Layer 2 Gateway (L2GW)

draft-xia-nvo3-l2gw-02

Liang Xia, Lucy Yong
Weiguo Hao, Anoop Ghanwani,
Ramki Krishnan

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Overview

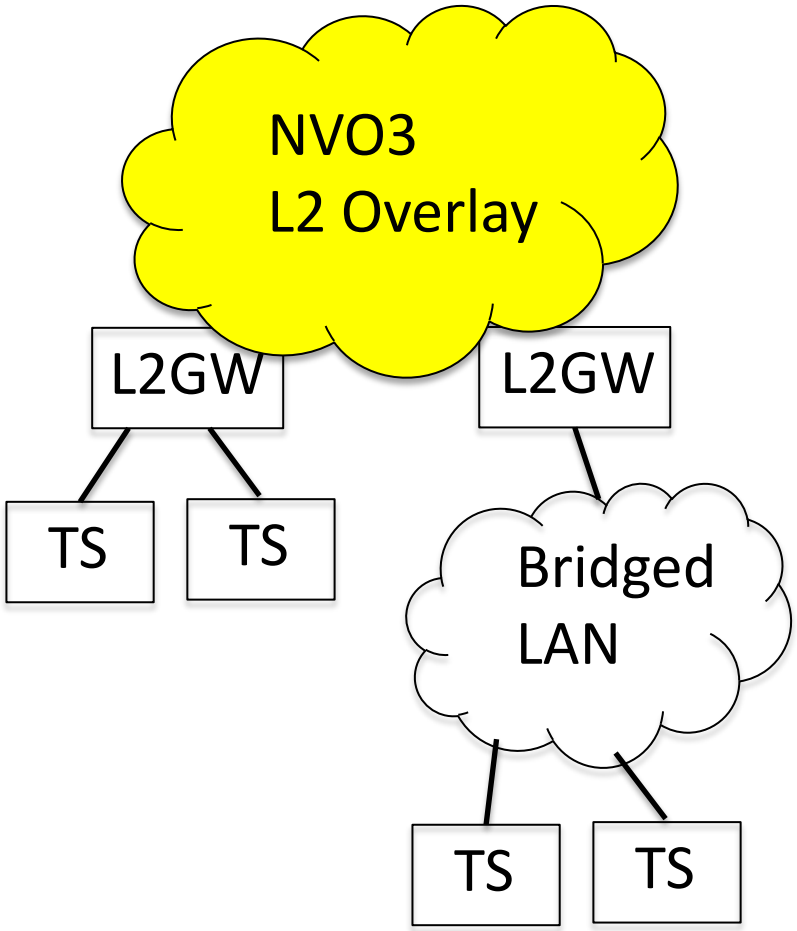
- Motivation
- L2GW
- L2GW issues
- Multi-homing to an L2GW
- L2GWs and L2 control protocols (L2CP)

Motivation

- NVO3-like L2 overlay networks are being deployed in DCs
- Traditional L2 bridged networks are still used for connecting non-virtualized devices
  - e.g. non-virtualized servers, storage systems, etc.

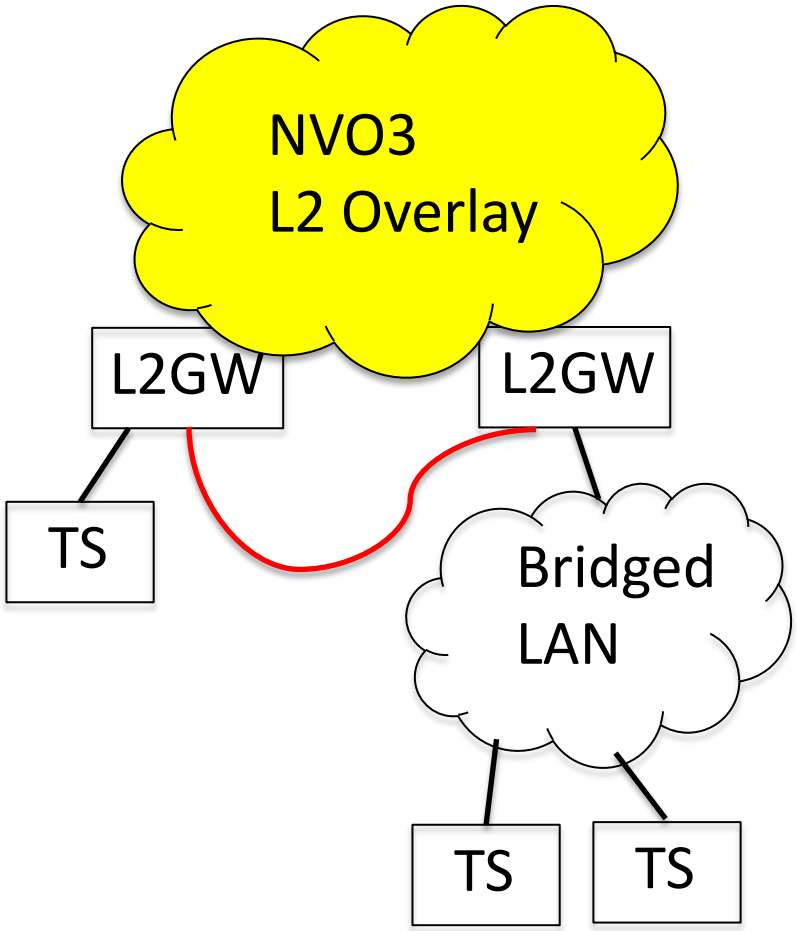
This draft discusses problems and concerns with interconnecting an L2 overlay network with L2 bridged networks

