



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S44NL-1U

(2.40 GHz,AMD EPYC 9654)

SPECrate®2017_int_base = 837

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9050

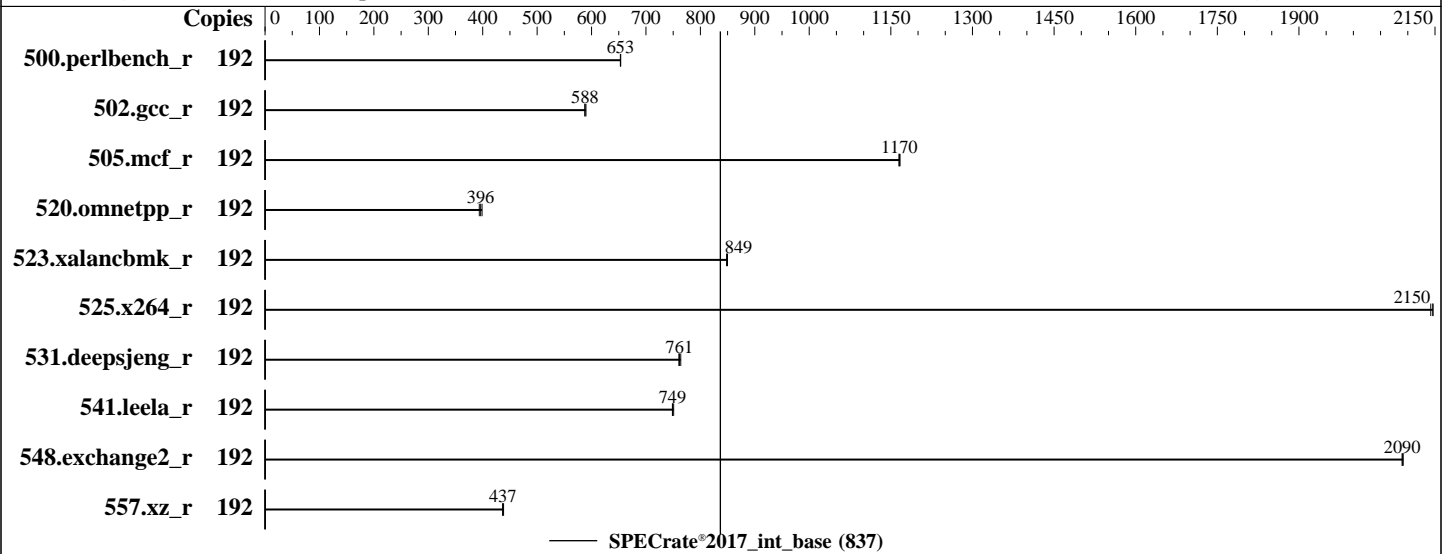
Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Jun-2023

Hardware Availability: Aug-2023

Software Availability: Jun-2023



Hardware

CPU Name: AMD EPYC 9654
 Max MHz: 3700
 Nominal: 2400
 Enabled: 96 cores, 1 chip, 2 threads/core
 Orderable: 1 chip
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 384 MB I+D on chip per chip,
 32 MB shared / 8 cores
 Other: None
 Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 960 GB NVMe SSD
 Other: None

Software

OS: Ubuntu 22.04.2 LTS
 kernel version 5.15.0-71-generic
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
 Parallel: No
 Firmware: Version 3A04 released Jun-2023
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other: None
 Power Management: BIOS 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		
500.perlbench_r	192	468	654	468	653	468	653									
502.gcc_r	192	463	588	461	590	462	588									
505.mcf_r	192	266	1160	266	1170	266	1170									
520.omnetpp_r	192	636	396	632	399	640	394									
523.xalancbmk_r	192	239	850	239	848	239	849									
525.x264_r	192	157	2150	157	2150	157	2140									
531.deepsjeng_r	192	288	764	289	761	289	761									
541.leela_r	192	425	749	423	751	425	749									
548.exchange2_r	192	241	2090	241	2090	241	2090									
557.xz_r	192	473	438	475	437	475	437									

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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.

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.



