Empowering an Expanded Network of CPEs with high security and scalability

Virtual SecGW

At a Glance:

- Tier 1 Telecommunication company
- Location: Canada
- Industry: Telecommunications

Challenge:

- Solution to support growth of their remote CPE base to 25K in 5 years
- Existing solutions including Cisco were not scaling beyond a few thousand IPsec tunnels
- VRF support was an MVP – Cisco did not support it
- Existing CPEs on the field required the support of both policy based and route based IPsec

Solution:

- Virtual Security Gateway (vSecGW)

Results:

- High volume of IPsec tunnels with HA capabilities
- Highly Scalable bare metal deployment
- Agile cooperation with innovative features
- Significant TCO Reduction

As a leading telecommunications company in Canada, this prominent CSP offers a wide range of communication services to cater to the needs of individuals, businesses, and government organizations. With a rich history spanning over a century, they have built a reputation for their comprehensive offerings, including landline and mobile telephone services, high-speed internet, television, and data connectivity solutions.

Their extensive network infrastructure ensures reliable and high-quality communication for millions of customers across the country. Committed to innovation, they invest in cutting-edge technologies to stay at the forefront of the industry.

Challenge

Unlocking Scalability: Transforming Canadian CPE Networks for Optimal Performance

A vast number of customer premises equipment (CPEs) were being rolled out across various locations in Canada. These CPEs establish connections with security gateways responsible for safeguarding the control traffic exchanged between the CPEs and the backhaul network. However, the current security gateways, built on Cisco technology, have encountered limitations when it comes to scaling capabilities. Consequently, there arose a need to explore an alternative scaling solution.

In light of the scaling challenges faced, efforts were made to seek out a more effective approach. The objective was to overcome the scaling limitations encountered with the existing Cisco-based security gateways. By doing so, it aimed to enhance the scalability of the network infrastructure, enabling a smoother and more efficient flow of control traffic between the CPEs and the backhaul network.

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Requirements

The customer required a security gateway solution that fulfilled several critical requirements.

- ▶ Needed a solution to support a large number of IPsec tunnels, ensuring secure communication between networks.

- ▶ VRF (Virtual Routing and Forwarding) support was necessary to enable the segregation and isolation of traffic within the gateway, enhancing network efficiency and security.

- ▶ The gateway needed to be equipped with robust routing protocols such as BGP (Border Gateway Protocol) and OSPF (Open Shortest Path First) to efficiently exchange routing information and enable dynamic network connectivity.

- ▶ Redundancy was crucial to ensure high availability, minimizing downtime and maximizing network resilience.

- ▶ The gateway to support both policy-based and route-based IPsec configurations, granting flexibility in securing network traffic based on specific policies or routes.

They were looking for a security gateway that would provide them with a robust and scalable solution to meet their demanding security and networking needs.

Solution

The customer opted for 6WIND Virtual Security Gateway (vSecGW), part of the 6WIND VSR product suite, due to its ability to meet all of their requirements.

One significant advantage that set 6WIND apart from the competition, particularly Cisco, was its robust support for Virtual Routing and Forwarding (VRF). This feature proved to be a major benefit for the customer.

Additionally, 6WIND vSecGW surpassed other typical Security Gateway (SecGW) vendors in the market by providing support for up to 100,000 policy-based and up to 7,500 route-based IPsec tunnels. This scalability and performance capability exceeded what other vendors could offer.

Furthermore, the inclusion of stateful redundancy in 6WIND vSecGW was seen as an added bonus that aligned perfectly with the customer's requirements. This feature ensured high availability and resilience in the network, enhancing the overall reliability and fault tolerance of the solution.

Seamless Integration and Enhanced Security with 6WIND vSecGW

They implemented VRF to isolate the VSR network into three distinct networks:

1. **MGMT**: This management VRF provided Internet access to the VSR for license activation and served as the administrative interface.
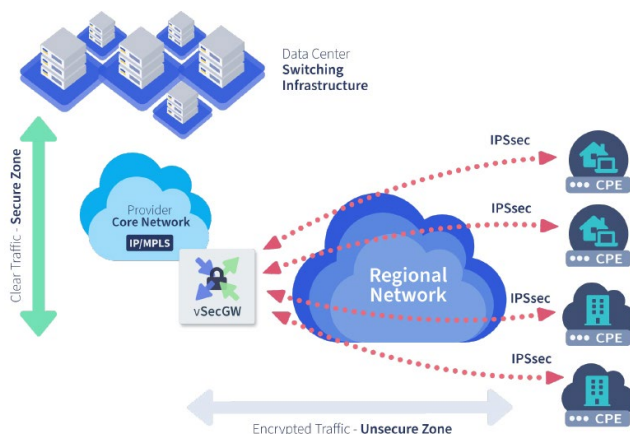

Diagram : Top Tier Operator – vSecGW deployment

2. **OUTSIDE VRF**: The OUTSIDE VRF faced the customer premises equipment (CPEs) and acted as the endpoint for IPsec tunnels initiated by the CPEs.

3. **INSIDE VRF**: The INSIDE VRF established a secure zone, connecting the CPEs to the core network, and facilitated the transmission of clear traffic.

Through the implementation of these segregated VRF networks, the customer ensured efficient connectivity while maintaining appropriate security measures. The evaluation process allowed them to validate the performance and functionality of the VSR, ensuring its adherence to their specific requirements. With the successful evaluation and deployment of the VRF-enabled networks, the customer was well-prepared to integrate 6WIND vSecGW into their production environment, enhancing their network's capabilities and strengthening overall security.

Results

6WIND vSecGW offers an array of impressive benefits. With its high volume of IPsec tunnels and robust high availability (HA) capabilities, it ensures secure and reliable communication across networks. The solution's highly scalable bare metal deployment enables seamless expansion and adaptability to evolving business needs. Additionally, its agile cooperation with innovative features fosters collaboration and enhances operational efficiency. Notably, the solution delivers a significant Total Cost of Ownership (TCO) reduction, allowing organizations to optimize their resources and investments while maximizing productivity.

With these compelling advantages, 6WIND vSecGW stands as a valuable asset, empowering businesses to achieve their communication goals with enhanced security, scalability, agility, and cost-effectiveness.

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