SPEC CPU®2017 Floating Point Rate Result

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero DS400TN-55R
(2.20 GHz,Intel Xeon Silver 4210)

$SPECrate®2017\_fp\_base = 125$

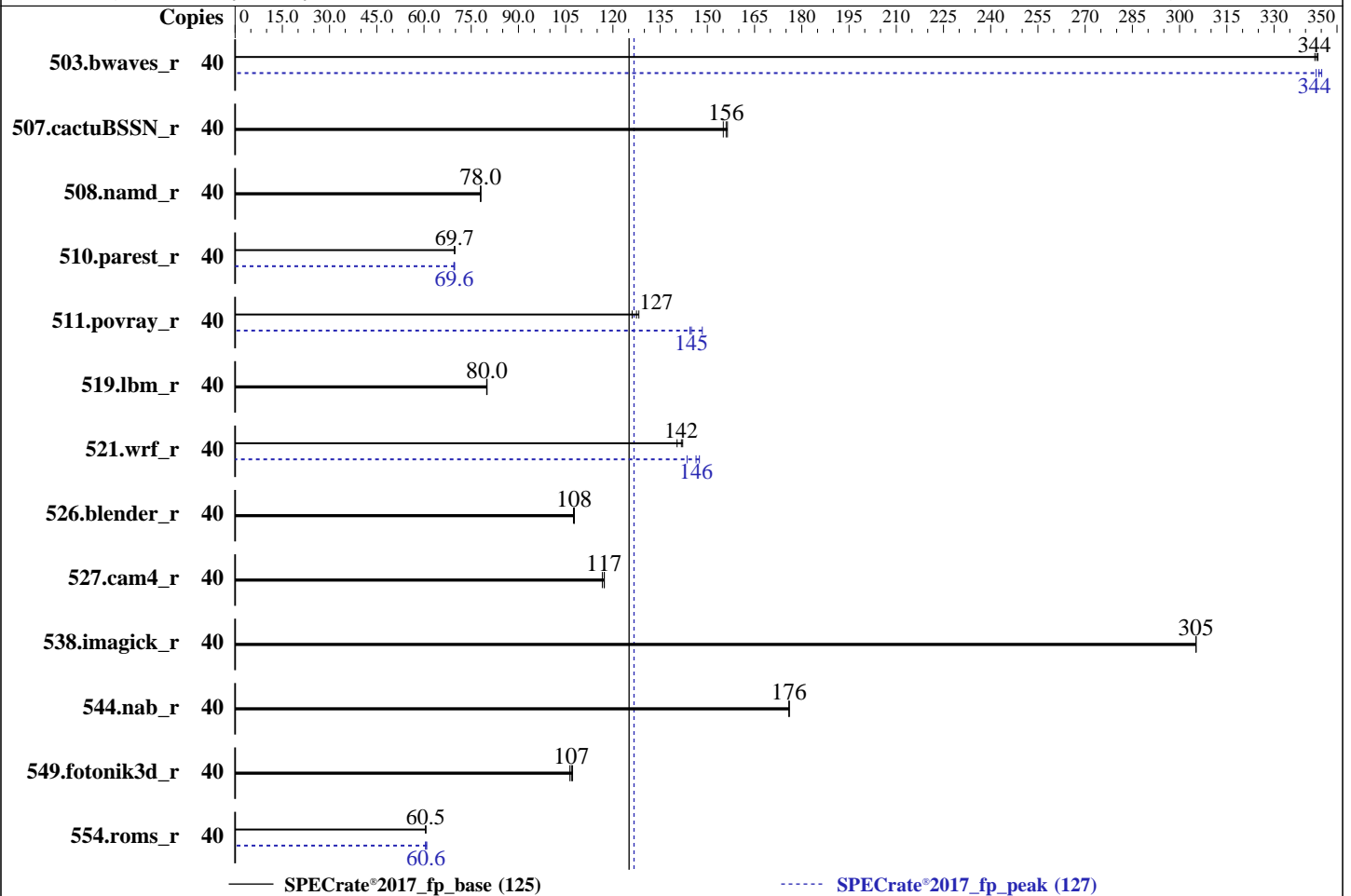$SPECrate®2017\_fp\_peak = 127$

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Feb-2021

Hardware Availability: Aug-2020

Software Availability: Dec-2020

Copies		
503.bwaves_r	40	344 / 344
507.cactuBSSN_r	40	156
508.namd_r	40	78.0
510.parest_r	40	69.7 / 69.6
511.povray_r	40	127 / 145
519.lbm_r	40	80.0
521.wrf_r	40	142 / 146
526.blender_r	40	108
527.cam4_r	40	117
538.imagick_r	40	305
544.nab_r	40	176
549.fotonik3d_r	40	107
554.roms_r	40	60.5 / 60.6

Scale: 0 15.0 30.0 45.0 60.0 75.0 90.0 105 120 135 150 165 180 195 210 225 240 255 270 285 300 315 330 350

——— SPECrate®2017_fp_base (125)   ----- SPECrate®2017_fp_peak (127)

Hardware

CPU Name: Intel Xeon Silver 4210
  Max MHz: 3200
  Nominal: 2200
Enabled: 20 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: 13.75 MB I+D on chip per chip
  Other: None
Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R, running at 2400)
Storage: 1 x 480 GB SATA SSD
Other: None

Software

OS: CentOS Linux release 8.3.2011
Kernel 4.18.0-240.el8.x86_64
4.18.0-240.el8.x86_64
Compiler: C/C++: Version 19.1.2.254 of Intel C/C++
Compiler Build 20200623 for Linux;
Fortran: Version 19.1.2.254 of Intel Fortran
Compiler Build 20200623 for Linux
Parallel: No
Firmware: Version 3.4 released Nov-2020
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 set to prefer performance at the cost of additional power usage.

