



# SPEC CPU®2017 Floating Point Rate Result

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## ASUSTeK Computer Inc.

ASUS RS720-E12-RS8G  
(2.20 GHz, Intel Xeon 6780E)

SPECrate®2017\_fp\_base = 1190

SPECrate®2017\_fp\_peak = 1220

CPU2017 License: 9016

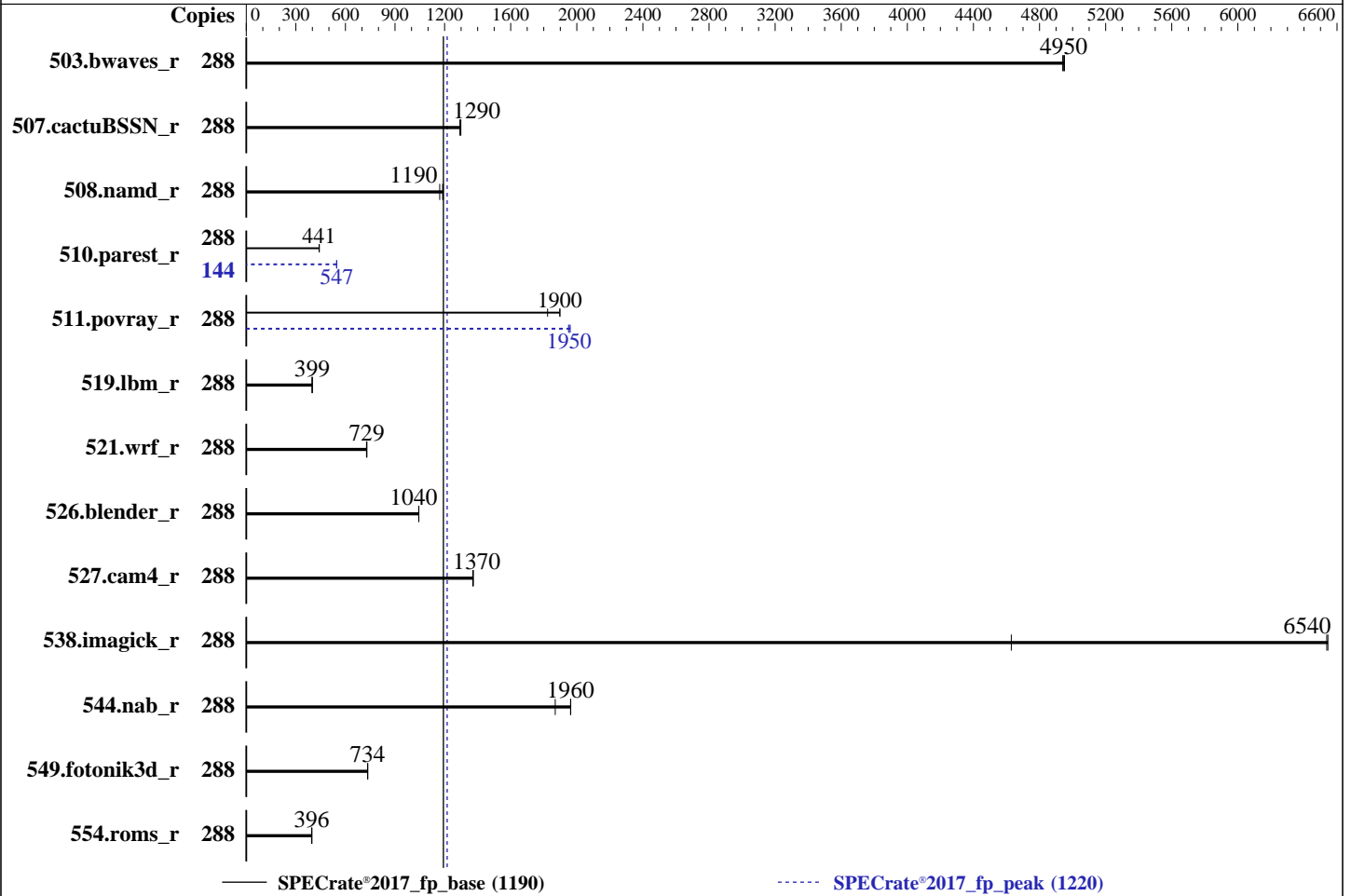
Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Mar-2026

