Overlay Networks - Path Computation Approaches

Snigdho Bardalai
Khuzema Pithewan
Rajan Rao
Problem Statement

• To be able to compute TE paths across multiple overlaying (or peering) networks or administrative domains.

• The objective of the draft is to:
  – Identify the path computation use-cases.
  – Describe different approaches on how this can be achieved.
Use-cases

- Point-to-point paths

- Diversity
  - Single head and tail end nodes
  - Multiple head and tail end nodes

- Point to multipoint paths
Approaches

• Virtual topology approach
  – Abstract or virtual nodes
  – Abstract or virtual links

• PCE approach
  – BRPC
  – Hierarchical PCE
    • Top-level parent PCE that operates across multiple administrative domains may not be available.

• Hybrid approach – virtual topology and PCE
  – Use virtual topology to determine domain entry and exit points.
  – Use PCEP to request for intra-domain paths.
Hybrid Approach Example

- PE nodes advertise a virtual-node representing the whole provider network or domain.
- CE node determines the entry and exit end-points using the virtual topology.
- CE node then sends a path computation request to the appropriate PCE.
Comments?

Thank You