New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)  

<table>
<thead>
<tr>
<th>SPEC CPU®2017 Floating Point Rate Result</th>
</tr>
</thead>
</table>

**Test Sponsor:** New H3C Technologies Co., Ltd.  
**Test Date:** Jun-2021  
**Hardware Availability:** Mar-2020  
**Tested by:** New H3C Technologies Co., Ltd.  
**Software Availability:** Dec-2020  

<table>
<thead>
<tr>
<th>Test</th>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>(235)</td>
<td></td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>508.namd_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>510.parest_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>511.povray_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>519.lbm_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>521.wrf_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>526.blender_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>527.cam4_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>538.imagick_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>544.nab_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>554.roms_r</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware</th>
</tr>
</thead>
</table>
| **CPU Name:** Intel Xeon Gold 6226R  
**Max MHz:** 3900  
**Nominal:** 2900  
**Enabled:** 32 cores, 2 chips, 2 threads/core  
**Orderable:** 1,2 chips  
**Cache L1:** 32 KB I + 32 KB D on chip per core  
**Cache L2:** 1 MB I+D on chip per core  
**Cache L3:** 22 MB I+D on chip per core  
**Memory:** 384 GB (12 x 32 GB 2Rx8 PC4-2933V-R)  
**Storage:** 1 x 1.6 TB SSD NVMe  
**Other:** None |

<table>
<thead>
<tr>
<th>Software</th>
</tr>
</thead>
</table>
| **OS:** Red Hat Enterprise Linux release 8.2 (Ootpa)  
**Compiler:** C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;  
Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;  
C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux |
| **Firmware:** No  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 64-bit  
**Peak Pointers:** 64-bit  
**Power Management:** BIOS set to prefer performance at the cost of additional power usage |
# SPEC CPU®2017 Floating Point Rate Result

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

**SPECrate®2017_fp_base = 224**  
**SPECrate®2017_fp_peak = 235**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>64</td>
<td>1341</td>
<td>479</td>
<td>1341</td>
<td>479</td>
<td>1340</td>
<td>479</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>64</td>
<td>283</td>
<td>287</td>
<td>276</td>
<td>293</td>
<td>279</td>
<td>291</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>64</td>
<td>362</td>
<td>168</td>
<td>363</td>
<td>167</td>
<td>363</td>
<td>168</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>64</td>
<td>1424</td>
<td>118</td>
<td>1420</td>
<td>118</td>
<td>1420</td>
<td>118</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>64</td>
<td>603</td>
<td>248</td>
<td>604</td>
<td>247</td>
<td>602</td>
<td>248</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>64</td>
<td>457</td>
<td>148</td>
<td>455</td>
<td>148</td>
<td>455</td>
<td>148</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>64</td>
<td>708</td>
<td>202</td>
<td>697</td>
<td>206</td>
<td>707</td>
<td>203</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>64</td>
<td>444</td>
<td>220</td>
<td>443</td>
<td>220</td>
<td>443</td>
<td>220</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>64</td>
<td>490</td>
<td>228</td>
<td>493</td>
<td>227</td>
<td>489</td>
<td>229</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>64</td>
<td>240</td>
<td>664</td>
<td>240</td>
<td>663</td>
<td>240</td>
<td>664</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>64</td>
<td>271</td>
<td>398</td>
<td>272</td>
<td>396</td>
<td>271</td>
<td>397</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>64</td>
<td>1728</td>
<td>144</td>
<td>1725</td>
<td>145</td>
<td>1726</td>
<td>145</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>64</td>
<td>1111</td>
<td>91.5</td>
<td>1110</td>
<td>91.7</td>
<td>1109</td>
<td>91.7</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"
MALLOCS_CONF = "retain:true"
```

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Redhat 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)
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 Patrol Scrub to Disabled
Set XPT Prefetch to Enabled

Sysinfo program /home/speccpu/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca64d64
running on localhost.localdomain Sun Jun 20 08:50:16 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 6226R CPU @ 2.90GHz
  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
Thread(s) per core:   2

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

**SPECrate®2017_fp_base = 224**  
**SPECrate®2017_fp_peak = 235**

---

**Platform Notes (Continued)**

- 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 6226R CPU @ 2.90GHz
- Stepping: 7
- CPU MHz: 3600.038
- CPU max MHz: 3900.0000
- CPU min MHz: 1200.0000
- BogoMIPS: 5800.00
- Virtualization: VT-x
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 1024K
- L3 cache: 22528K
- NUMA node0 CPU(s): 0-3,8-11,32-35,40-43
- NUMA node1 CPU(s): 4-7,12-15,36-39,44-47
- NUMA node2 CPU(s): 16-19,24-27,52-55,60-63
- NUMA node3 CPU(s): 20-23,28-31,56-59
- Flags: fpu vme de pse npxe mce cmov pat pse36 clflush dtc acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant-tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcd ccm3 ccm4 ssa svm xpm cmv8by4 others — x86_64

From /proc/cpuinfo
- cache size: 22528 KB

(Continued on next page)
New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

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

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>224</td>
<td>235</td>
</tr>
</tbody>
</table>

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

**Platform Notes (Continued)**

