

# Servionica Upgrades Their Existing Data Center Network and Promotes New OpenStack Cloud Service with Mellanox Ethernet Solutions

## Background

Servionica, a commercial data center and system integrator in Russia, was recently seeking upgrades to their existing data center that would bring high bandwidth and low latency. They also sought an increase in Virtual Machine density per server in order to better utilize the CPU and RAM and to reduce their capital expenditure investment into the servers. This would ultimately translate into an overall price-for-performance improvement in the data center, which means a better return on investment for Servionica.

## Solution

Servionica adopted Mellanox’s end-to-end Ethernet solution to address their needs for their cloud and storage environments. The solution included SX1012 switches to replace the existing Top-of-Rack level and ConnectX-3 Pro NICs to provide high network bandwidth.

SX1012 switches have a unique half-width 1RU form factor that enables an especially high port count per 1RU – the switches can handle 96 x 10GbE ports or 24 x 40/56GbE ports per 1RU. Moreover, the SX1012 has extremely low power consumption, ultra-low latency, and is very cost effective for the performance it provides. The SX1012 switches provide high availability through an OPEN-MLAG configuration, and

they are interoperable with the existing L2/L3 aggregation layer in the Servionica data center.

ConnectX-3 Pro NICs were chosen by Servionica because they offer RDMA over Converged Ethernet (RoCE) and because they utilize VXLAN offload technology. This offers high bandwidth across the network while freeing the CPU from network tasks, allowing it to concentrate on more essential compute jobs. When the CPU has more available resources, it can support more VMs running on the server, one of Servionica’s primary requirements.

“This solution offers us the highest quality and security,” commented Alexey Cherevko, Head of IaaS at Servionica. “The market requirements for Cloud services can only be accomplished with ongoing optimization of both the software and hardware sides of the

## SUMMARY

*“Mellanox equipment is best suited to support our Cloud platform, providing high bandwidth capabilities and management flexibility.”*

*- Alexey Cherevko, Servionica Head of IaaS*

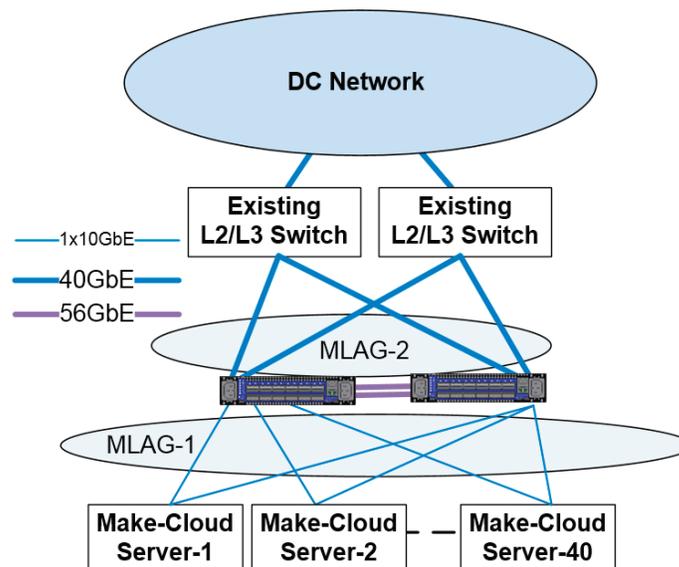


Figure 1. Mellanox solution for Servionica MakeCloud

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A pilot of the Mellanox solution was implemented at Servionica in the second quarter of 2015, with a plan to grow the cluster upon demand. However, the solution has become much more for Servionica than merely a new design for its own data center.

Servionica has used the Mellanox solution as the cornerstone of its new offering, an OpenStack-based public cloud service known as MakeCloud. This service allows enterprise customers to deploy virtualized infrastructure of any complexity and size with high bandwidth, low latency, and at low cost.

## Conclusion

Servionica has been very pleased with the Mellanox Ethernet solution. It has not only improved their own public cloud, but it also has provided the basis for a new offering of the platform for building private clouds for its enterprise customers. Servionica has brought high network bandwidth and low latency to its data center, enhanced its VM density on the servers, and, most of all, improved the performance it receives for its investment. Its customers can now receive all these benefits in the cost-effective MakeCloud service that is based on the Mellanox solution or offer a private cloud to be built based on the proven set of these advanced technologies.

Moreover, the relationship between Mellanox and Servionica has been strengthened, opening several areas of discussion for future projects.



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