Extensions to RT-Constrain for Hierarchical RR Scenario

draft-ietf-idr-rtc-hierarchical-rr

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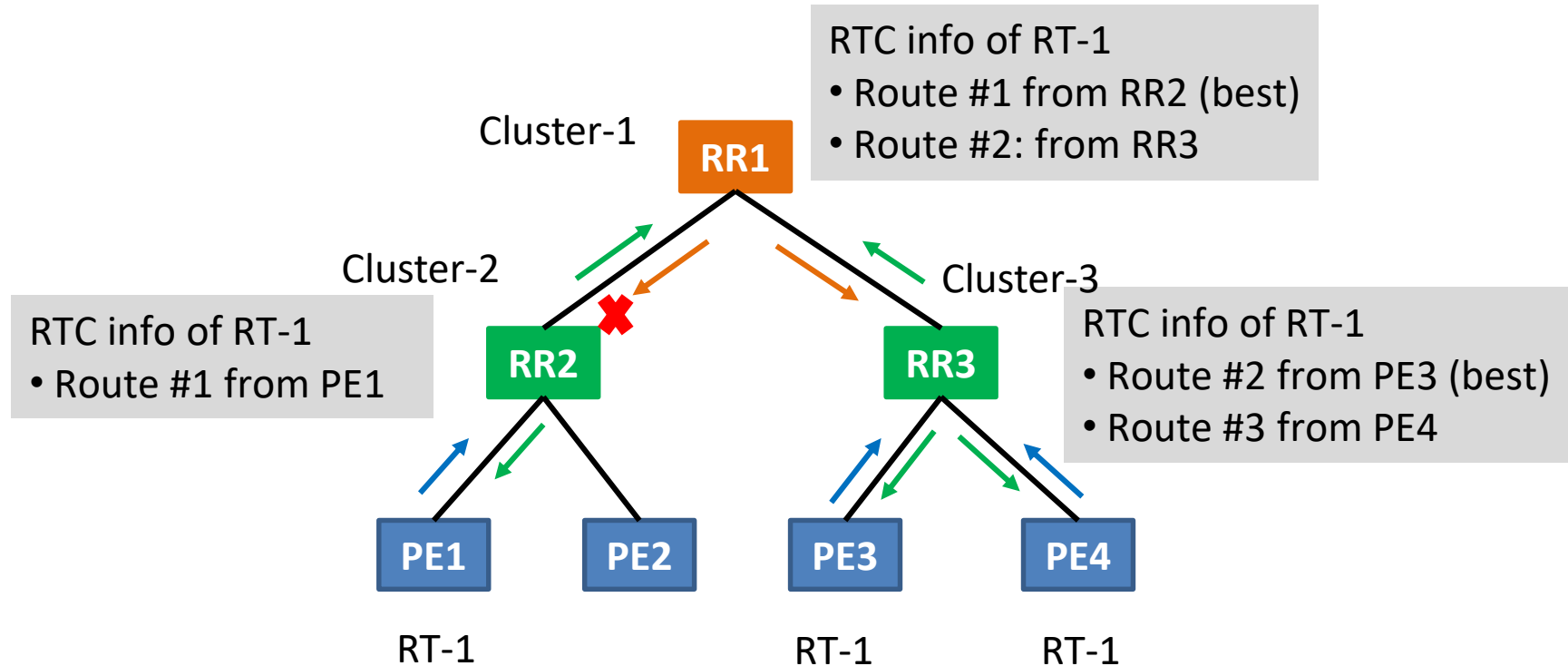
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Recap of This Document

- Analyzes the issues with RT-Constrain (RTC) in hierarchical RR scenarios

    - With current CT-Constrain rules, routers may fail to build the route distribution graph correctly

- Provides candidate solutions for fixing the RTC issues in hierarchical RR scenario

    - Details are provided on next page

- This discussion was initiated back in 2014, and this document was adopted in 2015

- There are new proposals on solving the RTC issues for hierarchical RR scenarios

    - See the next topic on the agenda

- The WG may want to take both the existing and new proposals into consideration to build one converged solution

Problem Scenario

Cluster-1

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

Cluster-2

RTC info of RT-1
- Route #1 from PE1

Cluster-3

RTC info of RT-1
- Route #2 from PE3 (best)
- Route #3 from PE4

RR1

RR2   RR3

PE1   PE2   PE3   PE4

RT-1   RT-1   RT-1

- RR1 selects the best RTC route (route #1 from RR2) and advertise to RR2 and RR3
- RR2 detects its own CLUSTER_ID in the RTC route, discard it
- Result: RR2 will NOT advertise VPN routes with RT-1 to RR1

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Proposed Solutions

- Option 1: Uses add-path for RTC routes between hierarchical RRs

  - Ensure that sufficient RTC routes are advertised to pass the BGP loop detection on the receiving RR

  - No change to BGP path selection rules

- Option 2: Advertises the most disjoint alternative route to the peer from which the best route is received

  - Most disjoint alternate path: the CLUSTER_LIST and ORIGINATOR_ID attributes are diverse from those of the best route

  - BGP path selection rules for RTC is changed

Next Steps

- Continue the discussion with authors of another document and the WG

- Provide a converged solution for RTC in hierarchical RR scenario

Thank You