New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

**SPECrate®2017_fp_base = 255**

**SPECrate®2017_fp_peak = 264**

**CPU2017 License:** 9066  
**Test Date:** Aug-2021

**Test Sponsor:** New H3C Technologies Co., Ltd.  
**Hardware Availability:** Mar-2020

**Tested by:** New H3C Technologies Co., Ltd.  
**Software Availability:** Dec-2020

### Hardware

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
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<td>503.bwaves_r</td>
<td>64</td>
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<tr>
<td>507.cactuBSSN_r</td>
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<td>538.imagick_r</td>
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</tr>
<tr>
<td>554.roms_r</td>
<td>64</td>
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</table>

**CPU Name:** Intel Xeon Gold 6246R  
**Max MHz:** 4100

**Nominal:** 3400  
**Enabled:** 32 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:** 35.75 MB I+D on chip per chip

**Memory:** 384 GB (12 x 32 GB 2Rx8 PC4-2933Y-R)

**Storage:** 1 x 1.6 TB SSD NVME

### Software

**OS:** Red Hat Enterprise Linux release 8.2 (Ootpa)  
**4.18.0-193.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;

**Classic Build 20201112 for Linux**

**Firmware:** Version 2.00.50 released Jun-2021 BIOS

**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
New H3C Technologies Co., Ltd.  H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

SPECrate®2017_fp_base = 255
SPECrate®2017_fp_peak = 264

Results Table

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<td></td>
</tr>
</tbody>
</table>

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:/home/speccpu/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
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)
New H3C Technologies Co., Ltd. | SPEC CPU®2017 Floating Point Rate Result
---|---
H3C UniServer R4900 G3 (Intel Xeon Gold 6246R) | SPECrate®2017_fp_base = 255

| SPECrate®2017_fp_peak = 264 |
---|---
CPU2017 License: | 9066
Test Sponsor: | New H3C Technologies Co., Ltd.
Tested by: | New H3C Technologies Co., Ltd.
Test Date: | Aug-2021
Hardware Availability: | Mar-2020
Software Availability: | Dec-2020

**General Notes (Continued)**

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.
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.:
numactl --interleave=all runcpu <etc>
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:
Set SNC to Enabled
Set IMC Interleaving to 1-way Interleave
Set Patrol Scrub to Disabled
Set XPT Prefetcher to Enabled

Sysinfo program /home/speccpu/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acac64d
running on localhost.localdomain Tue Aug 24 02:47:46 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 6246R CPU @ 3.40GHz
  2 "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 : 16
  siblings : 32
  physical 0: cores 0 1 2 3 4 5 6 12 13 16 17 18 19 24 28 29
  physical 1: cores 0 1 2 3 6 11 12 13 16 17 18 20 21 24 27 29

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
New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

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**CPU2017 License:** 9066  | **Test Date:** Aug-2021 |
| **Test Sponsor:** New H3C Technologies Co., Ltd.  | **Hardware Availability:** Mar-2020 |
| **Tested by:** New H3C Technologies Co., Ltd.  | **Software Availability:** Dec-2020 |

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**Platform Notes (Continued)**

- Thread(s) per core: 2
- Core(s) per socket: 16
- Socket(s): 2
- NUMA node(s): 4
- Vendor ID: GenuineIntel
- CPU family: 6
- Model: 85
- Model name: Intel(R) Xeon(R) Gold 6246R CPU @ 3.40GHz
- Stepping: 7
- CPU MHz: 4000.245
- CPU max MHz: 4100.0000
- CPU min MHz: 1200.0000
- BogoMIPS: 6800.00
- Virtualization: VT-x
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 1024K
- L3 cache: 36608K
- NUMA node0 CPU(s): 0-3, 9-11, 13, 32-35, 41-43, 45
- NUMA node1 CPU(s): 4-8, 12, 14, 15, 36-40, 44, 46, 47
- NUMA node2 CPU(s): 16-19, 24-26, 29, 48-51, 56-58, 61
- NUMA node3 CPU(s): 20-23, 27, 28, 30, 31, 52-55, 59, 60, 62, 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 dtses64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 lse4_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_pni ssbd mbab ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdtp _a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsaveopt xsavec xsaves cqm_llc cqm_occu0(llc cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req pkp ospke avx512_vnni md_clear flush_l1d arch_capabilities

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 9 10 11 13 32 33 34 35 41 42 43 45
- node 0 size: 95083 MB
- node 0 free: 84809 MB
- node 1 cpus: 4 5 6 7 8 12 14 15 36 37 38 39 40 44 46 47
- node 1 size: 96764 MB
- node 1 free: 89670 MB

