New H3C Technologies Co., Ltd.

H3C UniServer R4900 G3 (Intel Xeon Gold 5218N)

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.
Test Date: Aug-2021
Hardware Availability: Jun-2019
Software Availability: Dec-2020

503.bwaves_r

507.cactuBSSN_r

508.namd_r

510.parest_r

511.povray_r

519.lbm_r

521.wrf_r

526.blender_r

527.cam4_r

538.imagick_r

544.nab_r

549.fotonik3d_r

554.roms_r

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
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<tbody>
<tr>
<td>CPU Name: Intel Xeon Gold 5218N</td>
<td>OS: Red Hat Enterprise Linux release 8.2 (Ootpa) 4.18.0-193.el8.x86_64</td>
</tr>
<tr>
<td>Max MHz: 3700</td>
<td>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</td>
</tr>
<tr>
<td>Nominal: 2300</td>
<td>Classic Build 20201112 for Linux</td>
</tr>
<tr>
<td>Enabled: 32 cores, 2 chips, 2 threads/core</td>
<td>Parallel: No</td>
</tr>
<tr>
<td>Orderable: 1,2 chips</td>
<td>Firmware: Version 2.00.49 released Apr-2021 BIOS</td>
</tr>
<tr>
<td>Cache L1: 32 KB I + 32 KB D on chip per core</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>L2: 1 MB I+D on chip per core</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>L3: 22 MB I+D on chip per chip</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Other: None</td>
<td>Peak Pointers: 64-bit</td>
</tr>
<tr>
<td>Memory: 384 GB (12 x 32 GB 2Rx8 PC4-2933Y-R, running at 2666)</td>
<td>Other: jemalloc memory allocator V5.0.1</td>
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<tr>
<td>Storage: 1 x 1.6 TB SSD NVME</td>
<td>Power Management: BIOS set to prefer performance at the cost of additional power usage</td>
</tr>
<tr>
<td>Other: None</td>
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</tbody>
</table>
# SPEC CPU®2017 Floating Point Rate Result

New H3C Technologies Co., Ltd. | SPECrate®2017_fp_base = 194
H3C UniServer R4900 G3 (Intel Xeon Gold 5218N) | SPECrate®2017_fp_peak = 201

**CPU2017 License:** 9066  |  **Test Date:** Aug-2021
**Test Sponsor:** New H3C Technologies Co., Ltd.  |  **Hardware Availability:** Jun-2019
**Tested by:** New H3C Technologies Co., Ltd.  |  **Software Availability:** Dec-2020

---

## Results Table

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<td>500</td>
<td>102</td>
<td>495</td>
<td>103</td>
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</tbody>
</table>

### 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)

(Continued on next page)
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 982a61ec0915b55891ef0e16aaca6d
running on localhost.localdomain Tue Aug 17 13:00:49 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 5218N CPU @ 2.30GHz
 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 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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

(Continued on next page)
## Platform Notes (Continued)

<table>
<thead>
<tr>
<th>Thread(s) per core:</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core(s) per socket:</td>
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<tr>
<td>Socket(s):</td>
<td>2</td>
</tr>
<tr>
<td>NUMA node(s):</td>
<td>4</td>
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<tr>
<td>Vendor ID:</td>
<td>GenuineIntel</td>
</tr>
<tr>
<td>CPU family:</td>
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<tr>
<td>Model:</td>
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<tr>
<td>Model name:</td>
<td>Intel(R) Xeon(R) Gold 5218N CPU @ 2.30GHz</td>
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<tr>
<td>Stepping:</td>
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<td>CPU max MHz:</td>
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<td>L1i cache:</td>
<td>32K</td>
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<tr>
<td>NUMA node0 CPU(s):</td>
<td>0-3,8-11,32-35,40-43</td>
</tr>
<tr>
<td>NUMA node1 CPU(s):</td>
<td>4-7,12-15,36-39,44-47</td>
</tr>
<tr>
<td>NUMA node2 CPU(s):</td>
<td>16-19,24-27,48-51,56-59</td>
</tr>
<tr>
<td>NUMA node3 CPU(s):</td>
<td>20-23,28-31,52-55,60-63</td>
</tr>
<tr>
<td>Flags:</td>
<td>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_ppn管理体制 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vmmi 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 intel_pt avx512cd avx512bw avx512vl xsaveopt xsave xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req pku ospke avx512_vnni md_clear flush_lld arch_capabilities</td>
</tr>
</tbody>
</table>

```
/proc/cpuinfo cache data
    cache size : 22528 KB
```

