AWARE SPANNING TREE TOPOLOGY CHANGE ON RBRIDGES

draft-yizhou-trill-tc-awareness-00

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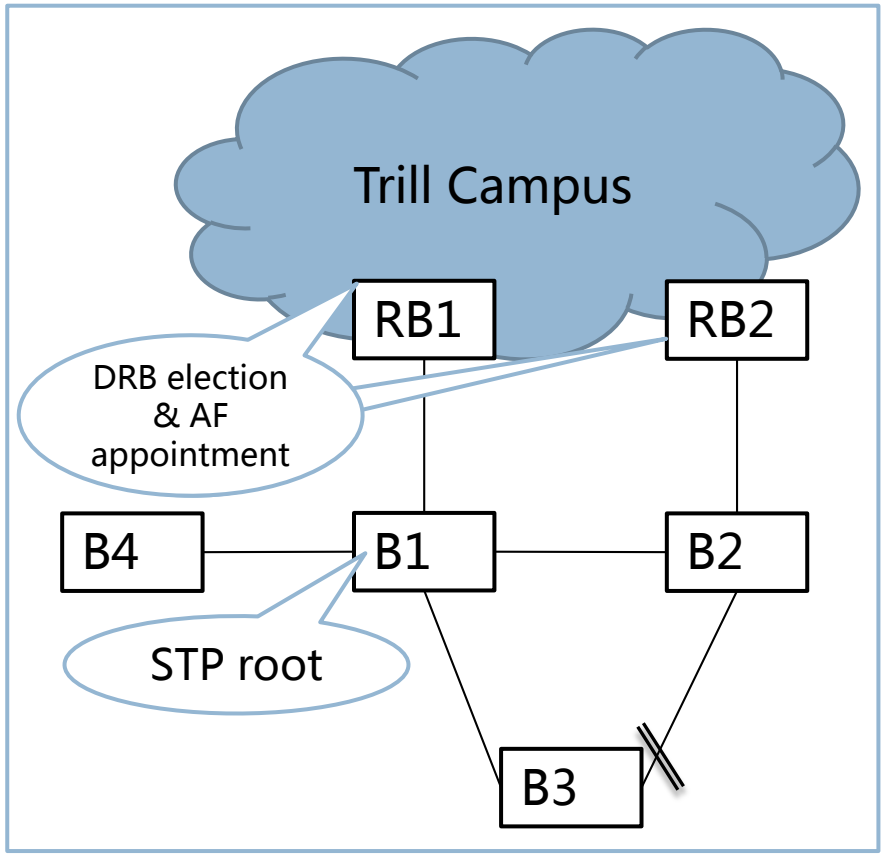
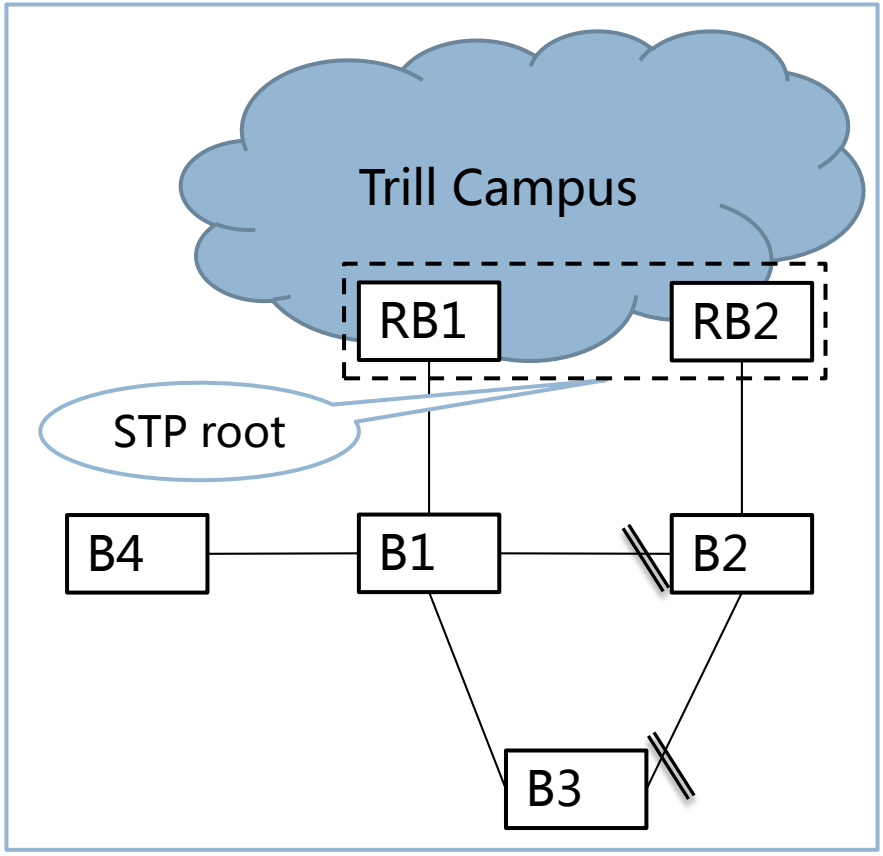
Background – Two approaches to interconnect STP and trill domain





