

Arista 7130

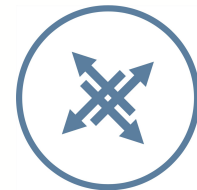
Low-latency layer 3 and FPGAs

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SwitchApp

SwitchApp - The lowest-latency switch for finance



- **Full-featured** 1/10G Layer 2/3 switch -- *implemented in FPGA*
 - Ultra-low latency packet forwarding averaging 89* ns (L2) or 133* ns (L3)
 - Full cut-through architecture
 - 48x 1/10G ports
 - 10k Uni- or multicast MAC addresses
 - 30k unicast, 22k multicast routes
- Fully **integrated** with EOS, running on 7130LB devices
 - Standard EOS CLI and protocols: STP, LLDP, IGMP, LAG
 - Standard EOS L3 stack: BGP, PIM, OSPF
 - Standard Management, telemetry, protocols, forwarding plane, CloudVision
- Layer 3 features were released in EOS 4.28.0F
 - Download at: <https://mako.arista.com/dyn/softwareportal/releases/#switchapp>

SwitchApp looks, feels and tastes like any EOS switch

*NOT STAC BENCHMARKS

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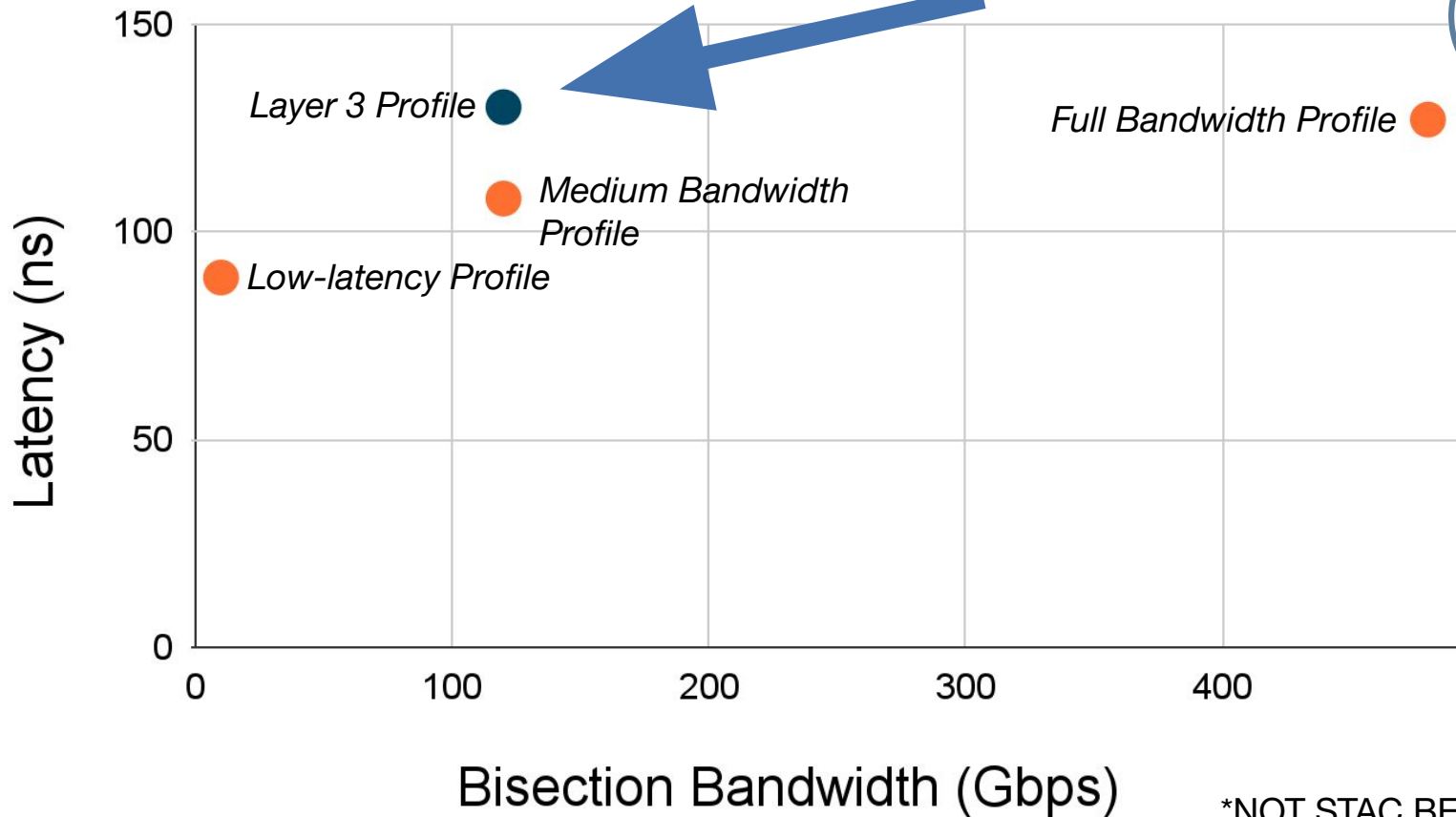
SwitchApp - Updates



- **New features released** – In production now in EOS 4.29.0
 - MLAG, VRFs, multicast boundary join control
- Important features **coming in Q4**:
 - PTP Boundary Clock – time synchronisation
 - LANZ buffer monitoring – latency monitoring.
 - Routed ACLs
 - VRRP
- Watch this space:
 - More features coming via software update in Q1. Feedback welcome!

