Extending B2B Services Beyond the EDGE

vPE

At a Glance:

- Tier 1 European CSP
- Location: HQ - Netherlands
- Industry: Telecommunications

Challenge:

- Needed advanced routing capabilities, automation compatibility, performance and scalability delivered cost effectively

Solution:

- 6WIND Virtual Provider Edge Router (vPE)

Results:

- Delivered High Performance & End-to-End Security (Performance for MPLS Routing and Scalable IPSec)
- Achieved Flexibility and programmability performance
- Lowered Energy Consumption
- Reduced Operational Costs

A Tier 1 Communication Service Provider with HQ in Netherlands and a global presence across 190 locations. They are providers of managed Internet and hybrid networks, SD-WAN, and Cloud connectivity solutions. They help customers improve productivity, enhancing the Cloud with agile, flexible, and optimized Internet performance.

Challenge

Establish multi-tenant secure VPNs that interconnect all the edge sites

The customer's need was to establish multi-tenant secure VPNs that interconnect all the edge sites, nomadic users, and remote branches that were not directly connected to a provider PoP. The virtual private WANs needed to be both reliable and secured by IPsec. Each service PE router instance shall support throughputs ranging from 10 to 100 Gbps full-duplex.

The challenge lay in reducing operational costs while providing high performing cutting edge technology with customized features.

"We looked at several vendors to meet our requirements for our new B2B services platform. Performance, Scalability, Flexibility and ROI were the key requirements. 6WIND not only met all of these but also helped in accelerating the maturity of our solution and reduced our time-to-market. With 6WIND VSR, we've been able to optimize our investment & build a future proof solution that is hardware agnostic, delivers openness and automation capabilities."

Quoted 6WIND Customer

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6WIND EMEA
Paris, France

6WIND Inc. Americas
Santa Clara, CA

6WIND APAC
Singapore

Requirements

The private CSP was looking to refresh aggregation and core network components, by replacing end of life Top Tier hardware vendor backbone and implementing latest best practices & solutions. It required high-end secure 10/40/100G WAN connectivity, customized advanced routing features, MPLS L3VPN, BFD, GREoIPSEC, MP-BGP, automation capabilities, forwarding performance and scalability, as well as mitigating compliance constraints to minimize interoperability issues while reducing their TCO and power consumption.

Solution

6WIND Virtual Provider Edge Router (vPE)

The 6WIND Virtual Provider Edge Router, part of the Virtual Service Router (VSR) product suite was the solution chosen by the customer as it met all their requirements.

The deciding factors to select 6WIND vPE Router was the innovative, cost-effective PoP at the EDGE architecture and its rich features. It provided a scalable compute processing at the Edge without vendor lock-in with ease of integration with management and automation tools, along with:

- VRF-lite isolation for various customers
- MPLS and LDP protocols for transit
- GRE for MPLS encapsulation
- BGP/MP-BGP control plane routing protocols for L3VPN with fast route install
- IPsec VPNs transport mode for core connectivity and GRE tunnels encryption
- Route-based IPsec through SVTI interfaces for access connectivity

The key USPs that stood out were:

- Small server footprint to reduce CAPEX/OPEX & Power consumption
- Flexible Licensing model (for throughput and features)
- Multi-interface support (1/10 Gbps, 25/40 Gbps and 100 Gbps)
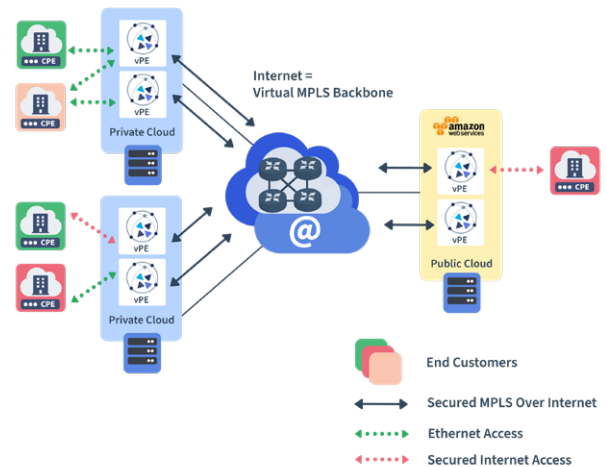- Innovative vPE advanced routing and security software feature set

Diagram : Virtual MPLS Backbone over Internet

- EVPN & L3VPN features
- High End L3VRF IPSec Performance and Throughput
  - 5000 svti vs 2000 for main competitor
  - More than 500 L3VRF
  - 5Gbps IPSec per CPU core (Intel 63xx)
- Automation/ZTP enablement
- Programmability with NETCONF/YANG
- KPI Telemetry data

Results

PoC with 6WIND vPE was 100% successful and therefore Customer decided to go through with our solution outside a tendering process given the offered price was highly competitive and within the direct buying limits.

An expansion plan is in place to increase their presence and offered services by adopting 6WIND innovative technology.

Key Performance numbers:

- 5000 SVTI instantiated in less than 1 min
- 5000 BGP neighbors with BFD (Sub-Second Failover)
- 500 L3VRF
- 5 Gbps IPSec per CPU core @90% (Intel Gold 6312U) for a Total of 39.6 Gbps PE-to-PE Encrypted Traffic
- BGP routes are learned and synchronized within 10 seconds

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