



SPEC CPU®2017 Integer Speed Result

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Nettrix

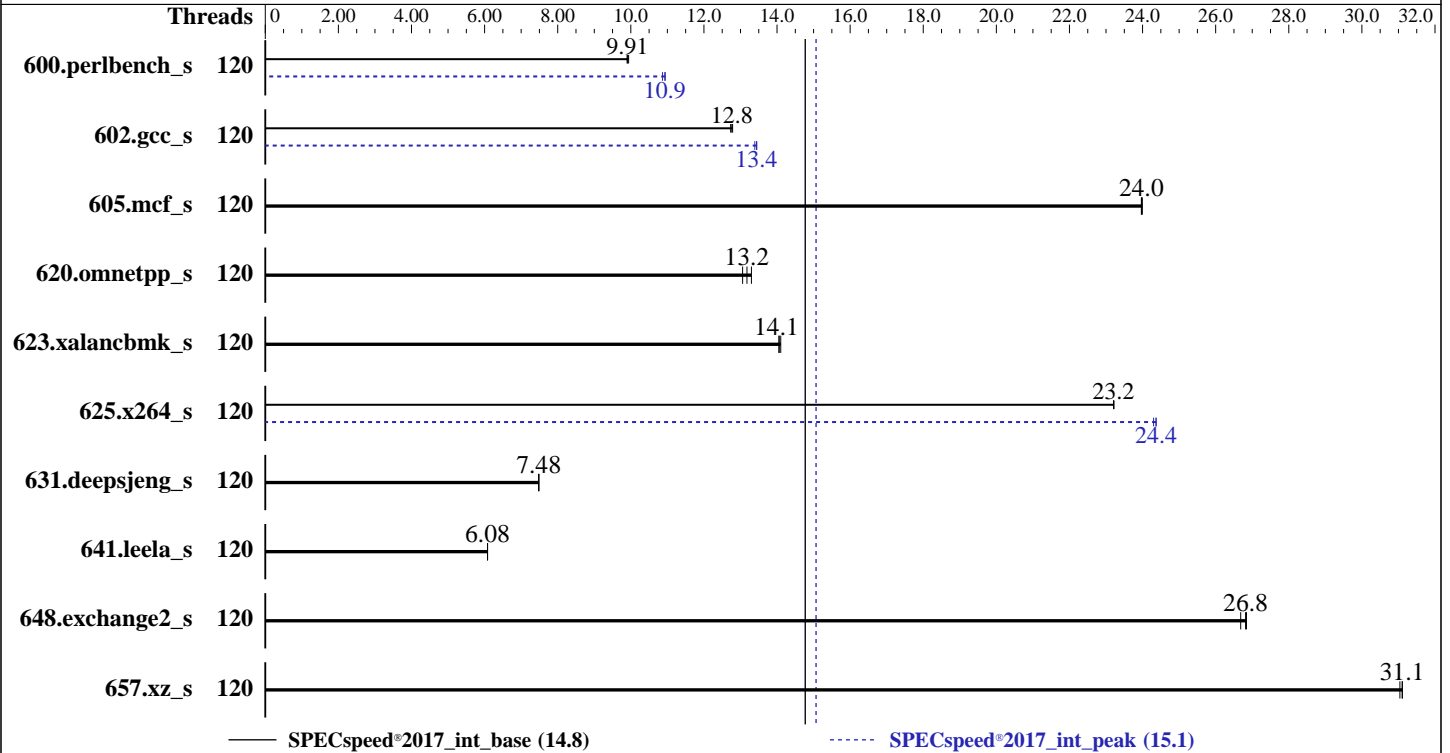
SPECspeed®2017_int_base = 14.8

R620 G50 (Intel Xeon Platinum 8580, 2 GHz)

SPECspeed®2017_int_peak = 15.1

CPU2017 License: 6138
Test Sponsor: Nettrix
Tested by: Nettrix

Test Date: Apr-2024
Hardware Availability: Jan-2024
Software Availability: Jan-2024



