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**Advertising Encapsulation Capability Using IS-IS
draft-xu-isis-encapsulation-cap-00**

Abstract

In a particular network environment where MPLS-SPRING-enabled routers are partially deployed, it needs to transport MPLS traffic through an IP-based tunnel between two MPLS-SPRING-enabled routers so as to traverse non-MPLS routers. The ingress of the IP-based tunnel must know which encapsulation type is supported by the egress of that IP-based tunnel. This document describes how to advertise the encapsulation capability of MPLS-SPRING-enabled routers using IS-IS.

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[1.](#) Introduction

[I-D.xu-spring-islands-connection-over-ip] describes a particular network environment where MPLS-SPRING-enabled routers are partially deployed and therefore it needs to transport MPLS traffic through an IP-based tunnel between two MPLS-SPRING-enabled routers so as to traverse non-MPLS routers. The ingress of the IP-based tunnel (i.e., tunnel encapsulator) must know which encapsulation type is supported by the egress of the IP-based tunnel (i.e., tunnel decapsulator). This document describes how to advertise the encapsulation capability of MPLS-SPRING-enabled routers using IS-IS.

[1.1.](#) Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

[2.](#) Terminology

This memo makes use of the terms defined in [[RFC4971](#)] and [[I-D.xu-spring-islands-connection-over-ip](#)].

3. Advertising Encapsulation Capability

MPLS-SPRING-enabled routers need to advertise the encapsulation type(s) they support by using a new sub-TLV of the IS-IS Router CAPABILITY TLV [RFC4971], referred to as Encapsulation Capability sub-TLV. The Encapsulation Capability sub-TLV could not appear more than once within a given IS-IS Router CAPABILITY TLV. The scope of the advertisement depends on the application but it is recommended that it SHOULD be domain-wide. The Type code of the Encapsulation Capability sub-TLV is TBD, the Length value is variable, and the Value field contains one or more Encapsulation Type sub-TLVs with each indicating a particular encapsulation format that the advertising router supports.

This document defines the following types of Encapsulation Type sub-TLV:

1. MPLS-in-IP [RFC4023] : Type code=TBD1; Length=0
2. MPLS-in-GRE [RFC4023]: Type code=TBD2; Length=0
3. MPLS-in-L2TPv3 [RFC3931]: Type code=TBD3; Length=0
4. MPLS-in-UDP [I-D.ietf-mpls-in-udp]: Type code=TBD4; Length=0

4. Acknowledgements

TBD.

5. IANA Considerations

This memo includes a request to IANA for allocating the type codes for Encapsulation Capability sub-TLV and Encapsulation Type sub-TLVs.

6. Security Considerations

This document does not introduce any new security risk.

7. References

7.1. Normative References

[I-D.xu-spring-islands-connection-over-ip]
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- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC4971] Vasseur, JP., Shen, N., and R. Aggarwal, "Intermediate System to Intermediate System (IS-IS) Extensions for Advertising Router Information", [RFC 4971](#), July 2007.

7.2. Informative References

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Xu, X., Sheth, N., Yong, L., Pignataro, C., and F. Yongbing, "Encapsulating MPLS in UDP", [draft-ietf-mpls-in-udp-05](#) (work in progress), January 2014.
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- [RFC4023] Worster, T., Rekhter, Y., and E. Rosen, "Encapsulating MPLS in IP or Generic Routing Encapsulation (GRE)", [RFC 4023](#), March 2005.

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