

APZ-DA

Database Acceleration Application Based on Vitis Libraries

PES, Zoho, AMD Collaboration

Team

- Arun M (PES)
- Neha Anna Johns (PES)
- Pranav Varkey (PES)
- Anagha (Zoho)

Table of Content

- Motivation
- Roadmap
- Status
- Similar Works
- Possibilities

Motivation

- Accelerating database processing with the power of FPGAs are hard without good knowledge of FPGAs. This application aims to bridge that gap.
- We'll do this by creating an application that provides a layer of abstraction to the user but not sacrifice control
- We plan to use the vitis database libraries in this application. Which provide optimised hls kernels for database acceleration.

Roadmap

1. Implement Vitis Libraries on FPGA
2. Optimisations
3. Package Application

Status

Queries In Focus

Queries	Phase	Remark
SELECT	1	Synthesising the hls kernel
DELETE	1	Porting custom hls kernel
BITWISE	1	TBD
UPDATE	1	On hold
JOIN	1	TBD

Similar Works

- Data Analytics - Xilinx
 - Big data analytics on FPGA boards
 - Limited support, only for AWS F1 instance and the u200 board
 - Last commit at 6 years ago

Possibilities

- Database Encryptor
- Database Compressor and Disaster Recovery Migration
- DPR with kernels
- Multiple queries on a single board using DPR