



SPEC CPU®2017 Integer Speed Result

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New H3C Technologies Co., Ltd.

SPECspeed®2017_int_base = 15.1

H3C UniServer R6900 G6 (Intel Xeon Platinum 8444H)

SPECspeed®2017_int_peak = 15.3

CPU2017 License: 9066

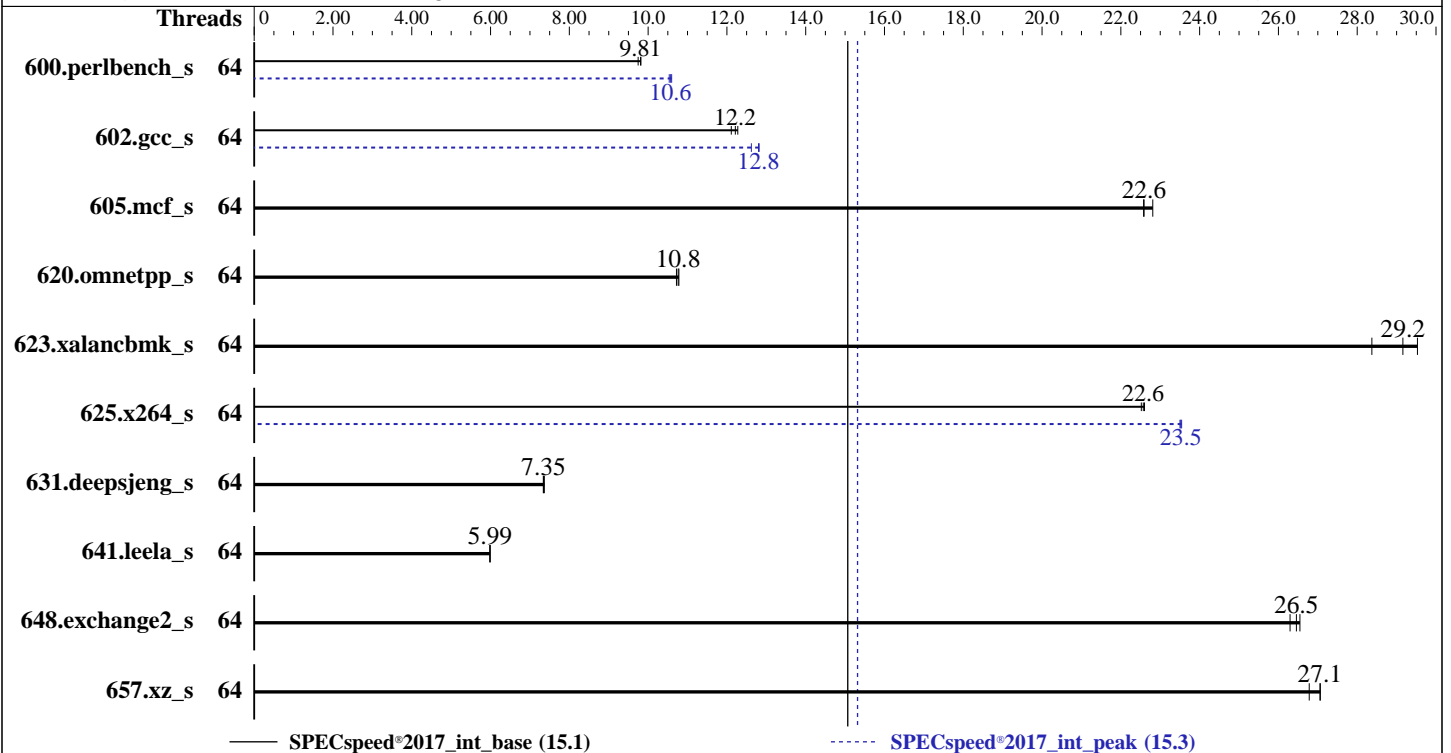
Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jul-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022



Hardware

CPU Name: Intel Xeon Platinum 8444H
 Max MHz: 4000
 Nominal: 2900
 Enabled: 64 cores, 4 chips
 Orderable: 1,2,3,4 chips
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 45 MB I+D on chip per chip
 Other: None
 Memory: 2 TB (32 x 64 GB 2Rx8 PC5-4800B-R)
 Storage: 1 x 7.68 TB NVME SSD
 Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
 5.14.0-70.22.1.el9_0.x86_64
 Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2023.0 of Intel Fortran Compiler
 for Linux;
 Parallel: Yes
 Firmware: Version 5.29 released Jun-2023 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 and OS set to prefer performance at the cost
 of additional power usage.



