



# Exposure of Telefonica network topology through ALTO for integration with Telefonica CDN Update from IETF 115

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# Rationale for making TCDN to be transport network aware (reminder)

- One of the main objective of TCDN is to provide an efficient delivery of contents within the network
- Content delivery is based nowadays on a (semi-)static view of the network, decoupled from the real situation along time
- In order to make a complete and efficient usage of the network, TCDN would benefit from a real time knowledge of the status and characteristics of the network
  - For instance, allowing delivery decisions in TCDN to quickly adapt to network status variation (e.g., topology changes, congestion, etc.)
- Project presented in IETF 114 and 115, update reported here

# Status

- Pilot running from Q4 2022 – 1663 subnets already retrieved
- Issues being faced
  - New OS versions with full support for BGP-LS being deployed to allow the retrieval of full topological information among layers have been deployed gradually.
    - Some issues detected for another service motivated a partial roll back, yet pending to be fully deployed again
  - Flapping occurred in the sessions between ALTO server and RR
    - "TCPZeroWindow" packets received in ALTO from RRs. Under analysis.
      - Discussion opened in exaBGP wrt "TCPZeroWindow"
    - Overflow in ALTO side prevented the processing of messages received
      - This triggered an initiative for re-architecting how ALTO implementation process the information received (more efficient way of processing the data)
  - Under analysis how often is convenient to retrieve the entire topology from the RR
    - Full topology is retrieved once the BGP sessions are established, later on only updates are received. Being this the normal behavior, for PoCs purposes is not the best.

# On-going next steps

- For the pilot (as reported in IETF 115)
  - Understand how to consume the ALTO information: how often?
  - Continue analyzing the information received to understand dynamics in a production network
  - Debug issues that could be found during the process
  - Wait till resolution of OS issue for HL2-HL3 connections in the overall network for building a complete picture of the network
- For ALTO-based solution (as reported in IETF 115)
  - Productification of ALTO
  - Topology load automation to be consumed by TCDN logic
- For ALTO / MOPS WG
  - Keep pilot documentation up-to-date (through ALTO wiki)
  - Identify gaps/issues/improvements in the solution worthy to work in (e.g., security)
- New pilots under discussion for other Telefonica's networks (e.g., Brazil)