INTRODUCTION

The explosion in Mobile services and user-generated content are driving a massive image processing workload in the data center. Image processing is requiring significant compute resources and continues to grow.

DeePoly Technology's ThunderImage software and hardware stack leverages Xilinx Alveo accelerators to deliver an ultra-high performance and cost-effective framework for image processing applications.

KEY BENEFITS

- 20x more Throughput
- 5x~10x Lower Latency
- 5x TCO Reduction
- 10x Power Efficiency
- Throughput up to 1.87GB/s
- QPS up to 4900 images/s

SOLUTION OVERVIEW

Working in partnership with Xilinx®, DeePoly® ThunderImage works seamlessly on servers with the Xilinx® Alveo™ U200 Data Center Accelerator Card or the public cloud. Normally User Generated image would upload to OBS, but most requests are from Terminals and would be different size/codec. With the help of ThunderImage, the image processing cluster of the data center could shrink 10x~20x of cluster size, get 5x~10x better QoS, 5x TCO reduction and 10x better power efficiency at the same time.

Figure-1
ThunderImage
Xilinx Alveo powers ThunderImage

SOLUTION DETAILS

ThunderImage supports JPEG Decode, Scale, JPEG Encode, WebP Encode, Lepton, etc. According to the business flow, ThunderImage provides related image processing model, i.e. codec combination.

For example, business flow in the Figure-2 would need a JPEG Decoder+Scaler+JPEG Encoder model. On the other hand, business flow in the Figure-3 would need a JPEG Decoder+WebP Encoder model.

RESULTS

For the heavy image processing flow in the data center, ThunderImage is the ultimate, low cost, high-performance solution.

Figure-4 is a typical thumbnail generation testing result (Input: 10000*4096x2160, Output: 1024x768, 640x480).

TAKE THE NEXT STEP

Learn more about Xilinx Alveo accelerator cards
Learn more about DeePoly Technology Inc.
Reach out to ThunderImage sales