



Case Study

FiOS Tecnologia Increases Availability of Fast, Reliable Internet Access in Brazil

FiOS Tecnologia Overview

FiOS is a growing Brazilian internet service provider whose mission is to increase the availability of fast, reliable internet access in the Amazon region of Brazil, which is home to over 4 million people. To deliver the highest quality internet access, FiOS owns and operates a fiber optic network.

CHALLENGES OF A GROWING ISP

Like many regional ISPs in Brazil, FiOS started by using MikroTik routers. While these were sufficient initially, limitations on the number of concurrent PPPoE sessions became a problem. As FiOS continued to grow their subscriber base, the MikroTik routers could only support about 1,500 PPPoE sessions. When FiOS exceeded that amount, they experienced occasional crashes (with the PPPoE service).

The number of internet connected devices has also been rapidly increasing throughout Brazil, so the exhaustion of IPv4 addresses was another major challenge facing FiOS. Unfortunately, they were having trouble finding a good CGNAT solution at a reasonable price.

To solve these challenges, FiOS looked at traditional router vendors such as Juniper, Cisco, and Huawei. However, these solutions came with expensive price tags and didn't include CGNAT capabilities.

GREATER SCALABILITY AND CGNAT

FiOS chose netElastic virtual Broadband Network Gateway (vBNG) with built-in CGNAT. vBNG is designed to deliver unmatched scalability and performance with a highly optimized data plane and patented packet processing techniques. Lucio Costa, FiOS CEO and Founder, said "netElastic vBNG can handle thousands of PPPoE/IPoE sessions and provides CGNAT capabilities, all with phenomenal stability."

vBNG runs on commodity x86 servers, which provides significant cost savings compared to the large router manufacturers. Lucio continued “The cost savings of vBNG allowed us to purchase two servers to ensure high availability, which was equal to the price of one Huawei router. And the Huawei router didn’t even include CGNAT, unlike netElastic vBNG.”

AN EASY AND AFFORDABLE CGNAT

FiOS looked at many stand-alone CGNAT solutions. However, most were too expensive and included many features they didn’t need.

netElastic offered a low-risk and low-cost approach to IPv6 transition with CGNAT designed into its Virtual Broadband Network Gateway (vBNG). “netElastic CGNAT is a very impressive solution that works perfectly, allocating ports dynamically to our subscribers,” continued Lucio. “This feature maximizes the number of subscribers that can use one IPv4 address.”

FiOS has also benefitted from netElastic BNG Manager, an intuitive web-based application that makes it easy for service providers to quickly configure their vBNGs and monitor how the network and vBNGs are performing. BNG Manager provides detailed information down to the subscriber level to simplify troubleshooting. At FiOS, “BNG Manager helps us facilitate the tasks of our support team, enabling us to solve customer issues faster,” said Lucio.

Since purchasing vBNG, FiOS has developed a close relationship with netElastic. “The netElastic support team has been quick to answer all our questions. They always stay close to their customers (ISPs) and try to understand every scenario so it can be built into the vBNG solution.”

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– Lucio Costa, FiOS

SPREADING THE MESSAGE THROUGHOUT BRAZIL

Given the success they've had so far, FiOS has recommended netElastic to other ISPs in Brazil. These include an ISP in Para and another in Manuas City. Both have approximately 1,000 – 2,000 subscribers and both were using MikroTik routers.

A common problem both ISPs experienced was frequent DDoS attacks, particularly network protocol attacks (which are measured in packets per second). These attacks affected 100% of the cores in MikroTik devices, causing significant damage each time this occurred.

Both ISPs purchased netElastic vBNG - and a primary reason was vBNG has built-in DDoS protection. Since implementing netElastic's solution, DDoS attacks have no longer been a problem and the services they offer have been extremely stable.

“ netElastic CGNAT is a very impressive solution that works perfectly. ”

– Lucio Costa, FiOS

LOOKING TO THE FUTURE

As FiOS continues to grow, netElastic vBNG will be a key part of that growth. According to Lucio, “The best part of netElastic vBNG is the price of licenses, which give ISPs the opportunity to grow their businesses with the quality and stability that's similar to solutions that are ten times more expensive.”

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