

## Product Highlights

### Performance

- 7130-48LS/LBS: 48x100M/1GbE/10GbE
- 7130-96LS/LBS: 96x100M/1GbE/10GbE
- Non blocking
- Nanosecond level L1 forwarding
- Xilinx Virtex® UltraScale+™ FPGA
- Deterministic

### Advanced L1 functionality

- Signal regeneration
- Media conversion
- Port mirroring
- Telemetry
- Dynamic patching/link management
- Layer 1+ statistics on every link

### Core Features

- SFP+ ports capable of 100M-11.3Gbps
- Full signal recovery & regeneration
- Bit for bit forwarding for any protocol
- Layer 1+ packet statistics
- Integrated FPGA for applications

### Ultra Low Latency

- Deterministic ultra low latency
- 5 ns - 7130-48LS/LBS
- 6 ns - 7130-96LS/LBS
- Less than 100 ps jitter
- Same latency for 1:N port mirroring
- Completely non-blocking

### Redundancy & Data Center Optimized

- Dual redundant, hot swappable PSU
- Dual redundant, hot swappable fans
- AC & DC power options
- Rear to front or front to rear cooling

### Monitoring

- Packet statistics on every port
- Embedded influxdb database
- Eye diagram for monitoring/troubleshooting
- tcpdump for diagnostics on every port
- LLDP for discovering network topology
- Full SFP+ interface diagnostics including light levels, temperature & voltage

### Management platform

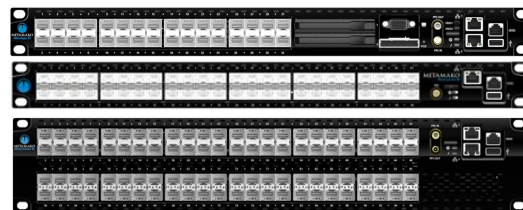
- Linux based
- Industry standard CLI
- JSON RPC API for remote management

## Overview

The Arista 7130LS Series FPGA-enabled devices leverage FPGA technology to enable the development and deployment of cutting-edge network applications. Available in 32, 48 or 96 SFP+ port options, the 7130LS Series combines multiple devices in one; performing layer 1+ switching in only 5 nanoseconds, enabling unrestricted access to an onboard FPGA and containing an x86\_64 server.

The 7130LS Series is optimized for Arista's FPGA-based network applications and can equally be leveraged to run 3rd party partner applications. FPGA application developers can utilize the platform to deploy and deliver their performance critical apps. On top of the market-leading FPGA functionality, the devices combine a range of Layer 1+ network functionality on to the same devices:

- Signal regeneration
- Port mirroring
- Dynamic patching/link management
- Ad-hoc tapping without rewiring
- Layer 1+ statistics on every link
- Media conversion
- Telemetry and more



*Arista 7130LS Series*

Feature	Benefits
Simplified stack	Fan-out with 5 ns of latency, equivalent to a single meter of fiber or copper interconnect and insignificant jitter.
Media conversion	Reduces costs by converting between different media types running at the same rate
Layer 1+ functionality	Save rack space and reduce complexity by leveraging dynamic patching, tapping, one-to-many replication, telemetry and comprehensive port statistics on a single device.
Feature rich	Avoid the need to build features in-house by leveraging Arista's access control, syslog, SNMP, packet stats, tcpdump, JSON RPC API, time series data, streaming telemetry and more - included as standard within the 7130 Series.
Easy app deployment	Streamline operational processes through Arista's built-in application infrastructure which allows developers to wrap applications into simple packages for deployment.
Enterprise ready	Deploy FPGA applications with ease - the FPGA platform integrates with a 64-bit x86 management processor and the MOS and/or EOS Operating systems to provide user extensible solutions.

### Arista 7130 Applications

Arista offers several powerful network applications to transform network infrastructure. These applications enable a complete lifecycle of networking functions, such as packet replication, multiplexing, filtering, timestamping, Layer 2 switching, aggregation and capture. Arista also provides FPGA development kits as well as IP cores to enable organizations to develop and deploy their own custom applications.

