

netElastic

FullFibre's Great NAT Escape: Unified BNG and CGNAT Platform

- Merging of three growing ISPs created scaling needs for the new network
- netElastic BNG and CGNAT software in 1RU delivers a full-featured solution for today, and easy upgrades for the future
- 40% cost reduction over three years by returning excess IPv4 addresses

FullFibre.

In the fast-paced world of UK AltNets, three fibre upstarts—**Zzoomm**, **Digital Infrastructure/BeFibre**, and **FullFibre**—merged in 2025 into a single entity passing *600,000 premises*. Consolidating their network while battling limitations from their previous vendor regarding costly and time-consuming IP address acquisition led to the need for a change. Acquiring new address space was slower and more expensive than securing a table at a Michelin-starred pub on match day. **Juniper MX routers** (Zzoomm's legacy) did not combine BNG and CGNAT while taking up two rack units (2RU) each, leaving customers unable to reach Netflix, BBC or their own bank without months of geo-location database whack-a-mole.

Enter **Dave Bell, Head of Networks** (ex-Zzoomm), who decided the only dignified response was to shop for a new Broadband Network Gateway. Requirements: proper CGNAT in one rack unit (1RU), 100 Gbps, and bare-metal x86 (Dell XR with Intel NICs) with scalable performance. netElastic delivered.



The transition was mercifully swift. FullFibre had already been a quiet netElastic customer since 2023; post-merger they doubled down with multiple orders of redundant pairs, each sized for 20,000 subscribers. Today they run seven HA pairs of large BNGs (140,000-subscriber capacity) plus a small pair for up to 3,000 users—total licensing up to 143,000 and growing.

The real magic? Moving DHCP onto the router itself. Lease times dropped from a lengthy one hour to a fast five minutes, which means the network detects and renegotiates lost connectivity 12 times faster than before, resulting in a significantly shorter tail of outages reported to customer care. Returning excess IPv4 blocks is projected to save 40% over three years, while halving rack space and power draw felt like finding money in an old coat pocket.

There were the inevitable “teething problems”—a few bugs, a brief CGNAT-related complaint spike—but netElastic support responded with extra licenses (gratis), rapid fixes, and the rare courtesy of actually picking up the phone. The CLI took some adjustment (“rather like switching from iambic pentameter to emoji”), but once learned, it integrated seamlessly via standard RADIUS, accounting and monitoring systems, and the rest of the network.

Dave Bell’s verdict: simpler than feared, no explosion in support tickets, and a plan to ride the x86 wave with netElastic software for another three to five years—possibly upgrading to 400 Gbps cards when the CPU cores catch up. Zzoomm becomes the retail face, and the wholesale business hums along.

Moral: In broadband, the killer app isn’t always speed. Sometimes it’s the ability to stop begging RIPE for scraps and start routing like you actually own the /16. netElastic didn’t just hand FullFibre a smaller box; it handed them freedom from IPv4 ransom through the combination of BNG and CGNAT—and a noticeably lighter electricity bill.

