## SPEC CPU®2017 Integer Rate Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL325 Gen10 Plus v2  
(3.05 GHz, AMD EPYC 7373X)  

**SPECrare®2017_int_base = 160**  
**SPECrare®2017_int_peak = 167**

<table>
<thead>
<tr>
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<th>SPECrate®2017_int_peak (167)</th>
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<tbody>
<tr>
<td>500.perlbench_r</td>
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<td>502.gcc_r</td>
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<td>505.mcf_r</td>
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<td>520.omnetpp_r</td>
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<td>523.xalancbmk_r</td>
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<td>525.x264_r</td>
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<td>531.deepsjeng_r</td>
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<td>541.leela_r</td>
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<tr>
<td>557.xz_r</td>
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<td>96.4</td>
</tr>
</tbody>
</table>

### Hardware
- **CPU Name:** AMD EPYC 7373X  
  - **Max MHz:** 3800  
  - **Nominal:** 3050  
  - **Enabled:** 16 cores, 1 chip, 2 threads/core  
  - **Orderable:** 1 chip  
  - **Cache L1:** 32 KB I + 32 KB D on chip per core  
  - **Cache L2:** 512 KB I+D on chip per core  
  - **Cache L3:** 768 MB I+D on chip per chip, 96 MB shared / 2 cores  
  - **Other:** None  
  - **Memory:** 1 TB (8 x 128 GB 4Rx4 PC4-3200AA-L)  
  - **Storage:** 1 x 480 GB SATA SSD, RAID 0  
  - **Other:** None

### Software
- **OS:** Ubuntu 20.04.3 LTS  
  - **Kernel:** 5.13.0-28-generic  
  - **Compiler:** C/C++/Fortran: Version 3.2.0 of AOCC  
  - **Parallel:** No  
  - **Firmware:** HPE BIOS Version A43 v2.56 02/10/2022 released  
  - **File System:** ext4  
  - **System State:** Run level 5 (multi-user)  
  - **Base Pointers:** 64-bit  
  - **Peak Pointers:** 32/64-bit  
  - **Other:** jemalloc; jemalloc memory allocator library v5.1.0  
  - **Power Management:** BIOS set to prefer performance at the cost of additional power usage
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HPE

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SPECrate®2017_int_peak = 167

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE
Test Date: Feb-2022
Hardware Availability: Mar-2022
Software Availability: Jan-2022

Results Table

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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.
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**Test Sponsor:** HPE  
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**Hardware Availability:** Mar-2022  
**Software Availability:** Jan-2022

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**Operating System Notes (Continued)**

To enable Transparent Hugepages (THP) only on request for base runs,  
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root.  
To enable THP for all allocations for peak runs,  
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and  
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.

---

**Environment Variables Notes**

Environment variables set by runcpu before the start of the run:  
LD_LIBRARY_PATH =  
"/home/oem/cpu2017/amd_rate_aocc320_milanx_A_lib/lib;/home/oem/cpu2017/a  
md_rate_aocc320_milanx_A_lib/lib32:"  
MALLOCONF = "retain:true"

Environment variables set by runcpu during the 523.xalancbmk_r peak run:  
MALLOCONF = "thp:never"

---

**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  
Memory Interleaving Mode set to Disabled  
Last-Level Cache (LLC) as NUMA Node set to Enabled

(Continued on next page)
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Platform Notes (Continued)

NUMA memory domains per socket set to Four memory domains per socket
Infinity Fabric Power Management set to Disabled
Infinity Fabric Performance State set to P0
Thermal Configuration set to Maximum Cooling
Workload Profile set to Custom
L2 HW Prefetcher set to Disabled

The system date and time as discovered by sysinfo is incorrect as the time was not updated prior to the run. The test_date field shows an accurate date for the result.

The system ROM used for this result contains microcode version 0xA001227h for the AMD EPYC 7nn3X family of processors. The reference code/AGESA version used in this ROM is version MilanPI 1.0.0.8.