(Continued on next page)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

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

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

**Platform Notes (Continued)**

```
node 2 cpus: 16 17 18 19 24 25 26 29 48 49 50 51 56 57 58 61
node 2 size: 96736 MB
node 2 free: 89777 MB
node 3 cpus: 20 21 22 23 27 28 30 31 52 53 54 55 59 60 62 63
node 3 size: 96763 MB
node 3 free: 89670 MB
node distances:
  node 0 1 2 3
  0: 10 11 21 21
  1: 11 10 21 21
  2: 21 21 10 11
  3: 21 21 11 10
```

From `/proc/meminfo`
```
MemTotal: 394597008 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/sbin/tuned-adm active
```
Current active profile: accelerator-performance
```
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

From `/etc/*release*/etc/*version`
```
NAME="Red Hat Enterprise Linux"
VERSION="8.2 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.2"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.2 (Ootpa)"
ANSI_COLOR=\"0;31\"
redhat-release: Red Hat Enterprise Linux release 8.2 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.2 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.2:ga
```

uname -a:
```
Linux localhost.localdomain 4.18.0-193.el8.x86_64 #1 SMP Fri Mar 27 14:35:58 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

(Continued on next page)
New H3C Technologies Co., Ltd.  
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Platform Notes (Continued)

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 sanitation
CVE-2017-5715 (Spectre variant 2):
Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): No status reported
CVE-2019-11135 (TSX Asynchronous Abort):
Mitigation: Clear CPU buffers; SMT vulnerable

SPEC is set to: /home/speccpu

Filesystem  Type  Size  Used  Avail  Use%  Mounted on
/dev/mapper/rhel-home  xfs   1.5T  138G  1.3T  10% /home

From /sys/devices/virtual/dmi/id
Vendor: New H3C Technologies Co., Ltd.
Product: UniServer R4900 G3
Product Family: Rack
Serial: 210235A3TKH193000008

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:
12x Micron 18ASF4G72PDZ-2G9E1 32 GB 2 rank 2933
12x NO DIMM NO DIMM

BIOS:
BIOS Vendor: American Megatrends Inc.
BIOS Version: 2.00.50
BIOS Date: 06/16/2021
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)
==============================================================================

(Continued on next page)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

Compiler Version Notes (Continued)

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++               | 508.namd_r(base, peak) 510.parest_r(base, 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            | 511.povray_r(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.

--------------------------------------------------------------------------
C++, C            | 511.povray_r(base) 526.blender_r(base, peak)
--------------------------------------------------------------------------

Intel (R) oneAPI DPC++/C++ Compiler for applications running on Intel (R) 64,
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--------------------------------------------------------------------------
C++, C            | 511.povray_r(peak)
--------------------------------------------------------------------------

Intel (R) C++ Intel (R) 64 Compiler Classic for applications running on
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Intel (R) C Intel (R) 64 Compiler Classic for applications running on Intel (R)
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(Continued on next page)
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**SPEC CPU®2017 Floating Point Rate Result**

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Software Availability: Dec-2020

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**Compiler Version Notes (Continued)**

C++, C  | 511.povray_r(base) 526.blender_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
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C++, C, Fortran  | 507.cactuBSSN_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
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Version 2021.1 Build 20201113  
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Fortran  | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)  
| 554.roms_r(base, peak)

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
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Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Fortran, C  | 521.wrf_r(peak)

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
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Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)  
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Fortran, C  | 527.cam4_r(base, peak)
New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

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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.

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*

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New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Gold 6246R)

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Test Date: Aug-2021
Tested by: New H3C Technologies Co., Ltd.
Hardware Availability: Mar-2020
Software Availability: Dec-2020

**Base Compiler Invocation (Continued)**

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
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

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
```

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

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

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

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

Peak Compiler Invocation

C benchmarks:
\texttt{icx}

C++ benchmarks:
\texttt{icpx}

Fortran benchmarks:
\texttt{ifort}

Benchmarks using both Fortran and C:
\texttt{521.wrf_r:ifort icc}
\texttt{527.cam4_r:ifort icx}

Benchmarks using both C and C++:

(Continued on next page)
Peak Compiler Invocation ( Continued )

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.lbmr_r: basepeak = yes
538.imagick_r: basepeak = yes
544.nab_r: -w -std=c11 -m64 -W1,-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 -W1,-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:
503.bwaves_r: -w -m64 -W1,-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

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New H3C Technologies Co., Ltd. | SPECrate®2017_fp_base = 255
H3C UniServer R4900 G3 (Intel Xeon Gold 6246R) | SPECrate®2017_fp_peak = 264

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Tested by: New H3C Technologies Co., Ltd.

**Peak Optimization Flags (Continued)**

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/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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.4-CLX-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/New_H3C-Platform-Settings-V1.4-CLX-RevB.xml

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