Method 1 (AF approach):

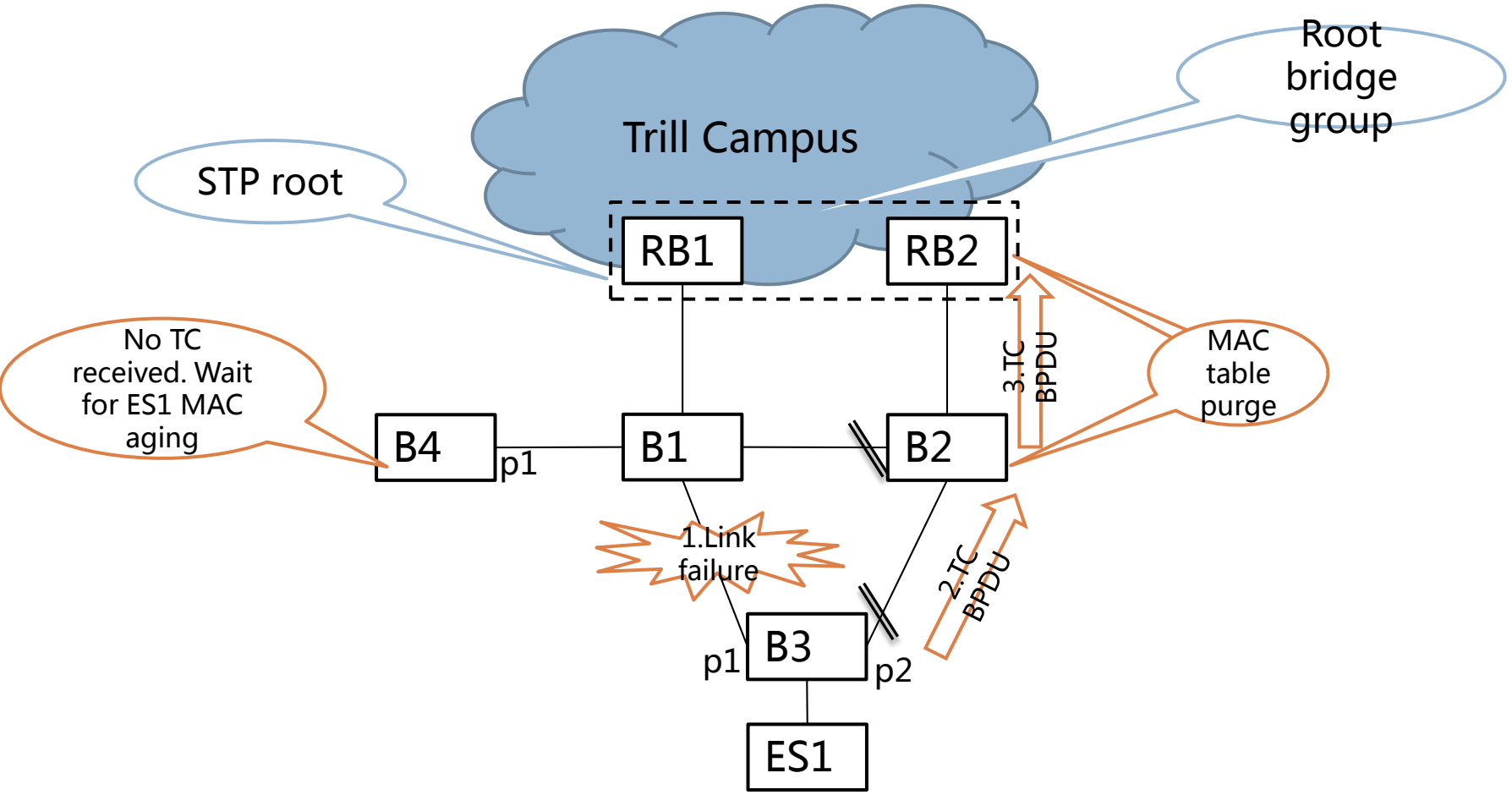
- RB does not participate in spanning tree calculation.
- Snooping certain BPDU, no emiting/forwarding
- Achieve VLAN based load balancing using AF

