TestCenter™

EVPN Emulation

An Ethernet VPN (EVPN) enables you to connect a group of diwspersed customer sites using a Layer 2 virtual bridge. As with other types of VPNs, an EVPN is comprised of customer edge (CE) devices (host, router, or switch) connected to provider edge (PE) devices. The PE devices can include an MPLS edge switch (MES) that acts at the edge of the MPLS infrastructure.

Viavi's EVPN RFC 7432 emulation package allows easy configuration and management of complex EVPN topologies. With Viavi's complete protocol and traffic EVPN wizard, you will be able to emulate vast number of VTEPs, PEs, and CEs devices and validate their performance and scalability under various scenarios including unicast, multicast, single homing, and multihoming.

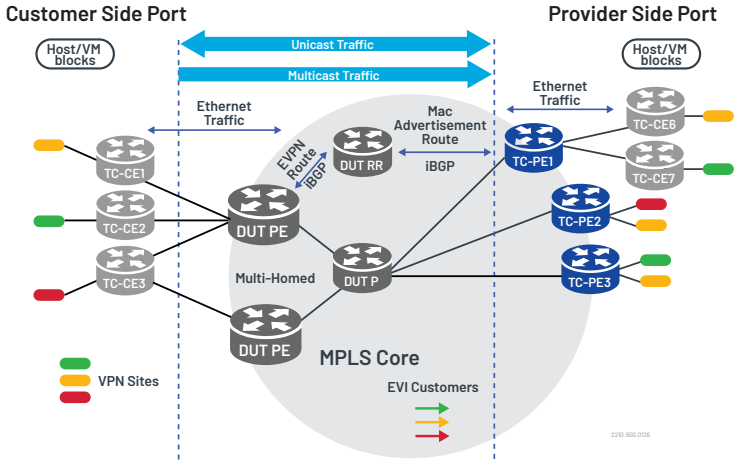

Figure 1: EVPN topology diagram

EVPN emulation is well integrated with Viavi's full protocol support - BGP, MPLS, and VXLAN. EVPN is supported on all Ethernet interfaces from 1Gig to 100Gig (with LAG), and Virtual and includes full automation support with "Save AS Script" and the "Command Sequencer".

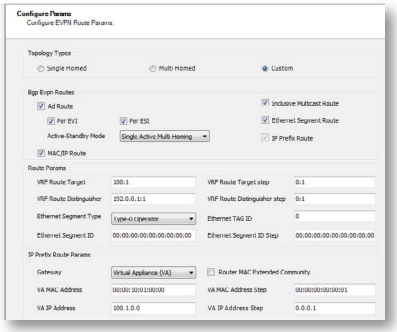

Figure 2: EVPN wizard configuration

Key Benefits

- Quickly assess the performance and scalability of your EVPN solution
- Use wizard to easily build, configure, setup complex topologies
- Comprehensive support for most data encapsulations MPLS, VXLAN and MAC-in-MAC

Key Features

- EVPN capability negotiation
- EVPN Route Types 1 to 8
- Multi-homing with Aliasing label
- Designated Forwarder Election with split horizon label (3 label)
- VXLAN Overlay
- MAC mobility
- Provider Backbone Bridging (PBB) EVPN
- Traffic Binding for MPLS, VXLAN and MAC-in-MAC
- Ease of use wizards to aid in complex topology configuration

Technical Specifications

Product Feature	Description
	• EVPN capability negotiation • Type-1: Ethernet Auto Discovery (AD) route with per ESI route and per EVI route • Type-2: MAC /IP Advertisement route • Type-3: Inclusive Multicast Ethernet Tag route • Type-4: Ethernet Segment route • Type-5: IP Prefix route • Type-6: Selective Multicast Ethernet Tag route • Type-7: Multicast Join Synch route • Type-8: Multicast Leave Synch route • Traffic binding to MPLS MAC labels, VXLAN and MAC-in-MAC encapsulations • MAC VRF • Multi-homing with Aliasing Label • Designated Forwarder Election with ESI or Split Horizon label (3-label) • All Active / Single Active Aliasing and Load Sharing • Fast Convergence – with Ethernet segment withdraw/re-advertise • Flood Label Support – Multicast flooding for BUM (Broadcast, Unknown Unicast, Multicast) traffic • Default Gateway Extended Community Support • Router Mac Extended Community Support • Label 2 – L3 VNI or IP VRF • MAC mobility (Sticky MAC) with MAC Extended Community • Encapsulation extended community for VXLAN Overlay • EVPN VPWS Service: E-Line and Flexible Cross Connect • Ease of use wizards to aide in complex topology configuration
EVPN results	• Connection State • Open Counters • Route Advertised and Withdrawn Counters • Route by type Counters • All Standard BGP Counters
RFCs and Drafts	• EVPN – RFC 7432 • Network Virtualization Overlay using EVPN for VXLAN – IETF Draft Bess-evpn-overlay-01 • IP Prefix Advertisement in EVPN – IETF Draft Bess-evpn-prefix-advertisement-01 • Router Mac Extended Community & IP VRF (L3 VNI) in Label 2 – IETF Draft Bess-evpn-inter-subnet-forwarding-00 • PBB EVPN – IETF Draft L2VPN-PBB-EVPN-10

Technical Specifications continued

Product Feature	Description
Requirements	• Standard TestCenter with Traffic Generator and Analyzer • Routing package requirements • Unicast Routing BPK-1004A/B • MPLS BPK-1006A/B
Supported platforms	• Supported on the Ethernet modules • Supported on TestCenter Virtual • Supported on TestCenter C1 and 50

Ordering Information

Option	Description
BPK-1311A	EVPN Emulation
BPK-1310A	VXLAN Emulation
SPK-1205A	VXLAN and EVPN with Overlay Solution
BPK-1337	EVPN VPWS (E-Line and Flexible Cross Connect)
BPK-1361A	EVPN Multicast Optimization
SPK-1206A	EVPN and EVPN PBB Solution
BPK-1328A	Provider Backbone Bridging (PBB) EVPN

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