Supermicro
SuperServer SYS-620U-TNR (X12DPU-6 , Intel Xeon Gold 5317)

**SPEC CPU®2017 Floating Point Rate Result**

<table>
<thead>
<tr>
<th><strong>CPU2017 License:</strong></th>
<th>001176</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Sponsor:</strong></td>
<td>Supermicro</td>
</tr>
<tr>
<td><strong>Tested by:</strong></td>
<td>Supermicro</td>
</tr>
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<td><strong>Test Date:</strong></td>
<td>Nov-2021</td>
</tr>
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<td><strong>Hardware Availability:</strong></td>
<td>Apr-2021</td>
</tr>
<tr>
<td><strong>Software Availability:</strong></td>
<td>Jun-2021</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 5317
- **Max MHz:** 3600
- **Nominal:** 3000
- **Enabled:** 24 cores, 2 chips, 2 threads/core
- **Orderable:** 1,2 Chips
- **Cache L1:** 32 KB I + 48 KB D on chip per core
- **L2:** 1.25 MB I+D on chip per core
- **L3:** 18 MB I+D on chip per chip
- **Other:** None
- **Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)
- **Storage:** 1 x 1 TB NVMe SSD
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 15 SP3 5.3.18-57-default
- **Compiler:** C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;
  Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;
  C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux
- **Parallel:** No
- **Firmware:** Version 1.1 released Apr-2021
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** jemalloc memory allocator V5.0.1
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage.

---

**SPECrater®2017_fp_base = 232**
**SPECrater®2017_fp_peak = 236**

---

**503.bwaves_r**
48 copies, 30.0 to 360.0, 546 copies

**507.cactuBSSN_r**
48 copies, 153, 301 copies

**508.namd_r**
48 copies, 131, 192 copies

**510.parest_r**
48 copies, 144, 232 copies

**511.povray_r**
48 copies, 232, 287 copies

**519.lbm_r**
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**521.wrf_r**
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**549.fotonik3d_r**
48 copies, 107, 19 copies

**554.roms_r**
48 copies, 107, 19 copies

---

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## Results Table

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</table>

**SPECrate®2017_fp_base = 232**

**SPECrate®2017_fp_peak = 236**

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"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

```
LD_LIBRARY_PATH = 
"/home/cpu2017-1.1.8/lib/intel64:/home/cpu2017-1.1.8/je5.0.1-64"
MALLOC_CONF = "retain:true"
```

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Red Hat Enterprise Linux 8.1

Transparent Huge Pages enabled by default

Prior to runcpu invocation

(Continued on next page)
Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6, Intel Xeon Gold 5317)

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECrate®2017 fp_peak = 236
SPECrate®2017 fp_base = 232

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Nov-2021
Hardware Availability: Apr-2021
Software Availability: Jun-2021

General Notes (Continued)

Filesystem page cache synced and cleared with:
sync; echo 3>/proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

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.
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.
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

Platform Notes

BIOS Settings:
Power Technology = Custom
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Extreme Performance
SNC (Sub NUMA) = Enable
KTI Prefetch = Enable
LLC Dead Line Alloc = Disable
DCU Streamer Prefetcher = Disable

Sysinfo program /home/cpu2017-1.1.8/bin/sysinfo
Rev: r6622 of 2021-04-07 982a6e9c915b55891ef0e16acaf64d
running on localhost Tue Nov 16 08:58:24 2021

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 5317 CPU @ 3.00GHz
  2 "physical id"s (chips)
  48 "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 : 12
siblings : 24
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11

From lscpu from util-linux 2.36.2:

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

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SPECrate®2017_fp_base = 232
SPECrate®2017_fp_peak = 236

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Nov-2021
Hardware Availability: Apr-2021
Software Availability: Jun-2021

Platform Notes (Continued)

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 46 bits physical, 57 bits virtual
CPU(s): 48
On-line CPU(s) list: 0-47
Thread(s) per core: 2
Core(s) per socket: 12
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Gold 5317 CPU @ 3.00GHz
Stepping: 6
CPU MHz: 3400.000
BogoMIPS: 6000.00
Virtualization: VT-x
L1d cache: 1.1 MiB
L1i cache: 768 KiB
L2 cache: 30 MiB
L3 cache: 36 MiB
NUMA node0 CPU(s): 0-5, 24-29
NUMA node1 CPU(s): 6-11, 30-35
NUMA node2 CPU(s): 12-17, 36-41
NUMA node3 CPU(s): 18-23, 42-47
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected
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
pdcp1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2
sse3 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_13 invvpcl_single ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vmx
flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms
invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb

