Carrying Attached Addresses in IS-IS

<draft-ward-l2isis-00.txt>

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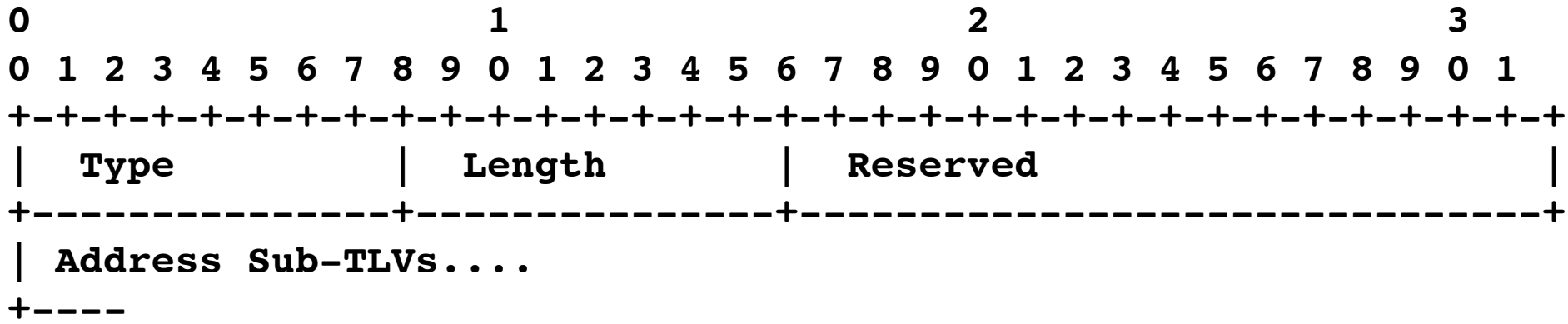
What is the problem?

- Some operators want to build networks in which they can dynamically learn L2 endpoints in their network.
  - Examples include storage networks, content providers, etc
- The draft doesn't really specify the application but, we have been approached by many diverse scenarios

What are we adding to ISIS?

- This draft proposes a single TLV, the ADDR TLV, with two sub-TLVs, for carrying a list of attached addresses and pairs of related addresses within the protocol

Address TLV



Type: TLV Type, set to [TBD].

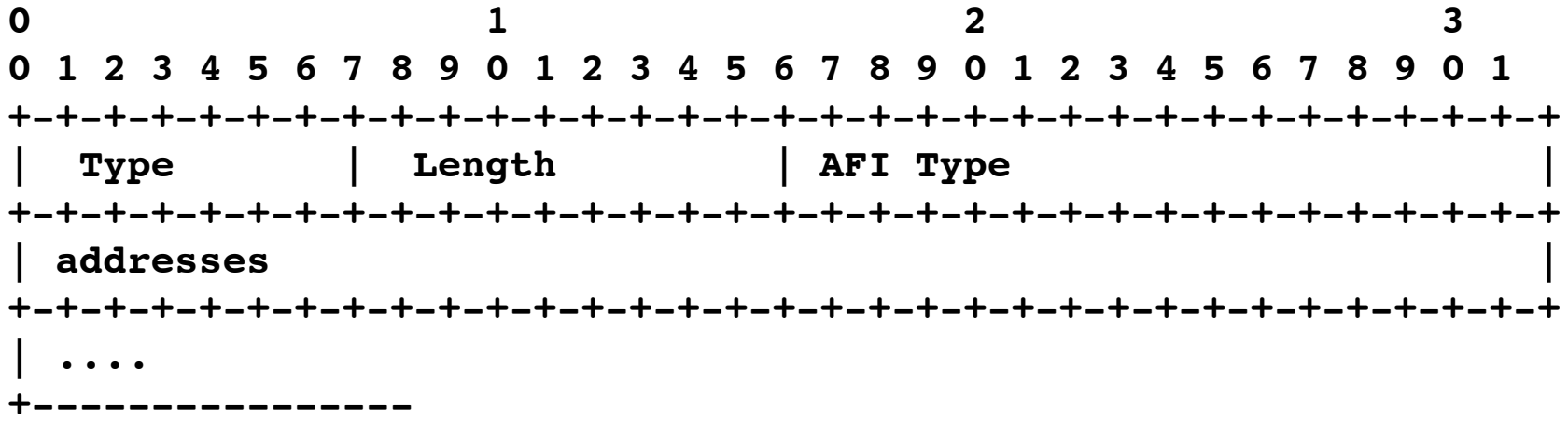
- Length: Total number of octets contained in the TLV, including the length of each Sub-TLV within the ADDR TLV.
- Reserved: Set to 0.

The LAYER 2 TLV MUST be carried in a level-1 psuedo-node LSP generated by the originating IS.

Just like in 1989 when ES TLVs went in the pseudo-node LSPf

Afi Type Sub-TLV

A Single AFI TLV is used to carry a list of addresses of a single AFI for devices attached to, or reachable from, the IS.



o Type: Set to 1.

o Length: Set to the length of the sub-TLV in octets.

