SOLUTION BRIEF

XILINX ALGORITHMIC TRADING REFERENCE DESIGN

INTRODUCTION

A fully featured open source and license free HLS hardware & software trading solution reference design. Give your developers a head start to create their own hardware-accelerated algorithmic trading platform

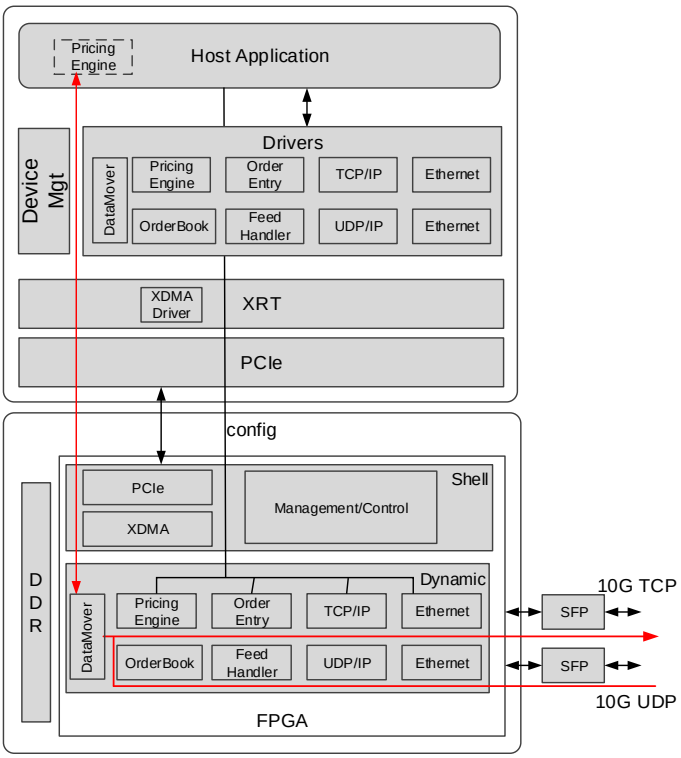
PRODUCT OVERVIEW

> Alveo U50,U250 boards with Vitis tools and libraries

> Migration from software algorithms to hardware

- Dataplane entirely in hardware
- Dataplane in hardware with pricing algorithm on host

> Baseline from which users can develop solutions



Features and Benefits

> CME “Market by Price” scheme:

- CME Feedhandler, Orderbook
- Two Pricing Algorithms
- Order Entry templated trades

> 10GbE UDP, TCP, IP(v4) in FPGA

> Data Transfer to host CPU

> Debug and diagnostic features

Quick Start Package provides:

> All HLS,C++ source code

> FPGA image (XCLBIN)

> PCAP input and output files

> Build automation tool

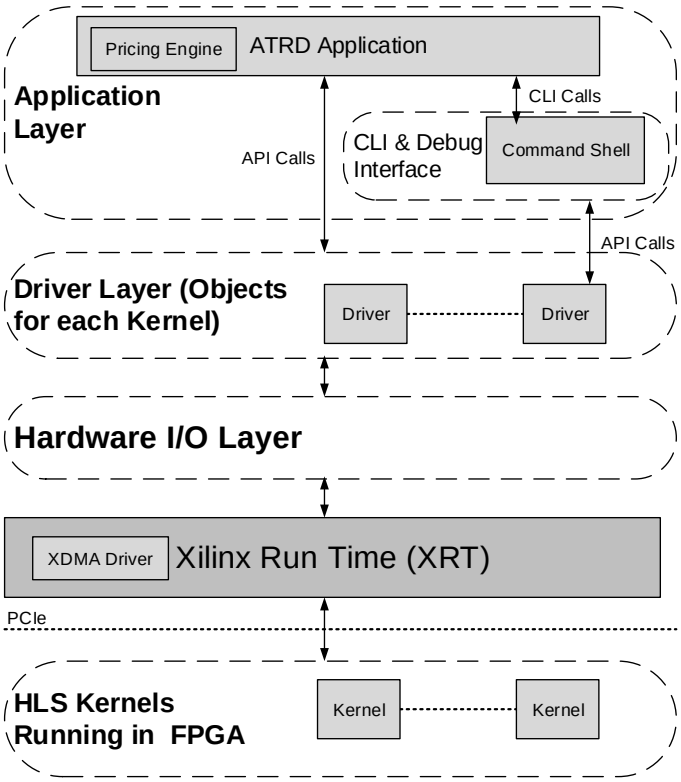
> Comprehensive user guide

Adaptable. Intelligent.

DATA TRANSFER WITH HOST

> Supports trading algorithm on host CPU
- Order Book pushed from FPGA to host
- Trading request pushed from host to FPGA
- XDMA transfer of data

> Data mover kernel
- Ring buffers in Alveo Memory.
- Data source updates tail pointer of buffer
- Data receiver monitors tail pointer to detect new data available



SOFTWARE OVERVIEW

> Algorithmic Trading Ref. Design application
- Configuration of trading and IP address parameters
- Software Trading application (if required)
- Calls APIs on driver layer
- Recovers diagnostic and debug information

> User Interface (Command line shell)
- Command shell provides easy interface with help functionality.

> Driver layer (User space)
- API Control of each hardware block
- Exposes functionality of hardware

> Hardware I/O Layer
- All communication with hardware
- Download image XCLBIN to FPGA

> XRT (Xilinx Run Time)
- XRT is a combination of userspace and linux kernel driver components
- XRT provides a standardized software interface to the FPGA

TAKE THE NEXT STEP

Get Started with Vitis https://www.xilinx.com/products/design-tools/vitis/vitis-platform.html
Alveo U50: https://www.xilinx.com/products/boards-and-kits/alveo/u50.html#gettingStarted
Alveo U250: https://www.xilinx.com/products/boards-and-kits/alveo/u250.html#gettingStarted
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Reach out to your local sales rep or contact fintech-contactus@xilinx.com

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