SPEC CPU®2017 Floating Point Rate Result

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2020
Hardware Availability: Mar-2019
Software Availability: May-2019

Copies

Benchmark		
503.bwaves_r	32	209
	16	219
507.cactuBSSN_r	32	62.9 / 62.9
508.namd_r	32	57.8 / 58.0
510.parest_r	32	46.7
	16	56.3
511.povray_r	32	87.3 / 95.4
519.lbm_r	32	46.6 / 47.1
521.wrf_r	32	91.1
	16	96.3
526.blender_r	32	69.0 / 68.8
527.cam4_r	32	83.5 / 87.2
538.imagick_r	32	172 / 175
544.nab_r	32	122 / 122
549.fotonik3d_r	32	65.6 / 65.4
554.roms_r	32	50.0
	16	56.1

—— SPECrate®2017_fp_base (79.6)
----- SPECrate®2017_fp_peak (83.2)

Hardware

CPU Name: Intel Xeon Silver 4110
 Max MHz: 3000
 Nominal: 2100
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: 11 MB I+D on chip per chip
 Other: None
Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R, running at 2400)
Storage: 1 x 960 GB SATA SSD
Other: None

Software

OS: Red Hat Enterprise Linux Server release 7.6 (Maipo)
3.10.0-957.el7.x86_64
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 2.00.40 released May-2020 BIOS
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: None
Power Management: BIOS set to prefer performance at the cost of additional power usage

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

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

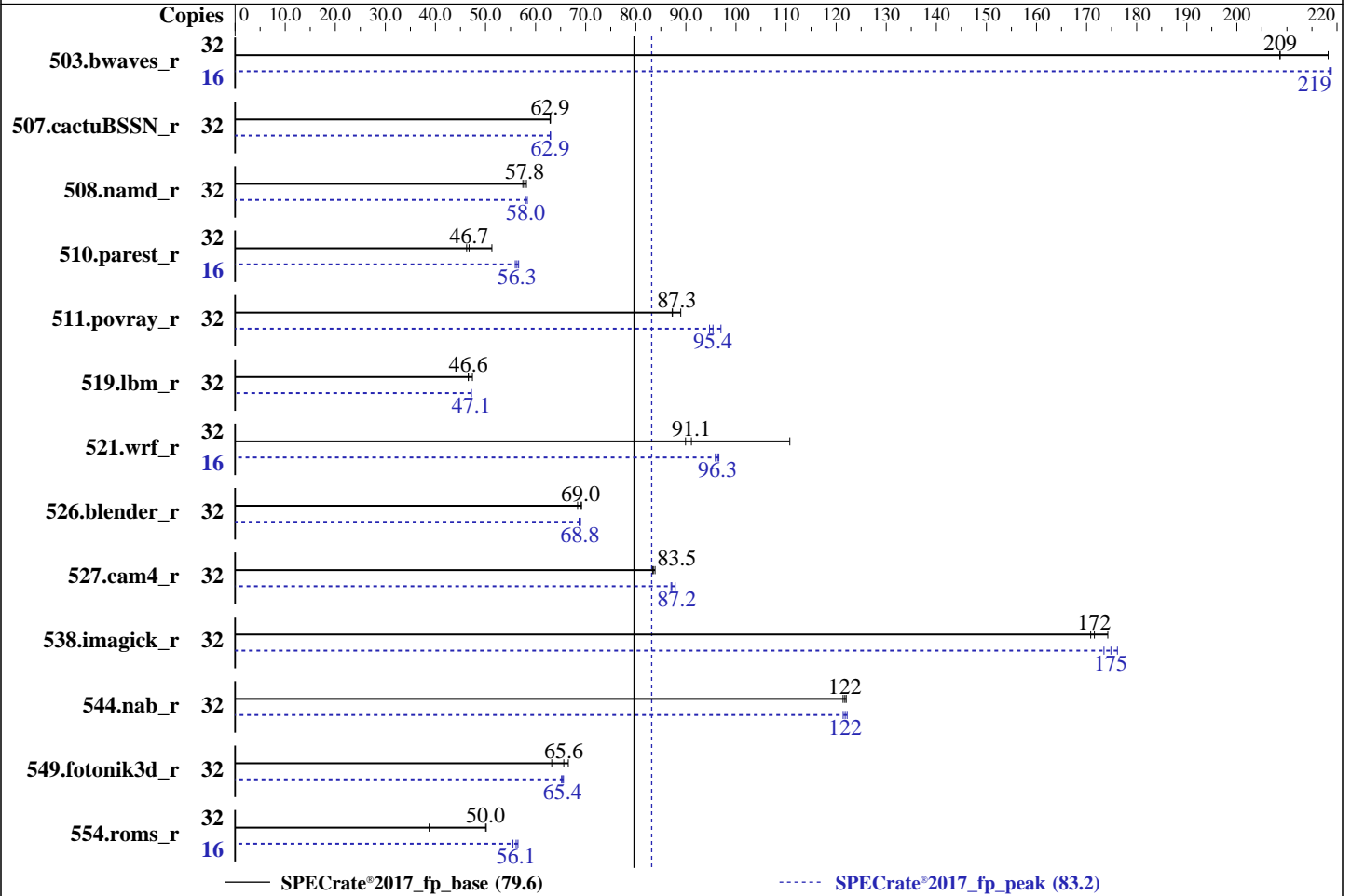| New H3C Technologies Co., Ltd.	SPECrate®2017_fp_base = 79.6
H3C UniServer R4900 G3 (Intel Xeon Silver 4110)	SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2020
Hardware Availability: Mar-2019
Software Availability: May-2019

