

Scavolini — Data Center and Campus Modernization with Pluribus Networks

Simultaneous Refresh of Data Center and Campus Network with High Performance, Full SDN Automation and Improved Security via Network Segmentation and Visibility



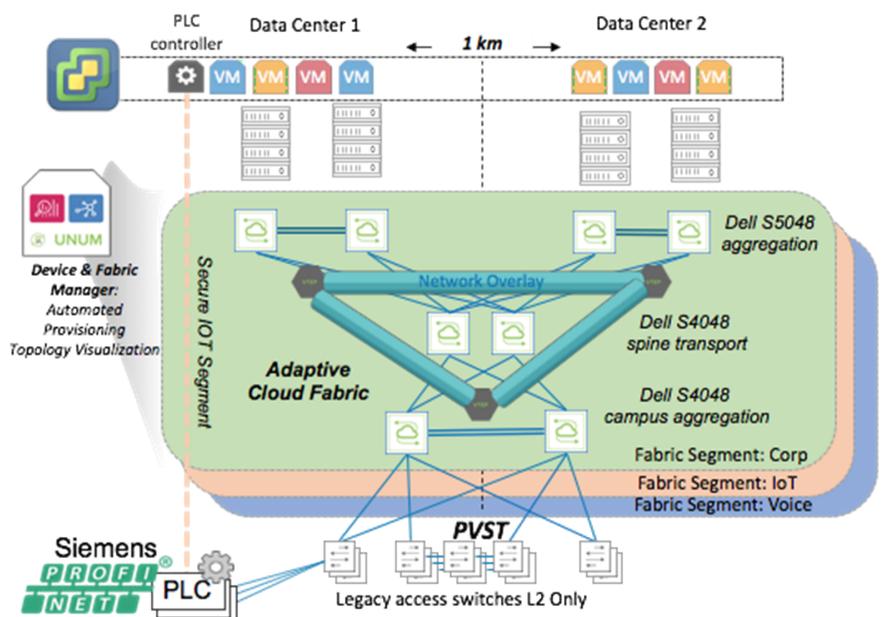
Scavolini has grown from a small workshop in central Italy to a major international manufacturer of kitchens with business in more than 50 countries. For three generations, Scavolini has delivered innovative designs that inspired customers and transformed homes. Since its founding, the Company has been committed to innovation, in the design of their kitchen cabinets, and in the manufacturing and distribution process behind them.

As a growing retailer with international operations and manufacturing facilities, the performance and reliability of the network and data center infrastructure is a key component of success for Scavolini. Its 700 employees rely on critical IT systems, including more than fifteen business applications such as ERP, Exchange, Virtual Desktop Infrastructure (VDI) and Computer Aided Manufacturing (CAM) software for furniture production, all of which are supported by their two data center locations managed by only two dedicated network engineers.

Before they were upgraded, Scavolini's two data centers were deployed with a layer 2 topology based on 10GbE server uplinks and a 40G spine. The two data centers were configured in an active-active architecture for disaster recovery. Scavolini also had a campus core and aggregation network in the same layer 2 domain.

Key Objectives of the Network Upgrade

1. Increase performance to make the network ready for 25 GbE server uplinks to handle increasing bandwidth demanded by core corporate applications.
2. Improve the resiliency and simplify operations of the active-active DC design by unifying the two data centers with an SDN-automated VXLAN overlay with distributed layer 3 services.
3. Extend the overlay fabric to the converged spine/campus core and campus aggregation locations to take advantage of fabric-wide automation for simpler operations and per-flow application visibility for performance monitoring and improved security.
4. Implement network segmentation in the data center and extend to the campus core and aggregation to improve voice performance and separate IoT CAM traffic from corporate traffic, reducing the attack surface for an improved security posture.
5. Support brownfield interoperability so the aggregation layer could interoperate with Cisco and Dell access switches at both the manufacturing sites and in the campus, as well as M-series Dell switches in the data center.
6. Deploy the GUI-based UNUN Fabric Manager with integrated workflows and health information to further simplify management of the network by the lean networking team.
7. Leverage open networking to achieve all of the above at a much lower capital cost than with traditional vertically integrated vendors.



Fabric-wide Automation

Pluribus controllerless SDN architecture leverages the processing power inside the switches, distributing the SDN-control intelligence to every switch in the network. Unlike a controller-based solution, Scavolini did *not* have to deploy three controllers at each data center location, saving capital expense and integration complexity.

Now, from any switch, Scavolini's small networking team can see the entire fabric, troubleshoot the entire fabric, or update policy across the entire fabric. New network services can be deployed using the 'Fabric-scope' command, which ensures that every switch in the fabric has the proper configuration with a single command. This not only greatly enhances operational agility and efficiency; it virtually eliminates human error by enabling multiple data center sites to be programmed and automated as one logical entity.

