SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)
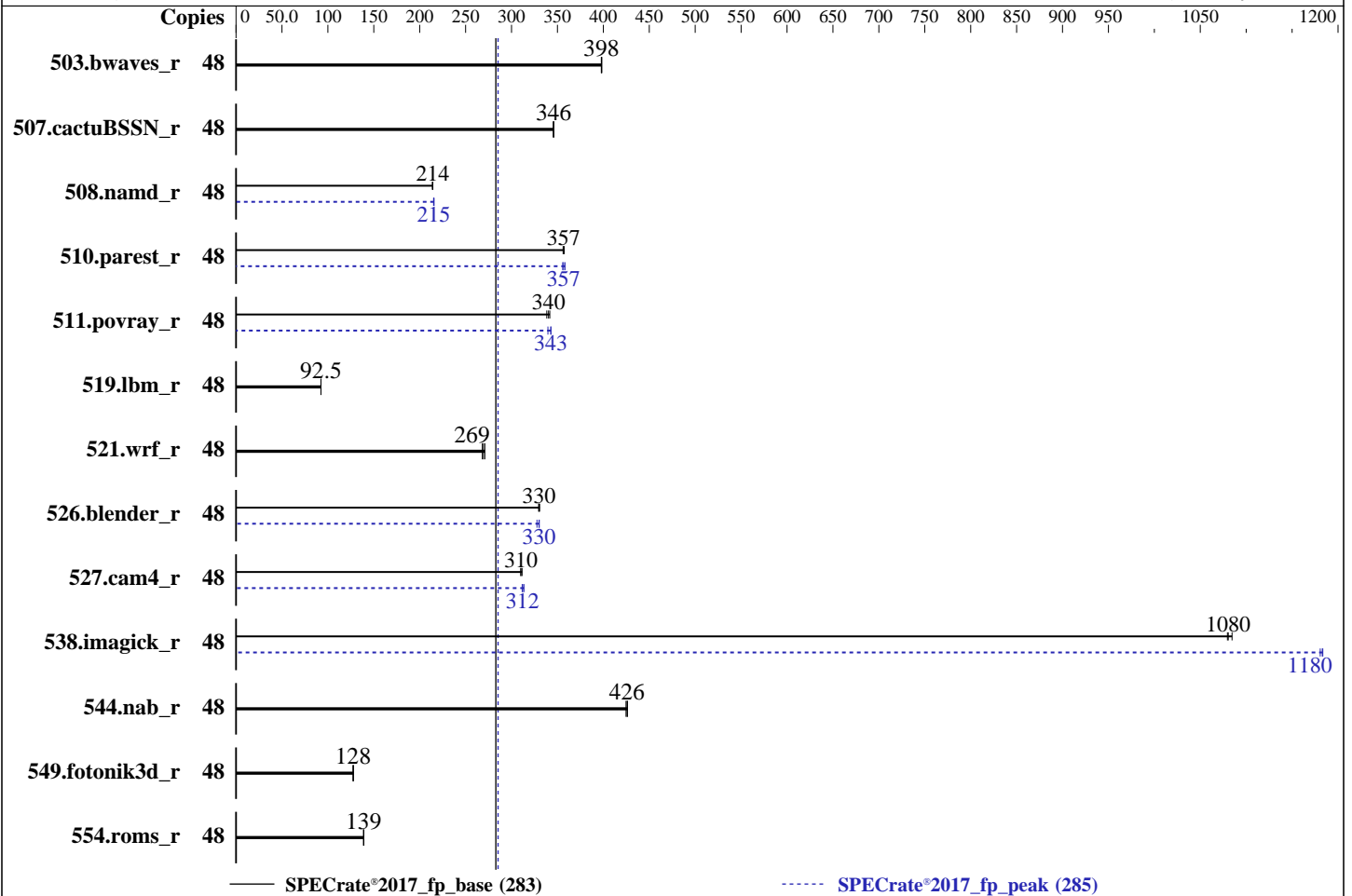
ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