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Environment Variables Notes

Environment variables set by runcpu before the start of the run:

```
LD_LIBRARY_PATH =
"/root/cpu2017-ZENVER4/amd_rate_aocc400_znver4_A_lib/lib:/root/cpu2017-ZENVER4/amd_rate_aocc400_znver4
_A_lib/lib32:"
MALLOC_CONF = "retain:true"
```

General Notes

Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

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.

Platform Notes

BIOS Configuration

```
ACPI CST C2 Latency set to 18
NUMA nodes per socket set to NPS4
Determinism Control is Manual
Determinism Slider set to Power
cTDP Control set to Manual
cTDP set to 400
PPT Control set to Manual
PPT set to 400
ACPI SRAT L3 Cache As NUMA Domain set to Enable
```

```
Sysinfo program /root/cpu2017-ZENVER4/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on 192-168-118-113 Sat Jun 24 21:24:09 2023
```

SUT (System Under Test) info as seen by some common utilities.

Table of contents

1. uname -a
2. w
3. ulimit -a
4. sysinfo process ancestry
5. /proc/cpuinfo
6. lscpu
7. numactl --hardware
8. /proc/meminfo
9. Systemd service manager version: systemd 249 (249.11-0ubuntu3.7)
10. Services, from systemctl list-unit-files
11. Linux kernel boot-time arguments, from /proc/cmdline
12. cpupower frequency-info
13. tuned-adm active
14. sysctl
15. /sys/kernel/mm/transparent_hugepage
16. /sys/kernel/mm/transparent_hugepage/khugepaged
17. OS release
18. Disk information

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Platform Notes (Continued)

```
19. /sys/devices/virtual/dmi/id
20. dmidecode
21. BIOS
```

```
1. uname -a
Linux 192-168-118-113 5.15.0-71-generic #78-Ubuntu SMP Tue Apr 18 09:00:29 UTC 2023 x86_64 x86_64 x86_64
GNU/Linux
```

```
2. w
21:24:09 up 1 min, 0 users, load average: 0.77, 0.34, 0.12
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU      WHAT
```

```
3. ulimit -a
time(seconds)          unlimited
file(blocks)           unlimited
data(kbytes)           unlimited
stack(kbytes)          unlimited
coredump(blocks)       0
memory(kbytes)         unlimited
locked memory(kbytes)  2097152
process                 3094156
nofiles                 1024
vmemory(kbytes)        unlimited
locks                   unlimited
rtprio                  0
```

```
4. sysinfo process ancestry
/sbin/init splash
/bin/sh -e /etc/rc.local start
/bin/bash ./test.sh
python3 ./run_amd_rate_aocc400_znver4_A1.py
/bin/bash ./amd_rate_aocc400_znver4_A1.sh
runcpu --config amd_rate_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 intrate
runcpu --configfile amd_rate_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 --nopower
--runmode rate --tune base --size test:train:refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /root/cpu2017-ZENVER4
```

```
5. /proc/cpuinfo
model name      : AMD EPYC 9654 96-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 17
stepping       : 1
microcode      : 0xa101135
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 3584 4K pages
cpu cores     : 96
siblings      : 192
1 physical ids (chips)
192 processors (hardware threads)
physical id 0: core ids 0-95
physical id 0: apicids 0-191
```

(Continued on next page)



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Platform Notes (Continued)