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

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Tested by: Supermicro

Test Date: Nov-2021
Hardware Availability: Apr-2021
Software Availability: Jun-2021

Platform Notes (Continued)

intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1 xsavev1 xsave vcnv dtrn ida arat
pln pts avx512v bmi umip pku ospke avx512_v bmi2 gfn vaes vpclmulqdq avx512_vnni
avx512_bitalg tme avx512_vpoptdtdq la57 rdpid fsrcm md_clear pconfig flush_l1d
arch_capabilities

From lscpu --cache:
NAME ONE-SIZE ALL-SIZE WAYS TYPE LEVEL SETS PHY-LINE COHERENCY-SIZE
  L1d  48K  1.1M  12 Data  1  64  1  64
  L1i  32K  768K  8 Instruction 1  64  1  64
  L2  1.3M  30M  20 Unified 2 1024  1  64
  L3  18M  36M  12 Unified 3 24576  1  64

/proc/cpuinfo cache data
  cache size: 18432 KB

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 2 3 4 5 24 25 26 27 28 29
node 0 size: 128535 MB
node 0 free: 118964 MB
node 1 cpus: 6 7 8 9 10 11 30 31 32 33 34 35
node 1 size: 129020 MB
node 1 free: 123395 MB
node 2 cpus: 12 13 14 15 16 17 36 37 38 39 40 41
node 2 size: 129020 MB
node 2 free: 123820 MB
node 3 cpus: 18 19 20 21 22 23 42 43 44 45 46 47
node 3 size: 129017 MB
node 3 free: 123741 MB
node distances:
  node 0 1 2 3
  0: 10 11 20 20
  1: 11 10 20 20
  2: 20 20 10 11
  3: 20 20 11 10

From /proc/meminfo
  MemTotal: 527969672 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release*/etc/*version*
  os-release:
    NAME="SLES"
    VERSION="15-SP3"

(Continued on next page)
## Platform Notes

### VERSION_ID="15.3"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP3"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp3"

### uname -a:

```
Linux localhost 5.3.18-57-default #1 SMP Wed Apr 28 10:54:41 UTC 2021 (ba3c2e9) x86_64
x86_64 x86_64 GNU/Linux
```

### Kernel self-reported vulnerability status:

#### CVE-2018-12207 (iTLB Multihit):
Not affected

#### CVE-2018-3620 (L1 Terminal Fault):
Not affected

#### Microarchitectural Data Sampling:
Not affected

#### 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: usercopy/swapgs barriers and __user pointer sanitization

#### CVE-2017-5715 (Spectre variant 2):
Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

#### CVE-2020-0543 (Special Register Buffer Data Sampling):
Not affected

#### CVE-2019-11135 (TSX Asynchronous Abort):
Not affected

### run-level 3 Nov 16 02:30

```
SPEC is set to: /home/cpu2017-1.1.8
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme0n1p4 xfs 815G 53G 762G 7% /home
```

### From /sys/devices/virtual/dmi/id

- **Vendor:** Supermicro
- **Product:** Super Server
- **Product Family:** Family
- **Serial:** 0123456789

Additional information from dmidecode 3.2 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:
16x SK Hynix HMA84GR7DJR4N-XN 32 GB 2 rank 3200, configured at 2933

(Continued on next page)
Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6, Intel Xeon Gold 5317)

SPECrates
SPECrate®2017_fp_base = 232
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CPU2017 License: 001176
Test Date: Nov-2021
Test Sponsor: Supermicro
Hardware Availability: Apr-2021
Tested by: Supermicro
Software Availability: Jun-2021

Platform Notes (Continued)

BIOS:
  BIOS Vendor: American Megatrends International, LLC.
  BIOS Version: 1.1
  BIOS Date: 04/21/2021
  BIOS Revision: 5.22

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
| C     | 519.lbm_r(base, peak) 538.imagick_r(base, peak) |
|       | 544.nab_r(base, peak) |
==============================================================================

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
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| C++   | 508.namd_r(base, peak) 510.parest_r(base, peak) |
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==============================================================================
| C++, C | 511.povray_r(peak) |
==============================================================================

Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 2020112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.1 Build 2020112_000000
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==============================================================================
| C++, C | 511.povray_r(base) 526.blender_r(base, peak) |
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Compiler Version Notes (Continued)

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    Version 2021.1 Build 20201113
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
    Intel(R) 64, Version 2021.1 Build 20201112_000000
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Fortran         | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)
                  | 554.roms_r(base, peak)
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(Continued on next page)
Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6 , Intel Xeon Gold 5317)

