

Carrier-grade NAT Counters IPv4 Address Scarcity

ISP Leucom Empowers and Protects its Growing Number of Customers with A10 Thunder CGN



Industry | Service Provider

As for many ISPs, IPv4 addresses are becoming scarce for the Thurgauer service provider Leucom. Carrier-grade NAT (CGNAT) makes it possible to hold off on the elaborate and complex conversion to IPv6.

The Leucom Group, headquartered in Frauenfeld, has its own cable and fiber-optic network that supports 18,000 internet customers, making it one of the largest internet service providers (ISPs) in Eastern Switzerland.

This product convinced me, The manufacturer focuses entirely on CGNAT and other specialized technologies such as application delivery, DDoS protection and IPv6 transition – it is not a general network provider that also allows for a little bit of CGNAT.

Christoph Tobler
IT Director, Leucom Group



Network Solution
A10 Thunder® CGN



Critical Issues

- IPv4 address exhaustion
- Budget-busting expense to buy available addresses on secondary market
- Needed a high-performance CGNAT infrastructure
- Maintain bullet-proof customer user experience



Results

- Resolved address IPv4 depletion issue
- Preserved valuable public IPv4 addresses
- Enhanced user experience transparently
- Reduced cost and complexity with simultaneous scalability of the IPv4/IPv6 gateway
- Seamless connection to the internet with IPv4, despite increasing scarcity of public IPv4 addresses
- Better protection against possible hacker attacks

Leucom IT Director Christoph Tobler says Leucom has the same problem as almost all other ISPs throughout the world – IPv4 addresses are no longer being issued and its existing addresses are running out. And that is a problem.

"We are coming to the end of the IPv4 addresses," Tobler says. It would be possible, according to Tobler, to buy available addresses on the secondary market, but the prices would be exorbitant. And acquiring or merging with a company that still has free IPv4 addresses is out of the question.

CGNAT Solves the Address Depletion Problem

Leucom found CGNAT offered the best solution. CGNAT enables the provider to assign a new private IPv4 address to customers rather than assigning a public IPv4 address. A CGNAT gateway at the provider translates this private address into a public one for access to the internet and several customers share one of the rare public addresses.

While searching for the best possible CGNAT solution, Tobler first examined the environment of a partner that had implemented CGNAT with its existing network infrastructure. After further research, Tobler learned about the Thunder CGN line of Carrier Grade Networking gateways from A10 Networks.

"This product convinced me," Tobler says. "The manufacturer focuses entirely on CGNAT and other specialized technologies such as application delivery, DDoS protection and IPv6 transition – it is not a general network provider that also allows for a little bit of CGNAT."



Faster Project Implementation

"The A10 distributor, Boll, responded to our request very quickly – we received a good presentation and were able to clarify everything that was necessary to cover in an open discussion," Tobler adds. "The chemistry has been right from the start."

Reseller ngworx.ag and the experts at A10 Networks designed a thorough proof-of-concept and implemented a test device, which convinced Leucom that A10 was the right choice.

Within three months of Boll and ngworx.ag meeting, everything took off at top speed and 3,000 customers had been migrated to the new CGNAT solution. The speed of implementation also surprised ngworx.ag.

"All project partners immediately agreed. We are delighted that this project could be completed so quickly and efficiently," ngworx.ag Business Development Manager Noam Suisa said.

Leucom implemented the changeover gradually, starting with the lowest-priced subscriptions.

"We started slowly, first with 100, then with 500 customers a week," Tobler says. "Between 100 and 200 customers share a public address. In this way, we were able to obtain feedback and check customer satisfaction."

For most Leucom customers, the conversion was seamless and went largely unnoticed.

"As providers, we feel committed to the fact that the CGN migration is absolutely transparent for customers, without any impediments," Tobler says.

The customers' networks are also better protected against possible hacker attacks from the outside through provider-side address translation.

IPv4 preservation with CGNAT offered the perfect solution for Leucom, which is not yet ready for a complete migration to IPv6.

"The changeover would be very complex and we could not do everything that we need with the current options," Tobler says.

