SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

$SPECspeed^{®}2017\_fp\_base = 368$

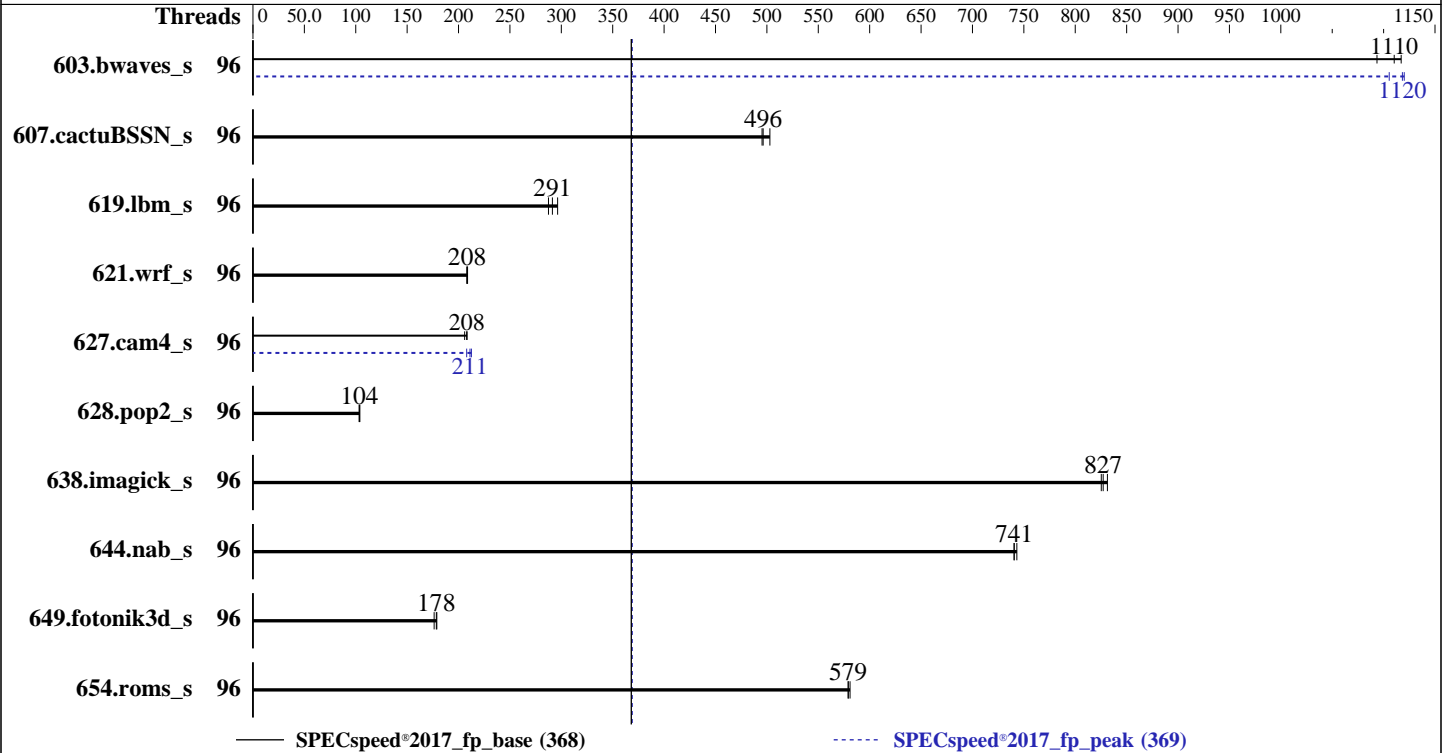$SPECspeed^{®}2017\_fp\_peak = 369$

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Feb-2024

Hardware Availability: Jul-2023

Software Availability: Dec-2023

Threads	Result
603.bwaves_s 96	1110 / 1120
607.cactuBSSN_s 96	496
619.lbm_s 96	291
621.wrf_s 96	208
627.cam4_s 96	208 / 211
628.pop2_s 96	104
638.imagick_s 96	827
644.nab_s 96	741
649.fotonik3d_s 96	178
654.roms_s 96	579

Scale: 0 50.0 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1150

SPECspeed®2017_fp_base (368) SPECspeed®2017_fp_peak (369)

Hardware

CPU Name: Intel Xeon Platinum 8468H
 Max MHz: 3800
 Nominal: 2100
Enabled: 96 cores, 2 chips
Orderable: 1, 2 chip(s)
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 105 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 1.6 TB PCIe NVMe SSD
Other: Cooling: DLC

Software

OS: SUSE Linux Enterprise Server 15 SP4 (x86_64)
 Kernel 5.14.21-150400.22-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: Version 2101 released Dec-2023
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.

