

Improving Network Efficiency through Automation

Noction IRP ensures optimal network performance for a Southern California Digital Phone and Internet Service Provider.

CUSTOMER OVERVIEW

ZTelco is a San Diego-based business communications solutions provider, offering custom voice, data and networking technology services. The company helps businesses build and maintain the right communications infrastructure to optimize performance.



Customer Name:

ZTelco

Industry:

VoIP, Internet Service Provider

Location:

San Diego, California, USA

Business Challenges:

- Overall Network Performance Boost;
- Network Latency and Packet Loss reduction;
- Detailed network and platform performance analytics;
- Minimization of Engineering Time spent on BGP manipulation processes.

ZTelco's fixed microwave towers transmit data at the speed of light, eliminating the need for expensive construction or drilling associated with typical wired installations. The offered solution is perfect for any type of business in Southern California, especially those located in remote regions or those who need data connectivity for special events where internet connectivity is difficult to access.

BUSINESS CHALLENGES

While operating in a competitive market segment, network uptime and reliability have always been important for ZTelco.

Back in 2019, the company's network administrators were spending hours, manually manipulating Border Gateway Protocol, specifying network policies to match ZTelco's business objectives. This was a time-consuming and error-prone process, requiring strict monitoring. These methods were getting cumbersome as the company's network evolved.

Moreover, ZTelco began to experience varying levels of network performance and reliability. That was the time when company engineers started paying attention to BGP automation technologies to ensure reliable and qualitative services for end-users at all times. They heard about Noction Intelligent Routing Platform and decided to give it a try, as it could help solve certain problems for the company's network and prepare it for future needs.

IRP IMPLEMENTATION PROCESS

ZTelco started a Proof of Concept with Noction by providing and implementing a list of prerequisites for the IRP deployment. The whole process was meticulously planned and discussed with Noction engineers, taking into account the company's network specifics. Configuration templates and advice provided by the Noction support team made the whole POC process fast and easy.

"The support at Noction was both technical and timely. They worked with us to help deploy the IRP solution in our complex environment efficiently and without issue. Very professional, would recommend."

Jake Hansen, President at ZTelco.

Intelligent Routing Platform deployment process went through the following stages:

1

Stage One: Non-intrusive deployment Stage

Initially, the platform was installed and turned on in a non-intrusive mode. When operating in this mode, IRP began to continuously probe ZTelco's destination IPs for various metrics, including packet loss, latency, and historical reliability. It started to automatically compute the optimal routing path in real-time, showing potential BGP optimization benefits via the system's frontend reports and graphs.

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Stage Two: Intrusive Deployment Stage

When switching-IRP to Intrusive mode, ZTelco engineers ensured that the proper outbound filters were in place, so that none of the BGP updates received from IRP would be re-announced to the upstream providers. The NO-EXPORT, well-known BGP community was set for all IRP announcements. ZTelco engineers opted to disable IRP's mechanism called - SPLIT updates, where each destination prefix would be split up in two smaller prefixes and subsequently installed in the router's Routing Information Base by the longest match of the subnet mask. Instead, a BGP attribute - Local Preference method was chosen. The value agreed upon was to overwrite the local preference in ZTelco's network.

Once turned Intrusive on January 31st, 2020, the platform began to inject improvements into the company's edge routers routing tables via an iBGP session. IRP started to automatically reroute ZTelco's outbound traffic through the best performing path.

OBTAINED RESULTS

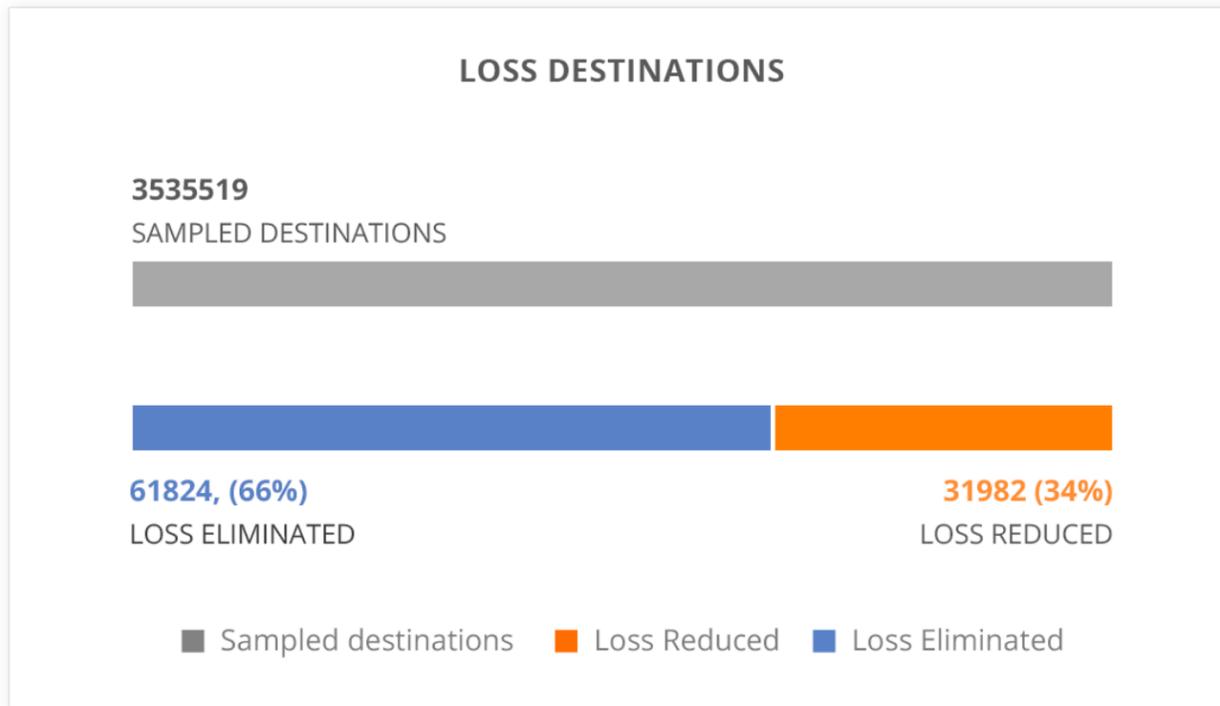
Noction IRP deployment has been completed successfully. The platform generated quite impressive results for the company and made ZTelco better positioned to address new IT challenges facing the organization.

