

# Ozon upgrades its network to a 400G microservices architecture from Arista to accelerate its growth

## Highlights

### Challenge

Ozon Group experienced rapid growth and needed to upgrade its legacy network to support a flexible microservices architecture essential for sustained expansion.

### Solutions

- Innovative leaf and spine architecture to support transition to microservices and EVPN security architectures.
- vEOS deployed as a virtual lab environment to allow for rapid design, implementation, testing and to streamline ongoing moves, adds and changes.
- Arista 7000 Series spine and leaf switches for high performance, low latency, and scale up to 400G.

### Results

- Improvement in operational efficiency for networking teams through a simplified network architecture.
- Ability to easily scale performance in line with growing microservices based architecture.
- Open architecture provided extensive network telemetry to enable in-house network management and automation capabilities for streamlined operations.

Following a decade of rapid growth, Ozon, Russia's leading multi-category e-commerce platform turned to Arista to deliver a major network upgrade to support its transition to a highly scalable microservices architecture. The deployment of Arista's 400G-enabled spine and leaf architecture along with its open design has not only improved performance and reliability but allowed Ozon to build its own management and automation tools to streamline its operational tasks and successfully scale out its business.

The Ozon logo is displayed in a bold, blue, sans-serif font. The letters are thick and closely spaced, with a slight shadow effect behind them, giving it a three-dimensional appearance. The logo is centered horizontally within a light gray rectangular area.

### Project Background

Originally launched in 1998 as an online bookseller by the Russian software house Reksoft, today, Ozon is Russia's leading multi-category e-commerce platform. The wider Ozon Group also includes online travel agency Ozon Travel, and holds a stake in Litres, Russia's largest digital books platform.

Ozon has grown rapidly and in November 2020, Ozon carried out an initial public offering on NASDAQ and the Moscow Exchange (MOEX), raising \$1.2 billion. The company was valued at more than \$7 billion, and two months later Ozon's market capitalization exceeded \$10 billion in what Bloomberg, a market analyst described as, "...the best market debut for a Russian company since 2011."

### Challenge

Ozon's significant growth over the last two decades has matched a surge in ecommerce in Russia. To meet this expansion, what originally started as a single rack in a shared data centre in Moscow has grown to encompass hundreds of racks across multiple, dedicated data centres. In 2018, it was decided by senior IT leadership within Ozon that its monolithic software architecture couldn't provide the required level of growth that the company was experiencing and chose to switch to a more flexible microservice infrastructure. But the planned microservice architecture was more demanding than the current network could provide so it started to look at alternatives.

As Anton Stepanenko, CTO for Ozon explains, "We use different vendors to build our networks and focus on ease of scaling the network, taking into account further business growth. When choosing a product, we evaluate the life cycle of this product: for us, the minimum life cycle for a hardware platform is 4 years and above, for particular technology - 5 years and above."

Anton Stepanenko also highlights 'openness' as a key requirement to ensure that it is able to manage the network using its own in-house built tools, "...Since we use equipment from different vendors, the openness, flexibility of network equipment, and the ability to build networks using our own design are very important for us. Arista offers an individual approach to each partner and adapts its design best practices to the needs of the business."

Ozon examined multiple options including its existing networking vendors and ran several proof-of-concept tests. This was a feature that really impressed Ozon. Stepanenko explains, "Working with Arista has helped us grow our data centers. One of the advantages of using Arista's solutions is the ability to build a virtual lab before deploying the solution to a production network. At the stage of evaluating Arista solutions for our data centers, we used the vEOS functionality, which allows us to perform pre-testing."

### Solution

Working closely with networking specialists from Arista, the first initial phase focused on a 100G design utilizing Arista 7020SR-24C2 switches as leafs and 7050CX3-32S switches as spines. However, with Ozon growing even faster than expected, the second phase switched to 7368X4 Series, to provide a 100G scaling to 400G spine within a modular system.

The 7368X4 series is built on a single 12.8Tbps high-capacity packet processor for data intensive workloads requiring consistent low latency, with a flexible choice of industry standard interfaces, and significant improvements in power consumption and system density.

The 7368X4 provides wire speed and scalable performance with rich EOS features including advances in traffic awareness, congestion handling and instrumentation that improve network resilience, visibility, and congestion management in large scale multi-tier networks.

This project is supported by 7280 series switches which include a flexible arrangement of 10/25/40/100GbE ports for use as border gateways to access its WAN networks and Internet.

Arista Networks technology provides the core network for several hundred racks across multiple data centres.



## Conclusion

The performance and reliability of the Arista solution has made a big impact on the Ozon infrastructure whilst the openness and predictability of the Arista technology fits in with the company's overall long-term strategy. All Arista switches use the same EOS which simplifies operational support – while the amount of telemetry data that Ozon can get from each device allows developers to build their own advanced network management and automation platform that the company uses for day-to-day operations.

The team have also been impressed by the responsiveness of the Arista technical support. Ozon has a large networking team and carried out most of the work themselves, yet when question arose or advice was needed – Arista TAC provided real expertise and responsiveness.

“We appreciate Arista's efforts to automate their solutions using open APIs and third-party tools. For us, as a customer, it is important that all questions arising during the work with the product can always be promptly resolved through the local team of engineers, and, if necessary, contact the global Arista office,” says Stepanenko.

Although originally the vEOS virtual lab built by Ozon was to help with the network design and upgrade process, its longer-term value has also been utilised as a ‘digital twin’ of its production network. Ozon can now test changes in the virtual lab before implementing to the production network which has positively affected the speed of making changes to the network that now take hours, instead of days.

The switch to Arista has helped Ozon to transition to its new microservice architecture and the company believes the move will allow it to continue to scale in line with demand. The infrastructure upgrade has been a very successful project for Ozon. The Arista technology roadmap matches Ozon's own infrastructure direction and offers a seamless path to 400G.



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