Advertising Encapsulation Capability Using IS-IS
draft-xu-isis-encapsulation-cap-05

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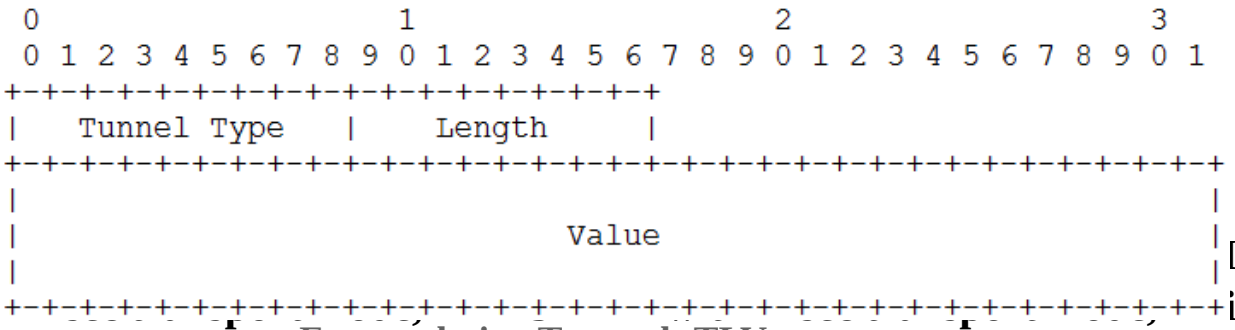
Motivation

- **Use Cases for IP-based tunnels:**
  - **Partial deployment of MPLS-SPRING as described in [I-D.xu-spring-islands-connection-over-ip], where IP tunnels are used between MPLS-SPRING-enabled routers so as to traverse non-MPLS routers.**
  - **Partial deployment of MPLS-BIER as described in Section 6.9 of [I-D.ietf-bier-architecture], where IP tunnels are used between MPLS-BIER-capable routers so as to traverse non MPLS-BIER[I-D.ietf-bier-mpls-encapsulation] routers.**
  - **Remote Loop Free Alternate repair tunnels as described in [RFC7490], where tunnels are used between the Point of Local Repair and the selected PQ node.**
- **The ingress needs to select a type of tunnel which is supported by the egress. This document describes how to use IS-IS Router Capability TLV to advertise the tunneling capabilities of egress nodes.**

Proposed Solution

- **Routers advertises their supported encapsulation type(s) by advertising a new sub-TLV of the IS-IS Router CAPABILITY TLV [RFC4971], referred to as Encapsulation Capability sub-TLV.**
  - **The Value field contains one or more Encapsulation Type sub-TLVs with each indicating a particular encapsulation format (e.g., GRE).**



Encapsulation Type sub-TLVs

- **It cu**
  - **[P-in-IP with in-IP, VXLAN, NVGRE, MPLS, MPLS-in-GRE, VXLAN-GPE, MPLS-in-UDP, MPLS-in-UDP with DTLS, MPLS-in-L2TPv3, GTP.**

Proposed Solution (con't)

- **The Value field of the Encapsulation Types sub-TLV contains zero or more Tunnel Encapsulation Attribute sub-TLVs which further describe associated attributes of a given tunnel type.**
- **It currently defines the following Tunnel Encapsulation Attribute sub-TLVs:**
  - **Encapsulation Parameters: sub-TLV type code=1**
    - **has its format defined in [RFC5512] under the name Encapsulation sub-TLV. One example is the GRE key field.**
  - **Encapsulated Protocol: sub-TLV type code=2**
    - **has its format defined in [RFC5512] under the name Protocol Type indicating the allowed tunnel payload types.**
  - **End Point: sub-TLV type code=3**
    - **The value field carries the Network Address to be used as tunnel destination address.**
  - **Color : sub-TLV type code=4**
    - **The color value is user defined and configured locally on the routers. It may be used by the service providers to define policies.**

Next Steps

- **WG adoption?**