### Application Comparison for Arista 7130LS Series

Application	Dev Standard	Overview	Key Features	Use it for...
<b>MetaWatch</b>	L & LB	Advanced network monitoring	<ul style="list-style-type: none"> <li>• Regenerative Tapping</li> <li>• Large scale, lossless tap aggregation</li> <li>• Multi-port data capture</li> <li>• Sub-nanosecond precise time stamping</li> <li>• Deep buffering (32 GB)</li> </ul>	<ul style="list-style-type: none"> <li>• In-depth network monitoring and visibility</li> <li>• Improved network reliability &amp; troubleshooting problems</li> <li>• Market data &amp; packet capture</li> <li>• Accurate latency measurement &amp; monitoring</li> <li>• Regulatory compliance (MiFID II/RTS 25)</li> </ul>
<b>MetaMux</b>	L & LB	Low-latency multiplexing	<ul style="list-style-type: none"> <li>• Data aggregation in 39 nanoseconds</li> <li>• Deterministic jitter</li> <li>• Packet statistics</li> <li>• BGP &amp; PIM support</li> </ul>	<ul style="list-style-type: none"> <li>• Ultra-low latency network connectivity for trading</li> <li>• Market data fan-out and data aggregation for order entry at nanosecond levels</li> </ul>
<b>MultiAccess</b>	L & LB	Connection sharing with enhanced security	<ul style="list-style-type: none"> <li>• Low-latency multiplexing and security from 55 nanoseconds</li> <li>• ACL-based configurable filtering</li> <li>• Easy to deploy data privacy for connection sharing</li> <li>• Simplified footprint for both mux and filtering applications</li> <li>• 10/1G Speed Conversion</li> </ul>	<ul style="list-style-type: none"> <li>• Secure network connection sharing</li> <li>• Providing sponsored access to multiple clients</li> <li>• Multi tenant exchange access</li> <li>• Low latency interconnect sharing</li> <li>• Supporting Colo deployments with multiple concurrent exchange connections</li> </ul>
<b>SwitchApp</b>	LB	Low latency Layer 2 switching	<ul style="list-style-type: none"> <li>• 1/10/40G Layer 2 switching, implemented in FPGA</li> <li>• Ultra-low latency packet forwarding in 94 -132 ns</li> <li>• Full featured L2 switching pipeline powered by EOS</li> <li>• Non-blocking bandwidth profiles to provide up to 480 Gbps</li> </ul>	<ul style="list-style-type: none"> <li>• Exchange-facing connectivity</li> <li>• L2 Multicast pub/sub</li> <li>• Supporting Colo deployments with multiple concurrent connections</li> <li>• Optimised distribution of traffic</li> <li>• Low latency back-office or message bus infrastructure</li> </ul>

Application	Dev Standard	Overview	Key Features	Use it for...
<b>ExchangeApp</b>	L	In-line packet time-stamping enabling exchange fairness	<ul style="list-style-type: none"> <li>• Timestamp at the edge of trading venue networks</li> <li>• Sub-200ns passthrough latency to apply the timestamp</li> <li>• Reliable accuracy and timestamp precision</li> <li>• Accurately synchronise timestamps between multiple ExchangeApp devices</li> </ul>	<ul style="list-style-type: none"> <li>• Increase exchange fairness</li> <li>• Reduce trading venue latency sensitivity</li> <li>• Maintain trade order based on edge timestamps</li> <li>• Reduce complexity and risk of traditional low-latency exchange infrastructures</li> </ul>
<b>MetaProtect Firewall</b>	L	Low-latency packet filtering in 135 ns	<ul style="list-style-type: none"> <li>• Architected for ultra-low-latency with forwarding from 135 nanoseconds</li> <li>• Line rate 10GbE packet uni or bidirectional filtering between port-pairs</li> <li>• Stateless security policy with up to 510 rules per ACL</li> <li>• Full packet header logging for noncompliant traffic</li> </ul>	<ul style="list-style-type: none"> <li>• Low-latency firewall</li> <li>• Satisfy InfoSec or regulatory compliance mandates without introducing excessive latency</li> </ul>

## Enabling Custom Applications

While FPGA applications can be challenging to develop, the Arista 7130LS 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.

These are the same APIs and developer kits used by the Arista engineering team to develop and deploy our applications.

