SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

$SPECspeed^{®}2017\_fp\_base = 124$

$SPECspeed^{®}2017\_fp\_peak = 126$

CPU2017 License: 001176	**Test Date:** Oct-2021
Test Sponsor: Supermicro	**Hardware Availability:** Apr-2021
Tested by: Supermicro	**Software Availability:** Apr-2021

Threads

- 603.bwaves_s 32 — 326
- 603.bwaves_s (peak) — 327
- 607.cactuBSSN_s 32 — 169
- 619.lbm_s 32 — 70.3
- 621.wrf_s 32 — 138
- 621.wrf_s (peak) — 146
- 627.cam4_s 32 — 87.7
- 628.pop2_s 32 — 87.3
- 638.imagick_s 32 — 128
- 644.nab_s 32 — 215
- 644.nab_s 64 — 230
- 649.fotonik3d_s 32 — 59.7
- 649.fotonik3d_s (peak) — 59.4
- 654.roms_s 32 — 130

SPECspeed®2017_fp_base (124)   SPECspeed®2017_fp_peak (126)

Hardware

CPU Name: Intel Xeon Gold 6338N
  Max MHz: 3500
  Nominal: 2200
Enabled: 32 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 32 KB I + 48 KB D on chip per core
  L2: 1.25 MB I+D on chip per core
  L3: 48 MB I+D on chip per chip
  Other: None
Memory: 256 GB (8 x 32 GB 2Rx4 PC4-3200AA-R, running at 2667)
Storage: 1 x 200 GB SATA III SSD
Other: None

Software

OS: Red Hat Enterprise Linux 8.3
  Kernel 4.18.0-240.el8.x86_64
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: Yes
Firmware: Version 1.1a released Jul-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.

SPEC CPU®2017 Floating Point Speed Result

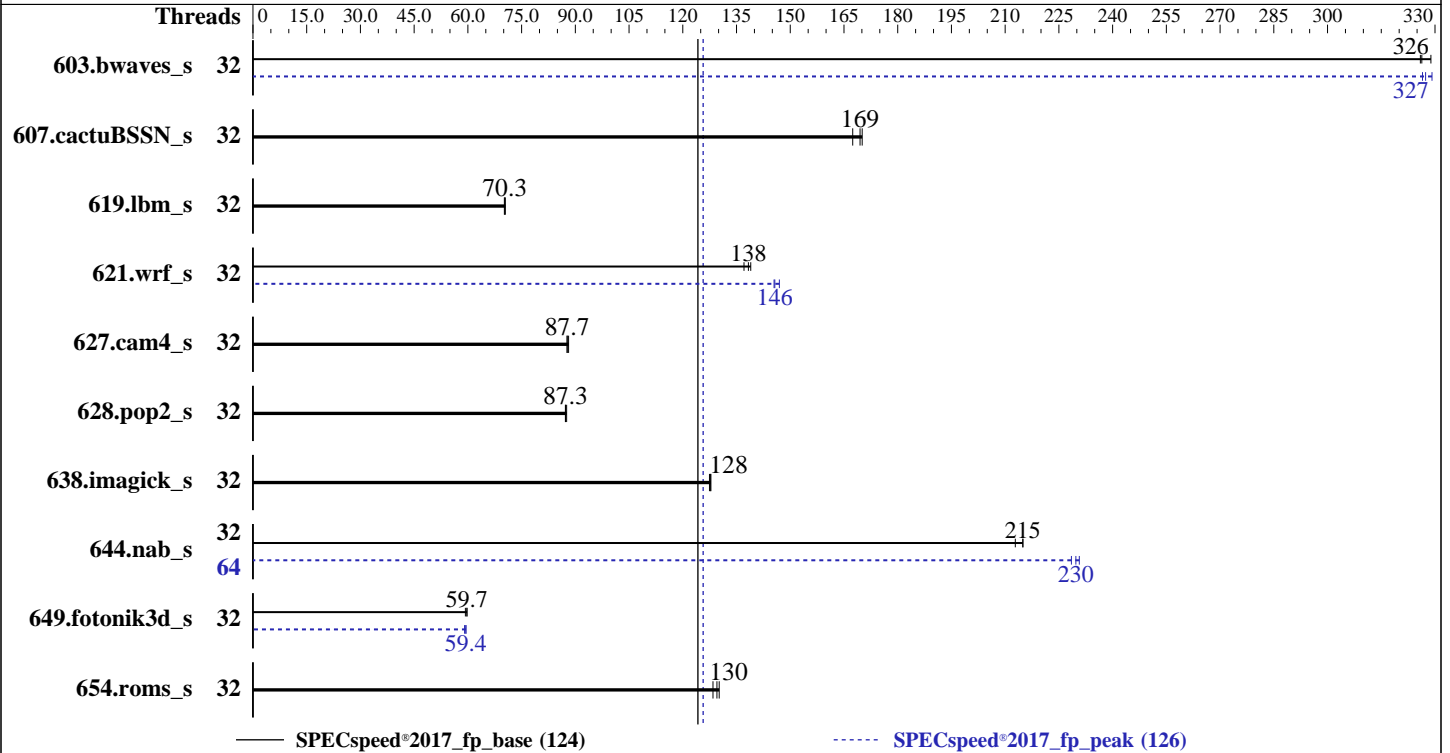Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Oct-2021

