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ansible-xcp-zfs

ARMv8 Neoverse-N1 testing on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

awx-zfs-gp2-5diskraidz1 had the most wins, coming in first place for 80% of the tests.

Test Systems:

Ansible-XCP-ZFS

ansible-xcp-zfs test 2

Processor: 2 x Intel Xeon E5-2667 v2 (3 Cores), Motherboard: Xen HVM domU v4.13, Chipset: Intel 440FX 82441FX PMC, Memory: 4096MB, Disk: 25GB, Graphics: bochs-drmfb

OS: Ubuntu 20.04, Kernel: 5.4.0-73-generic (x86_64), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768, System Layer: Xen HVM domU 4.13

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9.3.0/debian/tmp-nvptx/usr.hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch=32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v

Disk Notes: MQ-DEADLINE / relatime,rw

Processor Notes: CPU Microcode: 0x42e

Security Notes: itlb_multihit: KVM: Vulnerable + l1tf: Mitigation of PTE Inversion + mds: Mitigation of Clear buffers; SMT Host state unknown + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IPBP: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

awx-zfs-gp2-5diskraiz1

Processor: ARMv8 Neoverse-N1 (16 Cores), Motherboard: Amazon EC2 r6g.4xlarge (1.0 BIOS), Chipset: Amazon Device 0200, Memory: 128GB, Disk: 32GB Amazon Elastic Block Store + 5 x 54GB Amazon Elastic Block Store, Network: Amazon Elastic

OS: Ubuntu 20.04, Kernel: 5.13.0-1031-aws (aarch64), Vulkan: 1.1.182, Compiler: GCC 9.4.0, File-System: ext4

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-target-system-zlib=auto -v

Disk Notes: NONE / discard,relatime,rw / Block Size: 4096

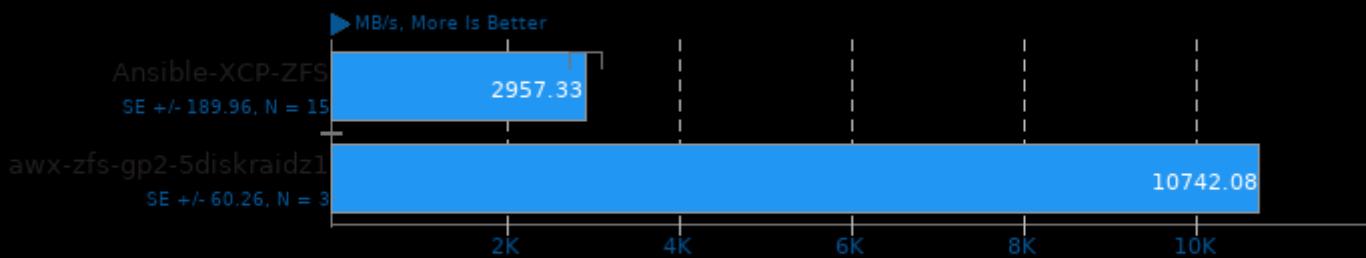
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Mitigation of CSV2 BHB + srbds: Not affected + tsx_async_abort: Not affected

	Ansible-XCP-ZFS	ansible-xcp-zfs test 2	awx-zfs-gp2-5diskraiz1
IOzone - 1MB - 2GB - Read Performance	2957		10742
(MB/s)			
Normalized	27.53%		100%
Standard Deviation	24.9%		1%
IOzone - 1MB - 4GB - Read Performance	364.06		10692
(MB/s)			
Normalized	3.4%		100%
Standard Deviation	11%		0.5%
IOzone - 1MB - 512MB - Read Performance		2747	10291
(MB/s)			
Normalized	26.69%		100%
Standard Deviation	20.5%		0.5%
IOzone - 2MB - 512MB - Read Performance		2527	10055
(MB/s)			
Normalized	25.14%		100%
Standard Deviation	1.3%		0.1%
IOzone - 4Kb - 512MB - Read Performance		1287	4974
(MB/s)			
Normalized	25.87%		100%
Standard Deviation	2.2%		0.7%
IOzone - 1MB - 512MB - Write Performance		149.75	165.73
(MB/s)			
Normalized	90.36%		100%
Standard Deviation	4.9%		0%

