Using ALTO for exposing Time-Variant Routing information

draft-contreras-tvr-alto-exposure-01

Luis M. Contreras (Telefonica)

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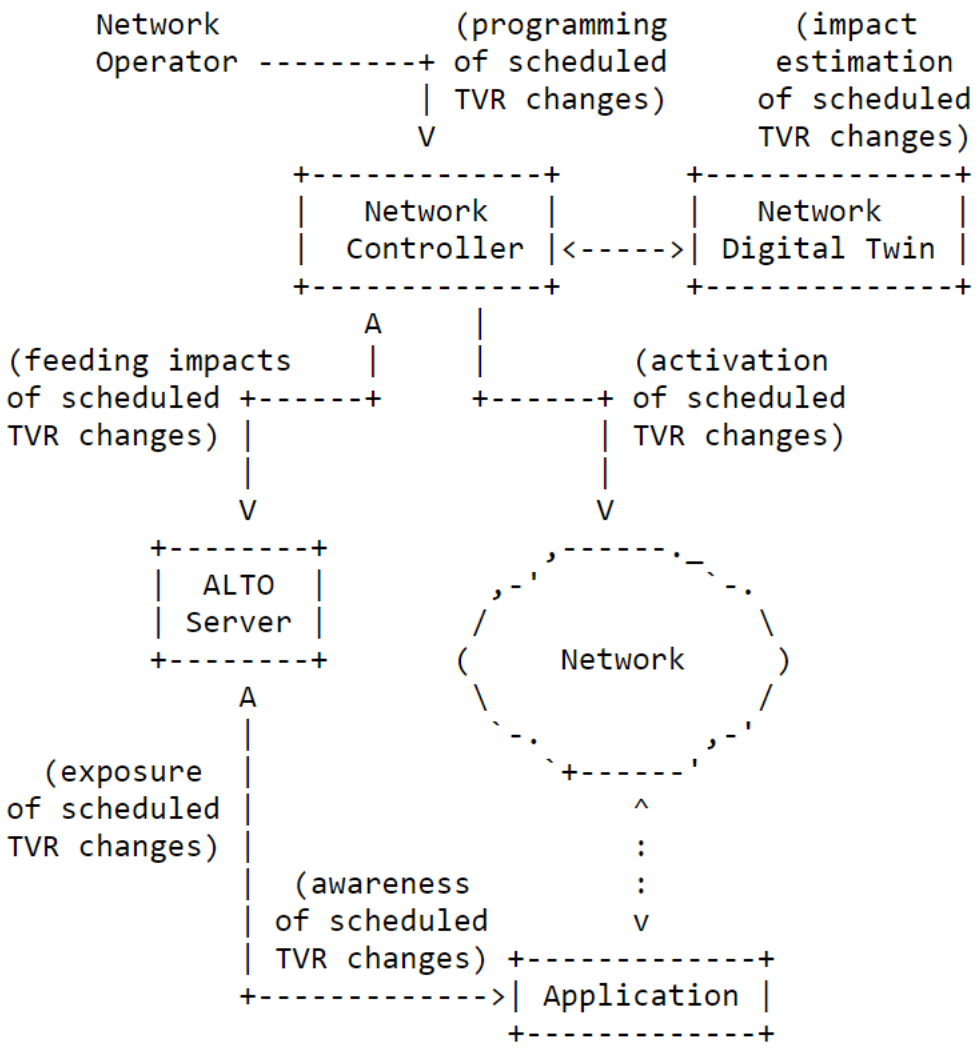
Background (-00 presentation at IETF 116)



- ALTO allows to expose anticipated and predictable topological changes by leveraging on the cost calendar feature, defined in [RFC8896]
- It enables an off-path mechanism for exposing scheduled topological changes
- ALTO can expose the scheduled topological changes to Applications/Services so that they can become aware of those routing variations become aware of those routing variations

Changes from -00

- Text added for discussion of strategies for advertising predicted topological changes: (1) by means of network controller + ALTO, vs (2) by advertisement of expected changes through routing protocols
- Text added for describing two ways of retrieving the scheduled topological changes by ALTO: (1) interaction with the network controller, vs (2) interaction with augmented routing protocols

Advantages of the proposed approach

- By leveraging on ALTO, it is possible to offload the processing of changes from the network elements, avoiding also undesirable cascading / propagation effect
  - I.e., one scheduled change notified by one network element triggers advertisement of subsequent predicted changes in other network elements, and so on
- It can easily solve the case of considering predicted changes due to the appearance of new nodes / links not currently present in a topology
  - Network elements know about present nodes and links, but not about nodes and links not yet existing in the topology
- It allows to expose the scheduled topological changes to Applications / Services
  - Application/Services usually do not have access to internal routing information

Next steps

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  - Collect feedback from the WG
  - Assess if the parametrization of the models representing scheduled changes are compatible with those in ALTO Cost Calendar
  - If perceived as necessary, to document scenarios where applications/services can be benefited of getting anticipated knowledge about predictable routing changes
  - Refine / improve the architectural figure if convenient

- Any comment / feedback is more than welcome