Sysinfo program /home/oem/cpu2017/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acfc64d
running on oem-dl325Gen10Plus Mon Jan 10 10:35:21 2022

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
- model name : AMD EPYC 7373X 16-Core Processor
- 1 "physical id"s (chips)
- 32 "processors"
- cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  - cpu cores : 16
  - siblings : 32
  - physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu from util-linux 2.34:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- Address sizes: 48 bits physical, 48 bits virtual
- CPU(s): 32
- On-line CPU(s) list: 0-31
- Thread(s) per core: 2
- Core(s) per socket: 16
- Socket(s): 1
- NUMA node(s): 8
- Vendor ID: AuthenticAMD
- CPU family: 25
- Model: 1
- Model name: AMD EPYC 7373X 16-Core Processor

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---

**Platform Notes (Continued)**

- **Stepping:** 2
- **CPU MHz:** 3044.249
- **BogoMIPS:** 6088.49
- **Virtualization:** AMD-V
- **L1d cache:** 512 KiB  
  **L1i cache:** 512 KiB  
  **L2 cache:** 8 MiB  
  **L3 cache:** 768 MiB
- **NUMA node0 CPU(s):** 0,1,16,17  
  **NUMA node1 CPU(s):** 2,3,18,19  
  **NUMA node2 CPU(s):** 4,5,20,21  
  **NUMA node3 CPU(s):** 6,7,22,23  
  **NUMA node4 CPU(s):** 8,9,24,25  
  **NUMA node5 CPU(s):** 10,11,26,27  
  **NUMA node6 CPU(s):** 12,13,28,29  
  **NUMA node7 CPU(s):** 14,15,30,31
- **Vulnerability Itlb multihit:** Not affected  
  **Vulnerability L1tf:** Not affected  
  **Vulnerability Mds:** Not affected  
  **Vulnerability Meltdown:** Not affected  
- **Vulnerability Spec store bypass:** Mitigation; Speculative Store Bypass disabled via prctl and seccomp  
  **Vulnerability Spectre v1:** Mitigation; usercopy/swapgs barriers and __user pointer sanitation  
  **Vulnerability Spectre v2:** Mitigation; Full AMD retpoline, IBPB conditional, IBRS_FW, STIBP always-on, RSB filling  
  **Vulnerability Srbds:** Not affected  
  **Vulnerability Tx async abort:** Not affected  
- **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 rdtsdp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf 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 kini wdt tce topoext perfctr_core perfctr_nb bext perfctr_l1c mwattx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb sha ni xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local clzero irperf xsavesrptr rdpru wbinvd amd_ppa atr npt lbrv svm_lock nrip_save tsc_scale vmc_clean flushbyasid decodeassist pausefilter pfthreshold v banging_vmload vgif v_spec_ctrl umip pku ospke vaes vpclmulqdq rdpid overlap_recov sucore smca

From lscpu --cache:

<table>
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<th>NAME</th>
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<td>512K</td>
<td>8</td>
<td>Data</td>
<td>1</td>
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<tr>
<td>L1i</td>
<td>32K</td>
<td>512K</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
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<tr>
<td>L2</td>
<td>512K</td>
<td>8MiB</td>
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**Platform Notes (Continued)**

```
  L3  96M  768M  16 Unified  3
```

/proc/cpuinfo cache data

  cache size : 512 KB

From numactl --hardware

WARNING: a numactl 'node' might or might not correspond to a physical chip.

  available: 8 nodes (0-7)
  node 0 cpus: 0 1 16 17
  node 0 size: 128712 MB
  node 0 free: 128200 MB
  node 1 cpus: 2 3 18 19
  node 1 size: 129020 MB
  node 1 free: 128949 MB
  node 2 cpus: 4 5 20 21
  node 2 size: 129022 MB
  node 2 free: 128903 MB
  node 3 cpus: 6 7 22 23
  node 3 size: 129021 MB
  node 3 free: 128809 MB
  node 4 cpus: 8 9 24 25
  node 4 size: 129022 MB
  node 4 free: 128887 MB
  node 5 cpus: 10 11 26 27
  node 5 size: 129021 MB
  node 5 free: 128793 MB
  node 6 cpus: 12 13 28 29
  node 6 size: 129022 MB
  node 6 free: 128870 MB
  node 7 cpus: 14 15 30 31
  node 7 size: 128975 MB
  node 7 free: 128857 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

