Building scalable and secure L3-VPN: Mininet prototype

***Abstract*—In this short document we describe scalable and secure L3-VPN architecture. We implement the prototype in Mininet framework and evaluate end-to-end performance of the hosts which are part of the L3-VPN.**

I. Introduction

II. Background

III. Architecture

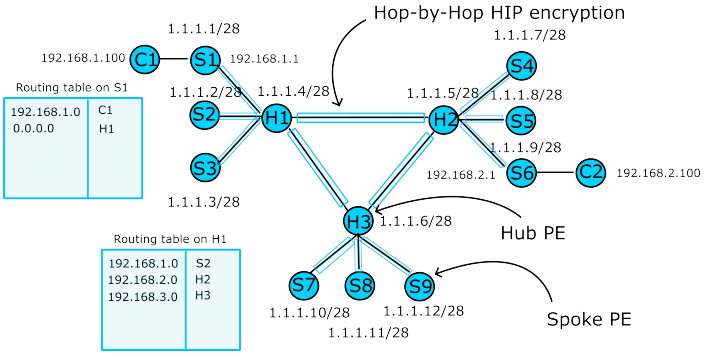

Fig. 1: High-level architecture of L3-VPN deployed in Mininet

The source code of the prototype is available in Github repository https://github.com/dmitriykuptsov/vpls-routing

[1]

IV. Experimental evaluation

V. Conclusions

References

[1] SQL HOWTO for freeradius 3.x on Debian Ubuntu. Online https://wiki.freeradius.org/guide/SQL-HOWTO-for-freeradius-3.x-on-Debian-Ubuntu.

Characteristic ↓ Overlay type →	L2-VPLS	L3-VPN	HIP-VPLS
Size of forwarding/routing table	$O(n)$, n-number of hosts	$O(m)$, m - number of subnetworks	$O(n)$
Number of links in mesh	$O(k^2)$, k - number of Hub-PEs	$O(k^2)$	$O(l^2)$, l - number of PEs
Privacy	MACs are exposed to PEs	IPs are exposed to PEs	No exposure of MACs and IPs (PEs are part of customers inftrastructure)
Encryption and authentication	Hop-by-hop	Hop-by-hop	End-to-end
Tunneling mode	Ethernet-in-IP	IP-in-IP	Ethernet-in-IP