Extensions to RT-Constrain for Hierarchical RR Scenario

draft-dong-idr-rtc-hierarchical-rr-02

Jie Dong, Mach Chen, Robert Raszuk

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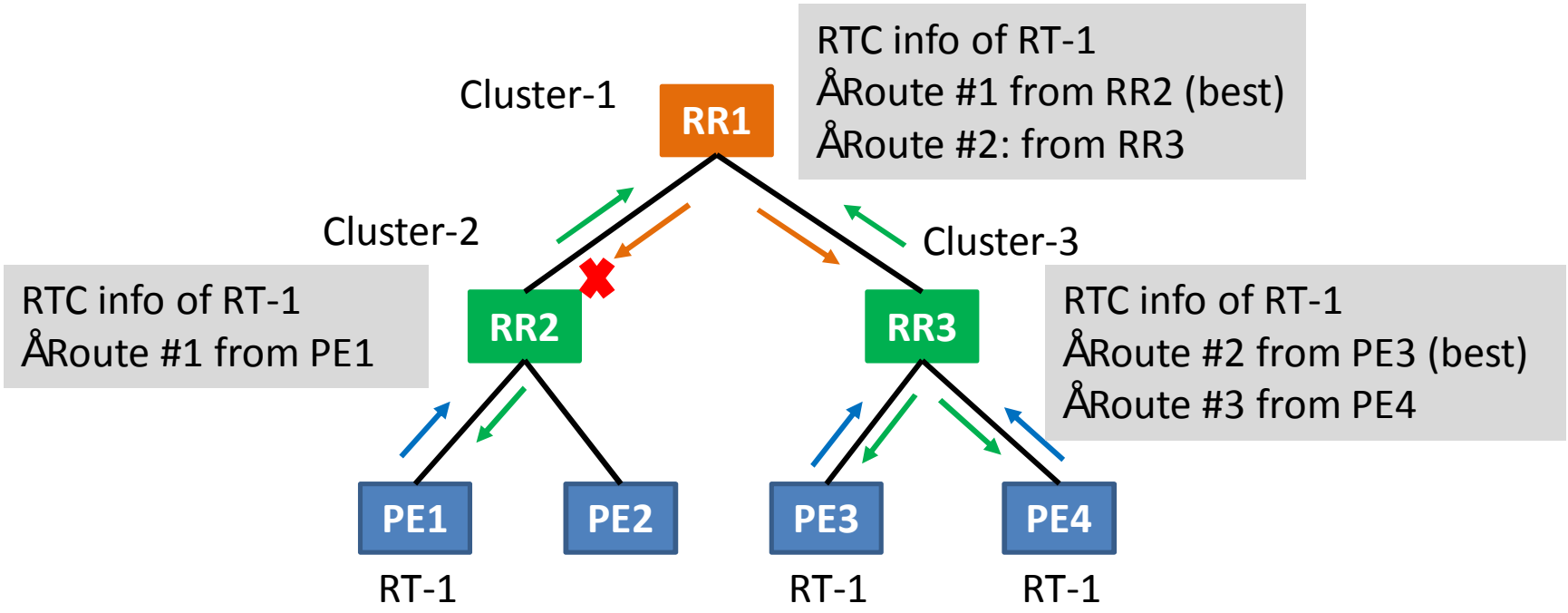
Problem Review

- In hierarchical RR scenario, with rules defined in RFC 4684, the route distribution graph can not be built correctly
  - Some PEs cannot get the needed VPN routes



Candidate Solution #1

- Revise the advertisement rule for RTC routes
  - When advertising an RTC route to an RR peer (**either client or non-client**), if the best path is received from this peer, and there are alternative paths received from other peers, the **most disjoint alternative path** SHOULD be advertised to this peer
  - Most disjoint alternate path:
    - The CLUSTER_LIST and ORIGINATOR_ID attributes are diverse from those of the best path

Candidate Solution #2

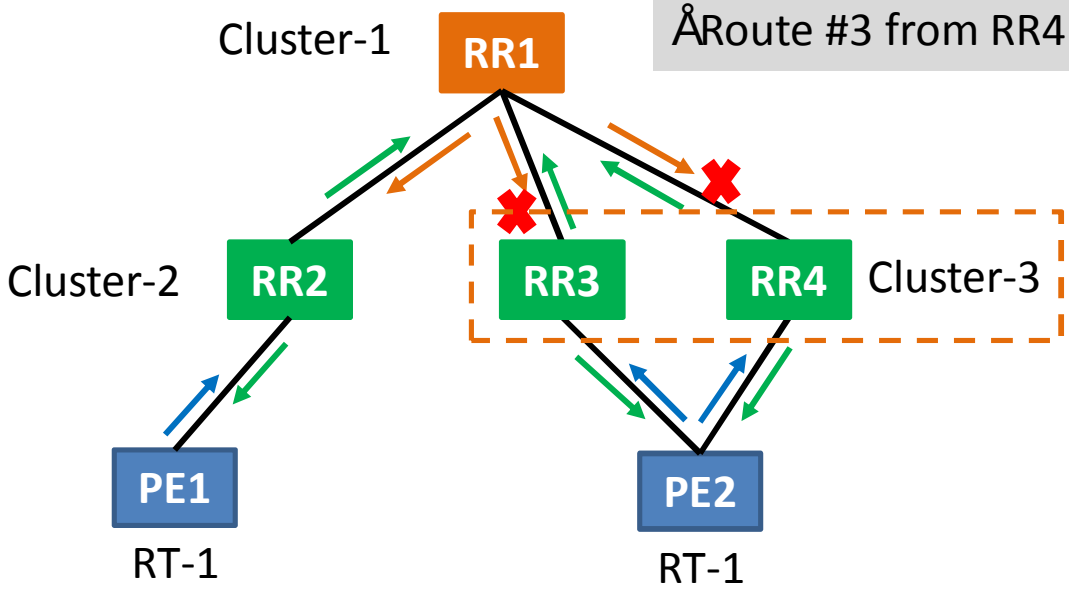
- Use add-path for RTC routes between hierarchical RRs
  - Identify RR clients which are lower layer RRs
    - Enable add-path for RTC AFI/SAFI, ensure that sufficient RTC routes are advertised to pass the BGP loop detection on the receiving RR.
    - Normal BGP path advertisement rules SHOULD be applied. (No change of ORIGINATOR_ID)
  - For RR clients which are NOT lower layer RRs
    - follow the advertisement rules defined in 3.2 of RFC 4684

Next Steps

- Finish WG adoption call
- Work on the solution space
  - Candidate solutions in the draft
  - Welcome other candidate solutions
  - Need WG's guide on the most suitable solution

Another Scenario

RTC info of RT-1
- Route #1 from RR2
- Route #2 from RR3
- Route #3 from RR4 (best)



- RR1 selects the best RTC route (route #3 from RR4) and advertises it to RR2, RR3 and RR4
- RR3 and RR4 detect their own CLUSTER_ID in the route, discard it
- Even if RR1 advertises the alternate route #2 (from RR3), RR3 and RR4 would still discard it