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

6. lscpu

From lscpu from util-linux 2.37.2:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          46 bits physical, 57 bits virtual
Byte Order:             Little Endian
CPU(s):                 192
On-line CPU(s) list:   0-191
Vendor ID:              AuthenticAMD
Model name:             AMD EPYC 9654 96-Core Processor
CPU family:             25
Model:                  17
Thread(s) per core:    2
Core(s) per socket:    96
Socket(s):               1
Stepping:               1
Frequency boost:        enabled
CPU max MHz:            3707.8120
CPU min MHz:            1500.0000
BogoMIPS:               4792.69
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 x2apic 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 avx512f avx512dq rdseed adx smap
                        avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
                        xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
                        avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd amd_ppin cppc arat npt
                        lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
                        pausefilter pfthreshold avic v_vmsave_vmload vgif v_spec_ctrl1 avx512vbmi
                        umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                        avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_l1d sme
                        sev sev_es
Virtualization:        AMD-V
L1d cache:             3 MiB (96 instances)
L1i cache:             3 MiB (96 instances)
L2 cache:              96 MiB (96 instances)
L3 cache:              384 MiB (12 instances)
NUMA node(s):          12
NUMA node0 CPU(s):    0-7,96-103
NUMA node1 CPU(s):    8-15,104-111
NUMA node2 CPU(s):    16-23,112-119
NUMA node3 CPU(s):    24-31,120-127
NUMA node4 CPU(s):    32-39,128-135
NUMA node5 CPU(s):    40-47,136-143
NUMA node6 CPU(s):    48-55,144-151
NUMA node7 CPU(s):    56-63,152-159
NUMA node8 CPU(s):    64-71,160-167
NUMA node9 CPU(s):    72-79,168-175
NUMA node10 CPU(s):   80-87,176-183
NUMA node11 CPU(s):   88-95,184-191

```

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Platform Notes (Continued)

Vulnerability Itlb multihit: Not affected
 Vulnerability Lltf: Not affected
 Vulnerability Mds: Not affected
 Vulnerability Meltdown: Not affected
 Vulnerability Mmio stale data: Not affected
 Vulnerability Retbleed: Not affected
 Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
 Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and __user pointer sanitization
 Vulnerability Spectre v2: Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP always-on, RSB filling, PBRSE-eIBRS Not affected
 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	3M	8	Data	1	64	1	64
L1i	32K	3M	8	Instruction	1	64	1	64
L2	1M	96M	8	Unified	2	2048	1	64
L3	32M	384M	16	Unified	3	32768	1	64

7. numactl --hardware

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

```

available: 12 nodes (0-11)
node 0 cpus: 0-7,96-103
node 0 size: 64164 MB
node 0 free: 63713 MB
node 1 cpus: 8-15,104-111
node 1 size: 64506 MB
node 1 free: 64120 MB
node 2 cpus: 16-23,112-119
node 2 size: 64506 MB
node 2 free: 64085 MB
node 3 cpus: 24-31,120-127
node 3 size: 64506 MB
node 3 free: 64166 MB
node 4 cpus: 32-39,128-135
node 4 size: 64471 MB
node 4 free: 64151 MB
node 5 cpus: 40-47,136-143
node 5 size: 64506 MB
node 5 free: 64192 MB
node 6 cpus: 48-55,144-151
node 6 size: 64506 MB
node 6 free: 64156 MB
node 7 cpus: 56-63,152-159
node 7 size: 64506 MB
node 7 free: 64182 MB
node 8 cpus: 64-71,160-167
node 8 size: 64506 MB
node 8 free: 64150 MB
node 9 cpus: 72-79,168-175
node 9 size: 64506 MB
node 9 free: 64177 MB
node 10 cpus: 80-87,176-183
node 10 size: 64506 MB
node 10 free: 64180 MB
node 11 cpus: 88-95,184-191
node 11 size: 64455 MB
node 11 free: 64117 MB

```

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Platform Notes (Continued)

node distances:

node	0	1	2	3	4	5	6	7	8	9	10	11
0:	10	11	11	12	12	12	12	12	12	12	12	12
1:	11	10	11	12	12	12	12	12	12	12	12	12
2:	11	11	10	12	12	12	12	12	12	12	12	12
3:	12	12	12	10	11	11	12	12	12	12	12	12
4:	12	12	12	11	10	11	12	12	12	12	12	12
5:	12	12	12	11	11	10	12	12	12	12	12	12
6:	12	12	12	12	12	12	10	11	11	12	12	12
7:	12	12	12	12	12	12	11	10	11	12	12	12
8:	12	12	12	12	12	12	11	11	10	12	12	12
9:	12	12	12	12	12	12	12	12	12	10	11	11
10:	12	12	12	12	12	12	12	12	12	11	10	11
11:	12	12	12	12	12	12	12	12	12	11	11	10

8. /proc/meminfo

MemTotal: 792220944 kB

'who -r' did not return a run level

9. Systemd service manager version: systemd 249 (249.11-0ubuntu3.7)

Default Target	Status
graphical	starting

10. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online apparmor blk-availability cloud-config cloud-final cloud-init cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ grub-common irqbalance keyboard-setup lm-sensors lvm2-monitor lxd-agent multipathd networkd-dispatcher networking nfs-blkmap nfs-server open-iscsi pollinate rpcbind rsyslog secureboot-db setvtrgb ssh systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved tuned ua-reboot-cmds ubuntu-advantage ufw wpa_supplicant
enabled-runtime	netplan-ovs-cleanup rc-local systemd-fsck-root systemd-remount-fs
disabled	acpid console-getty debug-shell grub-initrd-fallback ifupdown-wait-online ipmiev d iscsid ndctl-monitor nftables nvme-fc-boot-connections nvme-autoconnect rsync serial-getty@ sysstat systemd-boot-check-no-failures systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd thermald upower wpa_supplicant-nl80211@ wpa_supplicant-wired@ wpa_supplicant@
generated	apport cpufreqd cpufrequtils loadcpufreq mst openipmi
indirect	uuuid
masked	cryptdisks cryptdisks-early gpu-manager hwclock lvm2 multipath-tools-boot nfs-common open-vm-tools rc rcS screen-cleanup sudo udisks2 vgauth vmttoolsd x11-common

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