Hardware Availability: Apr-2021

Software Availability: Apr-2021

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	32	179	329	181	326	**181**	**326**	32	179	329	181	327	**180**	**327**
607.cactuBSSN_s	32	98.0	170	**98.4**	**169**	99.6	167	32	98.0	170	**98.4**	**169**	99.6	167
619.lbm_s	32	74.6	70.2	74.4	70.4	**74.5**	**70.3**	32	74.6	70.2	74.4	70.4	**74.5**	**70.3**
621.wrf_s	32	95.2	139	**95.6**	**138**	96.5	137	32	**90.8**	**146**	90.0	147	90.9	145
627.cam4_s	32	101	87.7	**101**	**87.7**	101	88.1	32	101	87.7	**101**	**87.7**	101	88.1
628.pop2_s	32	136	87.2	136	87.6	**136**	**87.3**	32	136	87.2	136	87.6	**136**	**87.3**
638.imagick_s	32	113	128	**113**	**128**	113	127	32	113	128	**113**	**128**	113	127
644.nab_s	32	82.1	213	81.3	215	**81.3**	**215**	64	**76.1**	**230**	76.5	228	75.7	231
649.fotonik3d_s	32	153	59.8	**153**	**59.7**	154	59.3	32	153	59.5	**153**	**59.4**	154	59.1
654.roms_s	32	121	130	**122**	**130**	123	128	32	121	130	**122**	**130**	123	128
SPECspeed®2017_fp_base =			**124**										
SPECspeed®2017_fp_peak =			**126**										

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"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

General Notes

```
 Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM
 memory using Redhat Enterprise Linux 8.0
 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

 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.
 jemalloc, a general purpose malloc implementation
```

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

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

Test Date: Oct-2021
Hardware Availability: Apr-2021
Software Availability: Apr-2021

General Notes (Continued)

```
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS Settings:
Power Technology = Custom
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Performance
Stale AtoS = Disable
Patrol Scrub = Disable

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on X12SPM-01 Mon Oct 11 17:14:02 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 6338N CPU @ 2.20GHz
      1  "physical id"s (chips)
     64 "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 : 32
     siblings  : 64
    physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
     25 26 27 28 29 30 31

From lscpu from util-linux 2.32.1:
     Architecture:        x86_64
     CPU op-mode(s):      32-bit, 64-bit
     Byte Order:          Little Endian
     CPU(s):              64
     On-line CPU(s) list: 0-63
     Thread(s) per core:  2
     Core(s) per socket:  32
     Socket(s):           1
     NUMA node(s):        2
     Vendor ID:           GenuineIntel
     CPU family:          6
     Model:               106
     Model name:          Intel(R) Xeon(R) Gold 6338N CPU @ 2.20GHz
     Stepping:            6
```

(Continued on next page)

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Oct-2021

Hardware Availability: Apr-2021

Software Availability: Apr-2021

Platform Notes (Continued)

```
        CPU MHz:                2700.000
        BogoMIPS:               4400.00
        Virtualization:         VT-x
        L1d cache:              48K
        L1i cache:              32K
        L2 cache:               1280K
        L3 cache:               49152K
        NUMA node0 CPU(s):      0-15,32-47
        NUMA node1 CPU(s):      16-31,48-63
        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 cpuid
    aperfmperf 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 invpcid_single
    intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept
    vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a
    avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni
    avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
    cqm_mbm_local split_lock_detect wbnoinvd dtherm ida arat pln pts avx512vbmi umip pku
    ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
    avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d arch_capabilities

  /proc/cpuinfo cache data
    cache size : 49152 KB

  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 8 9 10 11 12 13 14 15 32 33 34 35 36 37 38 39 40 41 42 43
    44 45 46 47
    node 0 size: 124311 MB
    node 0 free: 120299 MB
    node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 48 49 50 51 52 53 54 55 56
    57 58 59 60 61 62 63
    node 1 size: 124468 MB
    node 1 free: 126863 MB
    node distances:
    node   0   1
      0:  10  11
      1:  11  10

  From /proc/meminfo
    MemTotal:       263723036 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

$SPECspeed^®2017\_fp\_base = 124$

$SPECspeed^®2017\_fp\_peak = 126$

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

Test Date: Oct-2021
Hardware Availability: Apr-2021
Software Availability: Apr-2021

Platform Notes (Continued)