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

$SPECspeed®2017\_fp\_base = 368$

$SPECspeed®2017\_fp\_peak = 369$

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Feb-2024

Hardware Availability: Jul-2023

Software Availability: Dec-2023

Results Table

Benchmark	Base						Peak					
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	96	52.8	1120	54.0	1090	**53.1**	**1110**	96	52.7	1120	53.4	1110	**52.8**	**1120**
607.cactuBSSN_s	96	33.7	495	33.1	503	**33.6**	**496**	96	33.7	495	33.1	503	**33.6**	**496**
619.lbm_s	96	18.2	288	**18.0**	**291**	17.7	296	96	18.2	288	**18.0**	**291**	17.7	296
621.wrf_s	96	63.3	209	**63.5**	**208**	63.5	208	96	63.3	209	**63.5**	**208**	63.5	208
627.cam4_s	96	43.0	206	42.5	208	**42.6**	**208**	96	**42.0**	**211**	41.7	213	42.6	208
628.pop2_s	96	**114**	**104**	115	103	114	104	96	**114**	**104**	115	103	114	104
638.imagick_s	96	**17.4**	**827**	17.4	831	17.5	825	96	**17.4**	**827**	17.4	831	17.5	825
644.nab_s	96	**23.6**	**741**	23.5	743	23.6	741	96	**23.6**	**741**	23.5	743	23.6	741
649.fotonik3d_s	96	51.7	176	51.0	179	**51.1**	**178**	96	51.7	176	51.0	179	**51.1**	**178**
654.roms_s	96	**27.2**	**579**	27.1	581	27.2	579	96	**27.2**	**579**	27.1	581	27.2	579
SPECspeed®2017_fp_base =		368										
SPECspeed®2017_fp_peak =		369										

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,compact"
LD_LIBRARY_PATH = "/ic23u2/lib/intel64:/ic23u2/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 8.0
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
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.
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
```

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

$SPECspeed^{®}2017\_fp\_base = 368$

$SPECspeed^{®}2017\_fp\_peak = 369$

CPU2017 License: 9016		**Test Date:**	Feb-2024
Test Sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Jul-2023
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Dec-2023

Platform Notes

```
BIOS Configuration:
VT-d = Disabled
Patrol Scrub = Disabled
Hyper-Threading = Disable
LLC dead line allc = Disabled
Engine Boost = Aggressive
SR-IOV Support = Disabled
BMC Configuration:
Fan mode = Full speed mode

Sysinfo program /ic23u2/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Thu Feb 29 14:41:01 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 (249.11+suse.124.g2bc0b2c447)
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 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222)
  x86_64 x86_64 x86_64 GNU/Linux


------------------------------------------------------------
2. w
   14:41:01 up  3:14,  1 user,  load average: 67.40, 82.63, 86.64
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                11:27    3:12m  0.83s  0.00s /bin/bash ./speed.sh


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


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

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

SPECspeed®2017_fp_base = 368

SPECspeed®2017_fp_peak = 369

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

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

Platform Notes (Continued)

```
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) 4126872
  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) 4126872
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited


------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 30
 login -- root
 -bash
 /bin/bash ./speed.sh
 /bin/bash ./speed.sh
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=96 --tune base,peak -o all --define
   drop_caches fpspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=96 --tune base,peak --output_format all
   --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
   --note-preenv --logfile $SPEC/tmp/CPU2017.440/templogs/preenv.fpspeed.440.0.log --lognum 440.0
   --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /ic23u2


------------------------------------------------------------
6. /proc/cpuinfo
  model name      : Intel(R) Xeon(R) Platinum 8468H
  vendor_id       : GenuineIntel
  cpu family      : 6
  model           : 143
  stepping        : 8
  microcode       : 0x2b000461
  bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
  cpu cores       : 48
  siblings        : 48
  2 physical ids (chips)
  96 processors (hardware threads)
  physical id 0: core ids 0-47
  physical id 1: core ids 0-47
  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
  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
 Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
 virtualized systems.  Use the above data carefully.
```