SPECrate®2017_fp_base = 232
SPECrate®2017_fp_peak = 236

Compiler Version Notes (Continued)

==============================================================================
Fortran, C      | 521.wrf_r(peak)
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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.1 Build 20201112_000000
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------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.1 Build 20201112_000000
------------------------------------------------------------------------------

==============================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base, peak)
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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.1 Build 20201112_000000
------------------------------------------------------------------------------
Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6 , Intel Xeon Gold 5317)

SPECrater®2017_fp_base = 232
SPECrater®2017_fp_peak = 236

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Nov-2021
Hardware Availability: Apr-2021
Software Availability: Jun-2021

Base Compiler Invocation

C benchmarks: icx
C++ benchmarks: icpx
Fortran benchmarks: ifort
Benchmarks using both Fortran and C: ifort icx
Benchmarks using both C and C++: icpx icx
Benchmarks using Fortran, C, and C++: icpx icx ifort

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.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:
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-fflto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

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Base Optimization Flags (Continued)

C++ benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div
-qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both Fortran and C:
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both C and C++:
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using Fortran, C, and C++:
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx
Peak Compiler Invocation (Continued)

Fortran benchmarks:
  ifort

Benchmarks using both Fortran and C:
  521.wrf_r: ifort icc
  527.cam4_r: ifort icx

Benchmarks using both C and C++:
  511.povray_r: icpc icc
  526.blender_r: icpx icx

Benchmarks using Fortran, C, and C++:
  icpx icx ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
  519.lbm_r: basepeak = yes
  538.imagick_r: basepeak = yes
  544.nab_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
             -Ofast -qopt-mem-layout-trans=4
             -fimf-accuracy-bits=14:sqrt
             -mbranches-within-32B-boundaries -ljemalloc
             -L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:
  508.namd_r: basepeak = yes
  510.parest_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
               -flto -mfpmath=sse -funroll-loops

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**SPEC CPU®2017 Floating Point Rate Result**

**Supermicro**
SuperServer SYS-620U-TNR
(X12DPU-6 , Intel Xeon Gold 5317)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>232</th>
</tr>
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<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>236</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 001176
**Test Sponsor:** Supermicro
**Tested by:** Supermicro

**Test Date:** Nov-2021
**Hardware Availability:** Apr-2021
**Software Availability:** Jun-2021

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**Peak Optimization Flags (Continued)**

510.parest_r (continued):
- `qopt-mem-layout-trans=4`
- `mbranches-within-32B-boundaries`
- `ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`

Fortran benchmarks:

503.bwaves_r:
- `-w`
- `-m64`
- `-Wl,-z,muldefs`
- `-xCORE-AVX512`
- `-O3`
- `-ipo`
- `-no-prec-div`
- `-qopt-prefetch`
- `-ffinite-math-only`
- `-qopt-multiple-gather-scatter-by-shuffles`
- `-qopt-mem-layout-trans=4`
- `-nostandard-realloc-lhs`
- `-align array32byte -auto`
- `-mbranches-within-32B-boundaries`
- `-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`

549.fotonik3d_r:
- `basepeak = yes`

554.roms_r:

**Benchmarks using both Fortran and C:**

521.wrf_r:
- `-prof-gen(pass 1)`
- `-prof-use(pass 2)`
- `-xCORE-AVX512`
- `-O3`
- `-ipo`
- `-no-prec-div`
- `-qopt-prefetch`
- `-ffinite-math-only`
- `-qopt-multiple-gather-scatter-by-shuffles`
- `-qopt-mem-layout-trans=4`
- `-mbranches-within-32B-boundaries`
- `-nostandard-realloc-lhs`
- `-align array32byte -auto`
- `-L/usr/local/jemalloc64-5.0.1/lib`
- `-ljemalloc`

527.cam4_r:
- `basepeak = yes`

**Benchmarks using both C and C++:**

511.povray_r:
- `-prof-gen(pass 1)`
- `-prof-use(pass 2)`
- `-xCORE-AVX512`
- `-O3`
- `-ipo`
- `-no-prec-div`
- `-qopt-prefetch`
- `-ffinite-math-only`
- `-qopt-multiple-gather-scatter-by-shuffles`
- `-qopt-mem-layout-trans=4`
- `-mbranches-within-32B-boundaries`
- `-L/usr/local/jemalloc64-5.0.1/lib`
- `-ljemalloc`

526.blender_r:
- `basepeak = yes`

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

507.cactuBSSN_r:
- `basepeak = yes`

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

Supermicro
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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-TCX-revB.xml

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

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