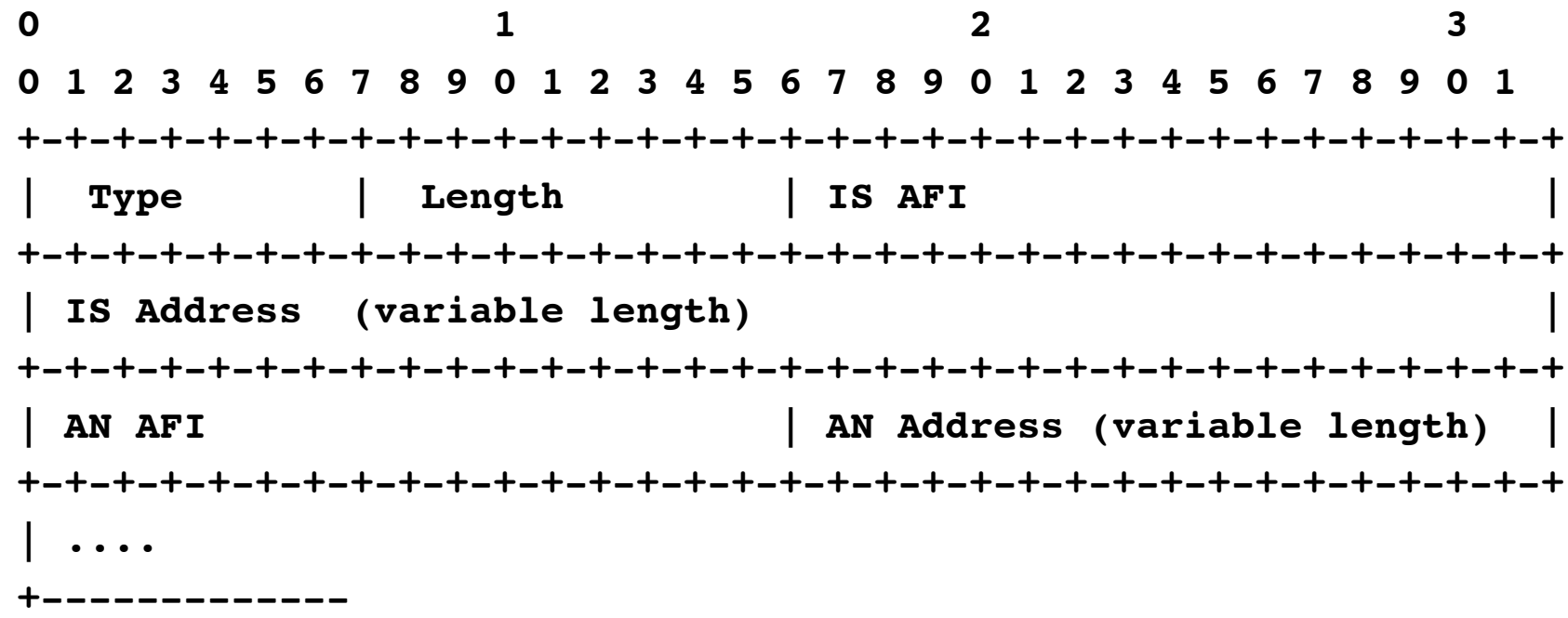
o AFI Type: The IANA defined AFI type of the included addresses [IANA].

o Addresses: Addresses of the type and length indicated by the AFI type.

Address Pair Type

- The Address Pair Sub-TLV carries a pair of related addresses, with each address type defined using an IANA assigned AFI type.
- The first address of the pair is the reachable through, or IS, address, and the second is the destination, or attached node, address.
- Zero or more Address Pair Type sub-TLVs MAY be included in a single ADDR TLV.

Address Pair Sub-TLV



- Type: Set to 2.
- Length: Set to the total number of octects in the sub-TLV.
- IS AFI: The IANA defined AFI type of address contained in the RT Address [IANA].
- IS Address: The reachable through, or IS, address. The length of this field is defined by the IANA defined AFI address type.
- AN AFI: The IANA defined AFI type of address contained in the AN Address [IANA].
- AN Address: The attached node, or reachable, address. The length of this field is defined by the IANA defined AFI address type.

Building the SPT

- There are two options for using the the layer 2 forwarding information carried within the new LAYER2 TLV when building an SPT:

  Add the address information carried within the ADDR TLV as leaves to the existing SPT built in [IS-IS] for finding loop free paths through the network. This would be similar to the way in which IPv4 and IPv6 information carried within [IS-IS] is treated today.

  Build a separate SPT, and place the information carried within the ADDR TLVs as leaves on this tree.

- The mechanism for forwarding traffic to the attached addresses is outside the scope of this draft.

Status

- Draft will be available as soon as the embargo is lifted.
- This draft is not specifically related to work that may occur in the potential TRILL WG