LSP Ping TLV and sub-TLV Registry

draft-pac-mpls-lsp-ping-tlv-sub-tlv-registry-00

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Problem Statement

- Current allocation policy
  - All TLVs and sub-TLVs have the same allocation policies

TLV and sub-TLV registration procedures

Block	Range	Registration Procedures	Notes
1	0-16383	Standards Action	This range is for mandatory TLVs or for optional TLVs that require an error message if not recognized.
2	16384-31743	Specification Required	Experimental RFC needed
3	31744-32767	Vendor Private Use	MUST NOT be allocated
4	32768-49161	Standards Action	This range is for optional TLVs that can be silently dropped if not recognized.
5	49162-64511	Specification Required	Experimental RFC needed
6	64512-65535	Vendor Private Use	MUST NOT be allocated

Problem Statement (cont.)

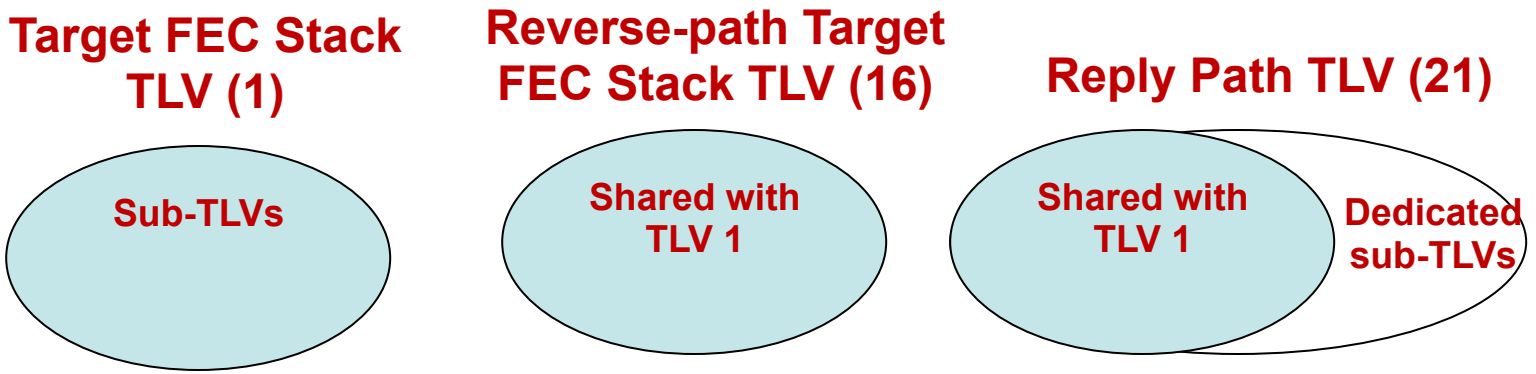
- Current allocation model
  - All TLVs and sub-TLVs are found in a single table
  - Sub-TLVs are scoped by the TLVs

Current TLV and sub-TLV registry (model)

Type	Sub-type	Value field	Reference
1		TLV # 1	RFC xxxx (1)
1	1	sub-TLV # 1	RFC xxxx (2)
1	2	sub-TLV # 2	RFC yyyy (3)
1	3	sub-TLV # 3	RFC yyyy (4)
2		TLV # 2	RFC xxxx (5)
3		TLV # 3	RFC zzzz (6)
3	1	sub-TLV # 1	RFC zzzz (7)
3	2	sub-TLV # 2	RFC zzzz (8)
3	3	sub-TLV # 3	RFC aaaa (9)
4		TLV # 4	RFC bbbb (10)
4	1-16383	as specified for type 1	RFC bbbb (11)
5		TLV # 5	RFC cccc (12)
5	1-65535	as specified for type 1	RFC cccc (13)

Problem Statement (cont.)

- With an increasing number of TLVs, and with some sub-TLVs shared across TLVs, it has become increasingly difficult to understand how the allocation policies interact.



  - Type16 and 21 TLV share the sub-TLVs defined for Type 1 TLV.
  - Type 21 TLV also has its own dedicated sub-TLVs.

Problem Statement (cont.)

- The name space of sub-TLVs is very large
  - 65 535 potential TLVs times 65 535 sub-TLVs per TLV, gives a maximum of 4 294 836 335 sub- TLVs.
- 65 535 sub-TLVs shared among all TLVs seems to be more than sufficient.
- If the IANA registries had been set up with one registry for TLVs and another for sub-TLVs
  - The registries and allocation policies would be much easier to understand and comprehend.
- But it is now impossible to create a single registry for sub-TLVs which encompasses all existing sub-TLVs.

Solutions

- **A single, common sub-TLV namespace for all the TLVs**
  - No changes to any existing allocations of sub-TLVs
  - The policy for the allocation of TLVs is unchanged
  - Backward compatible with the existing registries

Range	Registration Procedures	Notes
0-31	Reserved	Existing allocations in this range are unaltered. No future allocations are to be made from this range
32-16383	Standards Action	This range is for mandatory sub-TLVs or for optional sub-TLVs that require an error message if not recognized.
16384-31743	Specification Required	Experimental RFC needed This range is for mandatory sub-TLVs or for optional sub-TLVs that require an error message if not recognized.
31744-32767	Vendor Private Use	MUST NOT be allocated
32768-49161	Standards Action	This range is for optional sub-TLVs that can be silently discarded if not recognized.
49162-64511	Specification Required	Experimental RFC needed This range is for optional sub-TLVs that can be silently discarded if not recognized.
64512-65535	Vendor Private Use	MUST NOT be allocated

Backward compatible with the existing registries

Future allocations of sub-TLVs

Next Steps

- Solicit comments and opinions of the WG and refine the document.

- The authors would like to request to adopt this document as a WG document.