$SPECrate®2017\_fp\_base = 283$

$SPECrate®2017\_fp\_peak = 285$

CPU2017 License: 3 **Test Date:** Dec-2023
Test Sponsor: HPE **Hardware Availability:** Nov-2023
Tested by: HPE **Software Availability:** May-2022

Benchmark	Copies	base	peak
503.bwaves_r	48	398	
507.cactuBSSN_r	48	346	
508.namd_r	48	214	215
510.parest_r	48	357	357
511.povray_r	48	340	343
519.lbm_r	48	92.5	
521.wrf_r	48	269	
526.blender_r	48	330	330
527.cam4_r	48	310	312
538.imagick_r	48	1080	1180
544.nab_r	48	426	
549.fotonik3d_r	48	128	
554.roms_r	48	139	

— SPECrate®2017_fp_base (283)   ----- SPECrate®2017_fp_peak (285)

Hardware
CPU Name: AMD EPYC 7643P
  Max MHz: 3600
  Nominal: 2300
Enabled: 48 cores, 1 chip
Orderable: 1 chip
Cache L1: 32 KB I + 32 KB D on chip per core
  L2: 512 KB I+D on chip per core
  L3: 256 MB I+D on chip per chip,
      32 MB shared / 6 cores
  Other: None
Memory: 512 GB (8 x 64 GB 2Rx4 PC4-3200AA-R)
Storage: 1 x 480 GB SAS SSD
Other: None

Software
OS: Red Hat Enterprise Linux 9.0 (Plow)
    Kernel 5.14.0-70.13.1.el9_0.x86_64
Compiler: C/C++/Fortran: Version 3.2.0 of AOCC
Parallel: No
Firmware: HPE BIOS Version A43 v2.90 (10/27/2023) released Oct-2023
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc: jemalloc memory allocator library v5.1.0
Power Management: BIOS set to prefer performance at the cost of additional power usage

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

$SPECrate®2017\_fp\_base = 283$

$SPECrate®2017\_fp\_peak = 285$

CPU2017 License: 3	**Test Date:** Dec-2023
Test Sponsor: HPE	**Hardware Availability:** Nov-2023
Tested by: HPE	**Software Availability:** May-2022

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	48	**1210**	**398**	1208	398	1210	398	48	**1210**	**398**	1208	398	1210	398
507.cactuBSSN_r	48	**176**	**346**	176	346	176	345	48	**176**	**346**	176	346	176	345
508.namd_r	48	213	214	213	214	**213**	**214**	48	212	215	**212**	**215**	212	216
510.parest_r	48	**352**	**357**	351	357	353	356	48	**352**	**357**	353	356	351	358
511.povray_r	48	328	342	331	338	**329**	**340**	48	330	340	327	343	**327**	**343**
519.lbm_r	48	547	92.5	**547**	**92.5**	547	92.5	48	547	92.5	**547**	**92.5**	547	92.5
521.wrf_r	48	401	268	**399**	**269**	397	271	48	401	268	**399**	**269**	397	271
526.blender_r	48	221	331	222	330	**222**	**330**	48	221	330	**221**	**330**	223	328
527.cam4_r	48	270	311	**271**	**310**	271	310	48	**269**	**312**	269	312	268	314
538.imagick_r	48	110	1080	**110**	**1080**	111	1080	48	101	1180	101	1180	**101**	**1180**
544.nab_r	48	190	426	190	425	**190**	**426**	48	190	426	190	425	**190**	**426**
549.fotonik3d_r	48	1464	128	**1467**	**128**	1467	128	48	1464	128	**1467**	**128**	1467	128
554.roms_r	48	549	139	548	139	**549**	**139**	48	549	139	548	139	**549**	**139**
SPECrate®2017_fp_base =	**283**													
SPECrate®2017_fp_peak =	**285**													