High-performance CGNAT Infrastructures

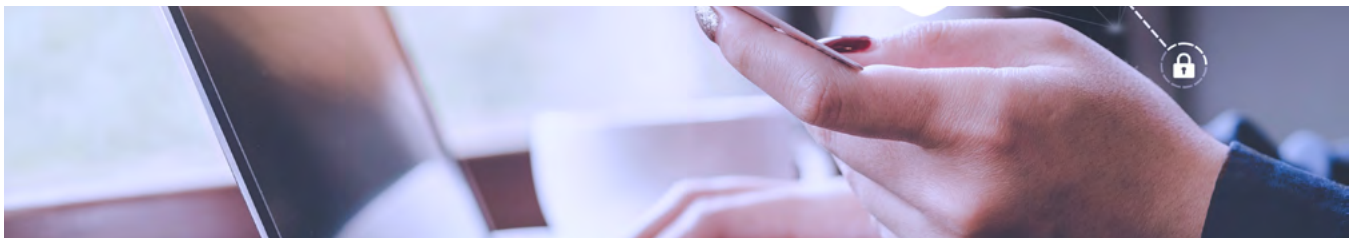
Currently, Leucom operates multiple Thunder CGN appliances. If one fails, another immediately takes over. The appliances are located at the Zurich headquarters, where its network is connected to the internet backbone. Leucom is planning to deploy additional Thunder CGN appliances at Frauenfeld for the future. However, Thunder CGN's high-performance capabilities have helped Leucom get the most out of its initial investment before adding additional devices – the provider is currently using just five percent of the CPU load of its existing appliances.

Thunder CGN appliances handle up to 15,000 customers – so Leucom can easily continue growing until the existing CGN gateways reach their performance limit. And with the other features of the Thunder CGN platform, Leucom is also equipped for a future migration to IPv6.

A10 Thunder CGN Product Feature Highlights



- Carrier-grade NAT with industry-leading performance and scalability
- Access of IPv6 clients to IPv4 content, and vice versa
- IPv4 and IPv6 tunneling
- Application layer gateways for protocols such as PPTP, SIP, DNS, H.323, and more
- Comprehensive logging
- Industry-leading performance per rack unit
- Ready for integration with OpenStack, SDN fabrics and
- NFV/MANO frameworks (virtual and Bare Metal)



About Leucom

Founded as a radio/TV business more than 50 years ago, Leucom is now a broad-based multimedia company group with more than 80 employees, located in Frauenfeld and with branches in Schlieren and St. Gallen. As a triple player (TV, telephony and the internet), Leucom is building and operating its own cable networks and is pushing ahead with expansion into fiber optics. The offer for private customers includes a range of internet and combined subscriptions with TV and telephony. Around 25,000 households from the Aargau region to the Appenzellerland region receive TV services, with about 18,000 getting their internet connection from Leucom. Business customers benefit from additional services such as virtual switchboards and web hosting.

About Ngworx.AG

The company ngworx.ag offers consulting, engineering and integration services in the network sector. In addition to its consulting business, ngworx.ag also distributes, integrates and operates network hardware as well as network management solutions from selected strategic partners (Juniper Networks, A10 Networks, RAD Data Communications, Ruckus Wireless, PulseSecure, Infosim GmbH). Customers primarily include companies from the ISP/telecom and large enterprise segment in Switzerland and Europe.



Testimonials



The chemistry with the distributor Boll, the manufacturer A10 Networks and the reseller ngworx.ag has been great from the start.

Christoph Tobler
IT Director, Leucom Group

As a provider, we are committed to ensuring that the CGNAT migration runs perfectly and transparently – and without a handicap for our customers.

Christoph Tobler
IT Director, Leucom Group

All project partners came to agreement very quickly. We are delighted that this project could be completed so quickly and efficiently.

Noam Suisa
Business Development Manager
ngworx.ag



Customer

Leucom
8500 Frauenfeld, Switzerland
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Reseller

ngworx.ag
8052 Zürich, Switzerland
www.ngworx.ag



Distributor

Boll Engineering AG
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www.boll.ch





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About A10 Networks

A10 Networks (NYSE: ATEN) provides secure application services for on-premises, multi-cloud and edge-cloud environments at hyperscale. Our mission is to enable service providers and enterprises to deliver business-critical applications that are secure, available and efficient for multi-cloud transformation and 5G readiness. We deliver better business outcomes that support investment protection, new business models and help future-proof infrastructures, empowering our customers to provide the most secure and available digital experience. Founded in 2004, A10 Networks is based in San Jose, Calif. and serves customers globally.

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