#LetstalkOpenly

A second in a series of three webinars determining the opportunity around Open Computing for African Governments, Enterprises and Service Providers.
Our Speakers

**Daniel** founded Atlancis with a vision to bridge the technology gap in Africa by combining global expertise with local context. Atlancis believes Technology adoption in Africa can only be driven by Africa. This has entailed developing tech-enabled vertical and horizontal solutions built to world class standards but with an informed understanding of the problems faced by businesses in Africa.

**Steve Helvie** is currently the VP of Channel for the Open Compute Project (OCP). In this role he helps to educate organisations on the benefits of open hardware designs and the value of “community-driven” engineering for the data centre. He works closely with Solution Providers and Manufacturers to help organisations adopt Open Compute across all regions and segments of the market.

**Lukasz Lukowski** is one of the first Open Networking evangelist in Europe who has been working closely with open communities and projects like OCP, TIP, ONF (ONF Ambassador), Terragraph or Express Wi-Fi Program. Active A-Team Ambassador of the Open Networking Foundation and focused Regional Lead Manager of the Open Compute Project making change happen in EMEA region!
Agenda

• Introduction of Open Networking
• Open Networking in Africa
• Telco’s transformation from traditional legacy system to an agile Open Network
• Q&A and Closing Address
Disaggregation

Steve Helvie
VP of Channel Development
Open Compute Project
150+ companies
190+ contributions
6K engineers

150+ OCP Accepted™ & OCP Inspired™ Products
OCP Ready™ Facilities
Our Projects

Networking  
Server  
Storage  
Rack & Power  
Advanced Cooling

Data Center  
Telco  
HW Mgmt  
Open System Firmware  
HPC  
Security

Modular DC  
openEDGE

https://www.opencompute.org/projects
1. CAPEX reduction initiatives
2. Increase in SDN offerings
3. Rise in merchant-based silicon

“OCP-certified switches have moved past the trial and wait-and-see phases”

Devan Adams, principal analyst at Omdia Inc

https://www.fiercetelecom.com/telecom/open-compute-project-switches-rule-bare-metal-roost-report
Open. For Business.

The Open Compute Project (OCP) is reimagining hardware, making it more efficient, flexible, and scalable. Join our global community of technology leaders working together to break open the black box of proprietary IT infrastructure to achieve greater choice, customization, and cost savings.
Open Networking in Africa

Dan Njuguna
Co-founder & CEO
**Atlancis’ journey**

We apply innovation that’s been honed in the world’s largest data centres to deliver fundamental improvements in performance, administration and efficiency at scale.

It’s our belief that a software-centric approach is the future for the data centre. These values run through our corporate ideology determining our alliances and objectives.
Africa is Open

- Business transformation 2018
- POCs executed at multiple levels
  - Hardware
  - Cloud platform
  - Applications
- Solutions listed on OCP website
- Global press coverage
- Compelling results
  - CAPEX
  - OPEX
  - ROI
  - Product development
- Platform for expansion
Atlancis deployments

**Edgecore Networks** Wedge 100G 100GbE Data Center Switch

A commercial product based on Facebook’s Wedge 100 design. Top-of-Rack switch optimized for web-scale data centers. Compatible with...

**Solution Providers:** Edgecore Networks, Hyve Solutions, ITOCHU Techno-Solutions Corporation, Circle B, Vesper Technologies, ECI Networks, Atlancis Technologies

Part #: Wedge 100G

Specifications

**Edgecore Networks** AS4610-30T 24x1G RJ45 Base-T, 4x10G SFP+, 2x20G QSFP, Access Switch

A high-performance Gigabit Ethernet Layer 3 switch family which is ideal as a data center top-of-rack switch or IPMI (Intelligent Platform Manage...
Tangible benefits

• 130 + hardware platforms
• Extensive supported vendor base
• Flexibility to work with best-in-class suppliers

• Reduced network equipment expenses
• Reduced installation and integration costs

• Flexible open architecture
• Customise your network and scale seamlessly

• Automated & accelerated provisioning of network capacity and services

• Greater control over the development of enhanced network services

• Reduce OpEx by using existing teams managing more switches each
Łukasz Łukowski
Vice President Sales & Channel EMEA
Edgecore Networks
What is Open Networking?

Traditional “Black-Box” Integrated HW+SW

Disaggregated “White-Box / Brite-Box”

Disaggregated “Open Networking” “Bare-Metal Box”

Networking Device

Networking NOS

Networking NOS

Networking NOS

Disaggregation

Networking Hardware

Networking Hardware

Disaggregation

Proprietary

Open
Why Open Networking?

