SPEC CPU®2017 Floating Point Rate Result

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Supermicro

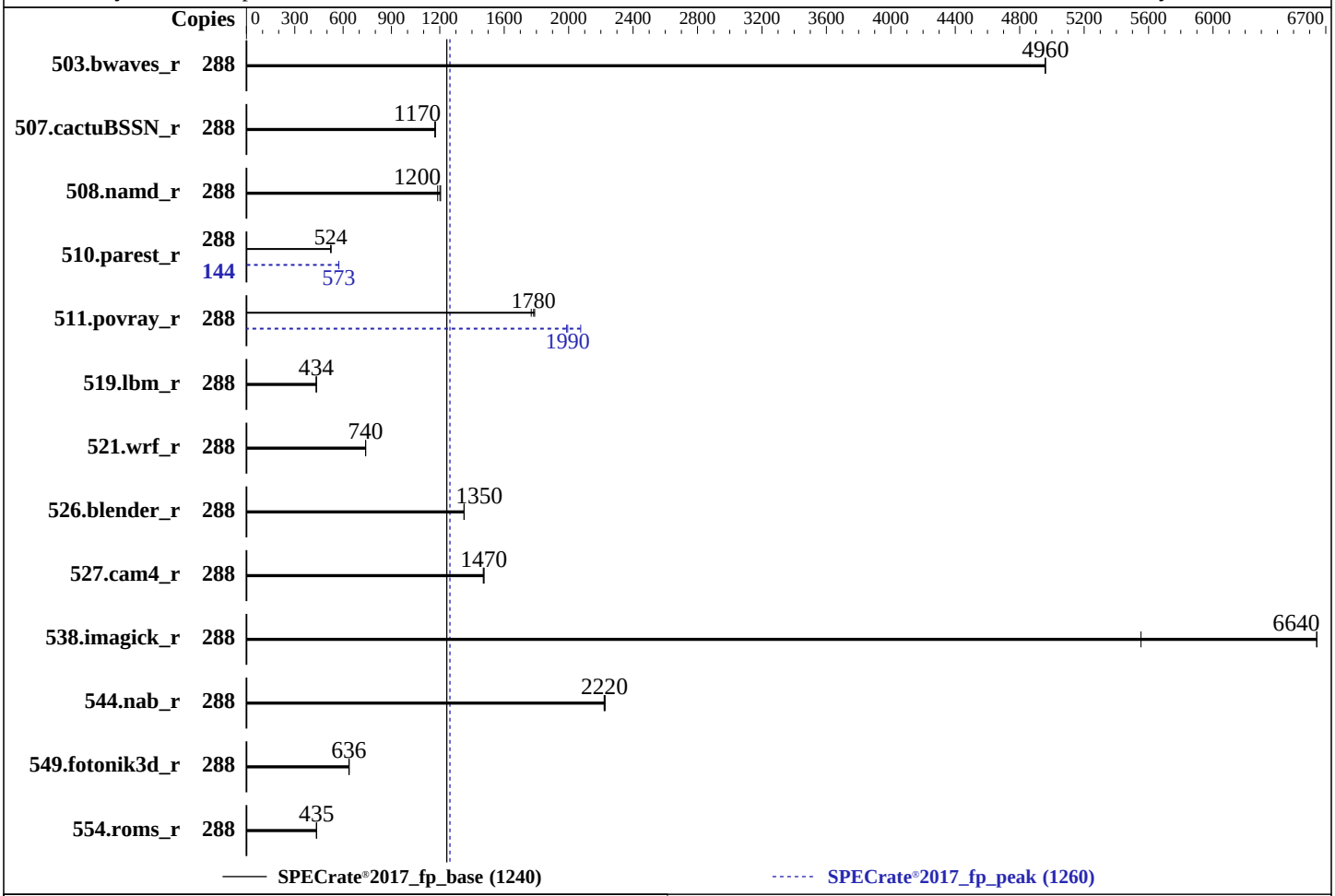
SuperServer SYS-112HA-TN
(X14SBH-AP , Intel Xeon 6990E+)