	154.32	168.19
IOzone - 2MB - 512MB - Write Performance (MB/s)		
Normalized	91.75%	100%
Standard Deviation	2.5%	0.1%
IOzone - 4Kb - 512MB - Write Performance (MB/s)	5.81	2.42
Normalized	100%	41.65%
Standard Deviation	6.4%	2.1%
IOzone - 64Kb - 512MB - Read Performance (MB/s)	2857	10292
Normalized	27.76%	100%
Standard Deviation	25%	0.4%
IOzone - 64Kb - 512MB - Write Performance (MB/s)	59.03	32.33
Normalized	100%	54.77%
Standard Deviation	11.4%	2.1%

IOzone 3.465

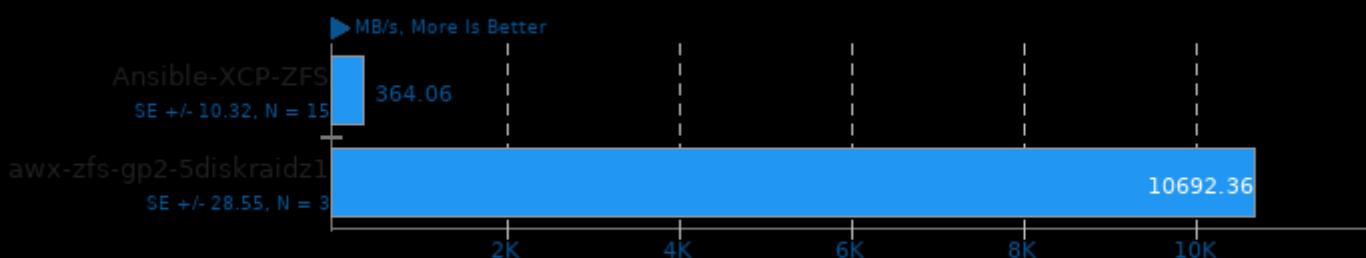
Record Size: 1MB - File Size: 2GB - Disk Test: Read Performance



1. (CC) gcc options: -O3

IOzone 3.465

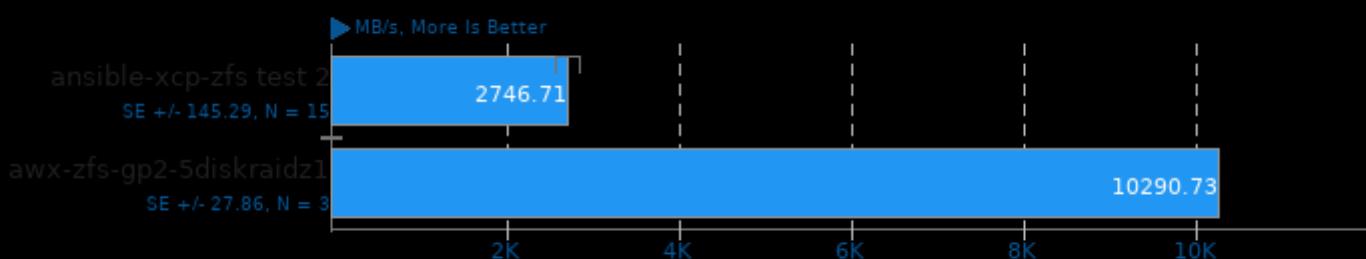
Record Size: 1MB - File Size: 4GB - Disk Test: Read Performance



1. (CC) gcc options: -O3

IOzone 3.465

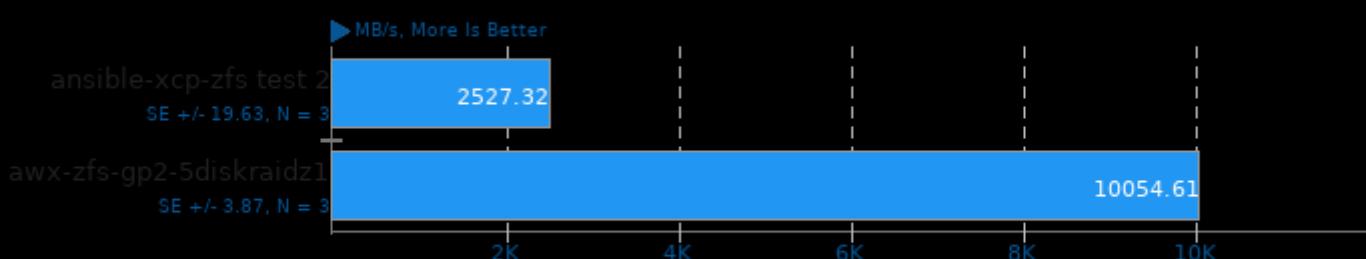
Record Size: 1MB - File Size: 512MB - Disk Test: Read Performance