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

Compiler Notes

```
The AMD64 AOCC Compiler Suite is available at
http://developer.amd.com/amd-aocc/
```

Submit Notes

```
The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.
```

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run
variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

To enable Transparent Hugepages (THP) for all allocations,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
```

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

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License: 3	**Test Date:** Dec-2023
Test Sponsor: HPE	**Hardware Availability:** Nov-2023
Tested by: HPE	**Software Availability:** May-2022

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
     "/home/cpu2017/amd_rate_aocc320_milanx_A_lib/lib;/home/cpu2017/amd_rate_aocc320_milanx_A_lib/lib32:"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 1TiB Memory using OpenSUSE 15.2

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: configured and built with GCC v4.8.2 in RHEL 7.4 (No options specified)
jemalloc 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2
```

Platform Notes

```
BIOS Configuration
Workload Profile set to General Throughput Compute
Determinism Control set to Manual
Performance Determinism set to Power Deterministic
AMD SMT Option set to Disabled
Last-Level-Cache(LLC) As Numa Node set to Enabled
NUMA memory domains per socket set to Four memory domains per socket
Memory Patrol Scrubbing set to Disabled
Thermal Configuration set to Maximum Cooling
Memory Interleaving set to Disabled
Workload Profile set to Custom
Power Regulator set to OS Control Mode
L1 HW Prefetcher set to Disabled

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Sat Dec  2 23:18:37 2023

 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 250 (250-6.el9_0)
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

$SPECrate^{®}2017\_fp\_base = 283$

$SPECrate^{®}2017\_fp\_peak = 285$

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Dec-2023

Hardware Availability: Nov-2023

Software Availability: May-2022

Platform Notes (Continued)

```
   12. Services, from systemctl list-unit-files
   13. Linux kernel boot-time arguments, from /proc/cmdline
   14. cpupower frequency-info
   15. sysctl
   16. /sys/kernel/mm/transparent_hugepage
   17. /sys/kernel/mm/transparent_hugepage/khugepaged
   18. OS release
   19. Disk information
   20. /sys/devices/virtual/dmi/id
   21. dmidecode
   22. BIOS
   ------------------------------------------------------------


   ------------------------------------------------------------
   1. uname -a
     Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
     x86_64 x86_64 GNU/Linux


   ------------------------------------------------------------
   2. w
      23:18:37 up 4 min,  1 user,  load average: 0.01, 0.11, 0.07
     USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
     root     pts/0      23:16   11.00s  1.10s  0.03s /bin/bash ./amd_rate_aocc320_milanx_A1.sh


   ------------------------------------------------------------
   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) 2062583
     max locked memory           (kbytes, -l) 2097152
     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) 2062583
     virtual memory              (kbytes, -v) unlimited
     file locks                       (-x) unlimited


   ------------------------------------------------------------
   5. sysinfo process ancestry
    /usr/lib/systemd/systemd --switched-root --system --deserialize 30
    sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
    sshd: root [priv]
    sshd: root@pts/0
    -bash
    python3 ./run_fprate.py
    /bin/bash ./amd_rate_aocc320_milanx_A1.sh
    runcpu --config amd_rate_aocc320_milanx_A1.cfg --tune all --reportable --iterations 3 fprate
    runcpu --configfile amd_rate_aocc320_milanx_A1.cfg --tune all --reportable --iterations 3 --nopower
      --runmode rate --tune base:peak --size test:train:refrate fprate --nopreenv --note-preenv --logfile
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License:	3	**Test Date:**	Dec-2023
Test Sponsor:	HPE	**Hardware Availability:**	Nov-2023
Tested by:	HPE	**Software Availability:**	May-2022

