Benchmarks and Methods for Multihomed EVPN
draft-morton-bmwg-multihome-evpn-03

Abstract

   Fundamental Benchmarking Methodologies for Network Interconnect
   Devices of interest to the IETF are defined in RFC 2544. Key
   benchmarks applicable to restoration and multi-homed sites are in RFC
   6894. This memo applies these methods to Multihomed nodes
   implemented on Ethernet Virtual Private Networks (EVPN).

Comments from Sudhin Jacob

- Thanks! Detailed Reply on the BMWG- List.
- Summary of Changes in 03 follows:
  - Retained Figure 1 for minimal Throughput Setup
  - Many additional details on Setup Configuration
  - Details on flows and calculations discussed

Clarify:

```
         Test                                                                    Test
         Device                          EVI-1                                   Device
         +---+                          ,-----.                                  +---+
         |   |                        /         \                                |   |
         |   |                      / (   PE    ..... \                    ESI   | | |
         |   |                     /    \  1   /      \           EVI-1      0    |   |
         |   | MAC  ,-----.      /       `-----'        \        ,-----.  +--+   | | |
         |   | A  /         \   /                        \      /        \ |  |  |   |
         |   |..( CE    X ESI 1                            X...(   PE      ...|CE|.|   |
         |   |    \  1  / \                                  \    3   /    | 2|  |   |
         |   |     `-----'  \                                  `-----'     +--+  | | |
         |   |               \     ,-----.                                       |   |
         |   |                \  /         \   /                                 |   |
         |   |                 \(   PE     ..../                                 |   |
         |   |                  \    2   /                                       |   |
         +---+                    `-----'                                        +---+
                                   EVI-1
```
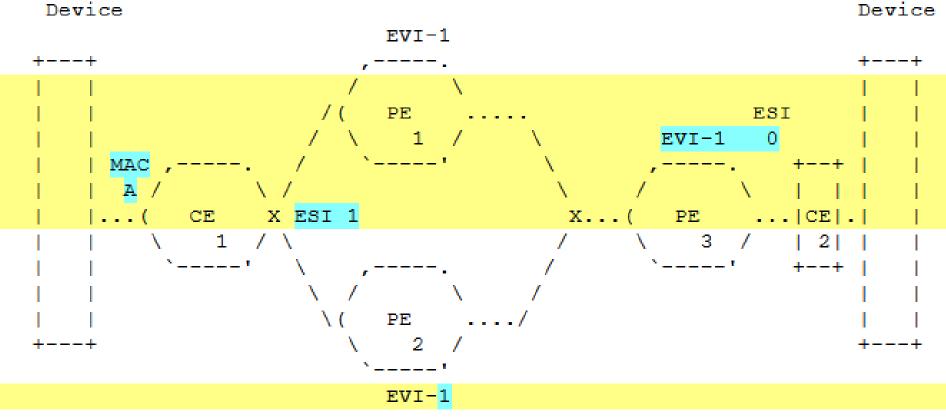
Figure 2 SUT with BGP & MPLS interconnecting multiple PE-ESI-CE
                                locations

PE1 learns MAC A via data plane learning, PE1 and PE2 share ESI 1 (
Ethernet Segment Identifier) and advertise an Ether A-D route with
ESI 1 to PE3, PE1 also advertises MAC A to PE3. PE3 instantiates
either Active/Backup or Active/Active towards PE1 and PE2 (Assume
PE1 is Active in Active/Backup scenario) for MAC A.

NEW:

4.1. Basic Configuration

This configuration serves as the base configuration for all test cases.

All routers except CE are configured with OSPF/IS-IS,LDP,MPLS,BGP with EVPN address family.

All routers except CE must have IBGP configured.

PE1,PE2,PE3 must be configured with an EVI context (EVI 1).

PE1 and PE2 must be configured with a non-zero ESI indicating that the two VLANS coming from CE1 belong to the same ethernet segment (ESI 1).

PE1 and PE2 are running Single Active mode of EVPN.

CE1 and CE2 are acting as bridges configured with VLANS that are configured on PE1, PE2, PE3.

In [RFC2889] procedures that follow, the test traffic will be bidirectional.

5. adds

5. Procedure for Full Mesh Throughput Characterization

   Objective: To characterize the ability of a DUT/SUT to process frames
   between CE and one or more PEs in a multihomed connectivity scenario.
   Figure 1 gives the least-complex test setup. Figure 2 gives a
   possible alternative with full BGP and MPLS interconnection.

   The Procedure follows.

5.1. Address Learning Phase

   "For every address, learning frames MUST be sent to the DUT/SUT to
   allow the DUT/SUT to update its address tables properly." [RFC2889]

5.2. Test for a Single Frame Size and Number of Unicast Flows

   Each trial in the test requires confiuring a number of flows (from
   100 to 100k) and a fixed frame size (64 octets to 128, 256, 512,
   1024, 1280 and 1518 bytes, as per [RFC2544]). Frame formats MUST be
   specified, they are as described in section 4 of [RFC2889].

   Only one of frame size and number of flows SHALL change for each
   test.

5.3. Detailed Procedure

Other Comments

- Calculations for Statistics are clear.

Thanks for your attention today!

- Please review!