(Continued on next page)

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

SPECspeed®2017_fp_base = 368

SPECspeed®2017_fp_peak = 369

CPU2017 License: 9016　　　　　　　　　　　　　　　　　　　　**Test Date:**　　　Feb-2024
Test Sponsor:　ASUSTeK Computer Inc.　　　　　　　　　**Hardware Availability:** Jul-2023
Tested by:　　　ASUSTeK Computer Inc.　　　　　　　　　**Software Availability:**　Dec-2023

Platform Notes (Continued)

```
   -------------------------------------------------------------
   7. lscpu

   From lscpu from util-linux 2.37.2:
     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):                  96
     On-line CPU(s) list:     0-95
     Vendor ID:               GenuineIntel
     Model name:              Intel(R) Xeon(R) Platinum 8468H
     CPU family:              6
     Model:                   143
     Thread(s) per core:      1
     Core(s) per socket:      48
     Socket(s):               2
     Stepping:                8
     CPU max MHz:             3800.0000
     CPU min MHz:             800.0000
     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 intel_ppin 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 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_l1d arch_capabilities
     Virtualization:          VT-x
     L1d cache:               4.5 MiB (96 instances)
     L1i cache:               3 MiB (96 instances)
     L2 cache:                192 MiB (96 instances)
     L3 cache:                210 MiB (2 instances)
     NUMA node(s):            2
     NUMA node0 CPU(s):       0-47
     NUMA node1 CPU(s):       48-95
     Vulnerability Itlb multihit:   Not affected
     Vulnerability L1tf:            Not affected
     Vulnerability Mds:             Not affected
     Vulnerability Meltdown:        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
     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     4.5M   12 Data             1     64        1             64
```

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

$SPECspeed®2017\_fp\_base = 368$

$SPECspeed®2017\_fp\_peak = 369$

CPU2017 License: 9016	**Test Date:**	Feb-2024
Test Sponsor: ASUSTeK Computer Inc.	**Hardware Availability:**	Jul-2023
Tested by: ASUSTeK Computer Inc.	**Software Availability:**	Dec-2023

Platform Notes (Continued)

```
    L1i      32K       3M   8 Instruction    1     64        1          64
    L2        2M     192M  16 Unified        2   2048        1          64
    L3      105M     210M  15 Unified        3 114688        1          64

    ---------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0-47
  node 0 size: 515722 MB
  node 0 free: 514209 MB
  node 1 cpus: 48-95
  node 1 size: 516020 MB
  node 1 free: 513790 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10

    ---------------------------------------------------------
9. /proc/meminfo
  MemTotal:       1056504588 kB

    ---------------------------------------------------------
10. who -r
  run-level 3 Feb 29 11:27

    ---------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
  Default Target  Status
  multi-user      running

    ---------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ haveged
                   irqbalance issue-generator kbdsettings klog lvm2-monitor nscd nvmefc-boot-connections
                   postfix purge-kernels rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4
                   wickedd-dhcp6 wickedd-nanny
  enabled-runtime  systemd-remount-fs
  disabled         autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                   chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                   firewalld gpm grub2-once haveged-switch-root hwloc-dump-hwdata ipmi ipmievd
                   issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap
                   nvmf-autoconnect rdisc rpcbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts
                   snmpd snmptrapd svnserve systemd-boot-check-no-failures systemd-network-generator
                   systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned udisks2
  indirect         wickedd

    ---------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
  root=UUID=9bcf0374-b29f-4a4c-932e-9c0e90fb0803
  splash=silent
  mitigations=auto
  quiet

    ---------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
```

(Continued on next page)

