ConnexCS Delivers 8x Traffic Growth for a Global VoIP Carrier

Scaling from 12M to 100M+ Monthly Minutes

Client Overview: A Global Wholesale VoIP Carrier

Our client, a US-based wholesale VoIP carrier with over 50 employees and operations spanning across multiple continents, provides telecom connectivity to call centers in Europe, the Indian subcontinent, and Australia.

A large portion of their traffic terminates in the United States, which required strict adherence to evolving telecom regulations.

Operating with multiple SIP trunks across numerous countries, the carrier faced growing pressure to maintain uptime, quality, compliance, and scalability in the face of increasing traffic and a complex regulatory environment.

The Challenge

Initially processing around 12 million voice minutes per month and supporting a peak of 4,000 concurrent channels, the carrier began onboarding a wave of new clients. This growth triggered key challenges:

Infrastructure Limitations: Their system was not designed to scale efficiently beyond a certain point, resulting in network congestion and performance degradation.

Traffic Distribution Needs: The increasing load demanded an intelligent, centralized SIP load-balancing system to ensure seamless routing of VoIP traffic.

Regulatory Compliance Pressures: With major traffic terminating in the U.S., they needed to comply with STIR/SHAKEN, the Robocall Mitigation Database (RMD), and other regulations, necessitating system enhancements and security measures.

Operational Agility: The ability to add or remove SIP servers dynamically—without service disruption—was essential to match traffic patterns and maintain business continuity.

Feature Evolution & Support: As operations expanded, they required custom development and round-the-clock support to meet their evolving business needs.

The ConnexCS Solution

ConnexCS stepped in with a comprehensive solution designed around cloud-native scalability, traffic optimization, regulatory compliance, and technical agility.

1. Cloud-Based Infrastructure for Elastic Scalability

ConnexCS provided a robust and scalable cloud platform tailored for high-volume VoIP operations:

Elastic Resource Allocation: Automatically adjusted infrastructure based on real-time demand.

Auto-Scaling Capabilities: Minimized manual intervention while enabling seamless traffic growth.

Optimized VoIP Architecture: Delivered performance and reliability with minimal latency.

2. Centralized SIP Routing with AnyEdge Load Balancer

The transformation's cornerstone was the implementation of ConnexCS's AnyEdge Anycast Load Balancer, a SIP-native routing solution tailored for high-concurrency environments.

Centralized Load Balancing: All SIP servers sat behind AnyEdge, meaning only the IPs of the load balancers needed whitelisting with upstream/downstream providers—simplifying configuration and reducing maintenance overhead.

Seamless SIP Server Scaling: The client could add or remove SIP servers from the routing pool with a single click, without any call disruption. This dynamic control enabled zero-downtime server maintenance and upgrades.

Geographically Distributed Resilience: By leveraging Anycast, AnyEdge routed traffic via the optimal global path, ensuring low latency, high reliability, and automatic failover in the event of network issues.

3. Compliance and Security Enhancements

With high volumes of U.S.-bound traffic, regulatory adherence was non-negotiable:

STIR/SHAKEN Integration: With ConnexCS, the client gained access to the market's fastest, turnkey STIR/SHAKEN solution, ensuring seamless, end-to-end caller ID authentication.

Robocall Mitigation Database (RMD): Our compliance tools ensured that the client was listed and up-to-date in the FCC's RMD, meeting industry regulations, thus avoiding scrutiny and ensuring smooth traffic flow.

ANY EDGE

SIP Server 1   SIP Server 2
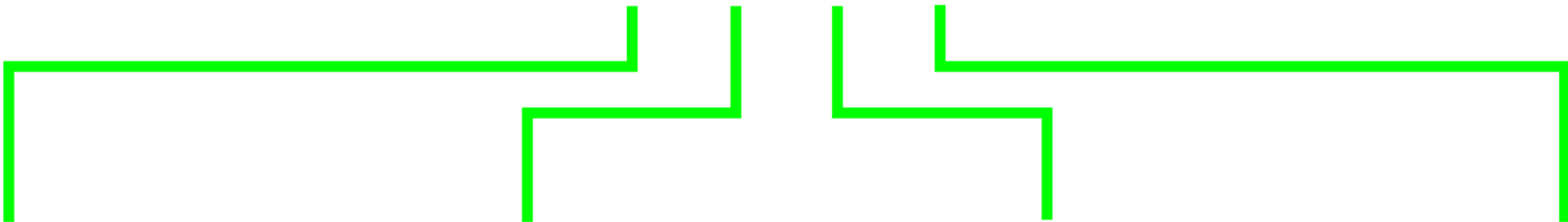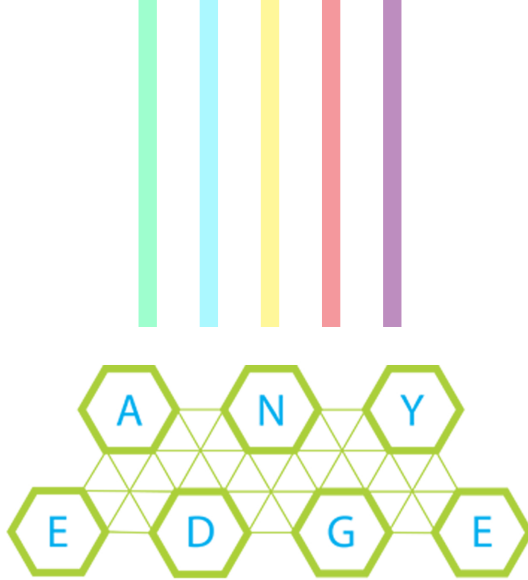
RTP Server 1- 3

