

Решения Xilinx для ускорения обработки данных в дата-центрах

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Agenda

- > Introduction
- > Alveo Accelerator cards
- > Xilinx Storage services
- > Xilinx NIC family
- > Xilinx App Store
- > Software



We Are Xilinx

Founded in 1984



\$3.16B

Revenue
(FY20)



~4,500

Employees Worldwide



60K+

Customers



60+

Industry Firsts



4,400+

Patents

Xilinx Data Center Platforms



Compute

Video transcoding SDK

Video analytics SDK

Graph analytics and DB SDK

Pre-optimized ML models

Pre-optimized libraries



U30



U50



U200



U250



U280



Networking

Onload

Vitis Networking

DPDK support

ARM SDK with SPDK support



U25N



SN1000



X2



Storage

Libraries

Compression/decompression

Encryption

Regular expression search



U50



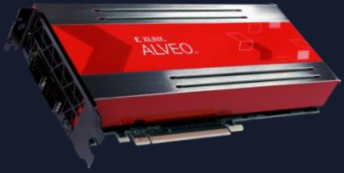
Smart
SSD

Alveo Accelerator Cards

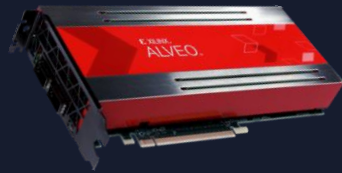


Xilinx Alveo Product Lineup

 ALVEO™ U200



 ALVEO™ U250



 ALVEO™ U280



 ALVEO™ U50



 ALVEO™ U25



UltraScale+ Architecture

UltraScale+ Architecture

UltraScale+ Architecture

UltraScale+ Architecture

UltraScale+ Architecture

1,182k LUTs

1,728k LUTs

1,304k LUTs

872k LUTs

520k LUTs

Dual slot, FH3/4L

Dual slot, FH3/4L

Dual slot, FH3/4L

Single slot, HHHL

Single slot, HHHL

64GB DDR, 77GB/sec

64GB DDR, 77GB/sec

8GB HBM2, 460GB/sec

8GB HBM2, 460GB/sec

6GB DDR4

PCIe Gen3

PCIe Gen3

PCIe Gen3, Gen4, CCIX

PCIe Gen3, Gen4, CCIX

2x PCIe Gen3x8

2x QSFP 28 (100GbE)

2x QSFP 28 (100GbE)

2x QSFP 28 (100GbE)

1x QSFP 28 (100GbE)

2x SFP28 (2x10/25GbE)