Model Comparison	7130-48LS	7130-48LAS	7130-96LS	7130-96LAS
Ports	48 x SFP+ 2 x RJ45	48 x SFP+ 2 x RJ45	96 x SFP+ 2 x RJ45	96 x SFP+ 2 x RJ45
FPGA	Xilinx Virtex® UltraScale+™ FPGA			
FPGA Model	VU7P Speed Grade 2			
DRAM	32GB DDR	32GB DDR	32GB DDR	32GB DDR
SSD Drive Bays	No	No	No	No
External PCIE	No	No	No	No
Internal 10G Ports	2	2	2	2
Throughput	100M-11.3Gbps	100M-11.3Gbps	100M-11.3Gbps	100M-11.3Gbps
Layer 1 Latency	5 ns	5 ns	6 ns	6 ns
MetaMux Latency	43 ns	43 ns	43 ns	43 ns
MultiAccess Latency	55 ns	55 ns	55 ns	55 ns
MetaWatch	Yes	Yes	Yes	Yes
ExchangeApp	Yes	Yes	Yes	Yes
MetaProtect	Yes	Yes	Yes	Yes
SwitchApp	No	No	No	No
FDK (FPGA Dev Kit)	Yes	Yes	Yes	Yes
VDK (Vitis™ Dev Kit)	No	No	No	No
Clock	OCXO	Atomic	OCXO	Atomic
CPU	Quad-Core x86	Quad-Core x86	Quad-Core x86	Quad-Core x86
System Memory	8 GB RAM	8 GB RAM	8 GB RAM	8 GB RAM
On-board SSD	64GB	64GB	64GB	64GB
USB Ports	1	1	1	1
100/1000 Mgmt Ports	2	2	2	2
PPS Input Ports (5V TTL, 50Ω)	1	1	1	1
PPS Output Ports (5V TTL)	1	1	1	1
RS-232 Serial Ports	1 (RJ-45)	1 (RJ-45)	1 (RJ-45)	1 (RJ-45)
Hot-swap Power Supplies	2 (1+1 redundant)			
Hot-swappable Fan Trays	2 (1+1 redundant)		3 (1+1 redundant)	
Reversible Airflow Option	Yes	Yes	Yes	Yes
Rack Units	1U	1U	2U	2U
Size (WxHxD)	17.6 x 1.7 x 14.9" (44.8 x 4.3 x 37.9 cm)		17.6 x 3.3 x 14.9" (44.8 x 8.7 x 37.9 cm)	
Max Power Draw	190W	190W	388W	388W
Weight	9kg/20lbs	9kg/20lbs	12kg/26lbs	12kg/26lbs
Fan Tray	FAN-7130-1U	FAN-7130-1U	FAN-7130-1U	FAN-7130-1U
Power Supplies	PWR-500 (AC or DC)	PWR-500 (AC or DC)	PWR-747AC PWR-1900DC	PWR-747AC PWR-1900DC