Method 2 (STP Partition approach):

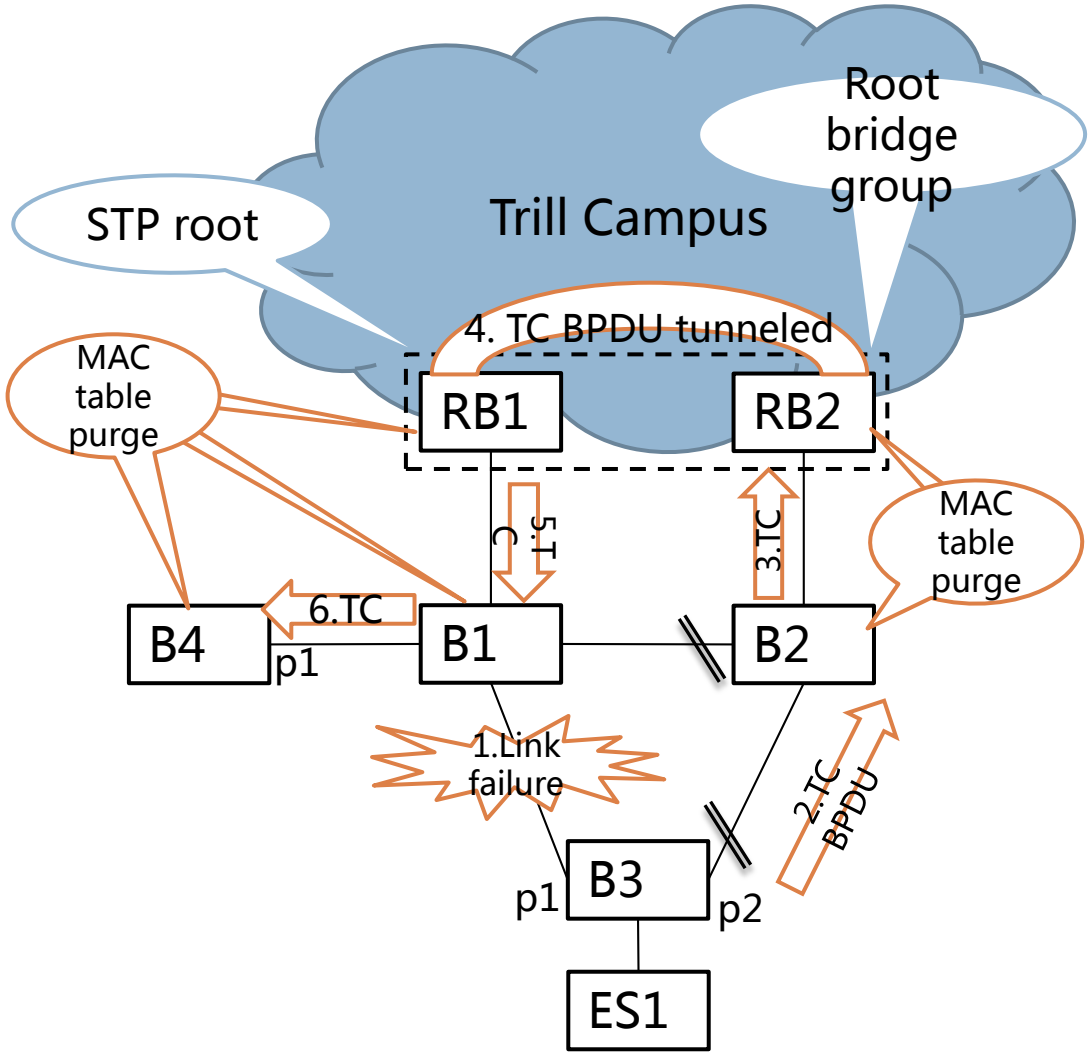
- RB1 & RB2 perform like one STP root
- Make STP domain partition
- Achieve per-vlan load balancing. AF & its inhibition timer no longer not necessary

Motivations

- In method 2, STP partition approach, bridged LAN needs to be aware of the topology change in both partitions.