```
/sbin/tuned-adm active
    Current active profile: throughput-performance

From /etc/*release* /etc/*version*
    os-release:
        NAME="Red Hat Enterprise Linux"
        VERSION="8.3 (Ootpa)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="8.3"
        PLATFORM_ID="platform:el8"
        PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
        ANSI_COLOR="0;31"
    redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
    system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
    Linux X12SPM-01 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020 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 Oct 8 23:44

SPEC is set to: /home/cpu2017
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda3       xfs   185G   20G  165G  11% /

From /sys/devices/virtual/dmi/id
    Vendor:         Supermicro
    Product:        Super Server
```

(Continued on next page)

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

CPU2017 License: 001176		**Test Date:**	Oct-2021
Test Sponsor:	Supermicro	**Hardware Availability:**	Apr-2021
Tested by:	Supermicro	**Software Availability:**	Apr-2021

Platform Notes (Continued)

```
      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:
     8x SK Hynix HMA84GR7CJR4N-XN 32 GB 2 rank 3200, configured at 2666

 BIOS:
    BIOS Vendor:      American Megatrends International, LLC.
    BIOS Version:     1.1a
    BIOS Date:        07/30/2021
    BIOS Revision:    5.22

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C                    | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
                     | 644.nab_s(base)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C                    | 644.nab_s(peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C                    | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
                     | 644.nab_s(base)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

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

Test Date: Oct-2021
Hardware Availability: Apr-2021
Software Availability: Apr-2021

Compiler Version Notes (Continued)

```
==============================================================================
C                    | 644.nab_s(peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++, C, Fortran | 607.cactuBSSN_s(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.1 Build 20201112_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 20201112_000000
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
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran          | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
                 | 654.roms_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran, C       | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
                 | 628.pop2_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.1 Build 20201112_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 20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Oct-2021

Hardware Availability: Apr-2021

Software Availability: Apr-2021

Base Compiler Invocation

C benchmarks:
`icc`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`ifort icc`

Benchmarks using Fortran, C, and C++:
`icpc icc ifort`

Base Portability Flags

603.bwaves_s: `-DSPEC_LP64`
607.cactuBSSN_s: `-DSPEC_LP64`
619.lbm_s: `-DSPEC_LP64`
621.wrf_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
627.cam4_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
628.pop2_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian -assume byterecl`
638.imagick_s: `-DSPEC_LP64`
644.nab_s: `-DSPEC_LP64`
649.fotonik3d_s: `-DSPEC_LP64`
654.roms_s: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
`-m64 -std=c11 -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP -mbranches-within-32B-boundaries`

Fortran benchmarks:
`-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs -mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Benchmarks using both Fortran and C:
`-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp`

(Continued on next page)

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Oct-2021

Hardware Availability: Apr-2021

Software Availability: Apr-2021

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
```
-DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

644.nab_s: `icx`

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
ifort icc
```

Benchmarks using Fortran, C, and C++:
```
icpc icc ifort
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

619.lbm_s: `basepeak = yes`

638.imagick_s: `basepeak = yes`

644.nab_s: `-m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -fiopenmp`

(Continued on next page)

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 124

SPECspeed®2017_fp_peak = 126

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

Test Date: Oct-2021
Hardware Availability: Apr-2021
Software Availability: Apr-2021

Peak Optimization Flags (Continued)

644.nab_s (continued):
```
-DSPEC_OPENMP -qopt-mem-layout-trans=4
-fimf-accuracy-bits=14:sqrt
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:

603.bwaves_s: `-m64 -Wl,-z,muldefs -prof-gen`(pass 1) `-prof-use`(pass 2)
```
-DSPEC_SUPPRESS_OPENMP -DSPEC_OPENMP -ipo -xCORE-AVX2
-O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

649.fotonik3d_s: `Same as 603.bwaves_s`

654.roms_s: `basepeak = yes`

Benchmarks using both Fortran and C:

621.wrf_s: `-m64 -std=c11 -Wl,-z,muldefs -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
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

627.cam4_s: `basepeak = yes`

628.pop2_s: `basepeak = yes`

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: `basepeak = yes`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-ICX-revB.html

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-ICX-revB.xml

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro

IoT SuperServer SYS-210P-FRDN6T
(X12SPM-LN6TF , Intel Xeon Gold 6338N)

$SPECspeed®2017\_fp\_base = 124$

$SPECspeed®2017\_fp\_peak = 126$

CPU2017 License: 001176		**Test Date:**	Oct-2021
Test Sponsor:	Supermicro	**Hardware Availability:**	Apr-2021
Tested by:	Supermicro	**Software Availability:**	Apr-2021

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

Tested with SPEC CPU®2017 v1.1.8 on 2021-10-11 05:14:01-0400.
Report generated on 2021-10-28 11:35:49 by CPU2017 PDF formatter v6442.
Originally published on 2021-10-26.