Hardware

CPU Name: Intel Xeon Platinum 8580
Max MHz: 4000
Nominal: 2000
Enabled: 120 cores, 2 chips
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 300 MB I+D on chip per chip
Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R)
Storage: 1 x 14 TB SATA HDD (7200 rpm)
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP5
5.14.21-150500.53-default
Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++
Compiler for Linux;
Fortran: Version 2023.2.3 of Intel Fortran
Compiler for Linux;
Parallel: Yes
Firmware: Nettrix BIOS Version NNH1041268 released Jan-2024
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	120	179	9.94	<u>179</u>	<u>9.91</u>	179	9.90	120	163	10.9	162	10.9	<u>162</u>	<u>10.9</u>
602.gcc_s	120	311	12.8	313	12.7	<u>312</u>	<u>12.8</u>	120	297	13.4	296	13.4	<u>296</u>	<u>13.4</u>
605.mcf_s	120	197	24.0	<u>197</u>	<u>24.0</u>	197	24.0	120	197	24.0	<u>197</u>	<u>24.0</u>	197	24.0
620.omnetpp_s	120	123	13.3	<u>124</u>	<u>13.2</u>	125	13.1	120	123	13.3	<u>124</u>	<u>13.2</u>	125	13.1
623.xalancbmk_s	120	101	14.1	<u>101</u>	<u>14.1</u>	100	14.1	120	101	14.1	<u>101</u>	<u>14.1</u>	100	14.1
625.x264_s	120	<u>76.0</u>	<u>23.2</u>	76.0	23.2	76.0	23.2	120	72.6	24.3	72.4	24.4	<u>72.4</u>	<u>24.4</u>
631.deepsjeng_s	120	<u>192</u>	<u>7.48</u>	192	7.48	192	7.48	120	<u>192</u>	<u>7.48</u>	192	7.48	192	7.48
641.leela_s	120	281	6.08	281	6.08	<u>281</u>	<u>6.08</u>	120	281	6.08	281	6.08	<u>281</u>	<u>6.08</u>
648.exchange2_s	120	110	26.7	110	26.8	<u>110</u>	<u>26.8</u>	120	110	26.7	110	26.8	<u>110</u>	<u>26.8</u>
657.xz_s	120	<u>199</u>	<u>31.1</u>	199	31.1	199	31.0	120	<u>199</u>	<u>31.1</u>	199	31.1	199	31.0

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
OS set to performance mode via cpupower frequency-set -g performance

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/tzk/SPECcpu/lib/intel64:/home/tzk/SPECcpu/lib/ia32:/home/tzk/SPECcpu/je5.0.1-64"
MALLOCONF = "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.
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



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Platform Notes

BIOS Configuration:

- SNC (Sub NUMA) set to Enable SNC2 (2-clusters)
- Patrol Scrub set to Disabled
- LLC dead line alloc set to Disabled
- DCU Streamer Prefetcher set to Disabled
- Hardware P-States set to Native Mode
- Enable LP [Global] set to Single LP

Sysinfo program /home/tzk/SPECcpu/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Tue Apr 30 17:00:04 2024

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
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9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
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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 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043)
x86_64 x86_64 x86_64 GNU/Linux

2. w
17:00:04 up 5:55, 2 users, load average: 0.00, 0.17, 0.54
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root pts/0 10.2.49.197 11:05 4.00s 1.00s 0.28s -bash
root pts/1 10.2.49.197 11:09 2:09m 0.03s 0.03s -bash

3. Username
From environment variable \$USER: root

4. ulimit -a
core file size (blocks, -c) unlimited

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Platform Notes (Continued)

```

data seg size      (kbytes, -d) unlimited
scheduling priority (-e) 0
file size          (blocks, -f) unlimited
pending signals    (-i) 4125121
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) 4125121
virtual memory     (kbytes, -v) unlimited
file locks         (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root@pts/0,pts/1
-bash
/bin/sh ./reportable-ic2023.2.3-lin-sapphirerapids-speed-smt-off-20231121.sh
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=120 --tune base,peak -o all --define
  intspeedaffinity --define smt-off --define drop_caches intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=120 --tune base,peak --output_format all
  --define intspeedaffinity --define smt-off --define drop_caches --nopower --runmode speed --tune base:peak
  --size refspeed intspeed --nopreenv --note-preenv --logfile
  $SPEC/tmp/CPU2017.325/templogs/preenv.intspeed.325.0.log --lognum 325.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/tzk/SPECcpu

```

```

-----
6. /proc/cpuinfo
model name      : INTEL(R) XEON(R) PLATINUM 8580
vendor_id      : GenuineIntel
cpu family     : 6
model          : 207
stepping      : 2
microcode     : 0x21000200
bugs          : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores     : 60
siblings      : 60
2 physical ids (chips)
120 processors (hardware threads)
physical id 0: core ids 0-59
physical id 1: core ids 0-59
physical id 0: apicids
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72
,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118
physical id 1: apicids
128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,1
80,182,184,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,23
2,234,236,238,240,242,244,246
Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
virtualized systems. Use the above data carefully.

