

OSPF Operator Defined TLVs for Agile Service Deployment

(previous name self-defined TLVs)

draft-chunduri-ospf-operator-defined-tlvs-00

(previously: draft-chunduri-ospf-self-defined-sub-tlvs-03)

Uma Chunduri

Ericsson Inc

Xiaohu Xu

Huawei

Luis M. Contreras

Telefonica

Mohamed Boucadair

France Telecom

OSPF WG, IETF 92, Dallas

OSPF Operator Defined (OD) TLVs in RI LSA

Why ?

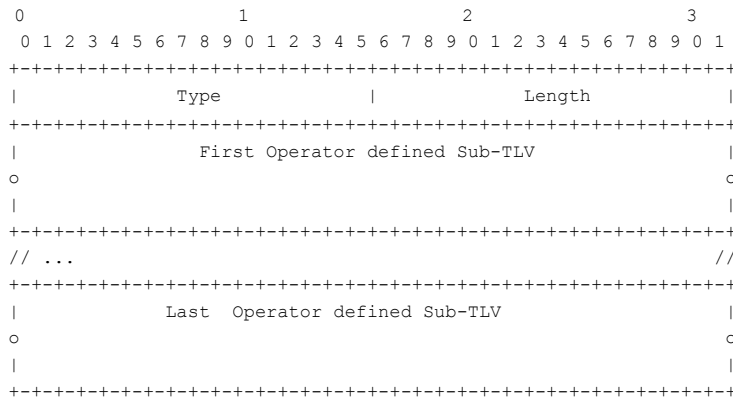
Operators can deploy services rapidly by advertising associated attributes without requiring of or not waiting long periods for standardization actions for those TLVs or sub-TLVs nor maintaining a global registry; hence meeting TTM objectives.

- Advertising Service Functions and their associated attributes
 - For service auto-discovery without the need of any standardization process while meeting the requirement of advertising service functions and their associated attributes
 - Each service can be identified by a dedicated sub-TLV type while the associated attributes/identifiers of the service are indicated by the value part of the corresponding sub-TLV
 - This also allows the controller to adjust its policies and react accordingly in a dynamical fashion
 - E.g., this attribute is consistent with <http://tools.ietf.org/html/draft-ietf-sfc-architecture-02> that says: “*No IANA registry is required to store the identity of SFs.*”
- To disseminate the node local information
 - Critical information like energy efficiency, etc.

How?

Through new TLV in OSPF (OSPFv2, OSPFv3) RI Opaque LSA [RFC 4970]

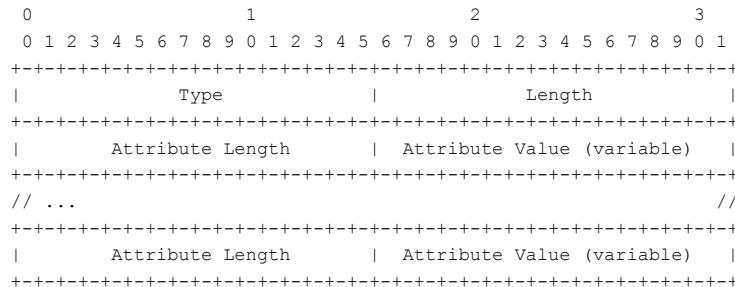
- Operator Defined (OD) TLV



Operator defined TLV

- Type: request to IANA to allocate a TLV type code from OSPF Router Information (RI) TLVs Registry defined by [RFC4970](#)
- Flooding Scope: Depends on application

OD Sub-TLV



- TYPE (Per Local Policy), Length (Variable, Total length of value portion of the sub-TLV)
- The Value field contains one or more **{Attribute-Len, Attribute-value}** tuple
 - Attribute Len (2 bytes)– For fixed formatting
 - Attribute Value – Multi byte value MUST be encoded in NBO.
 - If multiple fixed length values have to be represented it SHOULD be represented with multiple 2-tuples {Attribute-Len, Attribute-value}.

Properties of this TLV: Policy-driven and Deployment-specific

- The meaning of the Operator Defined sub-TLV is totally opaque to OSPF, but advertising is controlled through local policy engine.
- Routers advertising the OD sub-TLV are configured to do so without knowing (or even explicitly supporting) functionality implied by the sub-TLV.
- The interpretation of the OD sub-TLVs is deployment-specific.
- The meaning of a OD sub-TLV is defined by the network local policy and is controlled via configuration.
- How a receiving node communicates the OD sub-TLVs with the policy manager is outside the scope of this memo.

Considerations On the Use of Separate Instance

- It's reasonable that non-routing information should be advertised in a non-routing instance of OSPF as defined in <https://tools.ietf.org/html/draft-ietf-ospf-transport-instance-11> so as to minimize the impact on the operation of routing.
- However, since the information contained in the Operator Defined TLV may be related to the routing, whether or not using a non-routing instance to flood the OD TLVs should be determined by operators according to the information to be conveyed by the OD sub-TLV.



I E T F

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Next Steps:

- Authors feel draft is ready and ask for call on the list regarding adoption as OSPF WG Document

Thank you!