SPECrate®2017_fp_base = 1240

SPECrate®2017_fp_peak = 1260

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: May-2026
Hardware Availability: Jun-2026
Software Availability: Mar-2026



Hardware

CPU Name:	Intel Xeon 6990E+
Max MHz:	3200
Nominal:	2200
Enabled:	288 cores, 1 chip
Orderable:	1 chip
Cache L1:	64 KB I + 32 KB D on chip per core
L2:	288 MB I+D on chip per chip, 4 MB shared / 4 cores
L3:	576 MB I+D on chip per chip
Other:	None
Memory:	1152 GB (12 x 96 GB 2Rx4 PC5-8000B-R)
Storage:	1 x 480 GB NVMe SSD
Other:	CPU Cooling: Air

Software

OS:	Red Hat Enterprise Linux 9.7 Kernel 5.14.0-611.5.1.el9_7.x86_64
Compiler:	C/C++: Version 2026.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2026.0 of Intel Fortran Compiler for Linux;
Parallel:	No
Firmware:	Version 1.5b released May-2026
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	**582**	**4960**	583	4960	582	4960	288	**582**	**4960**	583	4960	582	4960
507.cactuBSSN_r	288	**312**	**1170**	311	1170	312	1170	288	**312**	**1170**	311	1170	312	1170
508.namd_r	288	227	1210	**228**	**1200**	231	1190	288	227	1210	**228**	**1200**	231	1190
510.parest_r	288	1441	523	1435	525	**1438**	**524**	144	658	573	**657**	**573**	657	573
511.povray_r	288	380	1770	376	1790	**377**	**1780**	288	338	1990	**337**	**1990**	324	2070
519.lbm_r	288	**700**	**434**	700	434	700	434	288	**700**	**434**	700	434	700	434
521.wrf_r	288	872	740	**872**	**740**	872	740	288	872	740	**872**	**740**	872	740
526.blender_r	288	325	1350	**325**	**1350**	325	1350	288	325	1350	**325**	**1350**	325	1350
527.cam4_r	288	343	1470	**342**	**1470**	342	1470	288	343	1470	**342**	**1470**	342	1470
538.imagick_r	288	**108**	**6640**	108	6650	129	5550	288	**108**	**6640**	108	6650	129	5550
544.nab_r	288	218	2220	218	2230	**218**	**2220**	288	218	2220	218	2230	**218**	**2220**
549.fotonik3d_r	288	1759	638	**1764**	**636**	1765	636	288	1759	638	**1764**	**636**	1765	636
554.roms_r	288	1054	434	1051	436	**1051**	**435**	288	1054	434	1051	436	**1051**	**435**

SPECrate®2017_fp_base = 1240

SPECrate®2017_fp_peak = 1260

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"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64"
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>

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
```

(Continued on next page)

General Notes (Continued)

```
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 settings:
Workload Profile = HPC
KTI Prefetch = Enable
Stale AtoS = Disable
LLC Dead Line Alloc = Disable

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on 135-180-133.engtw Thu May 14 21:44:51 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 252 (252-55.el9)
 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 135-180-133.engtw 5.14.0-611.5.1.el9_7.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Oct 17 14:16:35 EDT 2025
   x86_64 x86_64 x86_64 GNU/Linux

 ------------------------------------------------------------
 2. w
    21:44:51 up 1 day,  7:24,  1 user,  load average: 193.09, 265.60, 278.95
```

(Continued on next page)

Platform Notes (Continued)

```
  USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1      Wed14    5:53m  1.83s  0.01s -bash

