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 retrieving 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.