Scavolini did consider solutions offering do-it-yourself (DIY) BGP-EVPN automation for VXLAN fabrics, but with hundreds of lines of CLI required per service, the Company opted for the fully automated SDN approach.

"The most important benefit is operational efficiency and the associated network agility, in being able to make configuration changes simply and quickly. It has simplified network management, and we don't have to worry about or spend a lot of time on VLAN management. We can quickly move and focus on what needs to be done."



Edoardo Gentili

Information Systems Manager at Scavolini, in a June 2019 white paper sponsored by Dell EMC and Pluribus, written by analyst firm IDC, titled [*How Network Disaggregation Facilitates Datacenter and IT Modernization*](#)

Upgrade without Expense

Scavolini's IT team had been tracking the progress of open networking standards and solutions for years and understood that the move to open networking solutions could provide the performance, automation, flexibility and cost savings benefits to meet their needs.

Scavolini found that open networking solutions can dramatically reduce networking capital costs, by 30 – 60% over traditional vendors. Open networking solutions are based on disaggregating the hardware and software layers of traditional, legacy switching platforms to open, standards-based, bare-metal hardware with a choice of independent open software for the Network Operating Systems (NOS). Consequently, open networking principles enable Scavolini to assemble the best combination of networking hardware and software to meet their specific deployment requirements, while increasing flexibility and reducing acquisition and operational costs.

After evaluating open networking options, Scavolini chose Dell EMC open networking hardware running Pluribus Networks Netvisor® ONE operating system.

"We now have something that is vendor-agnostic and open."

Edoardo Gentili

Information Systems Manager at Scavolini

Elegant Design Extended from the Data Center to the Campus

Simplicity was the guiding principle for Scavolini, in network design as well as ongoing network operations. Scavolini chose Pluribus because they delivered on the promise of software-defined networking (SDN) in the data center. Pluribus Adaptive Cloud Fabric™ (ACF), powered by the Netvisor® ONE network operating system, delivers a controllerless SDN fabric that provides a VXLAN virtual overlay and is ideal for simplifying the networking operations. Also, because ACF can support any topology, in addition to the data center leaf/spine, the fabric could be easily extended to the converged spine and core, as well as to campus aggregation. This enables full SDN automation across data center, core and aggregation and also extends the power of visibility and segmentation to these other network locations.

Enhanced Visibility for Better Performance

Pluribus offers telemetry and meta-data on every flow traversing the fabric and allows the export of meta-data to analytics tools using IPFIX. This granular visibility into application traffic traversing the Scavolini network provides its IT team with insight into how the network architecture supports applications and users, to quickly identify DDoS attacks and troubleshoot network bottlenecks, enabling them to improve overall performance.

Network Segmentation for Improved Security

The Adaptive Cloud Fabric enables Scavolini to segment the network to reduce the ability for attackers to move laterally inside that network. For example, Scavolini created a network segment for the IoT data collected from its manufacturing locations. There have been numerous documented attacks through IoT devices, so taking this step reduces the attack surface to sensitive corporate data.

Pluribus UNUM for GUI-driven Network Operations



Scavolini opted to deploy UNUM Fabric Manager, which is a GUI-based platform that includes template driven workflows, topology visualization and integrated health statistics to make running the network even easier. With a few key clicks in the GUI, a new layer 2 or layer 3 service or a policy can be nearly instantly deployed across the entire fabric. As it does not keep network state, UNUM Fabric Manager is not a controller, but is instead a GUI front end that leverages the REST API available in Netvisor ONE OS.

Interoperability and Integration

As Pluribus, unlike many controller-based SDN implementations, uses standardized protocols for the underlay, Adaptive Cloud Fabric-enabled switches can easily interoperate with non-Pluribus brownfield infrastructure without any specialized gateways.

Additional operational enhancements come through integration with VMware vCenter enabling one-touch provisioning of network, compute and storage services from a single management interface.

“Through Pluribus’ support for integration with VMware environments, we have the automation and orchestration we need built into the network architecture that allows us to spend less time focusing on infrastructure architecture itself, and to spend more time ensuring that the network supports the applications that help us get products to market faster.”

Edoardo Gentili

Information Systems Manager at Scavolini

Bottom Line

For the past five years, Scavolini has had roughly the same IT and network budget. In that time, it has modernized and transformed its data center infrastructure moving from a 10-GbE network to a leaf-spine network that is 25GbE ready. Scavolini’s new network has delivered better network and application performance, along with an array of capabilities and features that the previous network did not, along with improved resiliency, more agility and simplified operations. These include support for the company’s initiatives in areas such as employee mobility (VDI), infrastructure modernization, IT cost containment and network virtualization.

Scavolini accomplished this by leveraging the disruptive economics of open networking solutions from Dell EMC, together with the powerful operational benefits derived from Pluribus Networks controllerless software-defined networking solutions.