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	32	**1538**	**209**	1538	209	1470	218	16	733	219	**734**	**219**	734	219
507.cactuBSSN_r	32	644	62.9	**644**	**62.9**	643	63.0	32	643	63.0	**644**	**62.9**	644	62.9
508.namd_r	32	**526**	**57.8**	523	58.2	529	57.5	32	525	57.9	**524**	**58.0**	521	58.3
510.parest_r	32	1811	46.2	**1792**	**46.7**	1633	51.3	16	748	55.9	**744**	**56.3**	739	56.6
511.povray_r	32	**856**	**87.3**	840	89.0	856	87.3	32	770	97.0	**783**	**95.4**	789	94.7
519.lbm_r	32	**724**	**46.6**	724	46.6	712	47.4	32	**716**	**47.1**	716	47.1	715	47.1
521.wrf_r	32	**787**	**91.1**	797	89.9	647	111	16	374	95.9	**372**	**96.3**	371	96.6
526.blender_r	32	**706**	**69.0**	713	68.4	705	69.2	32	710	68.7	707	69.0	**708**	**68.8**
527.cam4_r	32	672	83.3	**670**	**83.5**	667	83.8	32	643	87.0	637	87.9	**642**	**87.2**
538.imagick_r	32	457	174	**464**	**172**	466	171	32	**455**	**175**	459	173	452	176
544.nab_r	32	441	122	444	121	**442**	**122**	32	441	122	444	121	**442**	**122**
549.fotonik3d_r	32	1973	63.2	1874	66.5	**1900**	**65.6**	32	1902	65.6	**1908**	**65.4**	1913	65.2
554.roms_r	32	1312	38.7	**1016**	**50.0**	1014	50.1	16	**453**	**56.1**	458	55.5	450	56.5
SPECrate®2017_fp_base =		**79.6**												
SPECrate®2017_fp_peak =		**83.2**												

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/speccpu/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:
sync; echo 3>   /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066   **Test Date:** Jun-2020
Test Sponsor: New H3C Technologies Co., Ltd.   **Hardware Availability:** Mar-2019
Tested by: New H3C Technologies Co., Ltd.   **Software Availability:** May-2019

General Notes (Continued)

```
 numactl --interleave=all runcpu <etc>
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.
```

Platform Notes

```
BIOS Settings:
 Set SNC to Enabled
 Set IMC Interleaving to 1-way Interleave
 Set XPT Prefetcher to Enabled

 Sysinfo program /home/speccpu/bin/sysinfo
 Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
 running on localhost.localdomain Tue Jun  9 23:19:36 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) Silver 4110 CPU @ 2.10GHz
       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 1 2 3 4 5 6 7
       physical 1: cores 0 1 2 3 4 5 6 7

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

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066   **Test Date:** Jun-2020

Test Sponsor: New H3C Technologies Co., Ltd.   **Hardware Availability:** Mar-2019

Tested by: New H3C Technologies Co., Ltd.   **Software Availability:** May-2019

Platform Notes (Continued)

```
        Model:                  85
        Model name:             Intel(R) Xeon(R) Silver 4110 CPU @ 2.10GHz
        Stepping:               4
        CPU MHz:                1300.964
        CPU max MHz:            3000.0000
        CPU min MHz:            800.0000
        BogoMIPS:               4200.00
        Virtualization:         VT-x
        L1d cache:              32K
        L1i cache:              32K
        L2 cache:               1024K
        L3 cache:               11264K
        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 rdtscp
    lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
    aperfmperf eagerfpu 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 epb cat_l3 cdp_l3 intel_ppin
    intel_pt ssbd mba ibrs ibpb stibp tpr_shadow vnmi 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 avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv1
    cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts hwp
    hwp_act_window hwp_epp hwp_pkg_req pku ospke spec_ctrl intel_stibp flush_l1d