From /proc/meminfo

  MemTotal: 1056584228 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB
```

(Continued on next page)
Platform Notes (Continued)

/sbin/tuned-adm active
   Current active profile: throughput-performance

/usr/bin/lsb_release -d
   Ubuntu 20.04.3 LTS

From /etc/*release* /etc/*version*
   debian_version: bullseye/sid
   os-release:
      NAME="Ubuntu"
      VERSION="20.04.3 LTS (Focal Fossa)"
      ID=ubuntu
      ID_LIKE=debian
      PRETTY_NAME="Ubuntu 20.04.3 LTS"
      VERSION_ID="20.04"
      HOME_URL="https://www.ubuntu.com/"
      SUPPORT_URL="https://help.ubuntu.com/"

uname -a:
   Linux oem-dl325Gen10Plus 5.13.0-28-generic #31~20.04.1-Ubuntu SMP Wed Jan 19 14:08:10
   UTC 2022 x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit): Not affected
CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: Not affected
CVE-2017-5754 (Meltdown): Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store
   Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1): Mitigation: usercopy/swaps
   barriers and __user pointer
   sanitation
CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline,
   IBPB: conditional, IBRS_FW, STIBP:
   always-on, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 5 Jan 10 10:27

SPEC is set to: /home/oem/cpu2017
   Filesystem Type  Size Used Avail Use% Mounted on
   /dev/sda2  ext4  439G  17G  401G  4%  /

(Continued on next page)
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CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Platform Notes (Continued)

From /sys/devices/virtual/dmi/id
Vendor: HPE
Product: ProLiant DL325 Gen10 Plus v2
Product Family: ProLiant
Serial: CN70381LLR

Additional information from dmidecode 3.2 follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.
Memory:
  8x Hynix HMABAGL7ABR4N-XN 128 GB 4 rank 3200
  8x UNKNOWN NOT AVAILABLE

BIOS:
  BIOS Vendor: HPE
  BIOS Version: A43
  BIOS Date: 02/10/2022
  BIOS Revision: 2.56
  Firmware Revision: 2.60

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C    | 502.gcc_r(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: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.2.0/bin

==============================================================================
C    | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
     | 525.x264_r(base, peak) 557.xz_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)
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### Compiler Version Notes (Continued)

**C**

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**C**

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**C++**

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**C++**

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(Continued on next page)
**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL325 Gen10 Plus v2  
(3.05 GHz, AMD EPYC 7373X)  

| SPECrate®2017_int_base = 160 | SPECrate®2017_int_peak = 167 |

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

---

### Compiler Version Notes (Continued)

- **Target:** i386-unknown-linux-gnu  
- **Thread model:** posix  
- **InstalledDir:** /opt/AMD/aocc-compiler-3.2.0/bin

---

**C++**  
520.omnetpp_r(base, peak) 523.xalancbmk_r(base)  
531.deepsjeng_r(base, peak) 541.leela_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**  
548.exchange2_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

---

### Base Compiler Invocation

**C benchmarks:**  
clang

**C++ benchmarks:**  
clang++

**Fortran benchmarks:**  
flang

---

### Base Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64  
502.gcc_r: -DSPEC_LP64  
505.mcf_r: -DSPEC_LP64  
520.omnetpp_r: -DSPEC_LP64

(Continued on next page)
SPEC CPU®2017 Integer Rate Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
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CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2022
Hardware Availability: Mar-2022
Software Availability: Jan-2022

Base Portability Flags (Continued)

523.xalanbmk_r: -DSPEC_LINUX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-enable-licm-vrp
-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 -flto -Wl,-mllvm -Wl,-region-vectorize
-mllvm -m64 -Wl,-function-specialize
-mllvm -m64 -Wl,-align-all-nofallthru-blocks=6
-mllvm -m64 -Wl,-reduce-array-computations=3
-mllvm -m64 -Wl,-enable-loop-fusion -D3 -march=znver3 -fveclib=AMDLIBM