Model Comparison	7130-48LBS	7130-48LBAS	7130-96LBS	7130-96LBAS
Ports	48 x SFP+ 2 x RJ45	48 x SFP+ 2 x RJ45	96 x SFP+ 2 x RJ45	96 x SFP+ 2 x RJ45
FPGA	Xilinx Virtex® UltraScale+™ FPGA			
FPGA Model	VU9P Speed Grade 3			
DRAM	32GB DDR	32GB DDR	32GB DDR	32GB DDR
SSD Drive Bays	No	No	No	No
External PCIE	No	No	No	No
Internal 10G Ports	2	2	2	2
Throughput	100M-11.3Gbps	100M-11.3Gbps	100M-11.3Gbps	100M-11.3Gbps
Layer 1 Latency	5 ns	5 ns	6 ns	6 ns
MetaMux Latency	39 ns	39 ns	39 ns	39 ns
MultiAccess Latency	55 ns	55 ns	55 ns	55 ns
MetaWatch	Yes	Yes	Yes	Yes
Exchange App	No	No	No	No
MetaProtect	No	No	No	No
SwitchApp	Yes	Yes	Yes	Yes
FDK (FPGA Dev Kit)	Yes	Yes	Yes	Yes
VDK (Vitis™ Dev Kit)	Yes	Yes	Yes	Yes
Clock	OXCXO	Atomic	OXCXO	Atomic
CPU	Quad-Core x86	Quad-Core x86	Quad-Core x86	Quad-Core x86
System Memory	8 GB RAM	8 GB RAM	8 GB RAM	8 GB RAM
On-board SSD	64GB	64GB	64GB	64GB
USB Ports	1	1	1	1
100/1000 Mgmt Ports	2	2	2	2
PPS Input Ports (5V TTL,50Ω)	1	1	1	1
PPS Output Ports (5V TTL)	1	1	1	1
RS-232 Serial Ports	1 (RJ-45)	1 (RJ-45)	1 (RJ-45)	1 (RJ-45)
Hot-swap Power Supplies	2 (1+1 redundant)			
Hot-swappable Fan Trays	2 (1+1 redundant)		3 (1+1 redundant)	
Reversible Airflow Option	Yes	Yes	Yes	Yes
Rack Units	1U	1U	2U	2U
Size (WxHxD)	17.6 x 1.7 x 14.9" (44.8 x 4.3 x 37.9 cm)		17.6 x 3.3 x 14.9" (44.8 x 8.7 x 37.9 cm)	
Max Power Draw	190W	190W	388W	388W
Weight	9kg/20lbs	9kg/20lbs	12kg/26lbs	12kg/26lbs
Fan Tray	FAN-7130-1U	FAN-7130-1U	FAN-7130-1U	FAN-7130-1U
Power Supplies	PWR-500 (AC or DC)	PWR-500 (AC or DC)	PWR-747AC PWR-1900DC	PWR-747AC PWR-1900DC

### Supported Optics and Cables

Interface Type	SFP+ ports
1000BASE-T	RJ45
10GBASE-CR	SFP+ to SFP+: 0.5m-5m
10GBASE-SRL	100m
10GBASE-SR	300m
10GBASE-LRL	1km
10GBASE-LR	10km
10GBASE-ER	40km
10GBASE-DWDM	80km
40GBASE-CR4	QSFP+ / SFP+

### Environmental Characteristics

Operating Temperature	0 to 40°C (32 to 104°F)
Relative Humidity	10% to 85% non-condensing
Maximum Altitude	2,000m (6,500ft)

### Power Supply Specifications

Power Supply	PWR-460AC	PWR-460DC	PWR-747AC	PWR-1900DC
Input Voltage	100-240V AC	-48 to -60V DC	100-240V AC	40-72V DC
Typical Input Current	6.5 -3.2A	11.8A Max (-48V)	10.0 - 5.0A	44A Max (-48V)
Input Frequency	50/60Hz	DC	50/60Hz	DC
Input Connector	IEC 320-C13	AWG #14 Max	IEC 320-C13	AWG #6 Max
Efficiency (Typical)	93% Platinum	90%	93% Platinum	90%
Compatibility	7130-48LS/LAS/LBS/LBAS		7130-96LS/LAS/LBS/LBAS	

### Standards Compliance

EMC	FCC, EN55022, EN61000-3-2, EN61000-3-3 or EN61000-3-11, EN61000-3-12 (as applicable)
Immunity	EN55024, EN55035 EN300 386
Safety	UL/CSA 60950-1, EN 62368-1, IEC 60950-1 CB Scheme with all country differences
Certifications	North America (NRTL) European Union (EU) BSMI (Taiwan) C-Tick (Australia) CCC (PRC) KC (S. Korea) EAC (Eurasian Customs Union) VCCI (Japan)
European Union Directives	2006/95/EC Low Voltage Directive 2004/108/EC EMC Directive 2011/65/EU RoHS Directive 2012/19/EU WEEE Directive