< 225W

< 225W

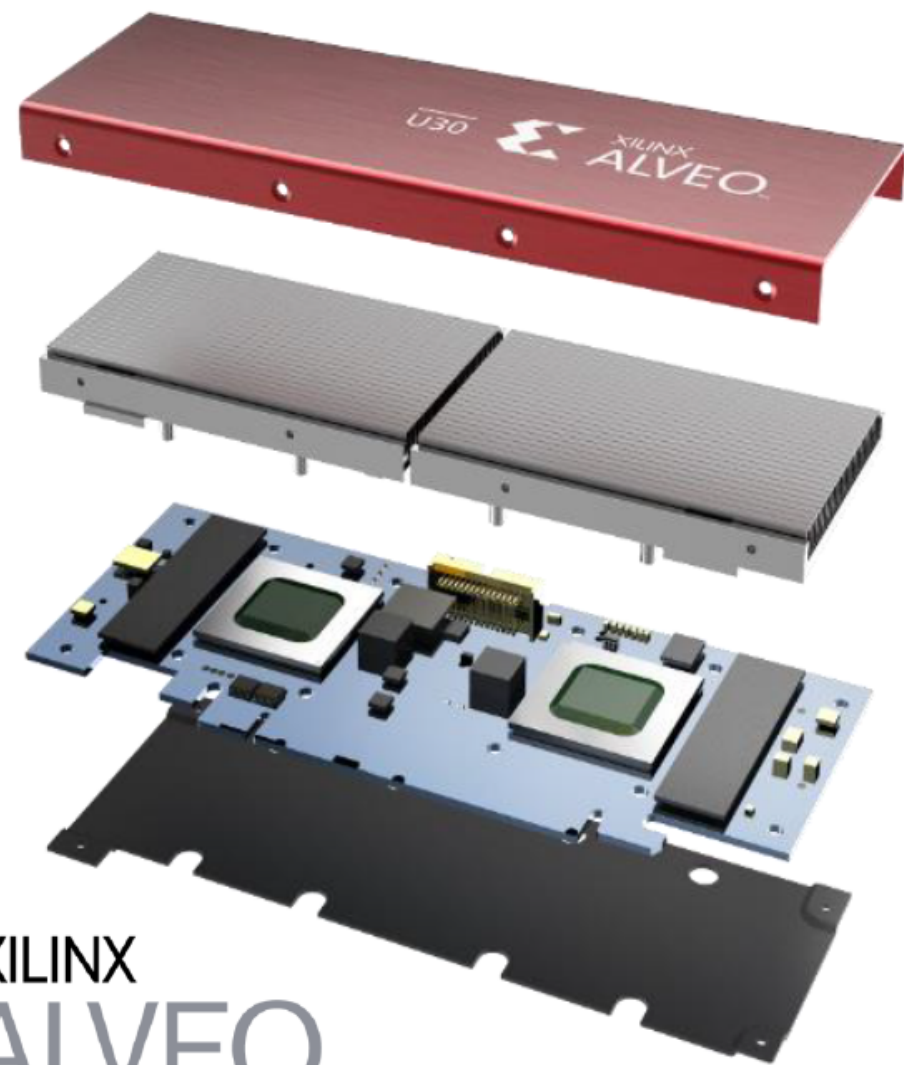
< 225W

< 75W

< 75W

U30 High Density Video Transcoding Solution

- ▶ High density media processing
 - Half Height / Half Length, Single Slot
- ▶ Supports:
 - 2 x 4kp60 simultaneous transcodes per card
 - 8 x 1080p60 simultaneous transcodes per card
 - 16 x 1080p30 simultaneous transcodes per card
 - 36 x 720p30 simultaneous transcodes per card
- ▶ Support for both H.264 & HEVC
- ▶ HDR and 10bit support (future)
- ▶ Support for low latency transcoding
- ▶ Low power solution **25W**



Xilinx FFmpeg Integration

Customer Application

FPGA h.264
encode plugin

FPGA HEVC
encode plugin

Xilinx h.264 decode
plugin

Xilinx ABR Scaler
plugin



FFmpeg (video codecs, scalers, compositing etc.)

X86 Server

**Xilinx Media Acceleration API
Xilinx Run-time API**

Xilinx Accelerator Binary

Xilinx Alveo Accelerator Card

Xilinx + Wowza



- Reliability
- Ease of use
- Security



- High density
- Ease of scale
- Low power

Content creators can deploy fast, and scale effortlessly, with ironclad reliability and security

Purpose Built for High-Quality, Low-Cost Real-Time Video Streaming Workloads



Bitrate Optimized Appliance

Alveo U50

Manage Your Viral Video Streams

For broadcasters delivering a small number of streams to large viewerships that demand high-quality video transcoding.

Optimized Workloads

- Transcoding
- eSports
- Live Video
- Smart Retail



High Channel Density Appliance

Alveo U30

Massive Volume

Optimized for a high volume of broadcasters with a smaller number of viewers demands high-density transcoding.