Platform Notes (Continued)

```
    $SPEC/tmp/CPU2017.007/templogs/preenv.fprate.007.0.log --lognum 007.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017


    ------------------------------------------------------------
 6. /proc/cpuinfo
    model name      : AMD EPYC 7643P 48-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 25
    model           : 1
    stepping        : 1
    microcode       : 0xa0011d1
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
    TLB size        : 2560 4K pages
    cpu cores       : 48
    siblings        : 48
    1 physical ids (chips)
    48 processors (hardware threads)
    physical id 0: core ids 0-5,8-13,16-21,24-29,32-37,40-45,48-53,56-61
    physical id 0: apicids 0-5,8-13,16-21,24-29,32-37,40-45,48-53,56-61
  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:          48 bits physical, 48 bits virtual
  Byte Order:             Little Endian
  CPU(s):                 48
  On-line CPU(s) list:    0-47
  Vendor ID:              AuthenticAMD
  BIOS Vendor ID:         Advanced Micro Devices, Inc.
  Model name:             AMD EPYC 7643P 48-Core Processor
  BIOS Model name:        AMD EPYC 7643P 48-Core Processor
  CPU family:             25
  Model:                  1
  Thread(s) per core:     1
  Core(s) per socket:     48
  Socket(s):              1
  Stepping:               1
  Frequency boost:        enabled
  CPU max MHz:            2300.0000
  CPU min MHz:            1500.0000
  BogoMIPS:               4591.35
  Flags:                  fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                          clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm
                          constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf rapl
                          pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 movbe popcnt aes
                          xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a
                          misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core
                          perfctr_nb bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single
                          hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2
                          erms invpcid cqm rdt_a rdseed adx smap clflushopt clwb sha_ni xsaveopt
                          xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
                          clzero irperf xsaveerptr rdpru wbnoinvd amd_ppin arat npt lbrv svm_lock
                          nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
                          pfthreshold v_vmsave_vmload vgif v_spec_ctrl umip pku ospke vaes
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

$SPECrate®2017\_fp\_base = 283$

$SPECrate®2017\_fp\_peak = 285$

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Dec-2023

Hardware Availability: Nov-2023

Software Availability: May-2022

Platform Notes (Continued)

```
                                   vpclmulqdq rdpid overflow_recov succor smca fsrm
    Virtualization:                AMD-V
    L1d cache:                     1.5 MiB (48 instances)
    L1i cache:                     1.5 MiB (48 instances)
    L2 cache:                      24 MiB (48 instances)
    L3 cache:                      256 MiB (8 instances)
    NUMA node(s):                  8
    NUMA node0 CPU(s):             0-5
    NUMA node1 CPU(s):             6-11
    NUMA node2 CPU(s):             12-17
    NUMA node3 CPU(s):             18-23
    NUMA node4 CPU(s):             24-29
    NUMA node5 CPU(s):             30-35
    NUMA node6 CPU(s):             36-41
    NUMA node7 CPU(s):             42-47
    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
    Vulnerability Spectre v1:      Mitigation; usercopy/swapgs barriers and __user pointer sanitization
    Vulnerability Spectre v2:      Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP disabled, 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       32K     1.5M    8 Data            1    64        1             64
      L1i       32K     1.5M    8 Instruction     1    64        1             64
      L2       512K      24M    8 Unified         2  1024        1             64
      L3        32M     256M   16 Unified         3 32768        1             64

  ------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 8 nodes (0-7)
  node 0 cpus: 0-5
  node 0 size: 64264 MB
  node 0 free: 63906 MB
  node 1 cpus: 6-11
  node 1 size: 64508 MB
  node 1 free: 64201 MB
  node 2 cpus: 12-17
  node 2 size: 64474 MB
  node 2 free: 64294 MB
  node 3 cpus: 18-23
  node 3 size: 64509 MB
  node 3 free: 64333 MB
  node 4 cpus: 24-29
  node 4 size: 64510 MB
  node 4 free: 64318 MB
  node 5 cpus: 30-35
  node 5 size: 64509 MB
  node 5 free: 64328 MB
  node 6 cpus: 36-41
  node 6 size: 64510 MB
  node 6 free: 64342 MB
  node 7 cpus: 42-47
  node 7 size: 64489 MB
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

