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 being 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 initaitve for re-architecting how ALTO implementatoin 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)