

FUSION NETWORKS IMPROVES NETWORK PERFORMANCE AND SECURITY WITH TELCOBRIDGES PROSBC



“The systems we were using just could not handle the traffic we were carrying”

Gabriel Mangieri
CTO, Fusion Networks

Summary

- Fusion Networks is a fast-growing full-service ISP serving customers with high-reliability voice, fax and data services
- Fusion Networks needed to improve voice and fax quality, and add protection against toll fraud
- To meet their needs, they chose ProSBC, a subscription-based virtual SBC from TelcoBridges
- With ProSBC, Fusion Networks was able to improve their network performance, and improve management by automating the process of updating SBC route set tables using ProSBC’s RESTful API.
- Protection against toll fraud was also addressed with a proprietary fraud prevention application
- “The SBCs have been working really well...my call quality is better, the number of fax problems have been minimal and we can now catch toll fraud before it becomes a problem” notes Gabriel Mangieri, CTO at Fusion Networks

Background

Fusion Networks is a growing full-service ISP offering hosted IP-PBX, SIP Trunking and Internet service based on Long Island, New York. Founded in 2015, the company operates three data centers, two in New York and one in Virginia, allowing them to offer last-mile redundancy and exceptionally reliable service for their business clients around the globe.

Challenges

As Gabriel Mangieri, CTO noted, “when we started out, our call volume was low and our Asterisk servers could handle it, but as we grew, we started having voice and fax quality issues”. As the customer base and associated traffic grew, the infrastructure at Fusion Networks started to have capacity and performance issues, requiring an architectural change to accommodate their growth plans.

One area of difficulty was providing reliable fax connectivity to their customers in the financial and healthcare markets, who are particularly dependent on fax communications. Customer support issues relating to fax reliability became an almost a daily occurrence.

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As the business continued to grow, operational and new customer provisioning issues became an even greater challenge, managing the many DID numbers and associated call routing. With each new customer DID, updating route tables became increasingly complex, time consuming and error-prone.

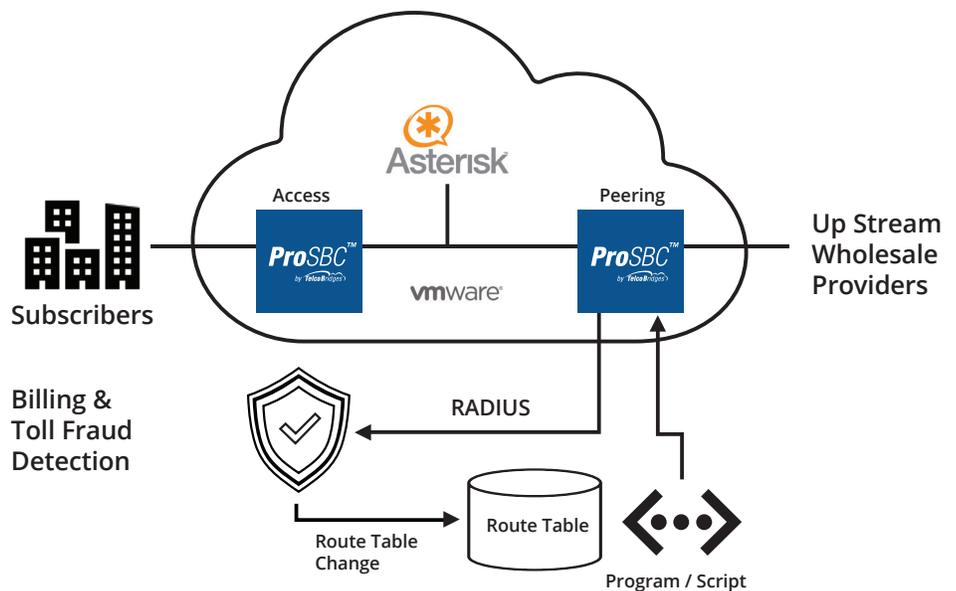
Lastly, as their customer base grew, toll fraud became a more frequent occurrence. Outbound traffic to international premium rate numbers and Wangiri attacks were costing both their customers and Fusion Networks. "Toll fraud became a significant issue and cost to the business." The company needed a round-the-clock means to detect and quickly stop toll fraud.

Solution

To improve their network performance and security, Fusion Networks turned to TelcoBridges' ProSBC, implementing two virtual session border controller instances in each of their three data centers as shown below – one as a peering SBC, connecting to the upstream provider, and the other for customer access.

"Since implementing ProSBC, we have drastically reduced voice quality and fax issues"

3x Datacenters



By using SBCs in this configuration, media traverses directly from the peering SBCs to the access SBCs, reducing the workload on the Asterisk servers.

“With our fraud detection application, we are able to identify and block potential toll fraud before it costs us and our subscribers a lot of money”,
Gabriel Mangieri
CTO, Fusion Networks

“The SBCs have been working really well... my call quality is better, the number of fax problems have been minimal and we can now catch toll fraud before it becomes a problem”

The result is a much more efficient use of resources, improving voice quality and allowing for many more subscribers on each of the Asterisk servers. By passing call traffic through ProSBC, metrics on voice quality are logged, allowing Gabriel and his staff to isolate other network or provider issues.

To ensure reliability, each ProSBC has a 1+1 redundant mate, ready to take traffic if the primary fails.

To address the call routing management issues, Gabriel worked with a developer to create a script that automates the process of updating the SBC route set tables based on the dial plan in each of the Asterisk servers. The script generates a revised route table for each SBC, periodically updating the SBCs using the ProSBC RESTful API. This has now fully automated the routing table update process as new subscribers are added, eliminating many of the manual and error-prone steps.

With the voice quality and route table issues resolved, Gabriel and his developer then turned to dealing with subscriber toll fraud issues and developing a proprietary fraud prevention application. Using the RADIUS call details output from ProSBC, the application monitors international toll call traffic, detecting unusual or fraudulent changes in behavior. If fraud is suspected, the application modifies the route table for that subscriber, preventing further abuse by redirecting potentially fraudulent calls to an announcement.

Results

By utilizing ProSBC, Fusion Networks has accomplished many of their goals, preparing for further growth, including:

- Significantly improved voice quality
- Improving fax reliability
- Simplified the process of adding new customers
- Blocking toll fraud
- Added billing for international calling
- Improved customer satisfaction
- Prepared for further growth capacity

Learn more about Fusion Networks at: <http://fusionnetworks.net>

For more information on ProSBC, visit: <https://freesbc.telcobridges.com/>



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