```

BOOT_IMAGE=/boot/vmlinuz-5.15.0-71-generic
root=UUID=8f9e5e96-8616-4e49-a1cd-677d4550f068
ro
pci_aspm=off
quiet
splash
amd_pstate=enable
idle=nomwait
cппc=enable
vt.handoff=7

```

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Platform Notes (Continued)

12. cpupower frequency-info

analyzing CPU 0:

current policy: frequency should be within 2.40 GHz and 2.40 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: 2400MHz

13. tuned-adm active

Current active profile: throughput-performance

14. 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

15. /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

16. /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

17. OS release

From /etc/*-release /etc/*-version
os-release Ubuntu 22.04.2 LTS

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Platform Notes (Continued)

18. Disk information

SPEC is set to: /root/cpu2017-ZENVER4

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/nvme0n1p2	ext4	879G	48G	786G	6%	/

19. /sys/devices/virtual/dmi/id

Vendor: Quanta Cloud Technology Inc.
 Product: QuantaGrid S44NL-1U
 Product Family: S6NL

20. dmidecode

Additional information from dmidecode 3.5 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 HMC94MEBRA123N 64 GB 2 rank 4800

21. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: American Megatrends International, LLC.
 BIOS Version: 3A04
 BIOS Date: 06/01/2023
 BIOS Revision: 5.27
 Firmware Revision: 3.7

Compiler Version Notes

C | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(base)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

C++ | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(base)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

Fortran | 548.exchange2_r(base)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

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QuantaGrid S44NL-1U

(2.40 GHz, AMD EPYC 9654)

SPECrate®2017_int_base = 837

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Jun-2023

Hardware Availability: Aug-2023

Software Availability: Jun-2023

Compiler Version Notes (Continued)

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

523.xalancbmk_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 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

-Wl,-mllvm -Wl,-reduce-array-computations=3

-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather

-z muldefs -O3 -march=znver4 -fveclib=AMDLIBM -ffast-math

-fstruct-layout=7 -mllvm -unroll-threshold=50

-mllvm -inline-threshold=1000 -fremap-arrays -fstrip-mining

-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang

-lamdalloc

C++ benchmarks:

-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

-Wl,-mllvm -Wl,-reduce-array-computations=3 -z muldefs -O3

-march=znver4 -fveclib=AMDLIBM -ffast-math

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SPEC CPU®2017 Integer Rate Result

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Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt
-fvirtual-function-elimination -fvisibility=hidden -lamdlibm -lflang
-lamdalloc-ext
```

Fortran benchmarks:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -z muldefs -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fepilog-vectorization-of-inductions
-mllvm -optimize-strided-mem-cost -floop-transform
-mllvm -unroll-aggressive -mllvm -unroll-threshold=500 -lamdlibm
-lflang -lamdalloc
```

Base Other Flags

C benchmarks:

```
-Wno-unused-command-line-argument
```

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

Fortran benchmarks:

```
-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/aocc400-flags.html>

http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-amd-speccpu-setting-v1_AMD_Genoa.html

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

<http://www.spec.org/cpu2017/flags/aocc400-flags.xml>

http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-amd-speccpu-setting-v1_AMD_Genoa.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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