SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant ML110 Gen11
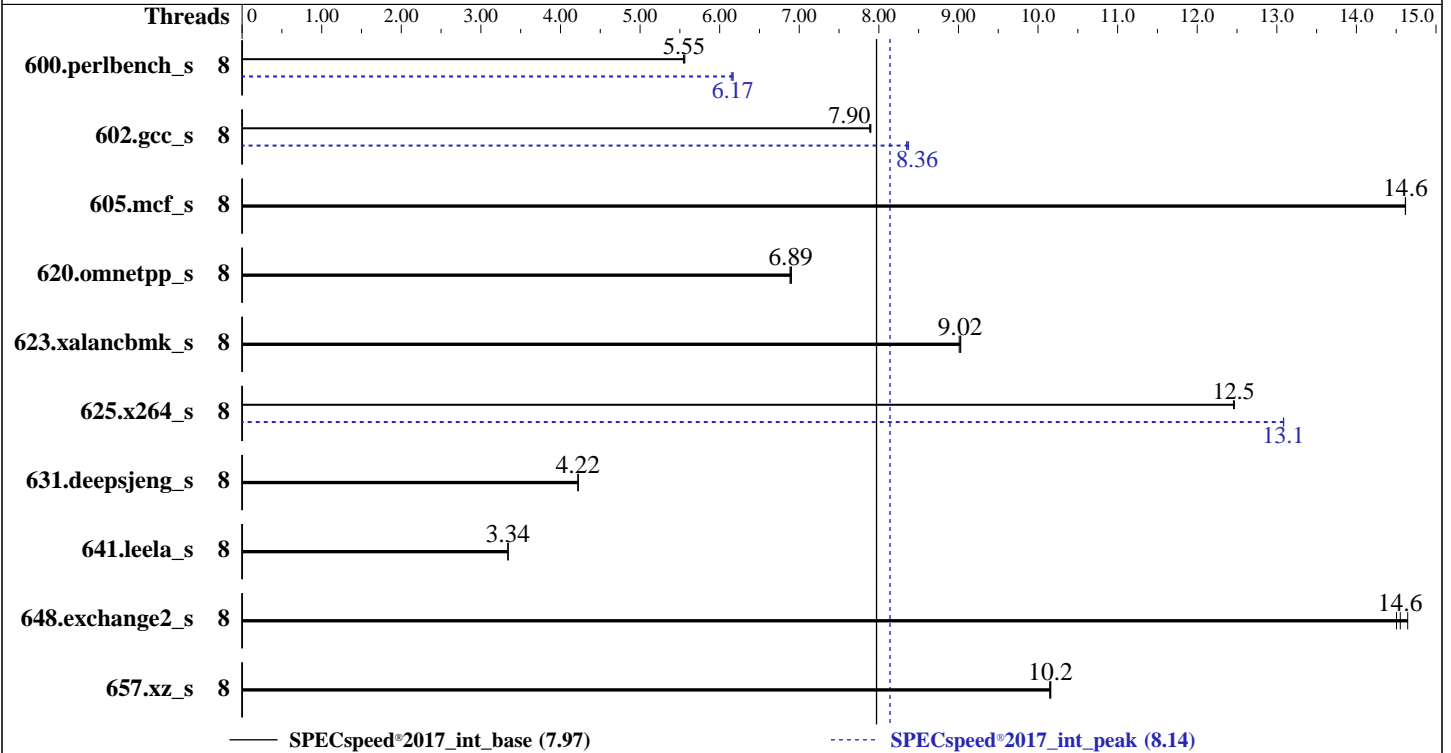(2.10 GHz, Intel Xeon Bronze 3508U)

$SPECspeed®2017\_int\_base = 7.97$

$SPECspeed®2017\_int\_peak = 8.14$

CPU2017 License: 3   **Test Date:** Feb-2024
Test Sponsor: HPE   **Hardware Availability:** Feb-2024
Tested by: HPE   **Software Availability:** Dec-2023

Threads — benchmark bar chart (scale 0 to 15.0):

- 600.perlbench_s — 8 — base 5.55, peak 6.17
- 602.gcc_s — 8 — base 7.90, peak 8.36
- 605.mcf_s — 8 — base 14.6
- 620.omnetpp_s — 8 — base 6.89
- 623.xalancbmk_s — 8 — base 9.02
- 625.x264_s — 8 — base 12.5, peak 13.1
- 631.deepsjeng_s — 8 — base 4.22
- 641.leela_s — 8 — base 3.34
- 648.exchange2_s — 8 — base 14.6
- 657.xz_s — 8 — base 10.2

SPECspeed®2017_int_base (7.97)   SPECspeed®2017_int_peak (8.14)

