

Blackfoot Communications: Transforming Network Scalability and Operations with netElastic

Blackfoot Communications, a telecommunications provider serving rural Montana and Idaho, faced significant challenges with its outdated broadband network. The company's legacy broadband network gateway (BNG) routers were expensive to scale and difficult to manage, straining its small technical support team. Additionally, Blackfoot was running out of IPv4 addresses and needed a solution to support its growing subscriber base.



Challenges

Blackfoot identified several key issues with its existing network infrastructure:

Existing Infrastructure: The hardware-based BNG routers required costly "forklift upgrades" to scale, making it hard to adapt to growing demands.

IPv4 Address Exhaustion: Rapid subscriber growth had depleted the company's IPv4 addresses, necessitating a carrier-grade NAT (CGNAT) solution.

Operational Silos: The company needed a new solution that would integrate seamlessly with its existing Calix platform and Operations Cloud to avoid creating a separate management system for its new routing solution.

Solution

To solve these issues, Blackfoot adopted a network virtualization strategy. The company chose netElastic's virtual router (vRouter) to replace its legacy BNGs. The vRouter runs on standard x86 servers, which aligned with Blackfoot's goal to reduce capital expenditures (CAPEX) and move away from proprietary hardware.

Key features of the solution included:

Integrated CGNAT: The vRouter's built-in CGNAT functionality resolved the IPv4 address exhaustion problem without impacting service quality.

High Availability: The vRouter was deployed in a redundant active/standby configuration to ensure service continuity and improved uptime.

Calix Integration: The vRouter's telemetry data was integrated directly into the Calix Operations Cloud, providing end-to-end network visibility in a single system and eliminating management silos.

Results and Benefits

Blackfoot's network transformation delivered significant benefits, positioning the company for future growth and expansion into new rural markets.

Cost Savings: The company eliminated the need for expensive proprietary hardware, which reduced both capital and support costs.

Greater Flexibility & Scalability: Blackfoot can now increase network capacity simply by updating a software license, rather than purchasing and installing new hardware.

Improved Operational Efficiency: The unified network visibility provided by the Calix Operations Cloud streamlines troubleshooting, allowing the team to proactively address potential issues and reduce operational overhead.

Customer Perspective

“By feeding netElastic’s telemetry into our Calix Operations Cloud, we’ve given our team a single, end-to-end view of the network,” says Rob Feenstra, Director of Network Engineering at Blackfoot Communications. “This unified visibility streamlines our troubleshooting—we can identify and resolve issues faster—and it’s helping us slash operational overhead as we proactively address potential problems. Ultimately, having everything in one place allows our NOC to run more efficiently and deliver an even more reliable service to our customers.”

The implementation of the netElastic vRouter has given Blackfoot a flexible, scalable foundation to support its rural expansion efforts and deliver a more reliable service to its customers.

