

FPGA-based network applications to simplify and transform your network infrastructure

Extensive Feature Set

- Data aggregation
- Precision time stamping
- Network monitoring
- Packet filtering
- Connection sharing
- Custom and 3rd application integration

Ultra-Low Latency

- 39 ns multiplexing
- 85 ns multiplexing + filtering

Custom Application Ready

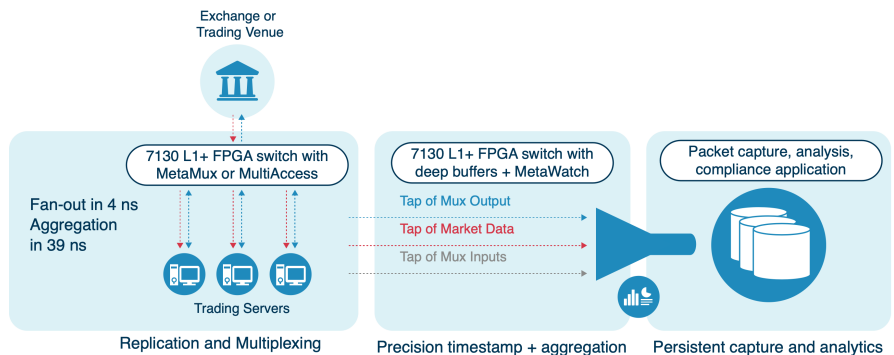
- Develop and host your own apps
- Leverage prebuilt IP cores
- Easy to use toolkits

Precision Monitoring

- High precision clock
- Precision time stamping
- Deep buffer capture aggregation




7130 Network Applications

Arista offers several powerful network applications to simplify and transform network infrastructure. These applications are designed for use cases including ultra-low latency exchange trading, network visibility and providing vendor or broker-based shared services. Arista's 7130E, K and L Series support these applications.



Financial services connectivity deployment example

The 7130 applications provided by Arista enable a complete lifecycle of packet replication, multiplexing, filtering, time stamping, aggregation, and capture. In addition to these application functions Arista also provides FPGA IP cores to enable low latency communications and multiplexing functionality in your own custom applications.

Application	Key Features	Use it for ...
MetaWatch Advanced network monitoring 	<ul style="list-style-type: none"> • Tapping • Large scale, lossless tap aggregation • Multi-port data capture • Sub-nanosecond precise time stamping • Deep buffering (up to 32 GB) 	<ul style="list-style-type: none"> • In-depth network monitoring and visibility • Improved network reliability & troubleshooting problems • Market data & packet capture • Accurate latency measurement & monitoring • Regulatory compliance (MiFID II - RTS 25)
MetaMux Low-latency multiplexing 	<ul style="list-style-type: none"> • Data aggregation in 39 nanoseconds • Deterministic jitter • Packet statistics • BGP & PIM support 	<ul style="list-style-type: none"> • Ultra-low latency network connectivity for trading • Market data fan-out and data aggregation for order entry at nanosecond levels
MultiAccess Connection sharing with enhanced security 	<ul style="list-style-type: none"> • Low-latency multiplexing and security in 85ns • ACL-based configurable filtering • Easy to deploy data privacy for connection sharing • Simplified footprint for both mux and filtering applications 	<ul style="list-style-type: none"> • Secure network connection sharing • Providing sponsored access to multiple clients • Multi tenant exchange access • Low latency interconnect sharing

Enabling Custom Applications

While FPGA applications can be challenging to develop, the Arista 7130 makes them easy to deploy. Arista provides a built-in application framework allowing developers to wrap applications into simple packages for deployment, streamlining operational processes. Arista development toolkits enable complete and unfettered access to the facilities provided by the in-system FPGAs. The MOSAPI provides monitoring, CLI, API, FPGA image management, and other facilities to allow application developers to concentrate on the core application functionality. These are the same APIs and developer kits used by the Arista engineering team to develop and deploy our applications.

Arista IP Cores

Arista develops FPGA applications based on a mature base of network logic IP. To make it easier to develop compelling FPGA-based network applications, Arista licenses that IP as IP cores for use on the Arista 7130 platform. These are supported, proven building blocks that reduce time to implement your applications.

Core	Overview	Use it for ...
10G MAC-PHY IP Core	<p>An IP core for interfacing 10 gigabit Ethernet with low latency.</p> <ul style="list-style-type: none"> • Implements a low latency Ethernet MAC and Physical layer (10GBASE-R) • Connects directly to FPGA top level serial transceiver pins and provides separate AXI4 interfaces for RX and TX user data • Supports Xilinx Virtex® 7, Xilinx Kintex® UltraScale™, and Virtex® UltraScale+™ FPGA's. 	<ul style="list-style-type: none"> • accelerating your own applications access to the 10G network
Mux IP Core	<p>Implements the same functionality as the Arista MetaMux application.</p> <ul style="list-style-type: none"> • allows for customizable radix and number of multiplexing cores • e.g. one 4:1, plus a 13:1, plus a 14:1, etc 	<ul style="list-style-type: none"> • Sharing the FPGA between the mux functionality and your own application • Building a multiplexing app with different configurations than the standard MetaMux application.
MMP IP Core	<p>Provides a bus that leverages parallel I/O between FPGA's on the 7130 triple FPGA platforms</p> <ul style="list-style-type: none"> • 8 ns intra FPGA latency • Provides a low latency clock domain crossing FIFO • Supports four MMP links connecting each Leaf FPGA to the Central FPGA and two MMP links connecting the two Leaf FPGAs together 	<ul style="list-style-type: none"> • The lowest latency , parallel communications bus for your multi FPGA applications • The fastest way to involve two FPGAs in a trading decision such as “splitting risk logic from trading logic”.

Partner Ecosystem

Several tried & tested integrations exist via our technology partners. We enable our partners to deliver value and differentiation in a highly competitive marketplace. Joint innovation with our partners has proven to generate powerful complementary solutions that run on the 7130 platform and offer clients additional capabilities: optimized analytics, data capture solutions, and more.