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Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
503.bwaves_r	40	1166	344	1170	343	**1168**	**344**	40	1168	343	1162	345	**1165**	**344**
507.cactuBSSN_r	40	324	156	**325**	**156**	327	155	40	324	156	**325**	**156**	327	155
508.namd_r	40	488	77.9	**487**	**78.0**	487	78.1	40	488	77.9	**487**	**78.0**	487	78.1
510.parest_r	40	1499	69.8	1503	69.6	**1500**	**69.7**	40	1505	69.5	1500	69.7	**1504**	**69.6**
511.povray_r	40	**733**	**127**	741	126	728	128	40	629	148	**644**	**145**	646	144
519.lbm_r	40	528	79.9	**527**	**80.0**	527	80.0	40	528	79.9	**527**	**80.0**	527	80.0
521.wrf_r	40	**632**	**142**	638	140	630	142	40	**612**	**146**	608	147	624	144
526.blender_r	40	565	108	**566**	**108**	567	107	40	565	108	**566**	**108**	567	107
527.cam4_r	40	**597**	**117**	600	117	596	117	40	**597**	**117**	600	117	596	117
538.imagick_r	40	**326**	**305**	326	305	326	305	40	**326**	**305**	326	305	326	305
544.nab_r	40	383	176	**383**	**176**	382	176	40	383	176	**383**	**176**	382	176
549.fotonik3d_r	40	1466	106	1454	107	**1459**	**107**	40	1466	106	1454	107	**1459**	**107**
554.roms_r	40	1049	60.6	**1050**	**60.5**	1050	60.5	40	1044	60.9	**1048**	**60.6**	1051	60.5

SPECrate®2017_fp_base =	**125**
SPECrate®2017_fp_peak =	**127**

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

General Notes

Binaries compiled on a system with 2x Intel Cascade Lake CPU 4214R + 384 GB RAM
memory using Centos 8.2 x86_64
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

(Continued on next page)

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Tested by: Tyrone Systems		**Software Availability:**	Dec-2020

