Bring C/C++ to Custom Hardware Accelerator Architectures
September, 2021
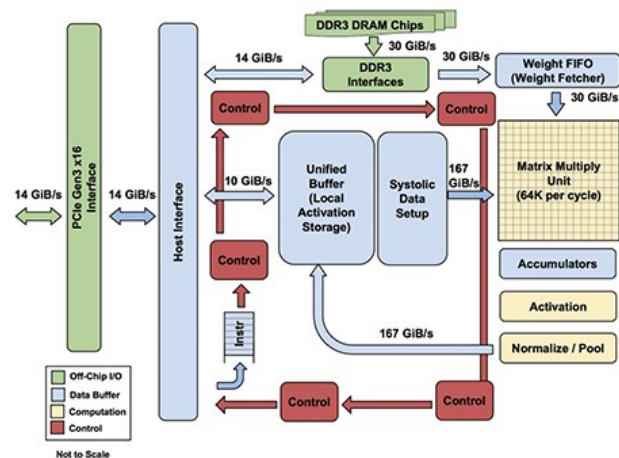
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Custom Hardware Accelerator Architectures

› **What are hardware accelerators?**

  › Domain Specific Architectures (DSA-s) designed to speed up the execution time for certain applications, in comparison to general purpose CPU-s

› **Example:**

  › **Domain**: Machine Learning

  › **DSA**: Tensor Processing Unit (TPU)

C/C++ compiler

› **LLVM compiler infrastructure**

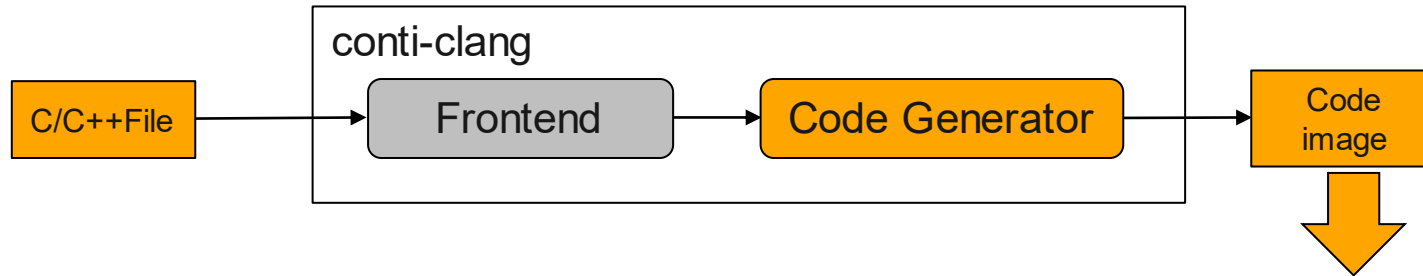 › An open-source project for building compilers for several HW architectures: x86_64, ARM, RISC-V

› **Reasons:**

 › C/C++ de facto programming language for embedded systems

  › A large base of C/C++ algorithms available(either open-source or proprietary)

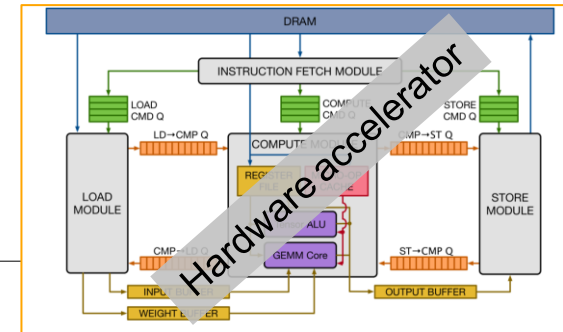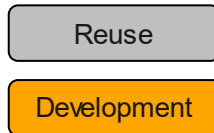 › LLVM allows adding a new HW architecture for code generation

The project: A Continental custom compiler

› **conti-clang: the Continental custom compiler**

› Uses the existing LLVM infrastructure

Legend:

Thank you!

For more details, please contact me

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