Problem Statement and Architecture for Information Exchange Between Interconnected Traffic Engineered Networks

draft-farrel-interconnected-te-info-exchange-02.txt

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Why This Draft?

- Lots of I-Ds addressing aspects of this space
- Need to see the bigger picture
- Want to avoid feature-creep in our protocols
- Use cases have been a bit fuzzy
- Terminology needs to be clarified
  - For example, CCAMP has some differing definitions of “Virtual TE link”
  - Helpful to invent new (untainted) terms
Objectives for This Meeting

• Move toward agreement on what we are trying to achieve

• Kick-start discussion towards a single, converged architecture for the problem space
  – Encompass all of the different popular deployment models
  – Can be realised with existing protocol components

• Converge on terminology

• Make a plan to move forward
Problem Statement

- The network is partitioned vertically and horizontally
- TE optimization is an end-to-end function
- TE metrics are growing in number (b/w, delay, SRLG, optical, etc.)
- How do you achieve end-to-end TE paths?
Assertions

• Sharing all TE information between domains is not good
  – Does not scale
  – Breaks confidentiality
  – Might not be understood

• Aggregation loses information to the extent that end-to-end connectivity is unknown
  – Both virtual node and virtual link models

• On-demand capacity is subject to policy
  – Likely means that cross-domain connectivity is pre-planned
Backup Slides

• Architectural tools
• Simple architecture
• Example
Proposed Architectural Tools

• Abstract Link
  – This is a connection (LSP) across a network (peer or server) that could be set up and turned into a TE link according to the policy of the network advertising it

• Abstract Layer Network
  – A network of edge nodes, edge links, and abstract links that allows a dynamic creation of links between client edge nodes
Architectural Overview

- Client Network
- Abstraction Network
- Server Network

- e2e client LSP
- (potential) Server LSP

Abstract link
Simple Example

Abstraction and server LSPs

Links created in client network