Hardware

CPU Name: Intel Xeon Bronze 3508U
Max MHz: 2200
Nominal: 2100
Enabled: 8 cores, 1 chip
Orderable: 1 chip
Cache L1: 32 KB I + 48 KB D on chip per core
  L2: 2 MB I+D on chip per core
  L3: 22.5 MB I+D on chip per chip
  Other: None
Memory: 256 GB (8 x 32 GB 2Rx8 PC5-5600B-R, running at 4400)
Storage: 1 x 240 GB SATA SSD
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP5
    Kernel 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: HPE BIOS Version v2.12 12/13/2023 released Dec-2023
File System: btrfs
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	8	319	5.56	**320**	**5.55**	320	5.54	8	**288**	**6.17**	289	6.15	288	6.17
602.gcc_s	8	504	7.90	**504**	**7.90**	505	7.89	8	**477**	**8.36**	477	8.35	476	8.37
605.mcf_s	8	**323**	**14.6**	323	14.6	323	14.6	8	**323**	**14.6**	323	14.6	323	14.6
620.omnetpp_s	8	236	6.90	**237**	**6.89**	237	6.88	8	236	6.90	**237**	**6.89**	237	6.88
623.xalancbmk_s	8	157	9.01	**157**	**9.02**	157	9.03	8	157	9.01	**157**	**9.02**	157	9.03
625.x264_s	8	**142**	**12.5**	141	12.5	142	12.5	8	135	13.1	135	13.1	**135**	**13.1**
631.deepsjeng_s	8	**339**	**4.22**	339	4.22	340	4.22	8	**339**	**4.22**	339	4.22	340	4.22
641.leela_s	8	511	3.34	**511**	**3.34**	511	3.34	8	511	3.34	**511**	**3.34**	511	3.34
648.exchange2_s	8	**202**	**14.6**	201	14.6	203	14.5	8	**202**	**14.6**	201	14.6	203	14.5
657.xz_s	8	608	10.2	**609**	**10.2**	609	10.1	8	608	10.2	**609**	**10.2**	609	10.1

SPECspeed®2017_int_base =	**7.97**
SPECspeed®2017_int_peak =	**8.14**

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"
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>
tuned service was stopped using "systemctl stop tuned"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/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.
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.

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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.
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

The system ROM used for this result contains Intel microcode version 0x2b000571 for
the Intel Xeon Bronze 3508U processor.
BIOS Configuration:
Workload Profile set to General Peak Frequency Compute
Enhanced Processor Performance Profile set to Aggressive
Thermal Configuration set to Maximum Cooling
Last Level Cache (LLC) Prefetch set to Enabled
Memory Patrol Scrubbing set to Disabled

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Wed Feb 14 14:20:51 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
  8. numactl --hardware
  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. tuned-adm active
 16. sysctl
 17. /sys/kernel/mm/transparent_hugepage
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
 19. OS release
 20. Disk information
 21. /sys/devices/virtual/dmi/id
 22. dmidecode
 23. 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
    14:20:51 up 2 min, 0 users, load average: 0.03, 0.02, 0.00

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Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Dec-2023

Platform Notes (Continued)

```
   USER     TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT

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


  ----------------------------------------------------------
  4. ulimit -a
    core file size          (blocks, -c) unlimited
    data seg size           (kbytes, -d) unlimited
    scheduling priority             (-e) 0
    file size               (blocks, -f) unlimited
    pending signals                 (-i) 1029943
    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) 1029943
    virtual memory          (kbytes, -v) unlimited
    file locks                      (-x) unlimited


  ----------------------------------------------------------
  5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize 29
   sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
   sshd: root@notty
   bash -c cd $SPEC/ && $SPEC/intspeedGFS.sh
   runcpu --nobuild --action validate --define default-platform-flags -c
     ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=8 --tune base,peak -o all --define
     intspeedaffinity --define drop_caches intspeed
   runcpu --nobuild --action validate --define default-platform-flags --configfile
     ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=8 --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/CPU2017.001/templogs/preenv.intspeed.001.0.log
     --lognum 001.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
  $SPEC = /home/cpu2017


  ----------------------------------------------------------
  6. /proc/cpuinfo
    model name       : INTEL(R) XEON(R) BRONZE 3508U
    vendor_id        : GenuineIntel
    cpu family       : 6
    model            : 143
    stepping         : 8
    microcode        : 0x2b000571
    bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores        : 8
    siblings         : 8
    1 physical ids (chips)
    8 processors (hardware threads)
    physical id 0: core ids 0-7
    physical id 0: apicids 0,2,4,6,8,10,12,14
   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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Test Date: Feb-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

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:            46 bits physical, 57 bits virtual
    Byte Order:               Little Endian
    CPU(s):                   8
    On-line CPU(s) list:      0-7
    Vendor ID:                GenuineIntel
    Model name:               INTEL(R) XEON(R) BRONZE 3508U
    CPU family:               6
    Model:                    143
    Thread(s) per core:       1
    Core(s) per socket:       8
    Socket(s):                1
    Stepping:                 8
    BogoMIPS:                 4200.00
    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
                              vnmi 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 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 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 flush_l1d arch_capabilities
    Virtualization:           VT-x
    L1d cache:                384 KiB (8 instances)
    L1i cache:                256 KiB (8 instances)
    L2 cache:                 16 MiB (8 instances)
    L3 cache:                 22.5 MiB (1 instance)
    NUMA node(s):             1
    NUMA node0 CPU(s):        0-7
    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, PBRSB-eIBRS SW
                                    sequence
    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     384K  12 Data             1    64        1             64
      L1i       32K     256K   8 Instruction      1    64        1             64
```