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -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 -fvirtual-function-elimination
-fvisibility=hidden -lamdlibm -ljemalloc -lflang

Fortran benchmarks:
-m64 -Wl,-mllvm -Wl,-inline-recursion=4
-mllvm -m64 -Wl,-isr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-ffast-math -fstruct-layout=5 -mllvm -unroll-threshold=50
-mllvm -m64 -Wl,-function-specialize
-mllvm -m64 -Wl,-align-all-nofallthru-blocks=6

(Continued on next page)
Hewlett Packard Enterprise
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Base Optimization Flags (Continued)

Fortran benchmarks (continued):
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-loop-fusion -O3 -march=znver3 -fveclib=AMDLIBM
-ffast-math -z muldefs -mllvm -unroll-aggressive
-mllvm -unroll-threshold=500 -lamdlibm -ljemalloc -lflang

Base Other Flags

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

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

Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Peak Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64
520.ommpp_r: -DSPEC_LP64
523.xalancbk_r: -DSPEC_LINUX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
Hewlett Packard Enterprise
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Peak Optimization Flags

C benchmarks:

500.perlbench_r -m64 -Wl,-allow-multiple-definition
-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
-fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mllvm -unroll-threshold=50 -fremap-arrays
-fiv-function-specialization -mllvm -inline-threshold=1000
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=false
-mllvm -function-specialize -mllvm -enable-licm-vrp
-mllvm -reduce-array-computations=3 -lamlidlibm -ljemalloc

502.gcc_r -m32 -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -flto
-Wl,-mllvm -Wl,-function-specialize -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mllvm -unroll-threshold=50 -fremap-arrays
-fiv-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 -fgnu89-inline
-ljemalloc

505.mcf_r: basepeak = yes
525.x264_r: basepeak = yes
557.xz_r: basepeak = yes

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r -m32 -Wl,-mllvm -Wl,-do-block-reorder=aggressive -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
-fiv-function-specialization -mllvm -enable-licm-vrp
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3

(Continued on next page)
Peak Optimization Flags (Continued)

523.xalancbmk_r (continued):
-ml diameter -global-vectorize-slp=true
-ml disabling -do-block-reorder=aggressive
-ffunction-elimination -fvisibility=hidden
-llmalloc

531.deepsjeng_r: -m64 -std=c++98 -flto -Wl,-ml diameter -Wl,-function-specialize
-Wl,-ml diameter -Wl,-align-all-nofallthru-blocks=6
-Wl,-ml diameter -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math
-finline-aggressive -ml diameter -unroll-threshold=100
-flv-function-specialization -ml diameter -enable-llicm-vrp
-ml diameter -rroll-loops -ml diameter -aggressive-loop-unswitch
-ml diameter -reduce-array-computations=3
-ml diameter -global-vectorize-slp=true
-ffunction-elimination -fvisibility=hidden
-lamdlbim -llmalloc

541.leela_r: Same as 531.deepsjeng_r

Fortran benchmarks:
-m64 -Wl,-ml diameter -Wl,-inline-recursion=4
-Wl,-ml diameter -Wl,-lsr-in-nested-loop -Wl,-ml diameter -Wl,-enable-iv-split
-flto -Wl,-ml diameter -Wl,-function-specialize
-Wl,-ml diameter -Wl,-align-all-nofallthru-blocks=6
-Wl,-ml diameter -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -ml diameter -unroll-aggressive
-ml diameter -unroll-threshold=500 -lamdlbim -llmalloc -llflang

Peak Other Flags

C benchmarks (except as noted below):
-Wno-unused-command-line-argument

502.gcc_r: -L/usr/lib -Wno-unused-command-line-argument
-L/sppo/bin/cpu2017v118-aocc3-milanX/amd_rate_aocc320_milanx_A_lib/lib32

C++ benchmarks (except as noted below):
-Wno-unused-command-line-argument

523.xalancbmk_r: -L/usr/lib -Wno-unused-command-line-argument
-L/sppo/bin/cpu2017v118-aocc3-milanX/amd_rate_aocc320_milanx_A_lib/lib32
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The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revR.html

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

http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revR.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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