Hardware Availability: Jul-2025

Software Availability: Jun-2024



### Hardware

CPU Name: Intel Xeon 6780E  
 Max MHz: 3000  
 Nominal: 2200  
 Enabled: 288 cores, 2 chips  
 Orderable: 1, 2 chip(s)  
 Cache L1: 64 KB I + 32 KB D on chip per core  
 L2: 144 MB I+D on chip per chip,  
 4 MB shared / 4 cores  
 L3: 108 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx8 PC5-6400B-R)  
 Storage: 1 x 1.6 TB PCIe NVMe SSD  
 Other: CPU Cooling: Air

### Software

OS: SUSE Linux Enterprise Server 15 SP6  
 Kernel 6.4.0-150600.21-default  
 Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++  
 Compiler for Linux;  
 Fortran: Version 2024.1 of Intel Fortran Compiler  
 for Linux;  
 Parallel: No  
 Firmware: Version 0701 released Oct-2025  
 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	288	585	4940	583	4950	<b>584</b>	<b>4950</b>	288	585	4940	583	4950	<b>584</b>	<b>4950</b>
507.cactuBSSN_r	288	281	1300	282	1290	<b>282</b>	<b>1290</b>	288	281	1300	282	1290	<b>282</b>	<b>1290</b>
508.namd_r	288	<b>230</b>	<b>1190</b>	230	1190	234	1170	288	<b>230</b>	<b>1190</b>	230	1190	234	1170
510.parest_r	288	1706	442	1708	441	<b>1708</b>	<b>441</b>	144	<b>688</b>	<b>547</b>	688	547	689	547
511.povray_r	288	369	1820	<b>354</b>	<b>1900</b>	354	1900	288	<b>344</b>	<b>1950</b>	343	1960	345	1950
519.lbm_r	288	761	399	<b>761</b>	<b>399</b>	760	399	288	761	399	<b>761</b>	<b>399</b>	760	399
521.wrf_r	288	884	729	<b>885</b>	<b>729</b>	887	728	288	884	729	<b>885</b>	<b>729</b>	887	728
526.blender_r	288	<b>420</b>	<b>1040</b>	420	1040	420	1040	288	<b>420</b>	<b>1040</b>	420	1040	420	1040
527.cam4_r	288	368	1370	<b>367</b>	<b>1370</b>	367	1370	288	368	1370	<b>367</b>	<b>1370</b>	367	1370
538.imagick_r	288	155	4630	<b>110</b>	<b>6540</b>	109	6540	288	155	4630	<b>110</b>	<b>6540</b>	109	6540
544.nab_r	288	<b>247</b>	<b>1960</b>	247	1960	259	1870	288	<b>247</b>	<b>1960</b>	247	1960	259	1870
549.fotonik3d_r	288	1526	735	<b>1529</b>	<b>734</b>	1530	734	288	1526	735	<b>1529</b>	<b>734</b>	1530	734
554.roms_r	288	1152	397	<b>1156</b>	<b>396</b>	1158	395	288	1152	397	<b>1156</b>	<b>396</b>	1158	395

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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"  
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:  
LD\_LIBRARY\_PATH = "/ic24u1/lib/intel64:/ic24u1/je5.0.1-64"  
MALLOC\_CONF = "retain:true"

### General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM  
memory using Red Hat Enterprise Linux 8.4  
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>

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### General Notes (Continued)

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>

### Platform Notes

BIOS Configuration:  
 ENERGY\_PERF\_BIAS\_CFG mode = Performance  
 Latency Optimized Mode = Enabled  
 Engine Boost = Aggressive  
 SR-IOV Support = Disabled  
 Page Policy = Adaptive  
 LLC dead line alloc = Disable

Sysinfo program /ic24ul/bin/sysinfo  
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
 running on localhost Fri Mar 27 14:56:20 2026

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 254 (254.10+suse.84.ge8d77af424)
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 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)  
 x86\_64 x86\_64 x86\_64 GNU/Linux

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### Platform Notes (Continued)

```

-----
2. w
   14:56:20 up  5:49,  1 user,  load average: 169.85, 256.21, 272.94
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
root      tty1    -             09:09    5:46m  1.40s  0.00s  /bin/bash ./rate.sh

```

```

-----
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) 2061436
   max locked memory       (kbytes, -l) 8192
   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) 2061436
   virtual memory          (kbytes, -v) unlimited
   file locks              (-x) unlimited