```
node 2 size: 96764 MB
node 2 free: 89571 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: 88988 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:       394598312 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*
```
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
CVE-2017-5754 (Meltdown): Not affected

(Continued on next page)
New H3C Technologies Co., Ltd. | SPEC CPU®2017 Floating Point Rate Result

H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

| SPECrate®2017_fp_base = 224 |
| SPECrate®2017_fp_peak = 235 |

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

Test Date: Jun-2021
Hardware Availability: Mar-2020
Software Availability: Dec-2020

Platform Notes (Continued)

CVE-2018-3639 (Speculative Store Bypass):
Mitigation: Speculative Store Bypass disabled via prctl and seccomp

CVE-2017-5753 (Spectre variant 1):
Mitigation: usercopy/swapgs barriers and __user pointer sanitization

CVE-2017-5715 (Spectre variant 2):
Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

CVE-2020-0543 (Special Register Buffer Data Sampling): No status reported
CVE-2019-11135 (TSX Asynchronous Abort):
Mitigation: Clear CPU buffers; SMT vulnerable

run-level 3 Jun 20 01:15

SPEC is set to: /home/speccpu
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 1.5T 97G 1.4T 7% /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 Hynix HMA84GR7CJR4N-WM 32 GB 2 rank 2933
12x NO DIMM NO DIMM

BIOS:
Vendor: American Megatrends Inc.
Version: 2.00.48
Date: 03/10/2021
Revision: 5.14

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>519.lbm_r(base, peak) 538.imagick_r(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>544.nab_r(base, peak)</td>
</tr>
</tbody>
</table>

(Continued on next page)
## 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>
<tr>
<th>Language</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++</td>
<td>508.namd_r(base, peak) 510.parest_r(base, peak)</td>
</tr>
</tbody>
</table>

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>
<tr>
<th>Language</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++, C</td>
<td>511.povray_r(peak)</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Language</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++, C</td>
<td>511.povray_r(base) 526.blender_r(base, peak)</td>
</tr>
</tbody>
</table>

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>
<tr>
<th>Language</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++, C</td>
<td>511.povray_r(peak)</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Language</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++, C</td>
<td>511.povray_r(base) 526.blender_r(base, peak)</td>
</tr>
</tbody>
</table>

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>
<tr>
<th>Language</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++, C</td>
<td>511.povray_r(peak)</td>
</tr>
</tbody>
</table>

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

H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

Spec®2017_fp_base = 224
Spec®2017_fp_peak = 235

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

Compiler Version Notes (Continued)

<table>
<thead>
<tr>
<th>C++, C</th>
<th>511.povray_r(base) 526.blender_r(base, peak)</th>
</tr>
</thead>
</table>
| 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>
<tr>
<th>C++, C, Fortran</th>
<th>507.cactuBSSN_r(base, peak)</th>
</tr>
</thead>
</table>
| 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>
<tr>
<th>Fortran</th>
<th>503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)</th>
</tr>
</thead>
</table>
| 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.|

<table>
<thead>
<tr>
<th>Fortran, C</th>
<th>521.wrf_r(peak)</th>
</tr>
</thead>
</table>
| 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.|

<table>
<thead>
<tr>
<th>Fortran, C</th>
<th>521.wrf_r(base) 527.cam4_r(base, peak)</th>
</tr>
</thead>
</table>

(Continued on next page)
New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)  

**SPECrate®2017_fp_base = 224**  
**SPECrate®2017_fp_peak = 235**

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

**Test Date:** Jun-2021  
**Hardware Availability:** Mar-2020  
**Software Availability:** Dec-2020

---

**Compiler Version Notes (Continued)**

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Ensemble Compiler Invocation

---

**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

(Continued on next page)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

SPECrate\textsuperscript{\textregistered}2017\_fp\_base = 224
SPECrate\textsuperscript{\textregistered}2017\_fp\_peak = 235

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Test Date: Jun-2021
Hardware Availability: Mar-2020
Tested by: New H3C Technologies Co., Ltd.
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.cactus\_BSSN\_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\_CASE\_FLAG -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)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

SPECrater®2017_fp_base = 224
SPECrater®2017_fp_peak = 235

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

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)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

SPECrate®2017_fp_base = 224
SPECrate®2017_fp_peak = 235

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

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
-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 -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

(Continued on next page)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G3 (Intel Xeon Gold 6226R)

SPECrate®2017_fp_base = 224
SPECrate®2017_fp_peak = 235

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

CPU2017 Floating Point Rate Result

Peak Optimization Flags (Continued)

549.fotonik3d_r: basepeak = yes
554.roms_r: Same as 503.bwaves_r

Benchmarks using both Fortran and C:


527.cam4_r: basepeak = yes

Benchmarks using both C and C++:


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

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.8 on 2021-06-19 20:50:15-0400.
Report generated on 2021-07-21 15:36:30 by CPU2017 PDF formatter v6442.
Originally published on 2021-07-20.