 /proc/cpuinfo cache data
    cache size : 11264 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 16 17 18 19 20 21 22 23
    node 0 size: 196191 MB
    node 0 free: 190875 MB
    node 1 cpus: 8 9 10 11 12 13 14 15 24 25 26 27 28 29 30 31
    node 1 size: 196608 MB
    node 1 free: 191456 MB
    node distances:
    node   0   1
      0:  10  21
      1:  21  10

 From /proc/meminfo
    MemTotal:       395596828 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB
```

(Continued on next page)

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066   **Test Date:**   Jun-2020
Test Sponsor: New H3C Technologies Co., Ltd.   **Hardware Availability:** Mar-2019
Tested by: New H3C Technologies Co., Ltd.   **Software Availability:** May-2019

Platform Notes (Continued)

```
From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.6 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VARIANT="Server"
      VARIANT_ID="server"
      VERSION_ID="7.6"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.6 (Maipo)"
   redhat-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.6:ga:server

uname -a:
   Linux localhost.localdomain 3.10.0-957.el7.x86_64 #1 SMP Thu Oct 4 20:48:51 UTC 2018
   x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault):        Mitigation: PTE Inversion; VMX: SMT vulnerable,
                                           L1D conditional cache flushes
Microarchitectural Data Sampling:         No status reported
CVE-2017-5754 (Meltdown):                 Mitigation: PTI
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled
                                           via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):        Mitigation: Load fences, __user pointer
                                           sanitization
CVE-2017-5715 (Spectre variant 2):        Mitigation: IBRS (kernel)

run-level 3 Jun 9 23:18 last=5

SPEC is set to: /home/speccpu
   Filesystem              Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   839G   14G  826G   2% /home

From /sys/devices/virtual/dmi/id
    BIOS:    American Megatrends Inc. 2.00.40 05/25/2020
    Vendor:  New H3C Technologies Co., Ltd.
    Product: UniServer R4900 G3
    Serial:  210235A3QUH188000033

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.
```

(Continued on next page)

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066   **Test Date:**   Jun-2020
Test Sponsor: New H3C Technologies Co., Ltd.   **Hardware Availability:** Mar-2019
Tested by: New H3C Technologies Co., Ltd.   **Software Availability:** May-2019

Platform Notes (Continued)

```
     Memory:
        12x Micron 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666, configured at 2400
        12x NO DIMM NO DIMM

   (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 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.
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)
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

$SPECrate^{®}2017\_fp\_base = 79.6$

$SPECrate^{®}2017\_fp\_peak = 83.2$

CPU2017 License: 9066		**Test Date:**	Jun-2020
Test Sponsor:	New H3C Technologies Co., Ltd.	**Hardware Availability:**	Mar-2019
Tested by:	New H3C Technologies Co., Ltd.	**Software Availability:**	May-2019

Compiler Version Notes (Continued)

```
    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
```

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
```

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

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066   **Test Date:**   Jun-2020
Test Sponsor: New H3C Technologies Co., Ltd.   **Hardware Availability:** Mar-2019
Tested by: New H3C Technologies Co., Ltd.   **Software Availability:**   May-2019

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:
`-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=4`

C++ benchmarks:
`-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=4`

Fortran benchmarks:
`-xCORE-AVX512 -ipo -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:
`-xCORE-AVX512 -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-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=4`

Benchmarks using Fortran, C, and C++:
`-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=4 -auto`
`-nostandard-realloc-lhs -align array32byte`

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

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_base = 79.6

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2020
Hardware Availability: Mar-2019
Software Availability: May-2019

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
```

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=4`

538.imagick_r: `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`

544.nab_r: Same as 538.imagick_r

C++ benchmarks:

508.namd_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=4`

(Continued on next page)

New H3C Technologies Co., Ltd.

SPECrate®2017_fp_base = 79.6

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066		**Test Date:**	Jun-2020
Test Sponsor:	New H3C Technologies Co., Ltd.	**Hardware Availability:**	Mar-2019
Tested by:	New H3C Technologies Co., Ltd.	**Software Availability:**	May-2019

Peak Optimization Flags (Continued)

510.parest_r: `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`

Fortran benchmarks:

503.bwaves_r: `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -auto -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=4 -auto -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=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-AVX512 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`

526.blender_r: `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4`

Benchmarks using Fortran, C, and C++:
`-xCORE-AVX512 -ipo -O3 -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
http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.html
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.3-SKL-RevE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.xml
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.3-SKL-RevE.xml

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECrate®2017_fp_base = 79.6

H3C UniServer R4900 G3 (Intel Xeon Silver 4110)

SPECrate®2017_fp_peak = 83.2

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2020
Hardware Availability: Mar-2019
Software Availability: May-2019

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 2020-06-09 11:19:35-0400.
Report generated on 2020-07-07 14:27:39 by CPU2017 PDF formatter v6255.
Originally published on 2020-07-07.