```

```

-----
5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize=42
   login -- root
   -bash
   /bin/bash ./rate.sh
   /bin/bash ./rate.sh
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=288 -c
   ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define peakfpcopies=144 --define
   physicalfirst --define invoke_with_interleave --define drop_caches --reportable --tune base,peak -o all
   fprate
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=288 --configfile
   ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define peakfpcopies=144 --define
   physicalfirst --define invoke_with_interleave --define drop_caches --reportable --tune base,peak
   --output_format all --nopower --runmode rate --tune base:peak --size refrate fprate --nopreenv
   --note-preenv --logfile $SPEC/tmp/CPU2017.879/templogs/preenv.fprate.879.0.log --lognum 879.0
   --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /ic24ul

```

```

-----
6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) 6780E
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 175
   stepping        : 3
   microcode       : 0x3000382
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
   cpu cores       : 144
   siblings        : 144

```

(Continued on next page)



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### Platform Notes (Continued)

```

2 physical ids (chips)
288 processors (hardware threads)
physical id 0: core ids 0-143
physical id 1: core ids 0-143
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
,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118,120,122,124,126,128,130,1
32,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,18
4,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,232,234,236
,238,240,242,244,246,248,250,252,254,256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286
physical id 1: apicids
512,514,516,518,520,522,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,554,556,558,560,562,5
64,566,568,570,572,574,576,578,580,582,584,586,588,590,592,594,596,598,600,602,604,606,608,610,612,614,61
6,618,620,622,624,626,628,630,632,634,636,638,640,642,644,646,648,650,652,654,656,658,660,662,664,666,668
,670,672,674,676,678,680,682,684,686,688,690,692,694,696,698,700,702,704,706,708,710,712,714,716,718,720,
722,724,726,728,730,732,734,736,738,740,742,744,746,748,750,752,754,756,758,760,762,764,766,768,770,772,7
74,776,778,780,782,784,786,788,790,792,794,796,798

```

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 2.39.3:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          52 bits physical, 48 bits virtual
Byte Order:             Little Endian
CPU(s):                 288
On-line CPU(s) list:   0-287
Vendor ID:              GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:             Intel(R) Xeon(R) 6780E
BIOS Model name:       Intel(R) Xeon(R) 6780E  CPU @ 2.2GHz
BIOS CPU family:       179
CPU family:             6
Model:                  175
Thread(s) per core:    1
Core(s) per socket:    144
Socket(s):              2
Stepping:               3
CPU(s) scaling MHz:    30%
CPU max MHz:            3000.0000
CPU min MHz:            800.0000
BogoMIPS:               4400.00
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
pdpelgb 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 sse3 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 intel_ppin cdp_l2
ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept
vpid ept_ad fsgsbase tsc_adjust bml avx2 smep bmi2 erms invpcid cqm
rdt_a rdseed adx smap clflushopt clwb intel_pt sha_ni xsaveopt xsavec
xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
split_lock_detect user_shstk avx_vnni lam wbnoinvd dtherm ida arat
pln pts hwp hwp_act_window hwp_epp hwp_pkg_req vnni umip pku ospke
waitpkg gfni vaes vpclmulqdq tme rdpid bus_lock_detect cldeMOTE

```

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### Platform Notes (Continued)

```

movdiri movdir64b enqcmd fsrm md_clear serialize pconfig arch_lbr ibt
flush_lld arch_capabilities
VT-x
Virtualization:
L1d cache: 9 MiB (288 instances)
L1i cache: 18 MiB (288 instances)
L2 cache: 288 MiB (72 instances)
L3 cache: 216 MiB (2 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0-143
NUMA node1 CPU(s): 144-287
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Reg file data sampling: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec rstack overflow: 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 / Automatic IBRS; IBPB conditional; RSB filling;
PBR SB-eIBRS Not affected; BHI BHI_DIS_S
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 32K 9M 8 Data 1 64 1 64
L1i 64K 18M 8 Instruction 1 128 1 64
L2 4M 288M 16 Unified 2 4096 1 64
L3 108M 216M 12 Unified 3 147456 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: 0-143
node 0 size: 257453 MB
node 0 free: 198917 MB
node 1 cpus: 144-287
node 1 size: 257931 MB
node 1 free: 204079 MB
node distances:
node 0 1
0: 10 21
1: 21 10

```

```

-----
9. /proc/meminfo
MemTotal: 527754744 kB

```

```

-----
10. who -r
run-level 3 Mar 27 09:07

```

```

-----
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
Default Target Status
multi-user running

```

(Continued on next page)



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### Platform Notes (Continued)

-----  
12. Services, from `systemctl list-unit-files`

STATE	UNIT FILES
enabled	YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ irqbalance issue-generator kbdsettings klog lvm2-monitor nsd nvme-fc-boot-connections nvmmf-autoconnect postfix purge-kernels rollback rsyslog sep5 smartd sshd systemd-pstore 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 console-getty cron console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info firewallld fsidd gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmievd issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts snmpd snmptrapd svnservice systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd tuned udisks2 vncserver@
indirect	systemd-userdbd wickedd

-----  
13. Linux kernel boot-time arguments, from `/proc/cmdline`