Optimized Workloads

- Safe City
- Social Video
- eSports
- Live Video



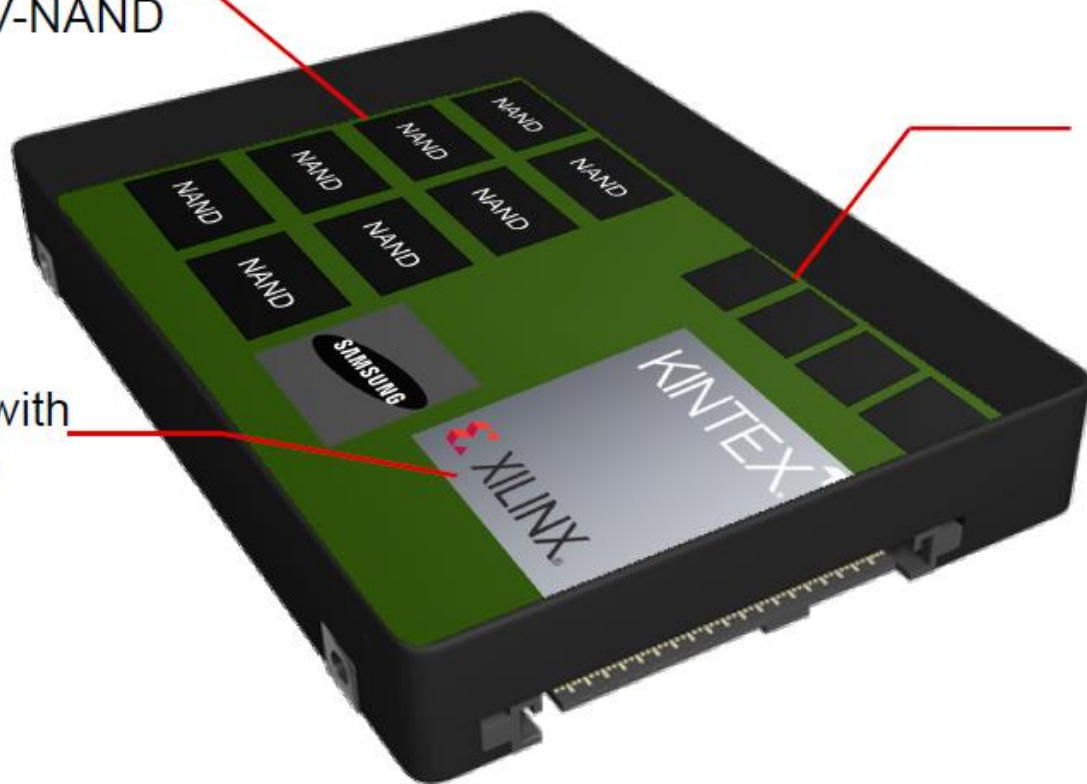


Xilinx Storage Services



SmartSSD® CSD

4 TB
5th Generation
Samsung V-NAND



4 GBs accelerator
memory

Xilinx FPGA with
customizable
accelerator



Big Data Analytics

- 10X faster time-to-insight
- Seamless acceleration of Spark
- Scale-up server performance



Transparent Compression

- Up to 10X more storage capacity
- Works with every application
- Line rate compression performance



Search-In-Storage

- Up to 100X acceleration
- Accelerated regular expression processing (RegEx)
- Searches petabytes in minutes



Video File Transcoding

- 60% reduction in video transcoding costs
- Accelerate transcoding for VoD
- Scale-up server performance



