Routing Proximity Services

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Introduction

- Routing Layer for Proximity/Localization services
  - What ?
  - Why ?
  - Need ?

Architecture

- Routing Layer for Proximity/Localization services. What ?

  - Leverage Routing databases (ISIS/OSPF/BGP) in order to compute proximity/localization services
  - Interface to routing layer is well known: routing adjacencies. No need to define anything new
  - OSPF/ISIS and BGP Data has very good proximity/localization properties
  - Includes protocol extensions/features for policy management

    BGP Communities

    Route Tags

    ...

Architecture

- Routing Layer for Proximity/Localization services. Why ?
  - Consistency between
    Routing/forwarding decisions
    Proximity decisions
  - Use same topology information as used for routing
    Not derived from third parties
  - Information is kept up to date by routing layer: adapt to network events
  - Leverage existing (and future) IGP/BGP protocol enhancements
    Examples:
    RFC 5029 - ISIS Link Attribute
    RFC 5130 - ISIS Route Tags
    draft-ietf-isis-genapp - ISIS Generic Application TLV
    BGP Community / Extended Community
    ...

Architecture

- Standardization effort - Need

  - **Need for a protocol supporting routing-based proximity**
  - ALTO is chartered to standardize a signaling protocol between clients and servers according to draft-kiesel-alto-reqs
  - Routing Proximity can be based on

    IP addresses, Prefixes, AS numbers, BGP Communities, ... any routing information type
  - Protocol extensibility and backward compatibility

    Protocol objects and signaling messages will probably ‘grow’ over time

References

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