

Open Shortest Path First IGP  
Internet-Draft  
Intended status: Standards Track  
Expires: January 2, 2019

P. Psenak, Ed.  
K. Talaulikar  
Cisco Systems, Inc.  
W. Henderickx  
Nokia  
P. Pillay-Esnault  
Huawei  
July 1, 2018

## **OSPF LLS Extensions for Local Interface ID Advertisement draft-ietf-ospf-lls-interface-id-04**

### Abstract

Every OSPF interface is assigned an identifier, Interface ID, which uniquely identifies the interface on the router. In some cases it is useful to know the Interface ID assigned by the adjacent router on its side of the adjacency (Remote Interface ID).

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

### 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 [BCP14] [RFC2119] [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](#).

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 January 2, 2019.

## Copyright Notice

Copyright (c) 2018 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

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

## [1.](#) Introduction

Every OSPF 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 the 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 signalling [[RFC5613](#)] to advertise the Local Interface Identifier.



where:



Type: 18

Length: 4 octets

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

Local Interface Identifier TLV signalling using LLS is applicable to all OSPF interface types other than virtual links.

#### **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 Link Local TE Opaque LSA if both are received from the same OSPF router.

Implementations which support Local Interface ID signalling via Link Local TE Opaque LSA MAY continue to do so to ensure backward compatibility. If they also support Local Interface ID signalling using LLS as described herein, they SHOULD 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 allocates a single code point from the "Open Shortest Path First (OSPF) Link Local Signalling (LLS) - Type/Length/Value Identifiers (TLV)" registry.

Following values is allocated:

- o 18 - Local Interface Identifier TLV

#### **6. Security Considerations**

Implementations must assure that malformed LLS TLVs and Sub-TLVs 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**

- [BCP14] , <<https://tools.ietf.org/html/bcp14>>.
- [ISO10589] International Organization for Standardization, "Intermediate system to Intermediate system intra-domain routeing information exchange protocol for use in conjunction with the protocol for providing the connectionless-mode Network Service (ISO 8473)", ISO/IEC 10589:2002, Second Edition, Nov 2002.
- [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>>.
- [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>>.





[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in [RFC 2119](#) Key Words", [BCP 14](#), [RFC 8174](#), DOI 10.17487/RFC8174, May 2017, <<https://www.rfc-editor.org/info/rfc8174>>.

#### 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