Xilinx NIC Family



Networking Platforms



London
Stock Exchange Group

Hyperscalers

CSPs

Telcos



XILINX VITIS Fintech Libraries



XILINX VITIS Networking

Onload



XILINX ALVEO
X2



XILINX ALVEO
SN1000, U25N

Fintech / High-Frequency Trading

Networking and Security Offloads



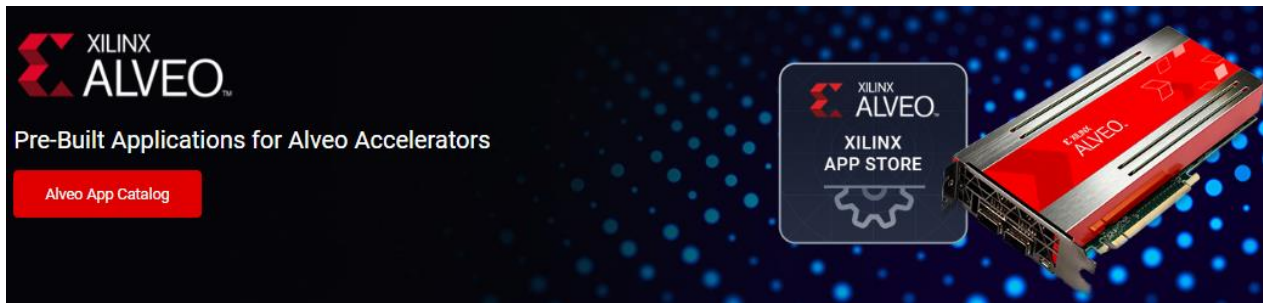
Xilinx App Store



Join Us!

SOLUTIONS Data Analytics bigstream BLACKLYNX XELERA boon inaccel BigZetta Systems swarm64 FENIAC Axonerve™ GROVF VITESSE DATA	Genomics & HPC illumina FALCON COMPUTING Geneclis byte LAKE MAXIMIZER gemalto inaccel delab Genetix VIVIDSPARKS	Video Processing XILINX Real Time Video Server Nextera Video XILINX VITIS V-NOVA skreens VYUSYNC MEGH Aupera b.com
Machine Learning XILINX VITIS AI Mipsology XILINX MEGH XELERA MOFFETT AI 睿瀚科技	Financial Computing XILINX enyx ALGOR CELEXIX MAXIMIZER COMINITY SOLUTIONS SciComp TAC FINTECH	Image Processing XILINX b.com DEEPOLY PEAKSPEED CTACCEL
Storage & Compression XILINX CAST SDST.COM ScaleFlux®	Network & Security GROVF RAYMAX 锐文科技 SILEX INSIGHT YUSUR 中科数数 TREND MICRO SECURE-IC	Tools & Services XILINX aws acelize arm HYPER-LIO

CLOUD aws Alibaba Cloud Microsoft Baidu 百度 Tencent Cloud	OEMS IBM inspur Lenovo Hewlett Packard Enterprise DELL SUPERMICR GIGABYTE™
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Browse App Store Container Catalog by Category

Browse the ever expanding catalog of pre-built accelerated application containers by category.

Application Workload	Target Platform	Cloud Service Provider
Database and Data Analytics	Alveo U30	AWS
Video and Image Processing	Alveo U50	
High Performance Computing	Alveo U200	
Machine Learning	Alveo U250	
Networking and Security	Alveo U280	
	Alveo VCK5000	
View All Applications		

Latest Apps

See what's new within the App Store

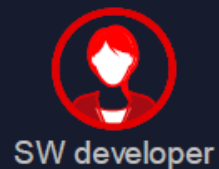




Software



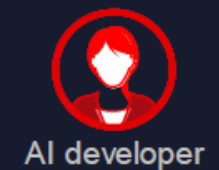
Accelerating SW & AI Development w/ HW Abstraction



SW developer

Opensource

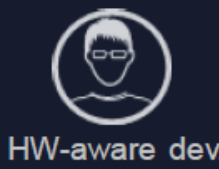
Software Application



AI developer



AI Acceleration



HW-aware dev.



SW Acceleration

C++, Python



Platform dev.




HW / Firmware

VHDL, Verilog

Vitis Unified Software Platform

Domain-specific development environment

Customer built applications



Vitis AI



TensorFlow

Caffe



PyTorch

AI/ML

Video Streaming SDK



FFmpeg



gstreamer

Video transcoding

Vitis accelerated libraries

Vision Library

Graph analytics Library

Fintech Library

Storage Library

Networking Library and middleware


Vitis core development kit

Compilers
ARM, HLS, AI Engines, P4

Analyzers

Debuggers

Vitis runtime (XRT)



Alveo

Adaptable.
Intelligent.