1. (CC) gcc options: -O3

IOzone 3.465

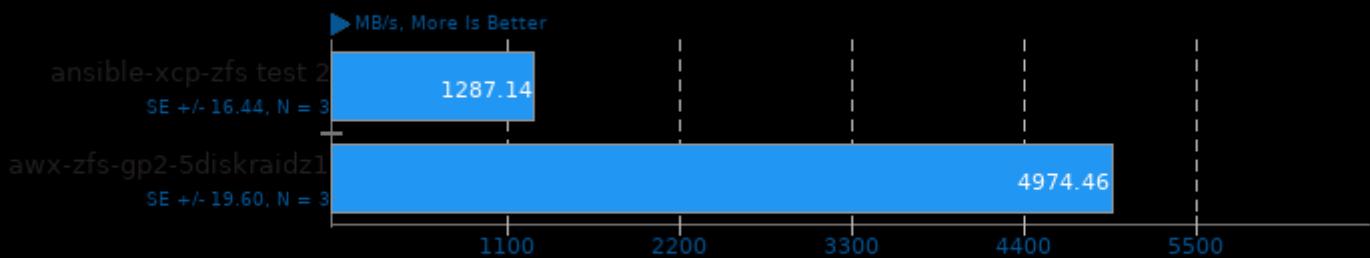
Record Size: 2MB - File Size: 512MB - Disk Test: Read Performance



1. (CC) gcc options: -O3

IOzone 3.465

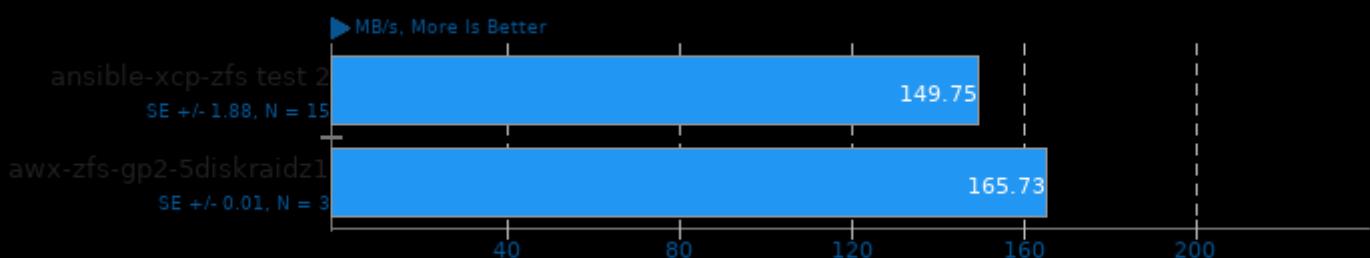
Record Size: 4Kb - File Size: 512MB - Disk Test: Read Performance



1. (CC) gcc options: -O3

IOzone 3.465

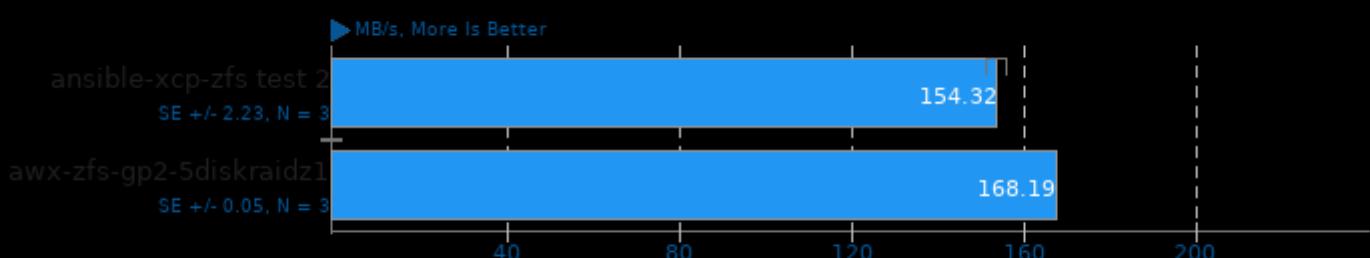
Record Size: 1MB - File Size: 512MB - Disk Test: Write Performance



