

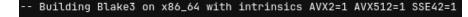
EOS on ARM

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ARM64 builds for EOS

- Motivated by heterogeneous architecture support
 - Experiment aarch64 test setups needing clients
 - lxplus-arm needing clients & mounts
- Initial set of changes thanks to IHEP
 - Talk/Paper at CHEP 2021
 - Code changes for CRC32 which had x86 specific intrinsics; mainly in eos-common
- CMake changes to detect machine architecture
 & intrinsics
 - Also helped when different intrinsics are used by cryptographic libraries - for eg. blake3
 - Tested on Apple M1 1st gen;)
 - Merged in EOS5

- -- Performing Test HAVE_SSE42
- -- Performing Test HAVE_SSE42 Success
- -- Performing Test HAVE_AVX512F
- -- Performing Test HAVE_AVX512F Success
- -- Performing Test HAVE_AVX512L
- -- Performing Test HAVE_AVX512L Success
- -- Performing Test HAVE_AVX2
- -- Performing Test HAVE_AVX2 Success
- -- Performing Test HAVE_ARMV8_CRC_CRYPTO
- -- Performing Test HAVE_ARMV8_CRC_CRYPTO Success
- -- Performing Test HAVE_ARMV8_CRC
- -- Performing Test HAVE_ARMV8_CRC Success
- -- Performing Test HAVE_ARM_NEON
- -- Performing Test HAVE_ARM_NEON Failed





ARM64 builds for EOS

Docker-arm runner introduced at CERN circa 2021

- Very limited runners available
- Client/FUSEX builds pushed to koji and available for lxplus-arm
- Summer student project to build/test the dependency chain for full EOS-server

Client/FUSEX builds available since EOS5

- Koji already builds multiple architectures
- Lxplus-arm has been configured with both the fusex mount and eos cli

Gitlab ARM CI runners available since mid 2023

- Needed the full chain of EOS dependencies built
- Thanks to <u>reduced dependencies</u> (EOS 5.2), it was easy to write both the build and publish routine to handle multiple architectures
- EOS Dependencies fully ported to ARM64 with minimal patches

Generally available since 5.2.13 for CentOS7 & AlmaLinux 9

Only compile tested at this moment



Future work

- Hardware/Quota request with the Openstack team in the queue
- Testing performance of FSTs when using EC
- Testing MGM workloads with namespace and other benchmarks
- We'd love to hear from you if you have deployments/requirements for ARM64!

