

Ready, Set, Automate!

BGP routing optimization for
the utmost network performance.

CUSTOMER OVERVIEW

Everstream Solutions LLC, the business-only fiber network, is a fast-growing connectivity solutions provider that offers fiber-based Ethernet, Dedicated Internet Access, Dark Fiber and Data Center solutions to businesses throughout the United States' Midwest region. The company's advanced fiber network offers direct peering with all major carriers and cloud hyperscalers. With high-speed, low-latency connections, it provides converged internet, voice, and data services at speeds of up to 100 Gbps.



Customer Name:
Everstream Solutions LLC

Industry:
Fiber-based Ethernet,
Dedicated Internet Access,
Dark Fiber and Data Center
solutions

Location:
Cleveland, OH, USA

Business Challenges:

- Automated resolution of network-related issues;
- Automated optimization of the BGP routing decisions;
- Reduction of Network Latency and Packet Loss.

BUSINESS CHALLENGES

Gaining a competitive edge in the highly competitive connectivity solutions space is challenging. Return on investment here relies heavily on agile business decisions and end-user experience. Responding quickly to network events and reducing packet loss and latency across the network is key.

The manual network manipulation processes are time-consuming, introduce human errors, and lack consistency. Moreover, as the network expands, such approaches become prohibitively expensive in staff hours and are hard to scale.

Everstream's network experienced exponential growth in recent years, growing to more than 15,000 route miles. In 2020, the company's network engineers started to look for a solution that would optimize and automate routes towards upstream providers. The required solution had to satisfy the ultimate goals of boosting the overall network performance, automating trouble resolution and enhancing customer experience.

SOLUTION

The networking team at Everstream performed detailed market research and evaluated various technical experts to find the best suitable solution. Noction IRP came highly suggested. After shortlisting the desired features and testing the platform in non-intrusive mode, the team decided to go ahead with two IRP platforms and switch them to operate in a fully automated manner.

"Deployment was easy, and support is available any time when needed," stated Milan Atanackovic, Vice President, Engineering at Everstream.

Both of the Intelligent Routing Platforms, deployed at Everstream network's edge, collect data and review how traffic is proceeding on a regular basis. Examining different paths, the systems automatically apply changes to the way the company's traffic is routed. IRP systems are tuned to automatically optimize traffic paths, avoid congestion and outages, and guarantee the lowest possible packet loss and latency for Everstream's network 24/7.

It was decided that the IRP's BMP monitoring stations would be used to collect data, diagnose and report the state of the BGP sessions between Everstream edge routers and providers, as well as network reachability

through specific providers. The BMP monitoring stations supply detailed routing data to other IRP components to make even more intelligent decisions.

With the BMP feature enabled, IRP instances within Everstream’s network:

- Evaluate and identify the best candidates among peers advertising both active and inactive routes on the Internet Exchanges.
- Have the ability to revisit previously performed probes and improvements each time a route changes for active and inactive routes.
- Maintain the supplied routes of partial providers in real-time.
- Have more FlowSpec rules to induce a drop of BGP session towards the affected provider.
- Reduce the CPU overhead on routers in case of large queries, especially on those servicing very large IXs.
- Benefit from a precise reconstruction of AS Path, as BMP allows this BGP attribute to be retrieved from actual (inactive) routes received from neighbors.