L2GW



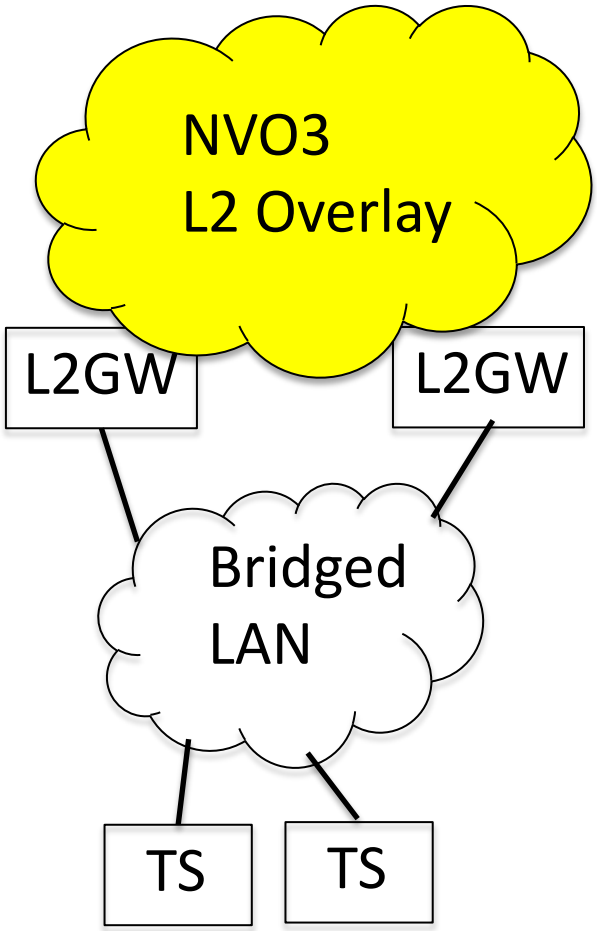
- Basically an NVE
- There are physical wires connecting a network or a TS to the NVE
- This introduces some problems
- Not unlike those in other overlays such as TRILL and E-VPN

L2GW Issues



- MAC learning
  - Sync with NVA
- Need loop detection/prevention
- ARP/ND Optimization
  - Maintain a cache from the NVA, snoop ARP Requests

Multi-homing to an L2GW



- Bridged LAN is multi-homed to an L2GW
- Active-Standby can be handled by the loop detection/prevention protocol
- Active-Active is harder
  - Learned MAC flip-flop
  - Duplication of BUM received from Bridged LAN
  - Duplication of BUM sent to Bridged LAN
  - More protocol work and/or coordination with NVE is needed

L2GWs and L2 Control Protocols

Protocol	Action
PAUSE/PFC	Participate
STP/RSTP/MSTP	Discard
LACP	Participate
Link OAM	Participate
LLDP	Participate
MVRP	Coordinate with NVA?
MMRP	Coordinate with NVA?
802.1AS	Participate

Preliminary – need WG feedback on this table

Summary

- L2GW is a physical NVE
  - The wires introduce some interesting problems
- Major areas that need to be addressed
  - Loop detection/prevention
  - Active-Active connectivity to an L2GW
- Areas that would benefit from specification
  - Interaction between MAC learning and NVA
  - L2 control protocol handling at an L2GW

THANK YOU