From numactl --hardware

```
WARNING: a numactl 'node' might or might not correspond to a physical chip.
    available: 4 nodes (0-3)
    node 0 cpus: 0 1 2 3 8 9 10 11 32 33 34 35 40 41 42 43
    node 0 size: 95091 MB
    node 0 free: 85513 MB
    node 1 cpus: 4 5 6 7 12 13 14 15 36 37 38 39 44 45 46 47
    node 1 size: 96764 MB
    node 1 free: 88999 MB
```

(Continued on next page)
## Platform Notes (Continued)

```markdown
node 2 cpus: 16 17 18 19 24 25 26 27 48 49 50 51 56 57 58 59
node 2 size: 96736 MB
node 2 free: 89698 MB
node 3 cpus: 20 21 22 23 28 29 30 31 52 53 54 55 60 61 62 63
node 3 size: 96763 MB
node 3 free: 89710 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: 394605200 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*
- os-release:
  - 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

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New H3C Technologies Co., Ltd. | SPECrate\textsuperscript{\textcopyright}2017\_fp\_base = 194
H3C UniServer R4900 G3 (Intel Xeon Gold 5218N) | SPECrate\textsuperscript{\textcopyright}2017\_fp\_peak = 201

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<thead>
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<th>CPU2017 License:</th>
<th>Test Sponsor:</th>
<th>Test Date:</th>
</tr>
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<tr>
<td>9066</td>
<td>New H3C Technologies Co., Ltd.</td>
<td>Aug-2021</td>
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<tr>
<td>Tested by:</td>
<td>New H3C Technologies Co., Ltd.</td>
<td>Hardware Availability: Jun-2019</td>
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</table>

| Software Availability: | |
|------------------------| Dec-2020 |

**Platform Notes (Continued)**

<table>
<thead>
<tr>
<th>CVE-2017-5754 (Meltdown):</th>
<th>Not affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE-2018-3639 (Speculative Store Bypass):</td>
<td>Mitigation: Speculative Store Bypass disabled via prctl and seccomp</td>
</tr>
<tr>
<td>CVE-2017-5753 (Spectre variant 1):</td>
<td>Mitigation: usercopy/swapgs barriers and _user pointer sanitation</td>
</tr>
<tr>
<td>CVE-2017-5715 (Spectre variant 2):</td>
<td>Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling</td>
</tr>
<tr>
<td>CVE-2020-0543 (Special Register Buffer Data Sampling): No status reported</td>
<td></td>
</tr>
<tr>
<td>CVE-2019-11135 (TSX Asynchronous Abort):</td>
<td>Mitigation: Clear CPU buffers; SMT vulnerable</td>
</tr>
</tbody>
</table>

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, configured at 2666
- 12x NO DIMM NO DIMM

BIOS:
- BIOS Vendor: American Megatrends Inc.
- BIOS Version: 2.00.49
- BIOS Date: 04/16/2021
- 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.  
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<tr>
<th>CPU2017 License: 9066</th>
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</thead>
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<td>SPECrate\textsuperscript{2017_\text{fp_peak}} = 201</td>
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<td>Tested by: New H3C Technologies Co., Ltd.</td>
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</table>

**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.

==============================================================================
<table>
<thead>
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<th>C++, C</th>
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| 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.  |
-----------------------------------------------------------------------------
<table>
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<th>C++, C</th>
<th>511.povray_r(base) 526.blender_r(base, peak)</th>
</tr>
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</table>
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113  
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-----------------------------------------------------------------------------

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**SPECrate®2017_fp_peak = 201**

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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,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
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 | 507.cactuBSSN_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.
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.
```

```
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
Intel(R) 64, Version 2021.1 Build 20201112_000000
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
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
```

```
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base, peak)
```

(Continued on next page)
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**Compiler Version Notes (Continued)**

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Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
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
Intel(R) 64, Version 2021.1 Build 20201112_000000
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Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
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Fortran, C | 521.wrf_r(base) 527.cam4_r(base, peak)
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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC+/C++ Compiler for applications running on Intel(R) 64,
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**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
New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 5218N)

SPECrate®2017_fp_base = 194
SPECrate®2017_fp_peak = 201

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.
Test Date: Aug-2021
Hardware Availability: Jun-2019
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

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### Base Optimization Flags (Continued)

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

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

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

### Peak Compiler Invocation

**C benchmarks:**
- `icx`

**C++ benchmarks:**
- `icpx`

**Fortran benchmarks:**
- `ifort`

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

Benchmarks using both C and C++:

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

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

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

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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](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/New_H3C-Platform-Settings-V1.4-CLX-RevB.xml](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.4-CLX-RevB.xml)

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

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