Extending ALTO by using BGP communities

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Singapore, ALTO WG, November 2019

BGP Communities

- BGP attribute
- Used to group destinations
- Represented as an integer
  - 32-bit number
  - Conventionally written as two 16-bit numbers separated by colon
    - First half is usually an AS number
    - ISP determines the meaning (if any) of the second half
- Each destination could be member of multiple communities
- Community attribute carried across ASs
- Useful in applying policies

Problem statement

- Network operators use extensively BGP Communities as a mean of putting together some destinations (i.e., IP prefixes) for different purposes
  - Traditionally used by administratively-defined filters for applying policies
  - Influence the behavior of the traffic towards the associated destinations
- ALTO protocol based on IP prefixes
  - An aggregation node in the Network (BNG, PGW) will have associated a number of IP prefixes, which can be modified along the time
  - Multiple queries are required for retireving from ALTO information linked to each prefix
  - The same response will be obtained from ALTO server for all the prefixes associated with such a node
- The usage of BGP Communities can simplify the process by:
  - Reducing the number of queries to ALTO server
  - Smoothly absorb the natural change in prefixes for a given node

Next Steps

- Elaborate more on the proposal.
- Collect interest from ALTO Working Group.
- Document the proposal for IETF#107.