General Notes (Continued)

```
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
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
built with the Centos 8.2 x86_64, 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 = Maximum Performance
SNC = Enable
Stale AtoS = Disable
IMC Interleaving = 1-way Interleave
Patrol Scrub = Disable

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
 running on localhost.localdomain Thu Feb 25 17:53:05 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) Silver 4210 CPU @ 2.20GHz
       2  "physical id"s (chips)
       40 "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 : 10
       siblings  : 20
       physical 0: cores 0 1 2 3 4 8 9 10 11 12
       physical 1: cores 0 1 2 3 4 8 9 10 11 12

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

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Platform Notes (Continued)

```
        CPU(s):                40
        On-line CPU(s) list:   0-39
        Thread(s) per core:    2
        Core(s) per socket:    10
        Socket(s):             2
        NUMA node(s):          2
        Vendor ID:             GenuineIntel
        CPU family:            6
        Model:                 85
        Model name:            Intel(R) Xeon(R) Silver 4210 CPU @ 2.20GHz
        Stepping:              7
        CPU MHz:               2738.747
        CPU max MHz:           3200.0000
        CPU min MHz:           1000.0000
        BogoMIPS:              4400.00
        Virtualization:        VT-x
        L1d cache:             32K
        L1i cache:             32K
        L2 cache:              1024K
        L3 cache:              14080K
        NUMA node0 CPU(s):     0-9,20-29
        NUMA node1 CPU(s):     10-19,30-39
        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 cdp_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 mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt
    avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc
    cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts pku ospke avx512_vnni md_clear
    flush_l1d arch_capabilities

 /proc/cpuinfo cache data
    cache size : 14080 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 20 21 22 23 24 25 26 27 28 29
    node 0 size: 185188 MB
    node 0 free: 171688 MB
    node 1 cpus: 10 11 12 13 14 15 16 17 18 19 30 31 32 33 34 35 36 37 38 39
    node 1 size: 186668 MB
    node 1 free: 184338 MB
```

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Hardware Availability: Aug-2020
Software Availability: Dec-2020

Platform Notes (Continued)

```
  node distances:
  node   0   1
    0:  10  21
    1:  21  10

 From /proc/meminfo
    MemTotal:       394870792 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

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

 /sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
    performance

 From /etc/*release* /etc/*version*
    centos-release: CentOS Linux release 8.3.2011
    centos-release-upstream: Derived from Red Hat Enterprise Linux 8.3
    os-release:
       NAME="CentOS Linux"
       VERSION="8"
       ID="centos"
       ID_LIKE="rhel fedora"
       VERSION_ID="8"
       PLATFORM_ID="platform:el8"
       PRETTY_NAME="CentOS Linux 8"
       ANSI_COLOR="0;31"
    redhat-release: CentOS Linux release 8.3.2011
    system-release: CentOS Linux release 8.3.2011
    system-release-cpe: cpe:/o:centos:centos:8

 uname -a:
    Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Fri Sep 25 19:48:47 UTC 2020
    x86_64 x86_64 x86_64 GNU/Linux

 Kernel self-reported vulnerability status:

 CVE-2018-12207 (iTLB Multihit):              KVM: Mitigation: Split huge pages
 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
```

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Platform Notes (Continued)

```
                                               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):     Mitigation: TSX disabled

  run-level 3 Feb 25 02:33

  SPEC is set to: /home/cpu2017
     Filesystem          Type  Size  Used Avail Use% Mounted on
     /dev/mapper/cl-home xfs   372G   26G  347G   7% /home

  From /sys/devices/virtual/dmi/id
     Vendor:         Tyrone Systems
     Product:        X11DPi-N(T)
     Product Family: SMC X11
     Serial:         123456789

  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:
      4x NO DIMM NO DIMM
      12x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2400

  BIOS:
    BIOS Vendor:       American Megatrends Inc.
    BIOS Version:      3.4
    BIOS Date:         11/23/2020
    BIOS Revision:     5.14

