# SPEC CPU®2017 Integer Rate Result

## New H3C Technologies Co., Ltd.

### CPU Name:
Intel Xeon Gold 6342

- **Max MHz:** 3500
- **Nominal:** 2800
- **Enabled:** 48 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 chips
- **Cache L1:** 32 KB I + 48 KB D on chip per core
- **L2:** 1.25 MB I+D on chip per core
- **L3:** 36 MB I+D on chip per chip
- **Other:** None
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC4-3200V-R)
- **Storage:** 1 x 480 GB SATA SSD
- **Other:** None

### Software
- **OS:** Red Hat Enterprise Linux release 8.3 (Ootpa) 4.18.0-240.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;
  C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux
- **Parallel:** No
- **Firmware:** Version 5.25 released May-2021
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 32/64-bit
- **Other:** jemalloc memory allocator V5.0.1
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage

### Test Sponsor:
New H3C Technologies Co., Ltd.

### Tested by:
New H3C Technologies Co., Ltd.

## SPECrate®2017

### Test Date:
Jun-2021

### Hardware Availability:
Apr-2021

### Software Availability:
Dec-2020

### Results:

<table>
<thead>
<tr>
<th>Spec benchmark</th>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>307</td>
<td>391</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>298</td>
<td>354</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>224</td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>479</td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td></td>
<td>784</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>295</td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>289</td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td></td>
<td>798</td>
</tr>
<tr>
<td>557.xz_r</td>
<td></td>
<td>204</td>
</tr>
</tbody>
</table>

---

### Hardware Details

- **CPU Name:** Intel Xeon Gold 6342
- **Max MHz:** 3500
- **Nominal:** 2800
- **Enabled:** 48 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 chips
- **Cache L1:** 32 KB I + 48 KB D on chip per core
- **L2:** 1.25 MB I+D on chip per core
- **L3:** 36 MB I+D on chip per chip
- **Other:** None
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC4-3200V-R)
- **Storage:** 1 x 480 GB SATA SSD
- **Other:** None

---

### Software Details

- **OS:** Red Hat Enterprise Linux release 8.3 (Ootpa) 4.18.0-240.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;
  C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux
- **Parallel:** No
- **Firmware:** Version 5.25 released May-2021
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 32/64-bit
- **Other:** jemalloc memory allocator V5.0.1
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage
## Results Table

<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>
<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>500.perlbench_r</td>
<td>96</td>
<td>581</td>
<td>263</td>
<td>582</td>
<td>263</td>
<td>581</td>
<td>263</td>
<td>96</td>
<td>499</td>
<td>306</td>
<td>497</td>
<td>307</td>
<td>497</td>
<td>307</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>96</td>
<td>458</td>
<td>297</td>
<td>455</td>
<td>298</td>
<td>455</td>
<td>298</td>
<td>96</td>
<td>384</td>
<td>354</td>
<td>385</td>
<td>353</td>
<td>383</td>
<td>355</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>96</td>
<td>249</td>
<td>623</td>
<td>252</td>
<td>615</td>
<td>250</td>
<td>620</td>
<td>96</td>
<td>249</td>
<td>623</td>
<td>252</td>
<td>615</td>
<td>250</td>
<td>620</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>96</td>
<td>561</td>
<td>225</td>
<td>562</td>
<td>224</td>
<td>562</td>
<td>224</td>
<td>96</td>
<td>561</td>
<td>225</td>
<td>562</td>
<td>224</td>
<td>562</td>
<td>224</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>96</td>
<td>211</td>
<td>480</td>
<td>212</td>
<td>477</td>
<td>212</td>
<td>479</td>
<td>96</td>
<td>211</td>
<td>480</td>
<td>212</td>
<td>477</td>
<td>212</td>
<td>479</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>96</td>
<td>214</td>
<td>785</td>
<td>215</td>
<td>783</td>
<td>214</td>
<td>784</td>
<td>96</td>
<td>205</td>
<td>822</td>
<td>205</td>
<td>822</td>
<td>204</td>
<td>822</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>96</td>
<td>373</td>
<td>295</td>
<td>373</td>
<td>295</td>
<td>373</td>
<td>295</td>
<td>96</td>
<td>373</td>
<td>295</td>
<td>373</td>
<td>295</td>
<td>373</td>
<td>295</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>96</td>
<td>550</td>
<td>289</td>
<td>550</td>
<td>289</td>
<td>550</td>
<td>289</td>
<td>96</td>
<td>550</td>
<td>289</td>
<td>550</td>
<td>289</td>
<td>550</td>
<td>289</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>96</td>
<td>316</td>
<td>796</td>
<td>315</td>
<td>798</td>
<td>315</td>
<td>799</td>
<td>96</td>
<td>316</td>
<td>796</td>
<td>315</td>
<td>798</td>
<td>315</td>
<td>799</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>96</td>
<td>497</td>
<td>209</td>
<td>497</td>
<td>209</td>
<td>497</td>
<td>209</td>
<td>96</td>
<td>510</td>
<td>203</td>
<td>508</td>
<td>204</td>
<td>507</td>
<td>204</td>
</tr>
</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/spec2017/lib/intel64:/home/spec2017/lib/ia32:/home/spec2017/je5.0.1-32"