$SPECrate®2017\_fp\_base = 283$

$SPECrate®2017\_fp\_peak = 285$

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

Test Date: Dec-2023
Hardware Availability: Nov-2023
Software Availability: May-2022

Platform Notes (Continued)

```
   node 7 free: 64316 MB
   node distances:
   node   0   1   2   3   4   5   6   7
     0:  10  11  12  12  12  12  12  12
     1:  11  10  12  12  12  12  12  12
     2:  12  12  10  11  12  12  12  12
     3:  12  12  11  10  12  12  12  12
     4:  12  12  12  12  10  11  12  12
     5:  12  12  12  12  11  10  12  12
     6:  12  12  12  12  12  12  10  11
     7:  12  12  12  12  12  12  11  10

   --------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       528155332 kB

   --------------------------------------------------------------
10. who -r
   run-level 3 Dec 2 23:13

   --------------------------------------------------------------
11. Systemd service manager version: systemd 250 (250-6.el9_0)
   Default Target  Status
   multi-user      running

   --------------------------------------------------------------
12. Services, from systemctl list-unit-files
   STATE             UNIT FILES
   enabled           NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd crond
                     dbus-broker firewalld getty@ irqbalance kdump lvm2-monitor mdmonitor microcode
                     nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sshd sssd
                     systemd-network-generator udisks2
   enabled-runtime   systemd-remount-fs
   disabled          blk-availability chrony-wait chronyd console-getty cpupower debug-shell hwloc-dump-hwdata
                     kvm_stat man-db-restart-cache-update nftables rdisc rhsm rhsm-facts rpmdb-rebuild
                     serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysext
                     target targetclid
   indirect          sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

   --------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=(hd0,gpt2)/vmlinuz-0-rescue-de810009b7df4a35a4c7454f61f3731c
   root=/dev/mapper/rhel-root
   ro
   resume=/dev/mapper/rhel-swap
   rd.lvm.lv=rhel/root
   rd.lvm.lv=rhel/swap

   --------------------------------------------------------------
14. cpupower frequency-info
   analyzing CPU 0:
     current policy: frequency should be within 1.50 GHz and 2.30 GHz.
                     The governor "performance" may decide which speed to use
                     within this range.
     boost state support:
       Supported: yes
       Active: yes
       Boost States: 0
       Total States: 3
       Pstate-P0:  2300MHz
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

$SPECrate^®2017\_fp\_base = 283$

$SPECrate^®2017\_fp\_peak = 285$

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Dec-2023

Hardware Availability: Nov-2023

Software Availability: May-2022

Platform Notes (Continued)

```
        ----------------------------------------------------------
        15. sysctl
          kernel.numa_balancing              1
          kernel.randomize_va_space          0
          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                     8
          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                      1
          vm.watermark_boost_factor      15000
          vm.watermark_scale_factor         10
          vm.zone_reclaim_mode               1


        ----------------------------------------------------------
        16. /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


        ----------------------------------------------------------
        17. /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


        ----------------------------------------------------------
        18. OS release
          From /etc/*-release /etc/*-version
          os-release     Red Hat Enterprise Linux 9.0 (Plow)
          redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
          system-release Red Hat Enterprise Linux release 9.0 (Plow)


        ----------------------------------------------------------
        19. Disk information
        SPEC is set to: /home/cpu2017
          Filesystem            Type  Size  Used Avail Use% Mounted on
          /dev/mapper/rhel-home xfs   372G  9.6G  362G   3% /home


        ----------------------------------------------------------
        20. /sys/devices/virtual/dmi/id
           Vendor:          HPE
           Product:         ProLiant DL325 Gen10 Plus v2
           Product Family:  ProLiant
           Serial:          CN70381LLR
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License: 3	**Test Date:** Dec-2023
Test Sponsor: HPE	**Hardware Availability:** Nov-2023
Tested by: HPE	**Software Availability:** May-2022