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

SPECspeed®2017_fp_base = 368

SPECspeed®2017_fp_peak = 369

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

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

Platform Notes (Continued)

```
      current policy: frequency should be within 800 MHz and 3.80 GHz.
                      The governor "performance" may decide which speed to use
                      within this range.
      boost state support:
        Supported: yes
        Active: yes


    ----------------------------------------------------------------
    15. tuned-adm active
      It seems that tuned daemon is not running, preset profile is not activated.
      Preset profile: throughput-performance


    ----------------------------------------------------------------
    16. 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
      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 SP4


    ----------------------------------------------------------------
    20. Disk information
    SPEC is set to: /ic23u2
      Filesystem     Type  Size  Used Avail Use% Mounted on
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

$SPECspeed^{®}2017\_fp\_base = 368$

$SPECspeed^{®}2017\_fp\_peak = 369$

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

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

Platform Notes (Continued)

```
  /dev/nvme0n1p8 xfs   500G  296G  205G  60% /


  ----------------------------------------------------------
 21. /sys/devices/virtual/dmi/id
     Vendor:          ASUSTeK COMPUTER INC.
     Product:         ESC4000-E11
     Product Family: Server
     Serial:          /psn/


  ----------------------------------------------------------
 22. dmidecode
   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 Samsung M321R8GA0BB0-CQKVG 64 GB 2 rank 4800



  ----------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends Inc.
   BIOS Version:      2101
   BIOS Date:         12/12/2023
   BIOS Revision:     21.1
```

Compiler Version Notes

```
==============================================================================================
C              | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_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++, C, Fortran | 607.cactuBSSN_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.
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.
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.
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran         | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_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.
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran, C     | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_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.
```

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

SPECspeed®2017_fp_base = 368

SPECspeed®2017_fp_peak = 369

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

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

Compiler Version Notes (Continued)

```
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.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using Fortran, C, and C++:
`icpx icx ifx`

Base Portability Flags

603.bwaves_s: `-DSPEC_LP64`
607.cactuBSSN_s: `-DSPEC_LP64`
619.lbm_s: `-DSPEC_LP64`
621.wrf_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
627.cam4_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
628.pop2_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
`-assume byterecl`
638.imagick_s: `-DSPEC_LP64`
644.nab_s: `-DSPEC_LP64`
649.fotonik3d_s: `-DSPEC_LP64`
654.roms_s: `-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 -fiopenmp`
`-DSPEC_OPENMP -Wno-implicit-int -L/usr/local/jemalloc64-5.0.1/lib`
`-ljemalloc`

Fortran benchmarks:
`-w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -Ofast`

(Continued on next page)

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

SPECspeed®2017_fp_base = 368

SPECspeed®2017_fp_peak = 369

CPU2017 License: 9016		**Test Date:**	Feb-2024
Test Sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Jul-2023
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Dec-2023

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
```
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

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 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

Fortran benchmarks:
```
ifx
```

Benchmarks using both Fortran and C:
```
ifx icx
```

Benchmarks using Fortran, C, and C++:
```
icpx icx ifx
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

(Continued on next page)

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

SPECspeed®2017_fp_base = 368

SPECspeed®2017_fp_peak = 369

CPU2017 License: 9016		**Test Date:**	Feb-2024
Test Sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Jul-2023
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Dec-2023

Peak Optimization Flags (Continued)

619.lbm_s: basepeak = yes

638.imagick_s: basepeak = yes

644.nab_s: basepeak = yes

Fortran benchmarks:

603.bwaves_s: `-w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

627.cam4_s: `-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z13-V1.3.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/ASUSTekPlatform-Settings-z13-V1.3.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS ESC4000-E11
(2.10 GHz, Intel Xeon Platinum 8468H)

$SPECspeed^®2017\_fp\_base = 368$

$SPECspeed^®2017\_fp\_peak = 369$

CPU2017 License: 9016		**Test Date:**	Feb-2024
Test Sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Jul-2023
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Dec-2023

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

Tested with SPEC CPU®2017 v1.1.9 on 2024-02-29 01:41:00-0500.
Report generated on 2024-03-27 20:19:36 by CPU2017 PDF formatter v6716.
Originally published on 2024-03-26.