MALLOC_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) is mitigated in the system as tested and documented.
**General Notes (Continued)**

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:

```shell
sync; echo 3> /proc/sys/vm/drop_caches
```

runcpu command invoked through numactl i.e.:

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


**Platform Notes**

BIOS settings:
- Set SNC to Enabled
- Set Patrol Scrub to Disabled
- Set XPT Prefetch to Enabled

Sysinfo program /home/spec2017/bin/sysinfo

Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca64d running on localhost.localdomain Tue Jun 8 20:27:59 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

```plaintext
model name : Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
2  "physical id"s (chips)
96 "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 : 24
  siblings : 48
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
```

From lscpu from util-linux 2.32.1:

```plaintext
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 96
On-line CPU(s) list: 0-95
Thread(s) per core: 2
Core(s) per socket: 24
```

(Continued on next page)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G5 (Intel Xeon Gold 6342)

| SPECerate®2017_int_base = 377 |
| SPECerate®2017_int_peak = 391 |

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

---

**Platform Notes (Continued)**

- **Socket(s):** 2  
- **NUMA node(s):** 4  
- **Vendor ID:** GenuineIntel  
- **CPU family:** 6  
- **Model:** 106  
- **Model name:** Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz  
- **Stepping:** 6  
- **CPU MHz:** 3300.000  
- **CPU max MHz:** 3500.0000  
- **CPU min MHz:** 800.0000  
- **BogoMIPS:** 5600.00  
- **Virtualization:** VT-x  
- **L1d cache:** 48K  
- **L1i cache:** 32K  
- **L2 cache:** 1280K  
- **L3 cache:** 36864K  
- **NUMA node0 CPU(s):** 0-11,48-59  
- **NUMA node1 CPU(s):** 12-23,60-71  
- **NUMA node2 CPU(s):** 24-35,72-83  
- **NUMA node3 CPU(s):** 36-47,84-95  
- **Flags:** fpu vme de pse tsc msr pae mce 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 aperf perf ofs pwp mru msrs clflushopt specnews intelHardened vpt tech xapic vsuid cmvt最初 is a physical chip.

Warning: a numactl 'node' might or might not correspond to a physical chip.

```plaintext
# 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 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59
node 0 size: 125767 MB
node 0 free: 127789 MB
node 1 cpus: 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59
node 1 size: 126580 MB
node 1 free: 128725 MB
```

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

node 2 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 72 73 74 75 76 77 78 79 80 81 82 83
node 2 size: 126430 MB
node 2 free: 128618 MB
node 3 cpus: 36 37 38 39 40 41 42 43 44 45 46 47 84 85 86 87 88 89 90 91 92 93 94 95
node 3 size: 126484 MB
node 3 free: 128346 MB
node distances:
  node 0  1  2  3
  0:  10  11  20  20
  1:  11  10  20  20
  2:  20  20  10  11
  3:  20  20  11  10

From /proc/meminfo
MemTotal:       527737780 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="8.3 (Ootpa)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="8.3"
    PLATFORM_ID="platform:el8"
    PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
    ANSI_COLOR="0;31"
  redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
  system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
  system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
  Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020
  x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

- CVE-2018-12207 (iTLB Multihit): Not affected
- CVE-2018-3620 (L1 Terminal Fault): Not affected
- Microarchitectural Data Sampling: Not affected

(Continued on next page)
New H3C Technologies Co., Ltd.
H3C UniServer R4900 G5 (Intel Xeon Gold 6342)

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

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

SPECrate®2017_int_base = 377
SPECrate®2017_int_peak = 391

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 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): Not affected

run-level 3 Jun 8 20:26

SPEC is set to: /home/spec2017
Filesystem            Type Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   372G   96G  276G  26% /home

From /sys/devices/virtual/dmi/id
Vendor:         New H3C Technologies Co., Ltd.
Product:        H3C UniServer R4900 G5
Product Family: Rack
Serial:         210235A2RBH214000004

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:
  16x Micron 36ASF4G72PZ-3G2E7 32 GB 2 rank 3200
  16x NO DIMM NO DIMM

