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Export of MPLS Segment Routing Label Type Information in IP Flow Information Export (IPFIX) draft-tgraf-ipfix-mpls-sr-label-type-01

Abstract

This document introduces two additional values in the Information Element mplsTopLabelType for IS-IS and OSPF MPLS Segment Routing (SR) extensions to enable Segment Routing label type information in IP Flow Information Export (IPFIX).

Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 RFC 2119 [RFC2119] RFC 8174 [RFC8174] when, and only when, they appear in all capitals, as shown here.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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1. Introduction

Besides existing MPLS control plane protocols such as BGP-4 [RFC8277], LDP [RFC5036] and BGP VPN [RFC4364], IS-IS Extensions [RFC8667] and OSPF Extensions [RFC8665] had been added to propagate Segment Routing labels for the MPLS dataplane [RFC8660].

Traffic Accounting in Segment Routing Networks [I-D.ali-spring-sr-traffic-accounting] describes how IPFIX can be laveraged to account traffic to MPLS Segment Routing label dimensions within a Segment Routing domain.

In the Information Model for IP Flow Information Export IPFIX [RFC5102], the information element #46 mplsTopLabelType describes which MPLS control plane protocol allocated the top-of-stack label in the MPLS label stack. RFC 7012 section 7.2 [RFC7012] describes the IANA Information Element #46 SubRegistry [IANA-IPFIX-IE46] where new values should be added.

By introducing two new values to information element #46 mplsTopLabelType for IS-IS and OSPF, when Segment Routing with one of these two routing protocols is deployed, we get insight which traffic is being forwarded based on which MPLS control plane protocol. A typical use case scenario is to monitor MPLS control plane migrations

from LDP to IS-IS or OSPF.

2. IANA Considerations

This document specifies two additional values for IS-IS and OSPF Segment Routing extension in the sub-registry "IPFIX MPLS label type (Value 46)" of the "IPFIX Information Elements" registry in the "IP Flow Information Export (IPFIX) Entities" name space.

ElementID	Value	Description	Abstract Data Type	Data Type Semantics
46	x	IS-IS Segment Routing	unsigned8	identifier
46	x	OSPF Segment Routing	unsigned8	identifier

Figure 1: Updates to "IPFIX Information Element #46" SubRegistry

3. Security Considerations

It is not believed that this document adds any additional security considerations.

4. Acknowledgements

I would like to thank Zafar Ali for his valuable comments.

5. Normative References

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