Platform Notes (Continued)

```
        ----------------------------------------------------------
        21. dmidecode
          Additional information from dmidecode 3.3 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 Micron 36ASF8G72PZ-3G2B2 64 GB 2 rank 3200


        ----------------------------------------------------------
        22. BIOS
        (This section combines info from /sys/devices and dmidecode.)
          BIOS Vendor:      HPE
          BIOS Version:     A43
          BIOS Date:        10/27/2023
          BIOS Revision:    2.90
          Firmware Revision: 2.72
```

Compiler Version Notes

```
==============================================================================
C              | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
------------------------------------------------------------------------------


==============================================================================
C++            | 508.namd_r(base, peak) 510.parest_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
------------------------------------------------------------------------------


==============================================================================
C++, C         | 511.povray_r(base, peak) 526.blender_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
------------------------------------------------------------------------------


==============================================================================
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Dec-2023

Hardware Availability: Nov-2023

Software Availability: May-2022

Compiler Version Notes (Continued)

```
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
------------------------------------------------------------------------------------------------


================================================================================================
Fortran      | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)
------------------------------------------------------------------------------------------------
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
------------------------------------------------------------------------------------------------


================================================================================================
Fortran, C   | 521.wrf_r(base, peak) 527.cam4_r(base, peak)
------------------------------------------------------------------------------------------------
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
AMD clang version 13.0.0 (CLANG: AOCC_3.2.0-Build#128 2021_11_12) (based on LLVM Mirror.Version.13.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin
------------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
flang
```

Benchmarks using both Fortran and C:
```
flang clang
```

Benchmarks using both C and C++:
```
clang++ clang
```

Benchmarks using Fortran, C, and C++:
```
clang++ clang flang
```

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License: 3	**Test Date:** Dec-2023
Test Sponsor: HPE	**Hardware Availability:** Nov-2023
Tested by: HPE	**Software Availability:** May-2022

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_CASE_FLAG -Mbyteswapio -DSPEC_LP64`
526.blender_r: `-funsigned-char -D__BOOL_DEFINED -DSPEC_LP64`
527.cam4_r: `-DSPEC_CASE_FLAG -DSPEC_LP64`
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:
```
-m64 -flto -Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -O3 -march=znver3 -fveclib=AMDLIBM
-ffast-math -fstruct-layout=5 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays
-mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-mllvm -enable-loop-fusion -z muldefs -lamdlibm -ljemalloc -lflang
```

C++ benchmarks:
```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -flto
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -O3 -march=znver3 -fveclib=AMDLIBM
-ffast-math -mllvm -enable-partial-unswitch
-mllvm -unroll-threshold=100 -finline-aggressive
-flv-function-specialization -mllvm -loop-unswitch-threshold=200000
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -extra-vectorizer-passes -mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -convert-pow-exp-to-int=false
-mllvm -enable-loop-fusion -z muldefs -lamdlibm -ljemalloc -lflang
```

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License: 3		**Test Date:**	Dec-2023
Test Sponsor: HPE		**Hardware Availability:**	Nov-2023
Tested by: HPE		**Software Availability:**	May-2022

Base Optimization Flags (Continued)

Fortran benchmarks:
```
-m64 -Wl,-mllvm -Wl,-enable-X86-prefetching
-Wl,-mllvm -Wl,-enable-licm-vrp -flto -Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -Hz,1,0x1 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -Kieee -Mrecursive
-mllvm -fuse-tile-inner-loop -funroll-loops
-mllvm -extra-vectorizer-passes -mllvm -lsr-in-nested-loop
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -enable-loop-fusion
-mllvm -enable-loopinterchange -mllvm -compute-interchange-order
-z muldefs -lamdlibm -ljemalloc -lflang
```

Benchmarks using both Fortran and C:
```
-m64 -Wl,-mllvm -Wl,-enable-X86-prefetching
-Wl,-mllvm -Wl,-enable-licm-vrp -flto -Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -O3 -march=znver3 -fveclib=AMDLIBM
-ffast-math -fstruct-layout=5 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays
-mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-mllvm -enable-loop-fusion -Hz,1,0x1 -Kieee -Mrecursive
-mllvm -fuse-tile-inner-loop -funroll-loops
-mllvm -extra-vectorizer-passes -mllvm -lsr-in-nested-loop
-mllvm -enable-loopinterchange -mllvm -compute-interchange-order
-z muldefs -lamdlibm -ljemalloc -lflang
```

Benchmarks using both C and C++:
```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -flto
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -O3 -march=znver3 -fveclib=AMDLIBM
-ffast-math -fstruct-layout=5 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays
-mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-mllvm -enable-loop-fusion -mllvm -enable-partial-unswitch
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