New York Zone

SIP Server 1   SIP Server 2

RTP Server 1- 3

Atalanta Zone

SIP Server 1   SIP Server 2

RTP Server 1- 3

Dallas Zone

SIP Server 1   SIP Server 2

RTP Server 1- 3

San Francisco Zone

Dynamic Security Controls: Built-in safety features were made available to keep pace with the ever-evolving regulatory landscape, providing protection against emerging threats.

4. Tailored Feature Development & Strategic Support

As the client's traffic surged, so did their requirements. ConnexCS ensured their success with:

Custom Engineering Support: Our team developed bespoke features tailored to their routing logic and real-time analytics needs.

Dedicated Account Management: A ConnexCS liaison provided proactive support and strategic scaling guidance.

24/7 Monitoring & Assistance: Technical teams remained available around the clock to respond to issues and optimize performance.

The Results?

With ConnexCS's partnership, the client achieved:

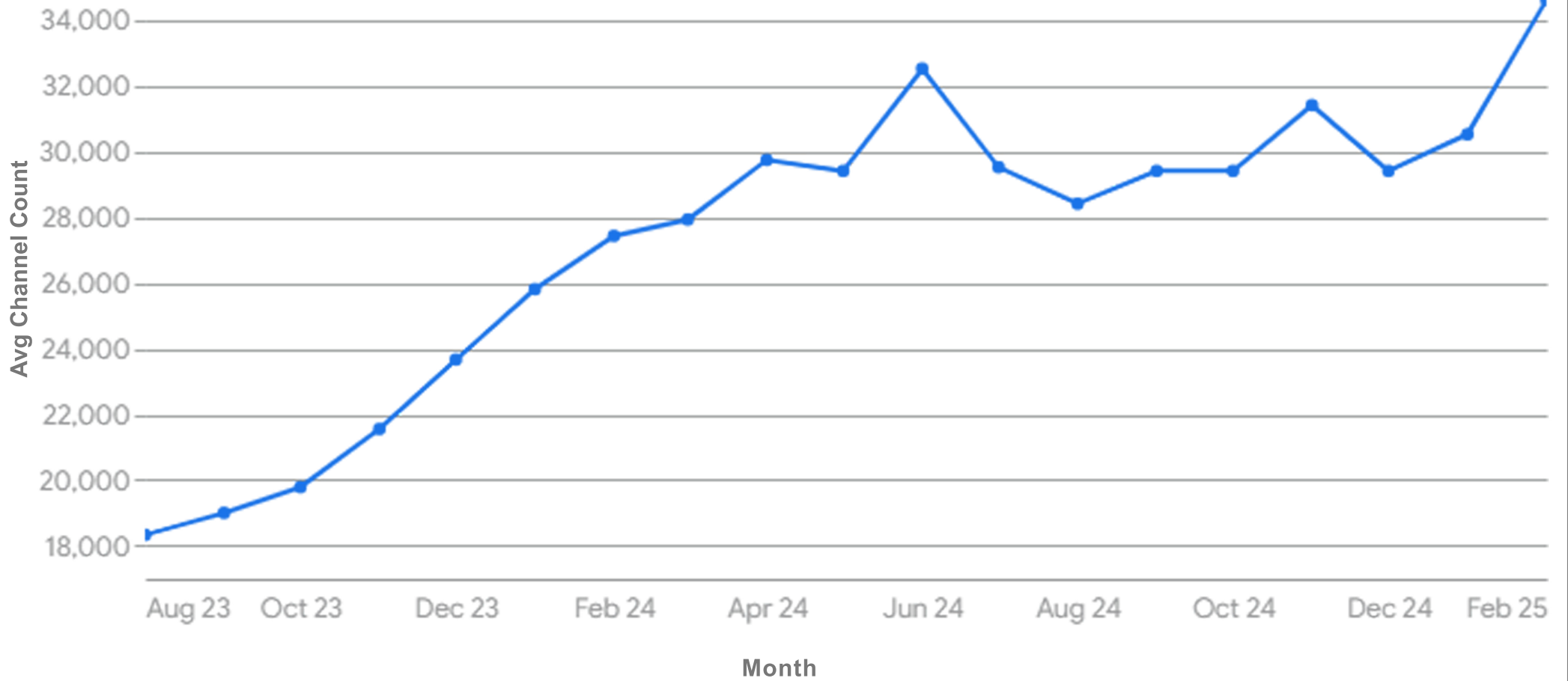**Traffic Scale-Up:** From 12 million to over 100 million minutes per month.

Concurrent Channels: Growth from 4,000 to 30,000+ concurrent calls.

Zero Downtime Scalability: Thanks to AnyEdge's single-click server management and routing flexibility.

Improved Call Quality: Due to optimized routing and minimized congestion.

Full Regulatory Compliance: Including STIR/SHAKEN, RMD, and additional U.S.-mandated requirements.

Monthly Growth in Average Channel Count