1. (CC) gcc options: -O3

IOzone 3.465

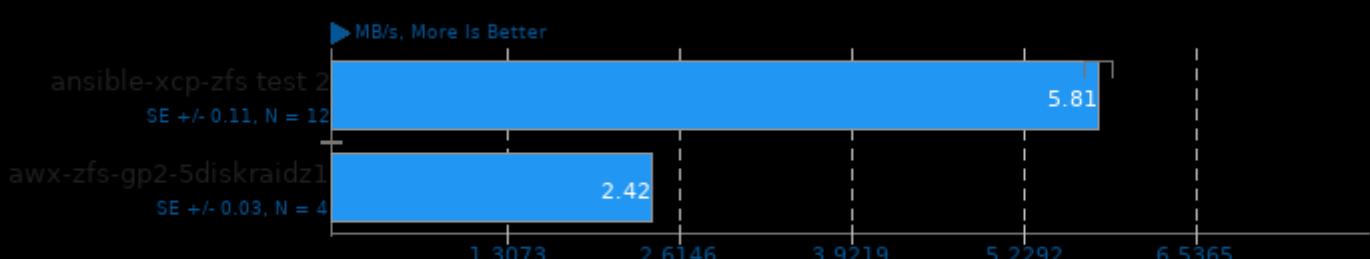
Record Size: 2MB - File Size: 512MB - Disk Test: Write Performance



1. (CC) gcc options: -O3

IOzone 3.465

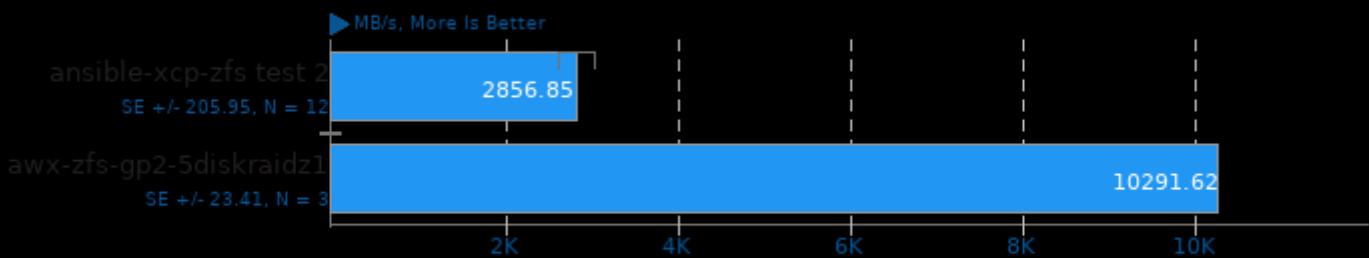
Record Size: 4Kb - File Size: 512MB - Disk Test: Write Performance



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IOzone 3.465

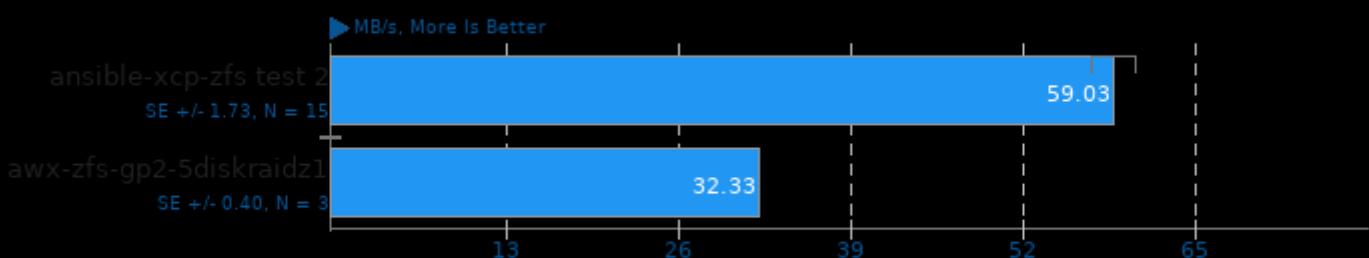
Record Size: 64Kb - File Size: 512MB - Disk Test: Read Performance



1. (CC) gcc options: -O3

IOzone 3.465

Record Size: 64Kb - File Size: 512MB - Disk Test: Write Performance



1. (CC) gcc options: -O3

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