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

Test Date: Dec-2023
Hardware Availability: Nov-2023
Software Availability: May-2022

Base Optimization Flags (Continued)

Benchmarks using both C and C++ (continued):
```
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000 -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch -mllvm -extra-vectorizer-passes
-mllvm -convert-pow-exp-to-int=false -z muldefs -lamdlibm -ljemalloc
-lflang
```

Benchmarks using Fortran, C, and C++:
```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -flto
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -O3 -march=znver3 -fveclib=AMDLIBM
-ffast-math -fstruct-layout=5 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays
-mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-mllvm -enable-loop-fusion -mllvm -enable-partial-unswitch
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000 -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch -mllvm -extra-vectorizer-passes
-mllvm -convert-pow-exp-to-int=false -Hz,1,0x1 -Kieee -Mrecursive
-mllvm -fuse-tile-inner-loop -funroll-loops -mllvm -lsr-in-nested-loop
-mllvm -enable-loopinterchange -mllvm -compute-interchange-order
-z muldefs -lamdlibm -ljemalloc -lflang
```

Base Other Flags

C benchmarks:
```
-Wno-unused-command-line-argument
```

C++ benchmarks:
```
-Wno-unused-command-line-argument
```

Fortran benchmarks:
```
-Wno-unused-command-line-argument
```

Benchmarks using both Fortran and C:
```
-Wno-unused-command-line-argument
```

Benchmarks using both C and C++:
```
-Wno-unused-command-line-argument
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

CPU2017 License:	3	**Test Date:**	Dec-2023
Test Sponsor:	HPE	**Hardware Availability:**	Nov-2023
Tested by:	HPE	**Software Availability:**	May-2022

Base Other Flags (Continued)

Benchmarks using Fortran, C, and C++:
```
-Wno-unused-command-line-argument
```

Peak Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
flang
```

