Carrying Routable IP Addresses in IS-IS Router Capability TLV
draft-xu-isis-routable-ip-address-00

Abstract

This document proposes two new sub-TLVs of the IS-IS Router
CAPABILITY TLV, called Routable IPv4 Address sub-TLV and Routable
IPv6 Address sub-TLV respectively.

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1. Introduction

There are several situations where it is required for IS-IS routers within one area to find correlations between routable IP addresses and capabilities of IS-IS routers within another area. However, in the IS-IS Router CAPABILITY TLV [RFC4971] which is used by IS-IS routers to announce their capabilities, there is no field for containing routable IP addresses of the originating router. Although TE Router ID sub-TLVs as defined in [RFC5316] are used to carry routable IP addresses, these sub-TLVs are specifically designed for Traffic-Engineering (TE) purpose. Therefore, this document proposes two new sub-TLVs of this CAPABILITY TLV for carrying routable IPv4 and IPv6 addresses of the router originating the CAPABILITY TLV respectively. These two sub-TLVs could be used for non-TE purpose. These routable addresses are typically implemented as "loopback addresses".

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].

3. Routable IPv4 Address Sub-TLV

A new sub-TLV of the IS-IS Router Capability TLV, called Routable IPv4 Address sub-TLV is defined to carry one or more routable IPv4 addresses of the router originating the CAPABILITY TLV. The Type of this sub-TLV is TBD, the Length is variable (multiple of 4), and the...
Value field contains one or more routable IPv4 addresses of the router originating the CAPABILITY TLV. This sub-TLV SHOULD NOT be included more than once in an CAPABILITY TLV. The scope of the advertisement depends on the application but it is recommended that it SHOULD be domain-wide. An implementation receiving a Routable IPv4 Address sub-TLV defined in this document MUST NOT consider the routable IPv4 address(es) contained in such sub-TLV in the standard SPF calculation because this can lead to forwarding loops when interacting with systems that do not support this sub-TLV.

4. Routable IPv6 Address Sub-TLV

A new sub-TLV of the IS-IS Router Capability TLV, called Routable IPv6 Address sub-TLV is defined to carry one or more routable IPv6 global addresses of the router originating the CAPABILITY TLV. The Type of this sub-TLV is TBD, the Length is variable (multiple of 16), and the Value field contains one or more routable IPv6 global address of the router originating the CAPABILITY TLV. This sub-TLV SHOULD NOT be included more than once in an CAPABILITY TLV. The scope of the advertisement depends on the application but it is recommended that it SHOULD be domain-wide. An implementation receiving a Routable IPv6 Address sub-TLV defined in this document MUST NOT consider the routable IPv6 address(es) contained in such sub-TLV in the standard SPF calculation because this can lead to forwarding loops when interacting with systems that do not support this sub-TLV.

5. Acknowledgements

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6. IANA Considerations

This memo includes a request to IANA to allocate two sub-TLV type codes within the IS-IS Router Capability TLV for the Routable IPv4 Address Sub-TLV and the Routable IPv6 Address Sub-TLV respectively.

7. Security Considerations

This document does not introduce any new security risk.

8. References
8.1. Normative References


8.2. Informative References


Authors’ Addresses

Xiaohu Xu
Huawei

Email: xuxiaohu@huawei.com

Uma Chunduri
Ericsson

Email: uma.chunduri@ericsson.com