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**Redistribute Route Originator Extend TLV for BGP-LS  
draft-wang-idr-redistribute-route-originator-01.txt**

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Abstract

This document describes one TLV extended for BGP-LS to transfer the originator of redistributed routes in order to let the SDN controller to deduce the network topology automatically under the multi-domain environments.

This extension can expand the usage of BGP-LS protocol to multi-domain; enable the network operator to collect the connection relationship between different domains and then calculate the overall network topology automatically based on the information provided by BGP-LS protocol.

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## [1.](#) Introduction

BGP-LS [[RFC 7752](#)] describes the methodology that using BGP protocol to transfer the Link-State information. Such method can enable SDN controller to collect the underlay network topology automatically, but it can only get the information within one IGP domain. If the operator has more than one IGP domain, and these domains interconnect each other, there is no suitable TLV within current BGP-LS to transfer the interconnect information.

This draft introduces one new TLV to extend the BGP-LS protocol to transfer the key information related to the interconnect topology. After that, the SDN controller can then deduce the multi-domain topology automatically based on the information from BGP-LS protocol.

## [2.](#) Conventions used in this document

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](#)].

## [3.](#) Multi-Domain Scenarios.

Fig.1 illustrates the multi-domain scenarios that this draft discussed. Normally, SDN Controller can get the topology of IGP A and IGP B individually via the BGP-LS protocol, but it can't get the topology connection information between these two IGP domains because there is normally no IGP protocol run on the connected links.



Length: 4 Bytes.

This TLV should be coincided with the IGP Route Tag TLV or OSPF Route Type TLV, because these two TLVs indicate the associated prefixes redistributed via other protocols.

When SDN Controller gets such information from BGP-LS protocol, it should compares the proximity of the redistributed prefixes. If they are under the same scope, then it should find the corresponding associated "redistributed route originator" TLV, build the link between these two originators.

After iterating the above procedures for all of the redistributed prefixes, the SDN controller can then draw the connection topology between different domains automatically.

## TBD

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## **7. References**

### **7.1. Normative References**

[RFC7752] H. Gredler, Ed., J. Medved, S. Previdi, A. Farrel, S. Ray,  
"North-Bound Distribution of Link-State and Traffic Engineering (TE)  
Information Using BGP ", [RFC7752](https://tools.ietf.org/html/rfc7752), March 2016,  
<https://tools.ietf.org/html/rfc7752>

### **7.2. Informative References**

## **8. Acknowledgments**

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