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

------------------------------------------------------------
4. ulimit -a
  real-time non-blocking time  (microseconds, -R) unlimited
  core file size              (blocks, -c) 0
  data seg size               (kbytes, -d) unlimited
  scheduling priority                 (-e) 0
  file size                   (blocks, -f) unlimited
  pending signals                     (-i) 4639996
  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) 4639996
  virtual memory              (kbytes, -v) unlimited
  file locks                          (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd rhgb --system --deserialize 20
 login -- root
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=288 -c
   ic2026.0-lin-clearwaterforest-rate-20260429.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
   ic2026.0-lin-clearwaterforest-rate-20260429.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/CPU2017.002/templogs/preenv.fprate.002.0.log --lognum 002.0
   --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) 6990E+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 221
    stepping        : 1
    microcode       : 0x1000120
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi spectre_v2_user
    cpu cores       : 288
    siblings        : 288
    1 physical ids (chips)
    288 processors (hardware threads)
    physical id 0: core ids 0-95,128-223,256-351
```

(Continued on next page)

Platform Notes (Continued)

```
     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
     4,186,188,190,256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300
     ,302,304,306,308,310,312,314,316,318,320,322,324,326,328,330,332,334,336,338,340,342,344,346,348,350,352,
     354,356,358,360,362,364,366,368,370,372,374,376,378,380,382,384,386,388,390,392,394,396,398,400,402,404,4
     06,408,410,412,414,416,418,420,422,424,426,428,430,432,434,436,438,440,442,444,446,512,514,516,518,520,52
     2,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,554,556,558,560,562,564,566,568,570,572,574
     ,576,578,580,582,584,586,588,590,592,594,596,598,600,602,604,606,608,610,612,614,616,618,620,622,624,626,
     628,630,632,634,636,638,640,642,644,646,648,650,652,654,656,658,660,662,664,666,668,670,672,674,676,678,6
     80,682,684,686,688,690,692,694,696,698,700,702
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
   virtualized systems.  Use the above data carefully.

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

From lscpu from util-linux 2.37.4:
   Architecture:                         x86_64
   CPU op-mode(s):                       32-bit, 64-bit
   Address sizes:                        52 bits physical, 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) 6990E+
   BIOS Model name:                      Intel(R) Xeon(R) 6990E+
   CPU family:                           6
   Model:                                221
   Thread(s) per core:                   1
   Core(s) per socket:                   288
   Socket(s):                            1
   Stepping:                             1
   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
                                         pdpe1gb rdtscp lm constant_tsc art arch_perfmon 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 intel_ppin
                                         cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
                                         flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 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 vnmi umip
                                         pku ospke waitpkg gfni vaes vpclmulqdq tme rdpid bus_lock_detect
                                         cldemote movdiri movdir64b enqcmd fsrm md_clear serialize pconfig
                                         arch_lbr ibt flush_l1d arch_capabilities
   Virtualization:                       VT-x
   L1d cache:                            9 MiB (288 instances)
   L1i cache:                            18 MiB (288 instances)
   L2 cache:                             288 MiB (72 instances)
   L3 cache:                             576 MiB (1 instance)
   NUMA node(s):                         3
   NUMA node0 CPU(s):                    0-95
```

(Continued on next page)

Platform Notes (Continued)

```
  NUMA node1 CPU(s):                    96-191
  NUMA node2 CPU(s):                    192-287
  Vulnerability Gather data sampling:   Not affected
  Vulnerability Indirect target selection: 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;
                                        PBRSB-eIBRS Not affected; BHI BHI_DIS_S
  Vulnerability Srbds:                  Not affected
  Vulnerability Tsa:                    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       576M     576M   16 Unified         3 589824        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 3 nodes (0-2)
  node 0 cpus: 0-95
  node 0 size: 386039 MB
  node 0 free: 333108 MB
  node 1 cpus: 96-191
  node 1 size: 387047 MB
  node 1 free: 313068 MB
  node 2 cpus: 192-287
  node 2 size: 386975 MB
  node 2 free: 346908 MB
  node distances:
  node     0    1    2
     0:   10   15   17
     1:   15   10   15
     2:   17   15   10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1187904768 kB

