

# Neo Telecoms Scales to 100GbE to Provide Additional Security and Redundancy for Customers

## Summary

### Company:

Neo Telecoms

### Industry:

Telecommunications

### Challenges:

- Respond to customer demand for higher network bandwidth
- Provide improved network redundancy
- Simplify network management

### Selection Criteria:

Neo Telecoms needed a high-performance, scalable network with a clear upgrade path to accommodate a 100GbE port requirement. Reliability and network redundancy were important decision making factors as well.

### Network Solution:

- MX960 3D Universal Edge Router with high-density 100GbE interfaces
- Junos operating system

### Results:

- Upgraded to 100GbE interfaces without downtime
- Introduced additional routers for increased redundancy
- Deployed a future-proof and scalable network infrastructure
- Simplified management and service delivery



Neo Telecoms

Neo Telecoms is a wholesale operator in the French fixed Internet market, offering dark fiber to 600 plus data-intensive enterprises, hosting companies, and telecom operators for high-speed IP connectivity, data center services, private networks, and cloud computing services. It manages more than 500 km of fiber (with a capacity of 432 fibers on each section), and a 500 Gbps backbone connecting 10 European countries and the U.S. The company regularly updates its offers with innovative technology, and it was classified as the #1 French IPv6 transit service operator in 2012.

## Challenge

Due to the market success of Neo Telecoms' offerings, its network traffic has recorded an incredible ten-fold increase every four years since 2000. To keep up with this rapid and unrelenting growth, Neo Telecoms has had to make strategic investments in new network infrastructure, as Christian De Balorre, head of engineering, explains: "Five years ago, our previous infrastructure was struggling under the weight of traffic. The equipment's capacity was limited and we could not configure more than 200 BGP sessions without destabilizing the network, which was a risk we were not prepared to take."

Given customer and traffic growth, Neo Telecoms was challenged to cost-effectively manage more and more 10GbE ports. The company also wanted to increase network redundancy by doubling the core routers at separate sites.

*"Our recent move to Juniper Networks places us ahead of our main competition in terms of both technology and experience. With a solid and secure network, we will be ready to respond to rapid growth as we have done in the past."*

Christian De Balorre, Head of Engineering, Neo Telecoms

## Selection Criteria

Neo Telecoms had previously deployed Juniper Networks® MX960 3D Universal Edge Router using 1GbE and 10GbE interfaces to create its high-performance European IP backbone. "The move from our previous supplier to Juniper enabled us to scale our network quickly and cost-effectively and deliver innovative services to our customers, with operational efficiency," De Balorre says.

Neo Telecoms new network infrastructure needed to be high performance, secure, agile, and scalable to accommodate anticipated future traffic growth, and it had to provide a nondisruptive upgrade path to 100 Gbps Ethernet (100GbE). Neo Telecoms

was also looking to simplify network management and improve operations. To simplify and optimize the design of the high capacity backbone, it started to investigate migrating bundles of multiple 10GbE ports into fewer 100GbE connections; additionally, some customers began to inquire about the possibility of 100GbE or 40GbE network connections.

## Solution

In order to fully understand the upgrade process to 100GbE, Neo Telecoms spent time in the Juniper Networks Proof-of-Concept laboratory in Amsterdam, the Netherlands. According to Christian: "It was vital to upgrade the infrastructure without impacting our customers, and so we had to prepare for this process very carefully. After modelling our entire architecture, we defined a number of tests which we conducted with the Juniper Networks team in the laboratory, creating a risk-free yet accurate environment. For each test, the results were carefully studied and we were delighted that all results met or exceeded our expectations."

Although the upgrade path was clear and achievable, a number of elements need to be considered. Juniper Networks Junos® operating system runs consistently across the Neo Telecoms network infrastructure, and upgrading the MX960 chassis with new 100GbE C form-factor pluggable (CFP) transceiver interfaces required a Junos OS upgrade to the latest version. Similarly, the switch control boards (SCBs), which provide the communication between the different line cards, needed to be replaced and upgraded to accommodate the increased traffic per slot.

Christian explains the upgrade process: "Although preparation took a number of months, the actual upgrade was done overnight, with only a scheduled 15 minute outage for all customers who were physically connected to these routers, while all of our other customers were completely unaffected."

*"The move to Juniper Networks enabled us to scale our network quickly and cost-effectively and deliver innovative services to our customers, as well as provide us with operational efficiency."*

Christian De Balorre, Head of Engineering, Neo Telecoms

## Results

A part of the network that had previously been mitigated by a complex, multiple 10GbE bundle has now been consolidated with one 100GbE circuit. Currently, over 3,000 BGP sessions run on the network infrastructure, which remains stable and available throughout. Network management, network design, and service delivery have been significantly simplified, and the infrastructure remains fully scalable in anticipation of further traffic growth.

## Next Steps and Lessons Learned

It is difficult to predict what the future holds for IP, as Christian explains: "We feel that the more experience we have in the 100GbE field, the better we can serve our customers and anticipate any potential issues. Our recent move to Juniper Networks places us ahead of our main competition in terms of both technology and experience. With a solid and secure network, we will be ready to respond to rapid growth as we have done in the past."

He concludes: "Neo Telecoms aims to provide its customers with a first-class, fully managed IP infrastructure from a single source. Our customers rely on our high-performance network services which are critical to their business. Juniper Networks enables us to support them with a next-generation network backbone which has the agility, scalability, and capacity to provide advanced services and follow our rapid growth."

## For More Information

To find out more about Juniper Networks products and solutions, please visit [www.juniper.net](http://www.juniper.net).

## About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at [www.juniper.net](http://www.juniper.net).

Corporate and Sales Headquarters  
Juniper Networks, Inc.  
1133 Innovation Way  
Sunnyvale, CA 94089 USA  
Phone: 888.JUNIPER (888.586.4737)  
or +1.408.745.2000  
Fax: +1.408.745.2100  
[www.juniper.net](http://www.juniper.net)

APAC and EMEA Headquarters  
Juniper Networks International B.V.  
Boeing Avenue 240  
1119 PZ Schiphol-Rijk  
Amsterdam, The Netherlands  
Phone: +31.0.207.125.700  
Fax: +31.0.207.125.701