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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	182	9.75	181	9.81	181	9.82	64	167	10.6	168	10.6	168	10.5
602.gcc_s	64	329	12.1	326	12.2	324	12.3	64	316	12.6	311	12.8	311	12.8
605.mcf_s	64	209	22.6	207	22.8	209	22.6	64	209	22.6	207	22.8	209	22.6
620.omnetpp_s	64	152	10.7	152	10.8	151	10.8	64	152	10.7	152	10.8	151	10.8
623.xalancbmk_s	64	48.6	29.2	48.0	29.5	49.9	28.4	64	48.6	29.2	48.0	29.5	49.9	28.4
625.x264_s	64	78.3	22.5	78.1	22.6	78.2	22.6	64	75.1	23.5	74.9	23.5	75.0	23.5
631.deepsjeng_s	64	195	7.36	195	7.34	195	7.35	64	195	7.36	195	7.34	195	7.35
641.leela_s	64	285	5.99	285	5.99	285	5.98	64	285	5.99	285	5.99	285	5.98
648.exchange2_s	64	111	26.5	111	26.5	112	26.3	64	111	26.5	111	26.5	112	26.3
657.xz_s	64	231	26.8	228	27.1	228	27.1	64	231	26.8	228	27.1	228	27.1

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

SPEC has ruled that the compiler used for this result was performing a compilation that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_s benchmarks using a priori knowledge of the SPEC code and dataset to perform a transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4 https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer publish results using this optimization.

This result is left in the SPEC results database for historical reference.

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:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/speccpu/lib/intel64:/home/speccpu/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

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General Notes (Continued)

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.

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
```

jemalloc, a general purpose malloc implementation

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

BIOS Settings:

Set Enable LP [Global] to Single LP

Set Patrol Scrub to Disabled

Set Power Performance Tuning to BIOS Controls EFB

Set ENERGY_PERF_BIAS_CFG_mode to Performance

Set LLC Prefetch to Disabled

Set FB Thread Slicing to Enabled

Sysinfo program /home/speccpu/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost.localdomain Wed Jul 19 22:30:38 2023

SUT (System Under Test) info as seen by some common utilities.

Table of contents

1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 250 (250-6.el9_0)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

```
1. uname -a
Linux localhost.localdomain 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64
x86_64 x86_64 GNU/Linux
```

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Platform Notes (Continued)

```
-----
2. w
  22:30:38 up 55 min,  1 user,  load average: 0.07, 2.92, 11.62
USER      TTY      LOGIN@   IDLE   JCPU   PCPU WHAT
root      tty1     21:35    6.00s  0.78s  0.00s -bash
```

```
-----
3. Username
  From environment variable $USER:  root
```

```
-----
4. ulimit -a
  real-time non-blocking time (microseconds, -R) unlimited
  core file size              (blocks, -c) 0
  data seg size                (kbytes, -d) unlimited
  scheduling priority          (-e) 0
  file size                    (blocks, -f) unlimited
  pending signals              (-i) 8253279
  max locked memory            (kbytes, -l) 64
  max memory size              (kbytes, -m) unlimited
  open files                   (-n) 1024
  pipe size                    (512 bytes, -p) 8
  POSIX message queues         (bytes, -q) 819200
  real-time priority           (-r) 0
  stack size                   (kbytes, -s) unlimited
  cpu time                     (seconds, -t) unlimited
  max user processes           (-u) 8253279
  virtual memory               (kbytes, -v) unlimited
  file locks                   (-x) unlimited
```