BIOS:
  BIOS Vendor: American Megatrends International, LLC.
  BIOS Version: 5.25
  BIOS Date: 05/19/2021
  BIOS Revision: 5.22

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C      | 500.perlbench_r(peak) 557.xz_r(peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)

(Continued on next page)
New H3C Technologies Co., Ltd. | SPEC®CPU®2017 Integer Rate Result
H3C UniServer R4900 G5 (Intel Xeon Gold 6342) | SPEC®CPU®2017\_int\_base = 377
| SPEC®CPU®2017\_int\_peak = 391

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

**Compiler Version Notes (Continued)**

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C | 502.gcc\_r(peak)
---
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)
| 525.x264\_r(base, peak) 557.xz\_r(base)
---
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 | 500.perlbench\_r(peak) 557.xz\_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 | 502.gcc\_r(peak)
---
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)
| 525.x264\_r(base, peak) 557.xz\_r(base)
---
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.

(Continued on next page)
New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G5 (Intel Xeon Gold 6342)

**Compiler Version Notes (Continued)**

<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbENCHMARK_R(peak) 557.xz_R(peak)</th>
</tr>
</thead>
</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>C</th>
<th>502.gcc_R(peak)</th>
</tr>
</thead>
</table>
|         | Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113
|         | Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbENCHMARK_R(base) 502.gcc_R(base) 505.mcf_R(base, peak) 525.x264_R(base, peak) 557.xz_R(base)</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++</th>
<th>520.omnetpp_R(base, peak) 523.xalancbmk_R(base, peak) 531.deepsjeng_R(base, peak) 541.leela_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>548.exchange2_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. |

### Base Compiler Invocation

C benchmarks:

icx

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

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G5 (Intel Xeon Gold 6342)

| SPECrate®2017_int_base = 377 |
| SPECrate®2017_int_peak = 391 |

**CPU2017 License:** 9066

**Test Sponsor:** New H3C Technologies Co., Ltd.

**Test Date:** Jun-2021

**Hardware Availability:** Apr-2021

**Tested by:** New H3C Technologies Co., Ltd.

**Software Availability:** Dec-2020

---

### Base Compiler Invocation (Continued)

**C++ benchmarks:**

icpx

**Fortran benchmarks:**

ifort

---

### Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

---

### Base Optimization Flags

**C benchmarks:**

-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

**C++ benchmarks:**

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

**Fortran benchmarks:**

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-auto -mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc
New H3C Technologies Co., Ltd. | SPECrate®2017_int_base = 377
H3C UniServer R4900 G5 (Intel Xeon Gold 6342) | SPECrate®2017_int_peak = 391

<table>
<thead>
<tr>
<th>CPU2017 License: 9066</th>
<th>Test Date: Jun-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: New H3C Technologies Co., Ltd.</td>
<td>Hardware Availability: Apr-2021</td>
</tr>
<tr>
<td>Tested by: New H3C Technologies Co., Ltd.</td>
<td>Software Availability: Dec-2020</td>
</tr>
</tbody>
</table>

### Peak Compiler Invocation

C benchmarks (except as noted below):

- icx
- 500.perlbench_r: icc
- 557.xz_r: icc

C++ benchmarks:

- icpx

Fortran benchmarks:

- ifort

### Peak Portability Flags

<table>
<thead>
<tr>
<th>500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64</th>
</tr>
</thead>
<tbody>
<tr>
<td>502.gcc_r: -D_FILE_OFFSET_BITS=64</td>
</tr>
<tr>
<td>505.mcf_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>520.omnetpp_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX</td>
</tr>
<tr>
<td>525.x264_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>531.deepsjeng_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>541.leela_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>548.exchange2_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>557.xz_r: -DSPEC_LP64</td>
</tr>
</tbody>
</table>

### Peak Optimization Flags

C benchmarks:


- 502.gcc_r: -m32 -L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/ia32_lin -std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1) -fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -flto -Ofast(pass 1) -O3 -ffast-math -qopt-mem-layout-trans=4

(Continued on next page)
New H3C Technologies Co., Ltd. SPECrate®2017_int_base = 377
H3C UniServer R4900 G5 (Intel Xeon Gold 6342) SPECrate®2017_int_peak = 391

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

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

Peak Optimization Flags (Continued)

502.gcc_r (continued):
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
-O3 -ffast-math -gopt-mem-layout-trans=4 -fno-alias
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

557.xz_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-gopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

Fortran benchmarks:

548.exchange2_r: basepeak = yes

The flags files that were used to format this result can be browsed at

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-V1.0-CPX-RevC.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 2021-06-08 08:27:58-0400.
Report generated on 2021-07-21 15:35:50 by CPU2017 PDF formatter v6442.
Originally published on 2021-07-20.