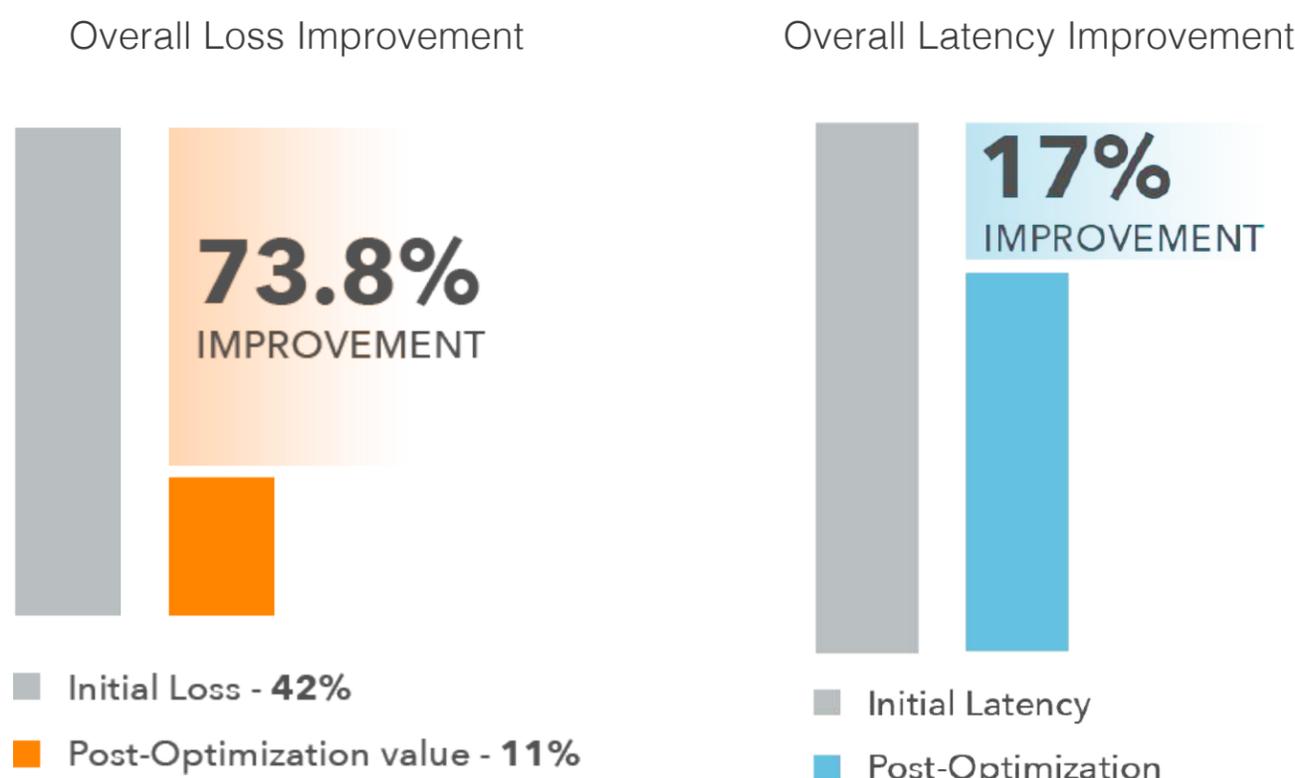
IRP's "VIP Improvements" feature was of great value to Everstream as well. It allowed the specification of a list of prefixes and AS numbers (Everstream has implemented optimization for preferred internet destination routes) that would be probed more frequently by IRP instances and optimized in accordance with the probing results, without reference to the data provided by the IRP collector.

OBTAINED RESULTS

With the two Noction Intelligent Routing Platforms deployed, Everstream noticed a significant improvement in its network performance.

As many as 209,362 unique prefixes were improved, 38% of which by Loss reason and 62% by Latency reason since the IRP deployment in Everstream’s network.

The average Loss rate dropped from **42%** to **11%**, reducing the rate by **73.8%**. The average Latency dropped by **17%** to the all-time lowest value.



Everstream was able to significantly reduce inbound internet trouble tickets since moving to the platform. The IRP systems make the necessary changes seamlessly without service interruptions and with fewer network engineers' implications. Moreover, the company is gathering IRP analytics bandwidth and improvements graphs. Sharing these graphs with potential clients helps Everstream gain a competitive advantage.

"Everstream has realized considerable value from our Noction IRP deployment. Delivering a customer experience that meets our high standards requires a robust toolset, and we're pleased to count IRP among those value-added tools," stated Milan Atanackovic, Vice President, Engineering at Everstream.



Milan Atanackovic

Vice President, Engineering
at Everstream.

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