```
-----
5. sysinfo process ancestry
  /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
  login -- root
  -bash
  -bash
  runcpu --nobuild --action validate --define default-platform-flags -c
  ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=64 --tune base,peak -o all --define
  intspeedaffinity --define drop_caches intspeed
  runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=64 --tune base,peak --output_format all
  --define intspeedaffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed
  intspeed --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.005/templogs/preenv.intspeed.005.0.log
  --lognum 005.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
  $SPEC = /home/speccpu
```

```
-----
6. /proc/cpuinfo
  model name      : Intel(R) Xeon(R) Platinum 8444H
  vendor_id      : GenuineIntel
  cpu family     : 6
  model          : 143
  stepping       : 6
  microcode      : 0x2b000181
  bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
  cpu cores      : 16
  siblings       : 16
  4 physical ids (chips)
```

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Platform Notes (Continued)

64 processors (hardware threads)
 physical id 0: core ids 0-15
 physical id 1: core ids 0-15
 physical id 2: core ids 0-15
 physical id 3: core ids 0-15
 physical id 0: apicids 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
 physical id 1: apicids 128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158
 physical id 2: apicids 256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286
 physical id 3: apicids 384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414
 Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.4:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          52 bits physical, 57 bits virtual
Byte Order:             Little Endian
CPU(s):                 64
On-line CPU(s) list:   0-63
Vendor ID:              GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:             Intel(R) Xeon(R) Platinum 8444H
BIOS Model name:       Intel(R) Xeon(R) Platinum 8444H
CPU family:             6
Model:                  143
Thread(s) per core:    1
Core(s) per socket:    16
Socket(s):              4
Stepping:               6
CPU max MHz:            4000.0000
CPU min MHz:            800.0000
BogoMIPS:               5800.00
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 aperfperf tsc_known_freq 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 cpuid_fault epb cat_l3 cat_l2 cdp_l3
                        invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                        tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2
                        smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                        avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                        xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                        cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
                        arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku
                        ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                        tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
                        enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
                        amx_tile flush_lld arch_capabilities
Virtualization:        VT-x
L1d cache:             3 MiB (64 instances)
L1i cache:             2 MiB (64 instances)
L2 cache:              128 MiB (64 instances)
L3 cache:              180 MiB (4 instances)
NUMA node(s):         4
NUMA node0 CPU(s):    0-15

```

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Platform Notes (Continued)

```

NUMA node1 CPU(s):          16-31
NUMA node2 CPU(s):          32-47
NUMA node3 CPU(s):          48-63
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf:         Not affected
Vulnerability Mds:          Not affected
Vulnerability Meltdown:    Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1:   Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:   Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds:        Not affected
Vulnerability Tsx async abort: Not affected

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	3M	12	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64
L2	2M	128M	16	Unified	2	2048	1	64
L3	45M	180M	15	Unified	3	49152	1	64

8. numactl --hardware

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

```

available: 4 nodes (0-3)
node 0 cpus: 0-15
node 0 size: 515150 MB
node 0 free: 513407 MB
node 1 cpus: 16-31
node 1 size: 516092 MB
node 1 free: 510034 MB
node 2 cpus: 32-47
node 2 size: 516055 MB
node 2 free: 514937 MB
node 3 cpus: 48-63
node 3 size: 516081 MB
node 3 free: 515049 MB
node distances:
node  0  1  2  3
0:  10  21  21  21
1:  21  10  21  21
2:  21  21  10  21
3:  21  21  21  10

```

9. /proc/meminfo

MemTotal: 2112901520 kB

10. who -r

run-level 3 Jul 19 21:34

11. Systemd service manager version: systemd 250 (250-6.el9_0)

```

Default Target Status
multi-user      running

```

12. Services, from systemctl list-unit-files

```

STATE UNIT FILES
enabled ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online

```

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Platform Notes (Continued)