```

BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
root=UUID=9bcf0374-b29f-4a4c-932e-9c0e90fb0803
splash=silent
mitigations=auto
quiet
video=1024x768

```

-----  
14. `cpupower frequency-info`

```

analyzing CPU 264:
  current policy: frequency should be within 800 MHz and 3.00 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: latency-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

```

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### Platform Notes (Continued)

vm.watermark_boost_factor	15000
vm.watermark_scale_factor	10
vm.zone_reclaim_mode	0

```
-----
17. /sys/kernel/mm/transparent_hugepage
defrag          always defer+madvice [madvice] never
enabled        [always] madvice 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 SP6
-----
```

```
-----
20. Disk information
SPEC is set to: /ic24ul
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p8 xfs   500G 231G 270G 47% /
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:      ASUSTeK COMPUTER INC.
Product:     RS720-E12-RS8G
Product Family: Server
Serial:      ----
-----
```

```
-----
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:
  16x Samsung M321R4GA3PB2-CCPKC 32 GB 2 rank 6400
-----
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:    American Megatrends Inc.
BIOS Version:   0701
BIOS Date:     10/13/2025
BIOS Revision: 7.1
-----
```



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720-E12-RS8G  
(2.20 GHz, Intel Xeon 6780E)

SPECrate®2017\_fp\_base = 1190

SPECrate®2017\_fp\_peak = 1220

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Mar-2026

Hardware Availability: Jul-2025

Software Availability: Jun-2024

### Compiler Version Notes

=====  
C | 519.lbm\_r(base, peak) 538.imagick\_r(base, peak) 544.nab\_r(base, peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
=====

=====  
C++ | 508.namd\_r(base, peak) 510.parest\_r(base, peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
=====

=====  
C++, C | 511.povray\_r(base, peak) 526.blender\_r(base, peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
=====

=====  
C++, C, Fortran | 507.cactuBSSN\_r(base, peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
=====

=====  
Fortran | 503.bwaves\_r(base, peak) 549.fotonik3d\_r(base, peak) 554.roms\_r(base, peak)  
=====

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
=====

=====  
Fortran, C | 521.wrf\_r(base, peak) 527.cam4\_r(base, peak)  
=====

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
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=====

### Base Compiler Invocation

C benchmarks:  
icx

(Continued on next page)



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**CPU2017 License:** 9016

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**Test Date:** Mar-2026

**Hardware Availability:** Jul-2025

**Software Availability:** Jun-2024

## Base Compiler Invocation (Continued)

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Base Portability Flags

```

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

```

## Base Optimization Flags

C benchmarks:

```

-w -std=c11 -m64 -Wl,-z,muldefs -xsierraforest -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

```

C++ benchmarks:

```

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

```

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**CPU2017 License:** 9016

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**Test Sponsor:** ASUSTeK Computer Inc.

**Hardware Availability:** Jul-2025

**Tested by:** ASUSTeK Computer Inc.

**Software Availability:** Jun-2024

## Base Optimization Flags (Continued)

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

Benchmarks using both C and C++:

```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xsierraforest -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

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

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

(Continued on next page)



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**CPU2017 License:** 9016

**Test Date:** Mar-2026

**Test Sponsor:** ASUSTeK Computer Inc.

**Hardware Availability:** Jul-2025

**Tested by:** ASUSTeK Computer Inc.

**Software Availability:** Jun-2024

## Peak Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: basepeak = yes

538.imagick\_r: basepeak = yes

544.nab\_r: basepeak = yes

C++ benchmarks:

508.namd\_r: basepeak = yes

510.parest\_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xsierraforest -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves\_r: basepeak = yes

549.fotonik3d\_r: basepeak = yes

554.roms\_r: basepeak = yes

Benchmarks using both Fortran and C:

521.wrf\_r: basepeak = yes

527.cam4\_r: basepeak = yes

Benchmarks using both C and C++:

(Continued on next page)



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## Peak Optimization Flags (Continued)

```
511.povray_r: -w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -ffast-math -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

526.blender\_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN\_r: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z14-V1.1.html>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html>

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

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z14-V1.1.xml>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

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