo 3> /proc/sys/vm/drop_caches
  runcpu command invoked through numactl i.e.:
  numactl --interleave=all runcpu <etc>
  ```

#### Platform Notes

**BIOS Settings:**
- Power Technology = Custom
- Turbo Mode = Enable
- Enhanced Halt State (C1E) = Disable
- CPU C6 report = Disabled
- Package C State = No limit
- Software Controlled T-States = Disable
- Hyper-Threading (All) = Enable
- Enforce POR = Disable
- Memory Frequency = Auto
- Patrol Scrub = Disabled
- IMC Interleaving = Auto
- SNC = Disabled

**Sysinfo program** /cpu2017.1.0/bin/sysinfo  
**Rev:** r5797 of 2017-06-14 96c45e4568ad54c135fd618bdc091c0f  
**running on SUT Thu Apr 12 22:23:19 2018**

**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 6134 CPU @ 3.20GHz  
- **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 0 2 3 9 16 19 26 27
  physical 1: cores 0 2 3 9 16 19 26 27
  ```

**From lscpu:**
- **Architecture:** x86_64
- **CPU op-mode(s):** 32-bit, 64-bit

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Software Availability: Mar-2018

Platform Notes (Continued)

Byte Order: Little Endian
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): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6134 CPU @ 3.20GHz
Stepping: 4
CPU MHz: 3201.000
CPU max MHz: 3201.0000
CPU min MHz: 1200.0000
BogoMIPS: 6400.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 25344K
NUMA node0 CPU(s): 0-7,16-23
NUMA node1 CPU(s): 8-15,24-31
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 rdtsdp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
aperfmpref eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 fma
cx16 xtrr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch epb cat_13 cd_p13 invpcid_single
intel_pt spec_ctrl ibpb_support tpr_shadow vmmi flexpriority ept vpid fsgsbase
tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rd_t_a avx512f avx512dq
rdseed adx smap clflushopt clwb avx512cd avx512bw avx512vl xsaveopt xsaves opt xgetbv1
cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 2 nodes (0-1)
node 0 cpus: 0 1 2 3 4 5 6 7 16 17 18 19 20 21 22 23
node 0 size: 65200 MB
node 0 free: 63063 MB
node 1 cpus: 8 9 10 11 12 13 14 15 24 25 26 27 28 29 30 31
node 1 size: 65356 MB
node 1 free: 63795 MB
node distances:

(Continued on next page)
Platform Notes (Continued)

node 0 1
0: 10 21
1: 21 10

From /proc/meminfo
MemTotal: 131464776 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
NAME="Red Hat Enterprise Linux Server"
VERSION="7.4 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.4"
PRETTY_NAME="Red Hat Enterprise Linux"
redhat-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.4:ga:server

uname -a:
Linux SUT 3.10.0-693.21.1.el7.x86_64 #1 SMP Fri Feb 23 18:54:16 UTC 2018 x86_64 x86_64
x86_64 GNU/Linux

run-level 3 Apr 12 14:33

SPEC is set to: /cpu2017.1.0
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 825G 85G 699G 11% /

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. 2.0b 03/06/2018
Memory:
8x Samsung M393A2G40EB2-CTD 16 GB 2 rank 2666

(End of data from sysinfo program)
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**Compiler Version Notes**

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| CC 519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base) |
|---|---|---|
| icc (ICC) 18.0.0 20170811 |
| Copyright (C) 1985-2017 Intel Corporation. All rights reserved. |

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<table>
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<tr>
<th>CC 521.wrf_r(peak) 527.cam4_r(peak)</th>
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<td>ifort (IFORT) 18.0.0 20170811</td>
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<tr>
<td>Copyright (C) 1985-2017 Intel Corporation. All rights reserved.</td>
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(Continued on next page)
## SPEC CPU2017 Floating Point Rate Result

**Epsylon Sp. z o.o. Sp. Komandytowa**

**eterio 210 RE1 (Intel Xeon Gold 6134, 3.20 GHz)**

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base = 113</th>
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<tr>
<td>SPECrate2017_fp_peak = 114</td>
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</table>

### CPU2017 License: 9081

**Test Sponsor:** Epsylon Sp. z o.o. Sp. Komandytowa  
**Tested by:** Epsylon Sp. z o.o. Sp. Komandytowa

### Test Date: Apr-2018

**Hardware Availability:** Sep-2017  
**Software Availability:** Mar-2018

### Compiler Version Notes (Continued)

- ifort (IFORT) 18.0.0 20170811  
  Copyright (C) 1985–2017 Intel Corporation. All rights reserved.
- icc (ICC) 18.0.0 20170811  
  Copyright (C) 1985–2017 Intel Corporation. All rights reserved.