------------------------------------------------------------
10. who -r
  run-level 3 May 13 14:20

------------------------------------------------------------
11. Systemd service manager version: systemd 252 (252-55.el9)
  Default Target  Status
  multi-user      running
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
                   accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker firewalld
                   gdm getty@ insights-client-boot irqbalance iscsi-onboot iscsi-starter kdump libstoragemgmt
                   low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
                   nvmefc-boot-connections ostree-remount qemu-guest-agent rhsmcertd rsyslog rtkit-daemon
                   selinux-autorelabel-mark smartd sshd sssd switcheroo-control systemd-boot-update
                   systemd-network-generator systemd-pstore tuned udisks2 upower vgauthd vmtoolsd
  enabled-runtime  systemd-remount-fs
  disabled         arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
                   canberra-system-shutdown-reboot chrony-wait chronyd-restricted cni-dhcp console-getty
                   cpupower cups-browsed dbus-daemon debug-shell dnf-system-upgrade dnsmasq iprdump iprinit
                   iprupdate iscsi-init iscsid iscsiuio kpatch kvm_stat ledmon lvm-devices-import
                   man-db-restart-cache-update netavark-dhcp-proxy netavark-firewalld-reload nftables
                   nvmf-autoconnect ostree-readonly-sysroot-migration ostree-state-overlay@ podman
                   podman-auto-update podman-clean-transient podman-kube@ podman-restart psacct ras-mc-ctl
                   rasdaemon rdisc rhcd rhsm rhsm-facts rpmdb-rebuild selinux-check-proper-disable
                   serial-getty@ speech-dispatcherd sshd-keygen@ systemd-boot-check-no-failures
                   systemd-sysext tuned-ppd wpa_supplicant
  indirect         iscsi spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
                   systemd-sysupdate systemd-sysupdate-reboot

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-611.5.1.el9_7.x86_64
  root=/dev/mapper/rhel_135--180--133-root
  ro
  resume=/dev/mapper/rhel_135--180--133-swap
  rd.lvm.lv=rhel_135-180-133/root
  rd.lvm.lv=rhel_135-180-133/swap
  rhgb
  quiet
  crashkernel=1G-2G:192M,2G-64G:256M,64G-:512M

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 267:
    Unable to determine current policy
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. tuned-adm active
  Current active 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                     40
  vm.dirty_writeback_centisecs      500
  vm.dirtytime_expire_seconds     43200
```

(Continued on next page)

Platform Notes (Continued)

```
  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

------------------------------------------------------------
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     Red Hat Enterprise Linux 9.7 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.7 (Plow)
  system-release Red Hat Enterprise Linux release 9.7 (Plow)

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017
  Filesystem                      Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel_135--180--133-home xfs   372G  143G  230G  39% /home

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         Supermicro
    Product:        Super Server
    Product Family: Family
    Serial:         0123456789

------------------------------------------------------------
22. dmidecode
  Additional information from dmidecode 3.6 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:
    12x SK Hynix HMCGM4AMBRB970N 96 GB 2 rank 8000


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
```

(Continued on next page)

Platform Notes (Continued)

```
    BIOS Vendor:       American Megatrends International, LLC.
    BIOS Version:      1.5b
    BIOS Date:         05/04/2026
    BIOS Revision:     5.35
```

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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
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Fortran, C     | 521.wrf_r(base, peak) 527.cam4_r(base, peak)
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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
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Base 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

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 -xclearwaterforest -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

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Base Optimization Flags (Continued)

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

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xclearwaterforest -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 -xclearwaterforest -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 -xclearwaterforest
-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 -xclearwaterforest
-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

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Peak Compiler Invocation (Continued)

Benchmarks using both C and C++:
icpx icx

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 -xclearwaterforest
-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

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Peak Optimization Flags (Continued)

527.cam4_r: `basepeak = yes`

Benchmarks using both C and C++:

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/Intel-ic2026-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CWF-revB.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2026-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CWF-revB.xml`

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

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