**Benefits:**

- Disaggregation provides **FREEDOM** of choice and removes vendor lock-in
- Greater **CONTROL** over Network Infrastructure through open software platforms
- Rapid **INNOVATION** through a community & develops approach
- Reduced **CAPEX** and **OPEX**

**Attributes:**

- **Open Hardware:** Standard Configurations, White-Box, Bare-Metal, Brite-Box Open Designs
- **Open Software:** Open Source and Commercial Software with Open Interfaces and Agents
- **Software Controlled Infrastructure:** SDN, NFV, Automation, Analytics, and Orchestration
Leading the Open Network Revolution

- Leading Member since conception / OCP Taiwan Representative
- 1st Contributor to Network Group - 17+ Accepted Design Contributions
- Designs for new use cases in Telco Project
- Member since 2014, Partner since 2018
- Contributing to all four Exemplar Reference Designs
- Board of Directors Membership
- Platinum Member since Conception
- Board of Directors Membership
- Contributor to Edge – Enterprise Solutions
- Cassini Optical Transponder Contribution
- 1st Contributor to Cell Site Gateway Project
- Top 5 Contributor
- Most platforms Contributed to SONiC Community
Accton Technology and Edgecore Networks

**Accton Technology**

- The Leading Network ODM - Servicing Tier-1 Customers
- Founded 1988, IPO Taiwan 1995 (TWSE: 2345)
- $1.8B USD Revenue 2019, 5,145 Employees Worldwide
- 9 R&D Locations with more than 1,000 Engineers
- State-Of-The-Art High-Volume Manufacturing in Taiwan and China
- One Stop Shop!

**Edgecore Networks**

- Brand launched in 2004, wholly owned subsidiary of Accton
- Go-to-market business to network operators - DC, Telecom, and Enterprise
- Manages customer, partner and open community relationships
- Leading contributor of network designs to OCP, TIP participant, ONF – Charter Partner
- More than 10M Ethernet Ports shipped in 2019!
Open Networking Evolution

10G Leaf
40G Spine

10G/25G Leaf
100G Spine

DCI

100G Leaf
400G Spine

Next Gen
Switch-Optical
Integration

Photonics
Switching

Monitoring,
Packet
Broker

CORD
&
Access

Internet
Exchange

Aggregation
&
Core

Cell Site
Gateways
& Backhaul

Data Center

Mobile
Fronthaul

PoE & Access
Switches

Open
Wi-Fi

Distribution
Centers

Corporate
Networks

MDU Services

Hotspot

Retail
Stores

uCPE

Telecom / MSO

Enterprise / Campus
Data center

Evolution

Leaf / Spine Fabric: Open Network Switches

Coherent Optical to Core

AS7716-245C
Coherent Optical Switch
Data center

Edgecore cooperation with Hyperscale Datacenter (40G / 100G)

Wedge-16X
16x40G, Broadcom Trident II

Wedge100S-32X
32x100G, Broadcom Tomahawk+

Facebook Design
Data center

Edgecore cooperation with Hyperscale Datacenter (100G / 400G)

MINIPACK AS8000

- Broadcom Tomahawk 3, Intel® Xeon® D-1527 CPU
- 8 Line Card Options (PIMs)
  - 16 x 100G QSFP28 / up to 128 x 100G
  - 4 x 400G QSFP-DD / up to 32 x 400G
Enterprise / Campus

Evolution

AS4610 SERIES
Access Switch
3 x 48 Port 1G, 4 x 10G, 2x10G Stack Ports
Broadcast XGS Helix 6
Embedded ARM CPU
POE and non-POE Options

AS4630 SPF/S
Access Switch
4 x 48 Port Multi-Rate, 4x10G, 2x100G
Broadcast XGS Helix 6
Intel Xeon Denverh CPU
Optional MACSEC
IEEE 802.3at, 30W POE Support

SAF5100, SAFS100, SAFS1015
Universal SD-LAN Switch
Integrates MAN, LAN, and VNFs
Intel Atom Intel Processor
SODIMM Memory
10G/1G, 24 SFP+ 10G, SFP+2
Enterprise / Campus

Evolution
Telecom / MSO

The Logical Architecture for Edgecore Open Networking CSP Portfolio
Telecom / MSO

Edgecore cooperation with Telecoms (DCSG)

**AS7316-26XB Cell Site Gateway**
16 x 10G SFP+, 8 x 25G SFP28 + 2 x 100G QSFP28

**AS7315-27X Cell Site Gateway**
16 x 10G SFP+, 8 x 25G SFP28 + 1 x 100G QSFP28 + 2 x 100G Stacking Ports

**AS5915-18X TIP DCSG Disaggregated Cell Site Router**
4 x 1G RJ45, 8 x 1G/2.5G SFP + 6 x 10G SFP+

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*Images of hardware components.*
Telecom / MSO

Edgecore cooperation with Telecoms (Aggregation and Core Routers or 10G OLT)

Stacked/Clustered
- Multiple CPU
- Single Control/Management Plane
- Redundant

Distributed Virtual Chassis
- Multiple CPU
- Single Control/Management Plane
- Redundant
- Scales to 1000s of Ports

10G PON ASXvOLT16
16 x 10G XGS-PON XFP + 4 x 100G QSFP28
## Strong Software Ecosystem

### COMMERCIAL SOFTWARE

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<th>Data Center</th>
<th>CSP</th>
<th>Enterprise</th>
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<td><strong>IP INFUSION</strong></td>
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### OPEN SOURCE SOFTWARE

- SONiC from Microsoft
- Open Networking Linux (ONL) from ONF
- OpenSwitch from the Linux Foundation
- Stratum from ONF
- ONOS from ONF
- Broadcom’s ICOS
- DANOS from the Linux Foundation
Where can you try Open Networking?

Edgecore Global LAB (LAAS)

Hsinchu
- Existing
- build debug
- VPN
- VNC
- git

Tainan
- Existing
- build debug
- VPN
- VNC
- git

San Jose *
- build debug
- VPN
- VNC
- git

India *
- build debug
- VPN
- VNC
- git

Mobile Labs available across EMEA

Leaf & Spine

Central Office – 10G PON
THANK YOU