Routing Proximity Services

IETF 73
Minneapolis, November 2008

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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 and 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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