Since going live, Noction IRP has been discovering routing anomalies for ZTelco on a continuous basis and improving upon them.

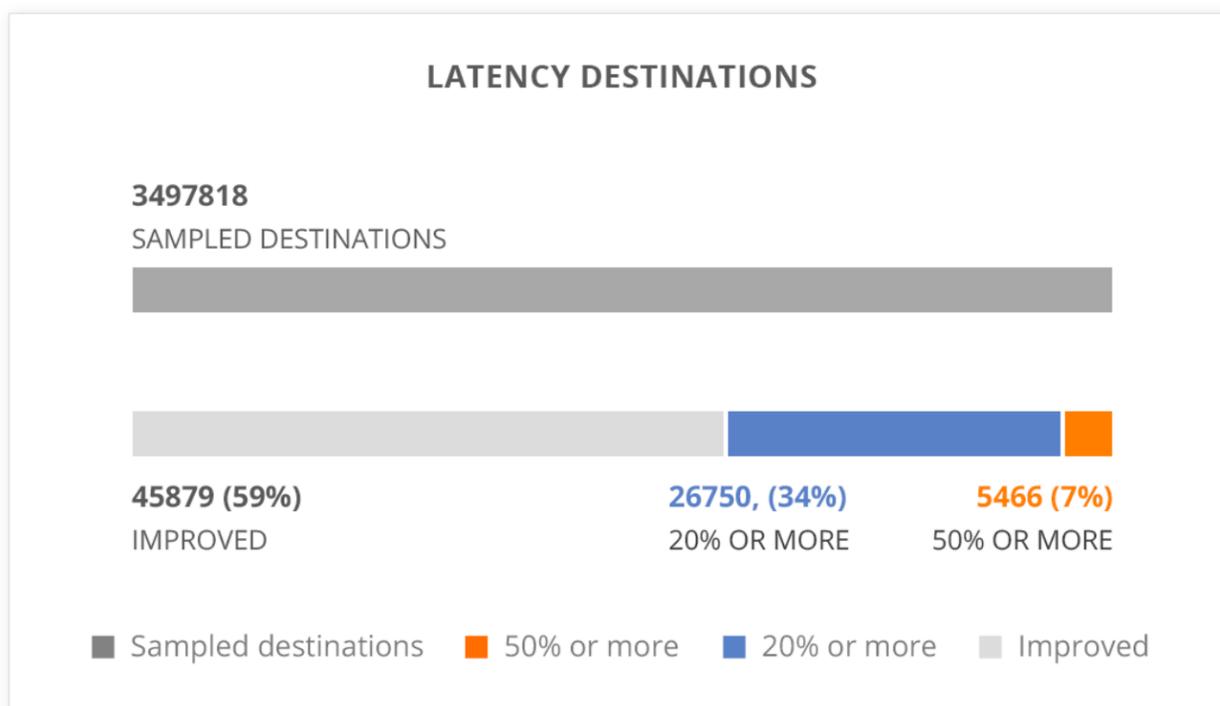
In the interval of February 1st, 2020 - March 19th, 2020, Noction IRP improved 169261 prefixes for ZTelco. 55% of them (92413 prefixes) were improved by Loss reason. The rest 45% (76817 prefixes) got improved by the Latency reason.

The company's average Packet Loss rate dropped from **36%** to **10%**, reducing the average loss rate by **84.44%**.

ZTelco's Loss Improvements graph presented below offers a detailed overview of how much packet loss has been detected and resolved during the above mentioned period.



The average Network Latency for ZTelco dropped by **22%**. A detailed breakdown of the network Latency improvement is shown below.



Besides optimizing the overall network performance and improving end-user experience, The Noction Intelligent Routing Platform offered ZTelco plenty of network and system performance analytics via the Platform’s Frontend. IRP freed the limited engineering resources within the company and refocused ZTelco’s engineering efforts.

“What we have done with Noction so far has made a meaningful impact on our ability to provide superior end-user experience to all of our clients continuously.” Jim Sweere, VP Network Ops at ZTelco.