```

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Platform Notes (Continued)

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):                 120
On-line CPU(s) list:   0-119
Vendor ID:              GenuineIntel
Model name:             INTEL(R) XEON(R) PLATINUM 8580
CPU family:             6
Model:                  207
Thread(s) per core:    1
Core(s) per socket:    60
Socket(s):              2
Stepping:               2
CPU max MHz:           4000.0000
CPU min MHz:           800.0000
BogoMIPS:               4000.00
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 aperfmperf 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 cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
                        vmni flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep
                        bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
                        avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512v1
                        xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                        cqm_mbm_local 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:             5.6 MiB (120 instances)
L1i cache:             3.8 MiB (120 instances)
L2 cache:              240 MiB (120 instances)
L3 cache:              600 MiB (2 instances)
NUMA node(s):         4
NUMA node0 CPU(s):    0-29
NUMA node1 CPU(s):    30-59
NUMA node2 CPU(s):    60-89
NUMA node3 CPU(s):    90-119
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:     Not affected
Vulnerability Mds:      Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSE-eIBRS SW
                        sequence
Vulnerability Srbds:    Not affected
Vulnerability Tsx async abort: Not affected

```

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Platform Notes (Continued)

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	5.6M	12	Data	1	64	1	64
L1i	32K	3.8M	8	Instruction	1	64	1	64
L2	2M	240M	16	Unified	2	2048	1	64
L3	300M	600M	20	Unified	3	245760	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: 0-29
node 0 size: 257562 MB
node 0 free: 250419 MB
node 1 cpus: 30-59
node 1 size: 258040 MB
node 1 free: 256271 MB
node 2 cpus: 60-89
node 2 size: 258005 MB
node 2 free: 255626 MB
node 3 cpus: 90-119
node 3 size: 257702 MB
node 3 free: 256943 MB
node distances:
node  0  1  2  3
 0: 10 12 21 21
 1: 12 10 21 21
 2: 21 21 10 12
 3: 21 21 12 10

```

9. /proc/meminfo

MemTotal: 1056062748 kB

10. who -r

run-level 3 Apr 30 11:05

11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)

```

Default Target Status
multi-user      running

```

12. Services, from systemctl list-unit-files

```

STATE UNIT FILES
enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd chronyd cron cups firewalld getty@
haveged irqbalance issue-generator kbdsettings kdump kdump-early klog lm_sensors
lvm2-monitor nscd postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked
wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs
disabled apcupsd autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates
chrony-wait console-getty corosync corosync-notifyd crm_mon ctdb cups-browsed debug-shell
dml dmraid-activation drbd drbd-lvchange@ drbd-wait-promotable@ ebttables
exchange-bmc-os-info fancontrol gpm grub2-once haveged-switch-root hawk ipmi ipmievd
ipvsadm issue-add-ssh-keys kexec-load ldirectord logd lunmask lvmlockd lvmlocks
man-db-create multipathd nfs nfs-blkmap pacemaker rpcbind rpmconfigcheck rsyncd sanlock
sbd sbd_remote serial-getty@ smartd_generate_opts snmpd snmptrapd svnserve
systemd-boot-check-no-failures systemd-network-generator systemd-sysext

```

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Platform Notes (Continued)

indirect systemd-time-wait-sync systemd-timesyncd udisks2 wdm
 wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
root=UUID=aec0cd35-b79c-432e-8a92-68e81aa94bbb
splash=silent
resume=/dev/disk/by-uuid/d53caa22-ee5c-46fa-a8f2-44d678cc6069
mitigations=auto
quiet
security=apparmor
crashkernel=317M,high
crashkernel=72M,low
default_hugepagesz=1G

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 5000
vm.dirty_ratio 30
vm.dirty_writeback_centisecs 700
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 10
vm.watermark_boost_factor 15000
vm.watermark_scale_factor 10
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

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Platform Notes (Continued)

```
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 openSUSE Leap 15.5

19. Disk information
SPEC is set to: /home/tzk/SPECcpu
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 12T 108G 12T 1% /home

20. /sys/devices/virtual/dmi/id
Vendor: Nettrix
Product: R620 G50
Product Family: Rack
Serial: 6101810603447812

21. dmidecode
Additional information from dmidecode 3.4 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 Hynix HMCG94AGBRA179N 64 GB 2 rank 5600

22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: NNH1041268
BIOS Date: 01/26/2024
BIOS Revision: 5.32

Compiler Version Notes

=====
C | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
| 657.xz_s(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
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Compiler Version Notes (Continued)

Fortran | 648.exchange2_s(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -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:
-w -std=c++14 -m64 -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

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SPEC CPU®2017 Integer Speed Result

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Nettrix

SPECspeed®2017_int_base = 14.8

R620 G50 (Intel Xeon Platinum 8580, 2 GHz)

SPECspeed®2017_int_peak = 15.1

CPU2017 License: 6138

Test Sponsor: Nettrix

Tested by: Nettrix

Test Date: Apr-2024

Hardware Availability: Jan-2024

Software Availability: Jan-2024

Base Optimization Flags (Continued)

Fortran benchmarks:

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

602.gcc_s: -w -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
```

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Peak Optimization Flags (Continued)

605.mcf_s: basepeak = yes

```
625.x264_s: -w -std=c11 -m64 -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-ic2023p2-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Nettrix-Platform-Settings-V1.3-SPR-revA.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Nettrix-Platform-Settings-V1.3-SPR-revA.xml>

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