Benchmarks using both Fortran and C:
```
flang clang
```

Benchmarks using both C and C++:
```
clang++ clang
```

Benchmarks using Fortran, C, and C++:
```
clang++ clang flang
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

519.lbm_r: basepeak = yes

538.imagick_r: `-m64 -flto -Wl,-mllvm -Wl,-function-specialize`
`-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6`
`-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast`
`-march=znver3 -fveclib=AMDLIB -ffast-math`
`-fstruct-layout=7 -mllvm -unroll-threshold=50`

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

SPECrate®2017_fp_base = 283

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_peak = 285

CPU2017 License: 3	**Test Date:** Dec-2023
Test Sponsor: HPE	**Hardware Availability:** Nov-2023
Tested by: HPE	**Software Availability:** May-2022

Peak Optimization Flags (Continued)

538.imagick_r (continued):
```
-fremap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slp=true
-mllvm -function-specialize -mllvm -enable-licm-vrp
-mllvm -reduce-array-computations=3 -lamdlibm -ljemalloc
```

544.nab_r: basepeak = yes

C++ benchmarks:

508.namd_r: `-m64 -std=c++98 -mno-adx -mno-sse4a`
```
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false
-Wl,-mllvm -Wl,-enable-licm-vrp -flto
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math
-finline-aggressive -mllvm -unroll-threshold=100
-flv-function-specialization -mllvm -enable-licm-vrp
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -lamdlibm -ljemalloc
```

510.parest_r: `-m64 -std=c++98 -mno-adx -mno-sse4a`
```
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false
-Wl,-mllvm -Wl,-enable-licm-vrp -flto
-Wl,-mllvm -Wl,-suppress-fmas
-Wl,-mllvm -Wl,-function-specialize -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -finline-aggressive
-mllvm -unroll-threshold=100 -flv-function-specialization
-mllvm -enable-licm-vrp -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -lamdlibm -ljemalloc
```

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

554.roms_r: basepeak = yes

Benchmarks using both Fortran and C:

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

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

Test Date: Dec-2023
Hardware Availability: Nov-2023
Software Availability: May-2022

Peak Optimization Flags (Continued)

521.wrf_r: `basepeak = yes`

527.cam4_r: `-m64 -Wl,-mllvm -Wl,-enable-X86-prefetching`
`-Wl,-mllvm -Wl,-enable-licm-vrp -flto`
`-Wl,-mllvm -Wl,-function-specialize`
`-Wl,-mllvm -Wl,-force-vector-interleave=1 -Ofast`
`-march=znver3 -fveclib=AMDLIBM -ffast-math`
`-fstruct-layout=7 -mllvm -unroll-threshold=50`
`-fremap-arrays -flv-function-specialization`
`-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist`
`-mllvm -global-vectorize-slp=true`
`-mllvm -function-specialize -mllvm -enable-licm-vrp`
`-mllvm -reduce-array-computations=3 -O3 -funroll-loops`
`-mllvm -extra-vectorizer-passes -mllvm -lsr-in-nested-loop`
`-Mrecursive -Hz,1,0x1 -mllvm -enable-loopinterchange`
`-mllvm -compute-interchange-order -lamdlibm -ljemalloc`
`-lflang`

Benchmarks using both C and C++:
`-m64 -std=c++98 -mno-adx -mno-sse4a`
`-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Wl,-mllvm -Wl,-enable-licm-vrp`
`-flto -Wl,-mllvm -Wl,-function-specialize`
`-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6`
`-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver3`
`-fveclib=AMDLIBM -ffast-math -fstruct-layout=7`
`-mllvm -unroll-threshold=50 -fremap-arrays -flv-function-specialization`
`-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist`
`-mllvm -global-vectorize-slp=true -mllvm -function-specialize`
`-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3`
`-finline-aggressive -mllvm -unroll-threshold=100 -mllvm -reroll-loops`
`-mllvm -aggressive-loop-unswitch -lamdlibm -ljemalloc`

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: `basepeak = yes`

Peak Other Flags

C benchmarks:
`-Wno-unused-command-line-argument`

C++ benchmarks:
`-Wno-unused-command-line-argument`

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen10 Plus v2
(2.30 GHz, AMD EPYC 7643P)

SPECrate®2017_fp_base = 283

SPECrate®2017_fp_peak = 285

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

Test Date: Dec-2023
Hardware Availability: Nov-2023
Software Availability: May-2022

Peak Other Flags (Continued)

Fortran benchmarks:
`-Wno-unused-command-line-argument`

Benchmarks using both Fortran and C:
`-Wno-unused-command-line-argument`

Benchmarks using both C and C++:
`-Wno-unused-command-line-argument`

Benchmarks using Fortran, C, and C++:
`-Wno-unused-command-line-argument`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.3-EPYC-revS.html
http://www.spec.org/cpu2017/flags/aocc320-flags-A1.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.3-EPYC-revS.xml
http://www.spec.org/cpu2017/flags/aocc320-flags-A1.xml

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 2023-12-02 12:48:36-0500.
Report generated on 2023-12-20 13:10:54 by CPU2017 PDF formatter v6716.
Originally published on 2023-12-20.