

Open Shortest Path First IGP
Internet-Draft
Intended status: Standards Track
Expires: May 24, 2018

P. Psenak, Ed.
K. Talaulikar
Cisco Systems, Inc.
W. Henderickx
Nokia
P. Pillay-Esnault
Huawei
November 20, 2017

OSPF LLS Extensions for Local Interface ID Advertisement
draft-ietf-ospf-lls-interface-id-01

Abstract

This draft describes the extensions to OSPF link-local signaling to advertise Local Interface Identifier.

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](#)].

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <https://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on May 24, 2018.

Copyright Notice

Copyright (c) 2017 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents

(<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	2
2.	Interface ID Exchange using TE Opaque LSA	2
3.	Interface ID Exchange using OSPF LLS	3
3.1.	Local Interface Identifier TLV	3
4.	Backward Compatibility with RFC 4203	4
5.	IANA Considerations	4
6.	Security Considerations	4
7.	Contributors	4
8.	Acknowledgements	4
9.	Normative References	4
	Authors' Addresses	5

[1.](#) Introduction

Every interface is assigned an Interface ID, which uniquely identifies the interface on the router. For example, some implementations MAY be able to use the MIB-II IfIndex [[RFC2863](#)] as the Interface ID.

Local/Remote Interface Identifiers MAY be flooded by OSPF [[RFC2328](#)] as defined in [[RFC4203](#)]. From the perspective of the advertising router, the Local Interface Identifier is a known value, however the Remote Interface Identifier needs to be learnt before it can be advertised. [[RFC4203](#)] suggests to use TE Link Local LSA [[RFC3630](#)] to communicate Local Interface Identifier to neighbors on the link. Though such mechanism works, it has some drawbacks.

This draft proposes an extension to OSPF link-local signaling (LLS) [[RFC5613](#)] to advertise the Local Interface Identifier.

[2.](#) Interface ID Exchange using TE Opaque LSA

Usage of the Link Local TE Opaque LSA to propagate the Local Interface Identifier to the neighbors on the link is described in [[RFC4203](#)]. This mechanism has following problems:

LSAs can only be flooded over an existing adjacency that is in Exchange state or greater. The adjacency state machine progresses

Local Interface Identifier: The value of the local Interface Identifier.

Local Interface Identifier TLV MUST be present in all Hello packets on all link types, except packets that are sent to the remote end of the virtual-link.

4. Backward Compatibility with [RFC 4203](#)

Implementations which support Local Interface ID signalling using LLS MUST prefer the Local Interface ID value received through LLS over the value received through the Link Local TE Opaque LSAs.

Implementations which also support the Local Interface ID signalling via Link Local TE Opaque LSA MAY continue to do so to ensure backward compatibility and they MUST signal the same local interface id via both mechanisms.

During the rare conditions, when the Local Interface ID changes, a timing interval may exist, where the received values of the Local Interface ID advertised through LLS and Link Local TE Opaque LSA may differ. Such situation is temporary and received values via both mechanisms should become equal as soon as the next Hello and/or Link Local TE Opaque LSA is re-generated by the originator.

5. IANA Considerations

This specification updates Link Local Signalling TLV Identifiers registry.

Following values is allocated:

- o 18 - Local Interface Identifier TLV

6. Security Considerations

Implementations must assure that malformed LLS TLV and Sub-TLV permutations do not result in errors which cause hard OSPF failures.

7. Contributors

8. Acknowledgements

Thanks to Tony Przygienda for his extensive review and useful comments.

9. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.
- [RFC2328] Moy, J., "OSPF Version 2", STD 54, [RFC 2328](#), DOI 10.17487/RFC2328, April 1998, <<https://www.rfc-editor.org/info/rfc2328>>.
- [RFC2863] McCloghrie, K. and F. Kastenholz, "The Interfaces Group MIB", [RFC 2863](#), DOI 10.17487/RFC2863, June 2000, <<https://www.rfc-editor.org/info/rfc2863>>.
- [RFC3630] Katz, D., Kompella, K., and D. Yeung, "Traffic Engineering (TE) Extensions to OSPF Version 2", [RFC 3630](#), DOI 10.17487/RFC3630, September 2003, <<https://www.rfc-editor.org/info/rfc3630>>.
- [RFC4203] Kompella, K., Ed. and Y. Rekhter, Ed., "OSPF Extensions in Support of Generalized Multi-Protocol Label Switching (GMPLS)", [RFC 4203](#), DOI 10.17487/RFC4203, October 2005, <<https://www.rfc-editor.org/info/rfc4203>>.
- [RFC5340] Coltun, R., Ferguson, D., Moy, J., and A. Lindem, "OSPF for IPv6", [RFC 5340](#), DOI 10.17487/RFC5340, July 2008, <<https://www.rfc-editor.org/info/rfc5340>>.
- [RFC5613] Zinin, A., Roy, A., Nguyen, L., Friedman, B., and D. Yeung, "OSPF Link-Local Signaling", [RFC 5613](#), DOI 10.17487/RFC5613, August 2009, <<https://www.rfc-editor.org/info/rfc5613>>.

Authors' Addresses

Peter Psenak (editor)
Cisco Systems, Inc.
Apollo Business Center
Mlynske nivy 43
Bratislava 821 09
Slovakia

Email: ppsenak@cisco.com

Ketan Jivan Talaulikar
Cisco Systems, Inc.
S.No. 154/6, Phase I, Hinjawadi
PUNE, MAHARASHTRA 411 057
India

Email: ketant@cisco.com

Wim Henderickx
Nokia
Copernicuslaan 50
Antwerp 2018
BE

Email: wim.henderickx@nokia.com

Padma Pillay-Esnault
Huawei
2330 Central Expressway
Santa Clara, CA 95050
USA

Email: padma@huawei.com