### Base Compiler Invocation

#### C benchmarks:

- icc

#### C++ benchmarks:

- icpc

#### Fortran benchmarks:

- ifort

#### Benchmarks using both Fortran and C:

- ifort icc

#### Benchmarks using both C and C++:

- icpc icc

#### Benchmarks using Fortran, C, and C++:

- icpc icc ifort

### Base Portability Flags

- 503.bwaves_r: -DSPEC_LP64
- 507.cactusBSSN_r: -DSPEC_LP64
- 508.namd_r: -DSPEC_LP64
- 510.parest_r: -DSPEC_LP64
- 511.povray_r: -DSPEC_LP64
- 519.lbm_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-AVX512  -ipo  -O3  -no-prec-div  -qopt-prefetch  
  -ffinite-math-only  -qopt-mem-layout-trans=3

**C++ benchmarks:**
-  
xCORE-AVX512  -ipo  -O3  -no-prec-div  -qopt-prefetch  
  -ffinite-math-only  -qopt-mem-layout-trans=3

**Fortran benchmarks:**
-  
xCORE-AVX512  -ipo  -O3  -no-prec-div  -qopt-prefetch  
  -ffinite-math-only  -qopt-mem-layout-trans=3  
  -nostandard-realloc-lhs  
  -align array32byte

**Benchmarks using both Fortran and C:**
-  
xCORE-AVX512  -ipo  -O3  -no-prec-div  -qopt-prefetch  
  -ffinite-math-only  -qopt-mem-layout-trans=3  
  -nostandard-realloc-lhs  
  -align array32byte

**Benchmarks using both C and C++:**
-  
xCORE-AVX512  -ipo  -O3  -no-prec-div  -qopt-prefetch  
  -ffinite-math-only  -qopt-mem-layout-trans=3

**Benchmarks using Fortran, C, and C++:**
-  
xCORE-AVX512  -ipo  -O3  -no-prec-div  -qopt-prefetch  
  -ffinite-math-only  -qopt-mem-layout-trans=3  
  -nostandard-realloc-lhs  
  -align array32byte

## Base Other Flags

**C benchmarks:**
-  
-m64  -std=c11

**C++ benchmarks:**
-  
-m64

**Fortran benchmarks:**
-  
-m64

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

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

(Continued on next page)
Epsylon Sp. z o.o. Sp. Komandytowa
Esterio 210 RE1 (Intel Xeon Gold 6134, 3.20 GHz)

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Base Other Flags (Continued)

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

Peak Compiler Invocation

C benchmarks:
icc
C++ benchmarks:
icpc
Fortran benchmarks:
ifort
Benchmarks using both Fortran and C:
ifort icc
Benchmarks using both C and C++:
icpc icc
Benchmarks using Fortran, C, and C++:
icpc icc ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
519.lbm_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512
-O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

538.imagick_r: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3

544.nab_r: Same as 519.lbm_r

(Continued on next page)
Peak Optimization Flags (Continued)

C++ benchmarks:
- prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3
- no-prec-div -qopt-prefetch -ffinite-math-only
- qopt-mem-layout-trans=3

Fortran benchmarks:

503.bwaves_r: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3
-nostandard-realloc-lhs -align array32byte

549.fotonik3d_r: Same as 503.bwaves_r

554.roms_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512
- O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- qopt-mem-layout-trans=3 -nostandard-realloc-lhs
- align array32byte

Benchmarks using both Fortran and C:
- prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3
- no-prec-div -qopt-prefetch -ffinite-math-only
- qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Benchmarks using both C and C++:
- prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3
- no-prec-div -qopt-prefetch -ffinite-math-only
- qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:
- prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3
- no-prec-div -qopt-prefetch -ffinite-math-only
- qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Peak Other Flags

C benchmarks:
-m64 -std=c11

C++ benchmarks:
-m64

Fortran benchmarks:
-m64

(Continued on next page)
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#### Peak Other Flags (Continued)

- Benchmarks using both Fortran and C:  
  -m64 -std=c11
- Benchmarks using both C and C++:  
  -m64 -std=c11
- Benchmarks using Fortran, C, and C++:  
  -m64 -std=c11

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:


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