The features you need, without the baggage.

Arista SwitchApp – Same Latency, More Features



*NOT STAC BENCHMARKS

SwitchApp - Now the **fastest*** Layer 3 switch too



133 ns*

Average Latency

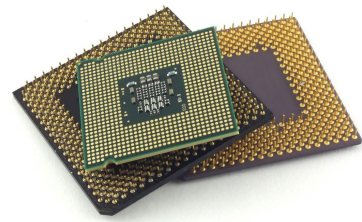
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FPGAs

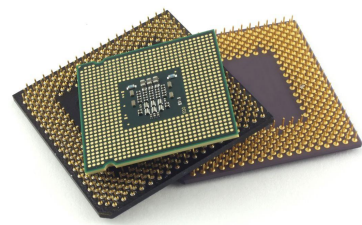
Arista 7130 is an **ideal FPGA platform**



- Arista 7130 is an **enterprise-grade platform** for FPGA apps:
 - hardware, manufacturing, support, RMAs – industry leading.
 - software (e.g. EOS/Linux), security/bug fixes. – industry leading.
 - engineering cost is amortised across 7130 sales for all use cases.
- Apps are **software extensions** (e.g. RPM).
 - FPGAs are programmed by software. Bitfiles are included in the package.
- Benefits: leverage the platform that **we stand behind**.
 - reduced engineering cost, greater agility.
 - trusted by partners and customers for critical applications.

Arista 7130 is a solid foundation for FPGA development.

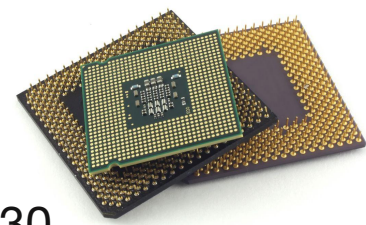
Building a development ecosystem



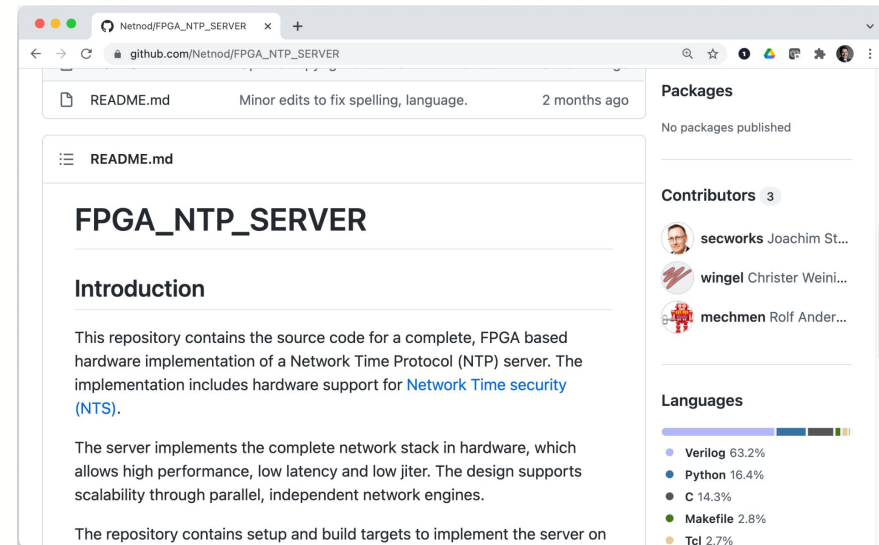
- Our **goal: enable developers** to write really useful FPGA applications...
 - Open source example apps
- What **we provide**:
 - An FPGA developer's kit with everything an FPGA team needs to use 7130.
 - Examples to copy and modify, IP cores for Arista hardware and networking.
 - For higher-layer business logic libraries, talk to our partners.
- Supporting **open source**
 - Recent open-source of pytest-netdut – a library for testing software on EOS/MOS.
 - Open source example apps in the FDK
 - Upcoming open-source release of a buildable FDK

Focussed on enabling FPGA developers

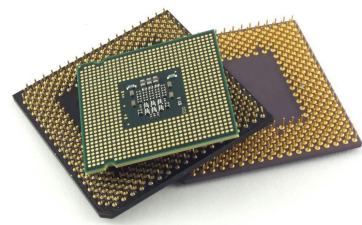
Open Source Example: Netnod



- Sweden's secure NTP service, delivered by FPGA on Arista 7130
- Open source: https://github.com/Netnod/FPGA_NTP_SERVER/tree/arista
- Moved from homebrew to Arista
- Time sync to PPS, using Arista core
- Uses 7130's OCXO stable oscillator



How to get started:



- Download the FDK, choose an example, and **type “make”**.
- Have an **existing FPGA team** and FPGA app?
 - Your server: x86 -> PCIE -> FPGA -> Network
 - Arista 7130: x86 -> PCIE -> FPGA -> Network
 - Port your bitfile to the VU9P FPGA in the Arista 7130 platforms.
 - Use Arista’s software tools to build operational apps.
- Working with a **vendor**?
 - No FPGA knowledge is required to *deploy* an FPGA app.
 - Third party FPGA vendors are better when strengthened by Arista 7130.
- Just **starting out**?
 - Get in touch with Arista, and we can recommend our partners.

Talk to your team, talk to us at the booth.



Thank You

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