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Platform Notes (Continued)

```
        L2           2M      16M   16 Unified       2 2048       1           64
        L3        22.5M   22.5M   15 Unified       3 24576       1           64


    ------------------------------------------------------------
    8. numactl --hardware
    NOTE: a numactl 'node' might or might not correspond to a physical chip.
      available: 1 nodes (0)
      node 0 cpus: 0-7
      node 0 size: 257508 MB
      node 0 free: 256864 MB
      node distances:
      node   0
        0:  10


    ------------------------------------------------------------
    9. /proc/meminfo
      MemTotal:       263688728 kB


    ------------------------------------------------------------
    10. who -r
      run-level 3 Feb 14 14:19


    ------------------------------------------------------------
    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           apparmor auditd cron getty@ irqbalance issue-generator kbdsettings lvm2-monitor postfix
                        purge-kernels rollback sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4
                        wickedd-dhcp6 wickedd-nanny
      enabled-runtime   systemd-remount-fs
      disabled          blk-availability boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell
                        grub2-once haveged haveged-switch-root issue-add-ssh-keys kexec-load lunmask
                        rpmconfigcheck serial-getty@ systemd-boot-check-no-failures systemd-network-generator
                        systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
      indirect          wickedd


    ------------------------------------------------------------
    13. Linux kernel boot-time arguments, from /proc/cmdline
      BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
      root=UUID=47a67c03-06d8-4549-b8fa-d048716d70c5
      splash=silent
      mitigations=auto
      quiet
      security=apparmor


    ------------------------------------------------------------
    14. cpupower frequency-info
      analyzing CPU 0:
        Unable to determine current policy
        boost state support:
          Supported: yes
          Active: yes


    ------------------------------------------------------------
    15. tuned-adm active
      It seems that tuned daemon is not running, preset profile is not activated.
```

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Platform Notes (Continued)

```
   Preset profile: throughput-performance

   ----------------------------------------------------------------
16. sysctl
   kernel.numa_balancing             0
   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
   vm.zone_reclaim_mode              0

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

   ----------------------------------------------------------------
18. /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

   ----------------------------------------------------------------
19. OS release
   From /etc/*-release /etc/*-version
   os-release SUSE Linux Enterprise Server 15 SP5

   ----------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017
   Filesystem     Type   Size  Used Avail Use% Mounted on
   /dev/sda3      btrfs  220G  144G   77G  66% /home

   ----------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:        HPE
    Product:       ProLiant ML110 Gen11
    Product Family: ProLiant
    Serial:        CNX2230TML

   ----------------------------------------------------------------
```

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Platform Notes (Continued)

```
 22. 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:
     8x Hynix HMCG88AGBRA193N 32 GB 2 rank 5600, configured at 4400


   ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       HPE
   BIOS Version:      2.12
   BIOS Date:         12/13/2023
   BIOS Revision:     2.12
   Firmware Revision: 1.56
```

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
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------


==============================================================================================================
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

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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
```

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
```

Hewlett Packard Enterprise
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SPECspeed®2017_int_base = 7.97

ProLiant ML110 Gen11
(2.10 GHz, Intel Xeon Bronze 3508U)

SPECspeed®2017_int_peak = 8.14

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

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.profdata`(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.profdata`(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: `-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:

(Continued on next page)

SPEC CPU®2017 Integer Speed Result

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ProLiant ML110 Gen11
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$SPECspeed®2017\_int\_base = 7.97$

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Peak Optimization Flags (Continued)

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/HPE-Platform-Flags-Intel-EMR-rev1.0.html
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html

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

http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-EMR-rev1.0.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml

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

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