

Pseudo-nickname for Active- Active Attachment

(draft-hu-trill-pseudonode-nickname-08)

*Hongjun Zhai
Tissa Senevirathne
Donald Eastlake
Yizhou Li
Mingui Zhang
Radia Perlman*

Motivation

- Provide an approach, on the data plane, to solve the problems in TRILL active-active access:
 - Address flip-flop by data plane learning
 - Duplication of multi-destination frames egressed to an active-active CE
 - Loop back of native multi-destination frames to the originating CE

Theory of Operations

- To avoid the address flip-flop:
 - Group of edge RBridges that interface with the same multi-homed CE is represented by single Virtual RBridge (RBv)
 - RBv has its pseudo-nickname
 - All native frames ingressed from any port of RBv uses pseudo-nickname as the ingress nickname.
 - Matching edge RBridges to distribution trees is done as specified in draft-ietf-trill-cmt to avoid RPF check problems

Theory of Operations

- To avoid the address flip-flop (cont):
 - Each MC-LAG can be identified by a globally unique ID, and that ID is advertised into TRILL campus by the attached edge RBridges.
 - Based on the advertised IDs, edge RBridges can find each other and then form an RBv automatically.

Theory of Operations

- Eliminate Frame Duplication:
 - Only DF (Designated Forwarder) for VLAN is allowed to egress the multi-destination frame to a multiply attached CE
 - Each edge RBridge in an edge group uses the same algorithm to determine the DF
 - Corner case discussions are provided in the draft
 - Only for BUM. This is not a problem for unicast

Theory of Operations

- To avoid Loop back:
 - Ingress nickname filtering is used to avoid loop back of native multi-destination frames to their originating CEs via TRILL campus
 - If (Ingress nickname == RBv pseudo-nickname), Then do not egress the multi-destination frame to RBv ports
 - not a problem for unicast

Summary

- Pseudo-nickname approach solves the issues in active-active access
- Works with current data plane, no hardware changes required

Next Steps

- Move to WG item
- Make the draft terminology consisted with draft-ietf-trill-active-active-connection-prob
- More reviews are welcome