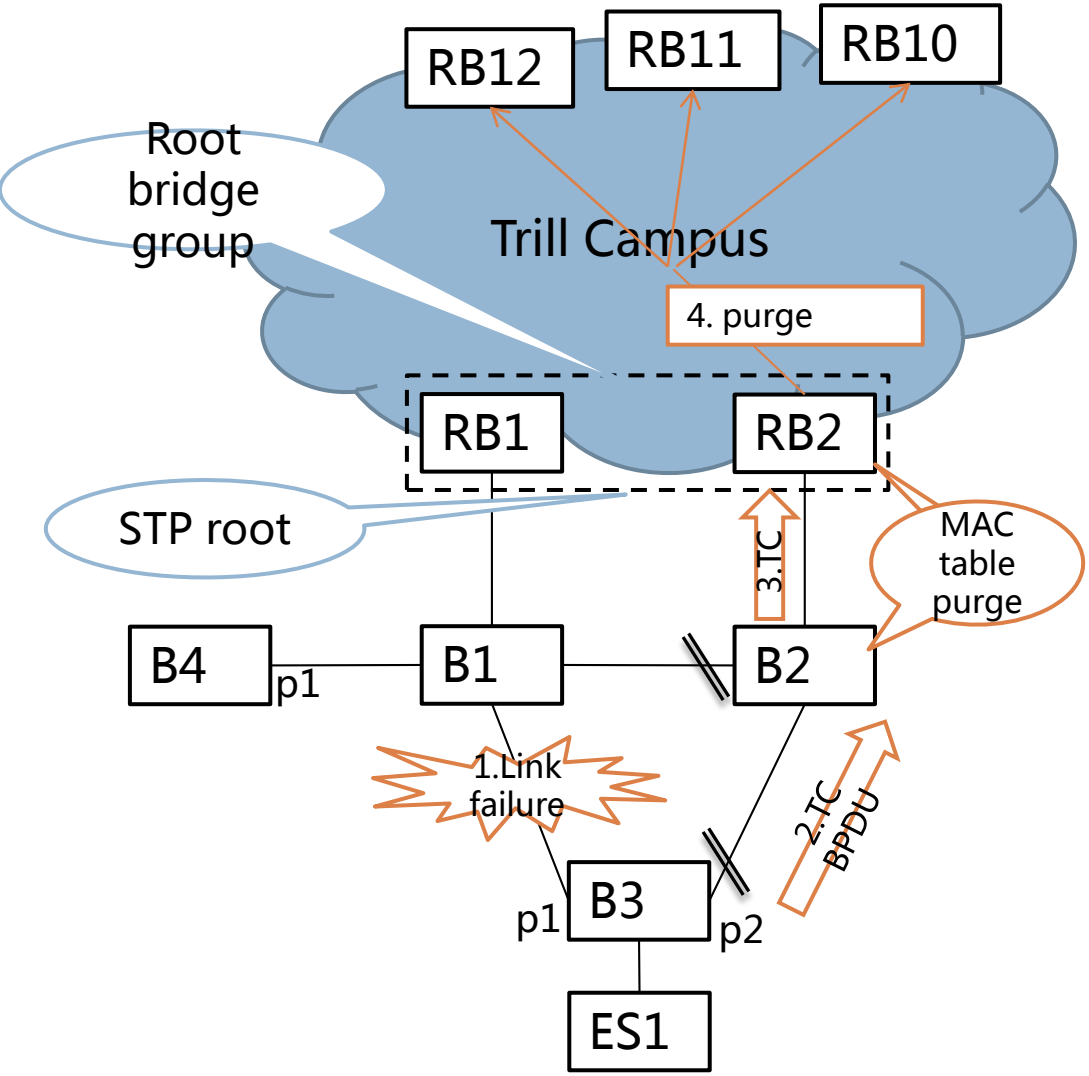


TC BPDU Tunneling



- Interested VLANs and Spanning Tree Roots Sub-TLV [RFC6326] carries spanning tree root bridge IDs. Use this TLV to automatically form the root bridge group and setup tunnels.
- Use RBridge Channel to tunnel TC BPDU
  - Unicast to other RB in the same root bridge group.
  - Define a new RBridge channel protocol for BPDU transmission

Purge MAC-Nickname correspondence on remote RBs



- Use RBridge Channel to multicast the purge info to the remote RBs
  - Triggered by RB2 who receives TC from bridged LAN
  - Define a new RBridge channel protocol for MAC-Nickname correspondence purge. Info includes nicknames in the same root bridge group and optionally VLANs affected.

Changes to current spanning tree support in TRILL

- Spanning tree can extend through the TRILL layer but only between end ports of the same link.
- Never build a spanning tree through the TRILL layer between different links.
- Further native TC BPDU triggered only sent to links configured as access link.

Next Steps

- Invite comments and contributors