## 7130LS

Product Number	Product Description
DCS-7130-48LS#	Arista 7130 Series 48LS with UltraScale VU7P-2 FPGA. Requires PSU/Fan kit sold separately.
DCS-7130-48LS-F	Arista 7130 Series 48LS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-48LS-R	Arista 7130 Series 48LS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-48LAS#	Arista 7130 Series 48LAS with UltraScale VU7P-2 FPGA and Atomic Clock. Requires PSU/Fan kit sold separately.
DCS-7130-48LAS-F	Arista 7130 Series 48LAS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-48LAS-R	Arista 7130 Series 48LAS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-96LS#	Arista 7130 Series 96LS with UltraScale VU7P-2 FPGA. Requires PSU/Fan kit sold separately.
DCS-7130-96LS-F	Arista 7130 Series 96LS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-96LS-R	Arista 7130 Series 96LS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-96LAS#	Arista 7130 Series 96LAS with UltraScale VU7P-2 FPGA and Atomic Clock. Requires PSU/Fan kit sold separately.
DCS-7130-96LAS-F	Arista 7130 Series 96LAS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-96LAS-R	Arista 7130 Series 96LAS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-48LBS#	Arista 7130 Series 48LBS with UltraScale VU7P-2 FPGA. Requires PSU/Fan kit sold separately.
DCS-7130-48LBS-F	Arista 7130 Series 48LBS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-48LBS-R	Arista 7130 Series 48LBS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-48LBAS#	Arista 7130 Series 48LBAS with UltraScale VU7P-2 FPGA and Atomic Clock. Requires PSU/Fan kit sold separately.
DCS-7130-48LBAS-F	Arista 7130 Series 48LBAS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-48LBAS-R	Arista 7130 Series 48LBAS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-96LBS#	Arista 7130 Series 96LBS with UltraScale VU7P-2 FPGA. Requires PSU/Fan kit sold separately.
DCS-7130-96LBS-F	Arista 7130 Series 96LBS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-96LBS-R	Arista 7130 Series 96LBS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC
DCS-7130-96LBAS#	Arista 7130 Series 96LBAS with UltraScale VU7P-2 FPGA and Atomic Clock. Requires PSU/Fan kit sold separately.
DCS-7130-96LBAS-F	Arista 7130 Series 96LBAS with UltraScale VU7P-2 FPGA, front-to-rear air, 2xAC
DCS-7130-96LBAS-R	Arista 7130 Series 96LBAS with UltraScale VU7P-2 FPGA, rear-to-front air, 2xAC

## 7130LS

## Optional Components and Spares

Product Number	Product Description
FAN-7130-1U-F	Spare fan module for Arista 7130 Series 1U (front-to-rear airflow)
FAN-7130-1U-F#	Configurable fan module for Arista 7130 Series 1U (front-to-rear airflow)
FAN-7130-1U-R	Spare fan module for Arista 7130 Series 1U (rear-to-front airflow)
FAN-7130-1U-R#	Configurable fan module for Arista 7130 Series 1U (rear-to-front airflow)
FAN-7130-2U-F	Spare fan module for Arista 7130 Series 2U (front-to-rear airflow)
FAN-7130-2U-F#	Configurable fan module for Arista 7130 Series 2U (front-to-rear airflow)
FAN-7130-2U-R	Spare fan module for Arista 7130 Series 2U (rear-to-front airflow)
FAN-7130-2U-R#	Configurable fan module for Arista 7130 Series 2U (rear-to-front airflow)
PWR-500AC-F	Spare 500 Watt AC power supply for Arista 7050X, 7280 and 7130 Switches (front-to-rear airflow)
PWR-500AC-R	Spare 500 Watt AC power supply for Arista 7050X, 7280 and 7130 Switches (rear-to-front airflow)
PWR-500-DC-F	Spare 500W DC Power Supply for 7050X, 7280 and 7130 series (front to rear airflow switch)
PWR-500-DC-R	Spare 500W DC Power Supply for 7050X, 7280 and 7130 series (rear to front airflow switch)
PWR-747AC-RED	Spare 750 Watt AC power supply for Arista 7280R and 7130 Switches (front-to-rear airflow)
PWR-747AC-BLUE	Spare 750 Watt AC power supply for Arista 7280R and 7130 Switches (rear-to-front airflow)
PWR-1900-DC-F	Spare 1900W DC power supply for Arista 7000 Series 2U switches (front to rear airflow)
PWR-1900-DC-R	Spare 1900W DC power supply for Arista 7000 Series 2U switches (rear to front airflow)

## Headquarters

5453 Great America Parkway  
 Santa Clara, California 95054  
 408-547-5500

## Support

[support@arista.com](mailto:support@arista.com)  
 408-547-5502  
 866-476-0000

## Sales

[sales@arista.com](mailto:sales@arista.com)  
 408-547-5501  
 866-497-0000

[www.arista.com](http://www.arista.com)

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