

# Credito Valtellinese modernizes its network to dramatically improve operational resilience and agility

## Creval

Creval is a medium-sized banking institution with more than 3400 employees, present in 11 Italian regions through a distribution network made up of 355 branches.

Established as a cooperative company in Sondrio, in 1908. From October 2016, it took on the new legal form of joint-stock company following the approval of the Shareholders' Meeting in accordance with the popular bank reform law passed by the Government in 2015.

From 30 April 2021, following the voluntary takeover bid promoted by Crédit Agricole Italia S.p.A. on the ordinary shares of Creval S.p.A., Creval becomes part of the Crédit Agricole Italia Banking Group.

### Network Challenges

Over the years Creval has expanded its business operations across Italy, added new services, staff, and branch offices. In order to meet the needs of a growing business, the IT team realized that their network needed to be modernized to meet the ever-increasing IT workloads and respond to the changing customer expectations.

The legacy network consisted of two data centers located approximately 150 kms apart. The applications hosted by these data centers were announced over a private MPLS WAN towards 300+ bank branches. The legacy data center architecture was based on older switches and created the following challenges:

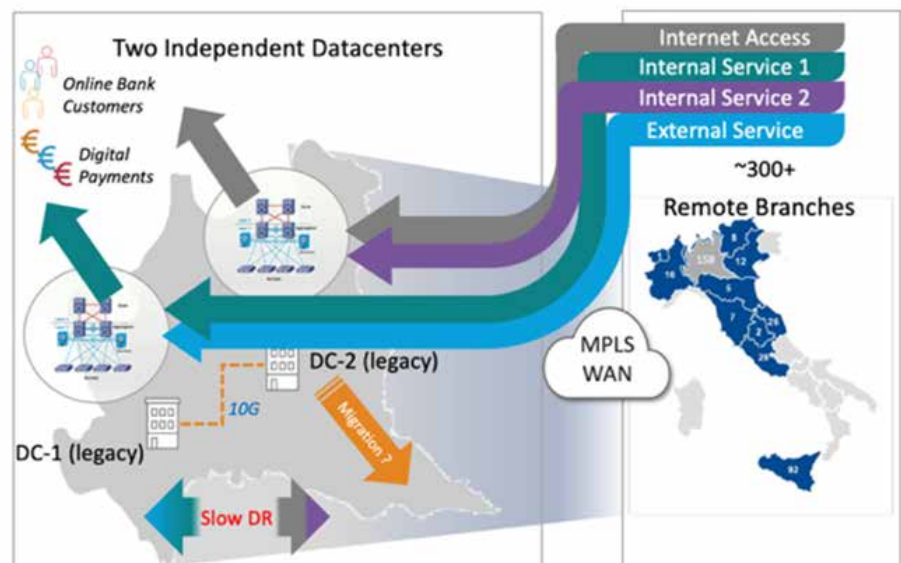


Figure 1: Creval Legacy Network

- **Disaster recovery:** The ability to migrate services from one data center to another was not deterministic. The recovery time objective (RTO) for a full disaster recovery was four days, which was unacceptable from a business perspective.
- **Localized services Independently managed:** From a load distribution perspective all services are localized to a single data center independently managed from the other one.
- **Legacy systems:** All networking switches, majority of the storage systems and firewalls were old and required modernization to meet emerging requirements of the business.

Based on the network challenges The Creval IT team came up with the following objectives for the network redesign:

1. **Streamline disaster recovery procedures:** The key requirement for the network re-design was the need for a deterministic and streamlined disaster recovery strategy.
2. **Evolve to a scalable and flexible datacenter architecture:** Build two new data centers with an option to expand to a third or even more sites without having to re-architect the network.
3. **Operational agility:** Have a unified overlay network fabric across the geographically separated data centers to enable simplified operations and workload mobility.
4. **Business continuity:** Continuity of business operations during the entire network re-design and migration process was a very important consideration for the team.
5. **Migration:** Seamless migration of services from the old data centers to the new data centers was a key requirement of this project.

### Dell-Pluribus Solution

The Creval team undertook a detailed analysis of the solutions and technologies available in the market that could meet their requirements. After an extensive evaluation process and discussions with vendors/system integrators they decided to move ahead with Pluribus Netvisor ONE running on high-performance open networking Dell S5200 series switches.