  (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) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10006: ignoring unknown option
  '-i_version=19.1.2.254' [-Woption-ignored]
------------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================
C++               | 508.namd_r(base, peak) 510.parest_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icpc (NextGen): command line warning #10006: ignoring unknown option
  '-i_version=19.1.2.254' [-Woption-ignored]
------------------------------------------------------------------------------


==============================================================================
C++, C            | 511.povray_r(base) 526.blender_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
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------------------------------------------------------------------------------


==============================================================================
C++, C            | 511.povray_r(peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


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C++, C            | 511.povray_r(base) 526.blender_r(base, peak)
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Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
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```

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Compiler Version Notes (Continued)

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icc (NextGen): command line warning #10006: ignoring unknown option
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Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------


==========================================================================
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
--------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icpc (NextGen): command line warning #10006: ignoring unknown option
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Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10006: ignoring unknown option
  '-i_version=19.1.2.254' [-Woption-ignored]
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 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 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------


==========================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base, peak)
--------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
```

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  64, Version 19.1.2.254 Build 20200623
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Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.2.254 Build 20200623
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------------------------------------------------------------------------------


==============================================================================
Fortran, C     | 521.wrf_r(base) 527.cam4_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
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------------------------------------------------------------------------------
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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.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:
```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-64/lib -ljemalloc
```

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero DS400TN-55R
(2.20 GHz,Intel Xeon Silver 4210)

SPECrate®2017_fp_base = 125

SPECrate®2017_fp_peak = 127

CPU2017 License: 006042
Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems

Test Date: Feb-2021
Hardware Availability: Aug-2020
Software Availability: Dec-2020

Base Optimization Flags (Continued)

C++ benchmarks:
```
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-64/lib
-ljemalloc
```

Fortran benchmarks:
```
-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -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 -L/usr/local/je5.0.1-64/lib
-ljemalloc
```

Benchmarks using both Fortran and C:
```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -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
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries -L/usr/local/je5.0.1-64/lib -ljemalloc
```

Benchmarks using both C and C++:
```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-64/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -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
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries -L/usr/local/je5.0.1-64/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:
```
icc
```

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero DS400TN-55R
(2.20 GHz,Intel Xeon Silver 4210)

SPECrate®2017_fp_base = 125

SPECrate®2017_fp_peak = 127

CPU2017 License: 006042		**Test Date:**	Feb-2021
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Aug-2020
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2020

Peak Compiler Invocation (Continued)

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: `basepeak = yes`

538.imagick_r: `basepeak = yes`

544.nab_r: `basepeak = yes`

C++ benchmarks:

508.namd_r: `basepeak = yes`

510.parest_r: `-m64 -qnextgen`
`-Wl,-plugin-opt=-x86-branches-within-32B-boundaries`
`-Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/je5.0.1-64/lib -ljemalloc`

Fortran benchmarks:

(Continued on next page)

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero DS400TN-55R
(2.20 GHz,Intel Xeon Silver 4210)

SPECrate®2017_fp_base = 125

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CPU2017 License: 006042		**Test Date:**	Feb-2021
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Aug-2020
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2020

Peak Optimization Flags (Continued)

503.bwaves_r: `-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -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 -L/usr/local/je5.0.1-64/lib -ljemalloc`

549.fotonik3d_r: `basepeak = yes`

554.roms_r: `Same as 503.bwaves_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/je5.0.1-64/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/je5.0.1-64/lib -ljemalloc`

526.blender_r: `basepeak = yes`

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: `basepeak = yes`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revB.xml

SPEC CPU®2017 Floating Point Rate Result

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Tyrone Systems
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Tyrone Camarero DS400TN-55R
(2.20 GHz,Intel Xeon Silver 4210)

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CPU2017 License: 006042		**Test Date:**	Feb-2021
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Aug-2020
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2020

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

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