```

accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker gdm
getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt
low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
nvme-fc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd
rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control
systemd-network-generator udisks2 upower vgauthd vmtoolsd
enabled-runtime systemd-remount-fs
disabled arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
dbus-daemon debug-shell dnsmasq firewalld gssproxy iprdump iprinit iprupdate ipsec iscsid
iscsiuio kpatch kvm_stat ledmon man-db-restart-cache-update nfs-blkmap nfs-server nftables
nvme-autoconnect podman podman-auto-update podman-restart psacct rdisc rhcd rhsm
rhsm-facts rpmdb-rebuild serial-getty@ speech-dispatcherd sshd-keygen@
systemd-boot-check-no-failures systemd-pstore systemd-sysext wpa_supplicant
indirect spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.22.1.el9_0.x86_64
root=/dev/mapper/rhel-root
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
rhgb
quiet
nohz_full=1-479
rcu_nocbs=1-479

```

```

-----
14. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 4.00 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.
  boost state support:
    Supported: yes
    Active: yes

```

```

-----
15. sysctl
kernel.numa_balancing          1
kernel.randomize_va_space      2
vm.compaction_proactiveness     20
vm.dirty_background_bytes       0
vm.dirty_background_ratio       10
vm.dirty_bytes                  0
vm.dirty_expire_centisecs       3000
vm.dirty_ratio                  20
vm.dirty_writeback_centisecs    500
vm.dirtytime_expire_seconds     43200
vm.extfrag_threshold            500
vm.min_unmapped_ratio           1
vm.nr_hugepages                  0
vm.nr_hugepages_mempolicy        0
vm.nr_overcommit_hugepages      0
vm.swappiness                    60
vm.watermark_boost_factor       15000
vm.watermark_scale_factor        10

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Platform Notes (Continued)

vm.zone_reclaim_mode 0

```

-----
16. /sys/kernel/mm/transparent_hugepage
defrag          always defer defer+madvice [madvice] never
enabled         [always] madvice never
hpage_pmd_size  2097152
shmem_enabled   always within_size advise [never] deny force

```

```

-----
17. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs  60000
defrag                 1
max_ptes_none          511
max_ptes_shared        256
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs   10000

```

```

-----
18. OS release
From /etc/*-release /etc/*-version
os-release            Red Hat Enterprise Linux 9.0 (Plow)
redhat-release        Red Hat Enterprise Linux release 9.0 (Plow)
system-release        Red Hat Enterprise Linux release 9.0 (Plow)

```

```

-----
19. Disk information
SPEC is set to: /home/speccpu
Filesystem            Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   7.0T  299G  6.7T   5% /home

```

```

-----
20. /sys/devices/virtual/dmi/id
Product Family: Rack

```

```

-----
21. dmidecode
Additional information from dmidecode 3.3 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:
  29x Hynix HMCG94AEBRA102N 64 GB 2 rank 4800
  3x Hynix HMCG94AEBRA109N 64 GB 2 rank 4800

```

```

-----
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     6.00.23
BIOS Date:        06/20/2023
BIOS Revision:    5.29

```

Compiler Version Notes

```

=====
C | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)

```

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Compiler Version Notes (Continued)

| 657.xz_s(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
C++ | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
641.leela_s(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
Fortran | 648.exchange2_s(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64

602.gcc_s: -DSPEC_LP64

605.mcf_s: -DSPEC_LP64

620.omnetpp_s: -DSPEC_LP64

623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX

625.x264_s: -DSPEC_LP64

631.deepsjeng_s: -DSPEC_LP64

641.leela_s: -DSPEC_LP64

648.exchange2_s: -DSPEC_LP64

657.xz_s: -DSPEC_LP64



SPEC CPU®2017 Integer Speed Result

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SPECspeed®2017_int_base = 15.1

H3C UniServer R6900 G6 (Intel Xeon Platinum 8444H)

SPECspeed®2017_int_peak = 15.3

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jul-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Base Optimization Flags

C benchmarks:

```
-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

C++ benchmarks:

```
-m64 -std=c++14 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:

```
-m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
```

(Continued on next page)



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Peak Optimization Flags (Continued)

600.perlbench_s (continued):

```
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

602.gcc_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)

```
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
```

```
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
```

```
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
```

```
-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib
```

```
-ljemalloc
```

605.mcf_s: basepeak = yes

625.x264_s: -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3

```
-ffast-math -flto -mfpmath=sse -funroll-loops
```

```
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
```

```
-fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html>

http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevC.html

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml>

http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevC.xml



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