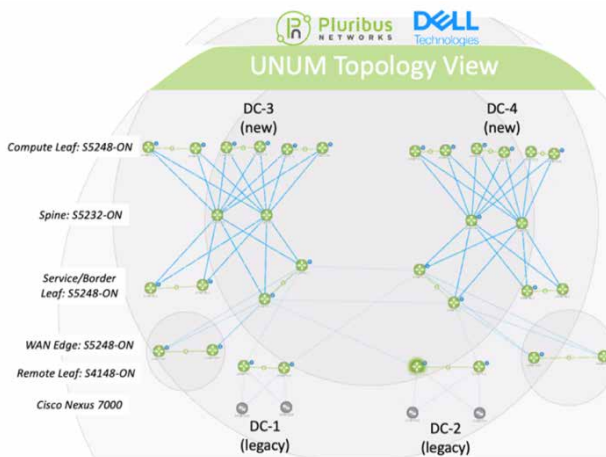


Figure 2: Creval Network Re-design

The key to choosing Pluribus was based on their ability to meet all of the program objectives and selection criteria which included the ability to unify the data centers into a seamless multi-site fabric for operational simplicity, agility, ease of service migration, integrated analytics for visibility and the ability of the solution to scale.

*“We decided to move ahead with a solution that supported disaggregated networking and a vendor that had local support and could meet our stringent testing and service migration requirements. The Pluribus deployment and engineering teams were very professional, a few minor issues that came up during the course of deployment were resolved in a timely manner”.*

**Iacopo Salacrist**  
Head of Technology Division at Creval

Creval built two new modern datacenters within a 50 kms distance of each other. The two new data centers are interconnected with two 10G low latency DWDM links. To make service migration seamless a pair of Dell-Pluribus switches interface with the existing Cisco Nexus 5500 switch, the Pluribus Adaptive Cloud Fabric (ACF) was able to extend the fabric from the new data center to the old data center and seamlessly connect to migrate services.

The workload migration was completed smoothly within the allocated time and after extensive testing. This solution was certified from a bank regulation compliance at the end of 2020.

*“The key benefit of this network refresh with Pluribus, is to have drastically streamlined the disaster recovery procedures and brought down the RTO to minutes for the most critical applications and few hours for the entire infrastructure, when before they were complex leading to longer and mostly undeterministic RTO”.*

**Bruno Franchetti**  
Chief Architect at Creval

Application services can be distributed across both new data centers for resilience and there is complete flexibility in performing granular workload migration without impacting service performance. The IT team has now the choice to control when to move an entire service or all services from one site to the other by just reconfiguring a pair of firewall interfaces and with a minimal impact to the service availability.

### Key Solution Elements

**Dell S5200 Series Switches:** The PowerSwitch S5200-ON 25/100GbE fixed switches comprise Dell Technologies’ latest disaggregated hardware and software data center networking solutions, providing state-of-the-art, high density 25/100GbE ports and a broad range of functionality to meet the growing demands of today’s data center environment.

**Pluribus Netvisor® ONE Operating System:** The Netvisor ONE is a Linux-based operating system purpose-built to optimize the power and performance of bare metal open networking hardware. It is based on the open source FRRouting routing project and is instantiated in one or more lightweight containers on bare metal leaf-and-and-spine switches, offering a rich set of Layer 2 and Layer 3 protocols.

**Pluribus Adaptive Cloud Fabric:** The Pluribus Adaptive Cloud Fabric was designed to meet all of the customer's requirements for a unified overlay network fabric across geographically separated data centers. With a controllerless SDN architecture incorporating network virtualization for secure multi-tenant segmentation, as well as built-in monitoring and analytics for pervasive network visibility.

Unlike traditional data center interconnect approaches that stop at the edge of the data center, the Adaptive Cloud Fabric runs on every top-of-rack switch and creates a fully software-defined overlay network, based on industry-standard VXLAN technology, over any wide area transport network technology and topology (including over traditional DCI transport solutions). This approach abstracts away distance and underlay network complexity, supports insertion into existing "brownfield" network environments and enables seamless connectivity among endpoints and resources located within any site in the fabric.

**Pluribus UNUM:** UNUM is a unified management platform that integrates a comprehensive range of advanced management capabilities. It enhances the intrinsic automation of the Adaptive Cloud Fabric architecture with workflow automation, topology visualization, network diagnostics and integrated performance analytics.

### Bottom Line

The move to open networking and next-generation software-defined networking has delivered significant technical and operational benefits to Creval. They have upgraded their data center infrastructure, with greater capacity for improved performance.

For the IT team, they achieved saving significant costs and benefiting from having a deterministic and streamlined disaster recovery capability for smooth business functioning, enhanced visibility and analytics, as well as delivering operational efficiency with the fabric-wide automation of the Adaptive Cloud Fabric.

Creval now has a world-class data center infrastructure to meet the growth needs of their business and customer expectations.