

Internet
Internet-Draft
Intended status: Standards Track
Expires: 23 April 2026

Y. Qu
Futurewei Technologies
L. Ginsberg
Cisco Systems
A. Przygienda
Juniper Networks
B. Decraene
Orange
Y. Zhu
China Telecom
20 October 2025

YANG Data Model for IS-IS L2 Bundle Member Link Attributes PICS
draft-ietf-lsr-isis-pics-l2member-attr-yang-02

Abstract

The YANG model in this document is to query an IS-IS Protocol Implementation Conformance Statement (PICS) of advertising Layer 2 Bundle Member Link Attributes.

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 23 April 2026.

Copyright Notice

Copyright (c) 2025 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 Revised BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Revised BSD License.

Table of Contents

| | |
|---|---|
| 1. Overview | 2 |
| 1.1. Requirements Language | 2 |
| 2. Design of the Model | 2 |
| 3. ISIS PICS for L2 Bundle Member Attributes Tree | 3 |
| 4. IS-IS PICS SR-MPLS YANG Modules | 3 |
| 5. Security Considerations | 5 |
| 6. IANA Considerations | 6 |
| 7. Acknowledgements | 6 |
| 8. Normative References | 6 |
| 9. Informative References | 8 |
| Authors' Addresses | 8 |

1. Overview

[I-D.ietf-lsr-isis-pics-yang] defines the framework to query IS-IS Protocol Implementation Conformance Statement (PICS). The module defined in this document is used to query an IS-IS PICS of advertising Layer 2 Bundle Member Link Attributes [RFC8668].

The YANG modules in this document conform to the Network Management Datastore Architecture (NMDA) [RFC8342].

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 [RFC2119] [RFC8174].

2. Design of the Model

The YANG module is used to query an IS-IS implementation of advertising L2 bundle member link attributes [RFC8668] for the conformance of the protocol implementation.

Container "isis-pics-l2-member-attr" only exists when "isis-pics-l2-member-attr" is included in the list of "supported-isis-pics" in ietf-isis-pics module.

The existence of a TLV support container means the support of a TLV. The details of the flags and features are included in the container.

3. ISIS PICS for L2 Bundle Member Attributes Tree

This document uses the graphical representation of data models defined in [RFC8340].

```
module: ietf-isis-pics-l2-member-attr
  +--ro isis-pics-l2-member-attr
    +--ro l2-bundle-member-attributes-tlv-support!
      +--ro shared-attribute-sub-tlv-support*   uint8

  augment /isis-pics:isis-pics/isis-pics:isis-pics-mptlv:
    +--ro l2-bundle-member-attributes-support?  isis-pics:support
```

4. IS-IS PICS SR-MPLS YANG Modules

```
<CODE BEGINS> file "ietf-isis-pics-l2-member-attr@2025-05-05.yang"
module ietf-isis-pics-l2-member-attr {
  yang-version 1.1;
  namespace "urn:ietf:params:xml:ns:yang:ietf-isis-pics-l2-member-attr";
  prefix isis-pics-l2-mem-attr;

  import iana-isis-pics {
    prefix "iana-isis-pics";
  }

  import ietf-isis-pics {
    prefix "isis-pics";
  }

  organization
    "IETF LSR - Link State Routing Working Group";
  contact
    "WG Web:   <http://datatracker.ietf.org/wg/lsr>
    WG List:   <mailto:lsr@ietf.org>

    Author:    Yingzhen Qu
               <mailto:yingzhen.ietf@gmail.com>
    Author:    Les Ginsberg
               <mailto:ginsberg@cisco.com>
    Author:    Tony Przygienda
               <mailto:prz@juniper.net>
    Author:    Bruno Decraene
               <bruno.decraene@orange.com>
    Author:    Yongqing Zhu
               <mailto:zhuyq8@chinatelecom.cn>";

  description
```

"The YANG module is used to query an IS-IS Protocol Implementation Conformance Statement (PICS) of Advertising Layer 2 Bundle Member Link Attributes in IS-IS (RFC8668).

This YANG model conforms to the Network Management Datastore Architecture (NMDA) as described in RFC 8342.

Copyright (c) 2025 IETF Trust and the persons identified as authors of the code. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, is permitted pursuant to, and subject to the license terms contained in, the Revised BSD License set forth in Section 4.c of the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>).

This version of this YANG module is part of RFC XXXX (<https://www.rfc-editor.org/info/rfcXXXX>); see the RFC itself for full legal notices.";

reference

"RFC XXXX: YANG Data Model for IS-IS Layer 2 Link Attributes PICS";

revision 2025-05-05 {

description

"Initial Version";

reference

"RFC XXXX: YANG Data Model for IS-IS Layer 2 Link Attributes PICS.";

}

container isis-pics-l2-member-attr {

when "/isis-pics:isis-pics/isis-pics:supported-isis-pics " + "= 'iana-isis-pics:isis-pics-l2-member-attr'" {

description

"This container only exists when isis-pics-l2-member-attr is present in the ietf-isis-pics module.";

}

config false;

description

"IS-IS Protocol Implementation Conformance Statement (PICS) of Advertising Layer 2 Bundle Member Link Attributes.";

reference

"RFC 8668: Advertising Layer 2 Bundle Member Link Attributes in IS-IS";

```
container l2-bundle-member-attributes-tlv-support {
  presence "Support of L2 bundle member attributes tlv.";
  description
    "Support of L2 bundle member attributes tlv (Type 25).";

  leaf-list shared-attribute-sub-tlv-support {
    type uint8;
    description
      "List of sub-tlvs supported for advertising neighbor
      information.";
    reference
      "IANA registry:IS-IS Sub-TLVs for TLVs Advertising Neighbor
      Information. https://www.iana.org/assignments/isis-tlv-codepoints/isis-tlv-codepoints.xhtml#isis-tlv-codepoints-advertising-neighbor-information";
  }
}

augment "/isis-pics:isis-pics/isis-pics:isis-pics-mptlv"
{
  description
    "Augment isis-pics-mptlv container with the tlvs defined
    in RFC 8668.";

  leaf l2-bundle-member-attributes-support {
    type isis-pics:support;
    description
      "MP-TLV support of L2 bundle member attributes tlv (Type 25).";
  }
}
<CODE ENDS>
```

5. Security Considerations

The YANG modules defined in this document are designed to be accessed via YANG-based management protocols, such as NETCONF [RFC6241] and RESTCONF [RFC8040]. These protocols have to use a secure transport layer (e.g., SSH [RFC4252], TLS [RFC8446], and QUIC [RFC9000]) and have to use mutual authentication.

The Network Configuration Access Control Model (NACM) [RFC8341] provides the means to restrict access for particular NETCONF or RESTCONF users to a preconfigured subset of all available NETCONF or RESTCONF protocol operations and content.

Some of the readable data nodes in the `ietf-isis-pics-l2-member-attr.yang` module may be considered sensitive or vulnerable in some network environments. It is thus important to control read access (e.g., via `get`, `get-config`, or notification) to these data nodes.

6. IANA Considerations

The document requests IANA to create a entry, called `isis-pics-sr-mppls` in the "IS-IS PICS" registry [I-D.ietf-lsr-isis-pics-yang].

This document requests IANA to add a new "identity" to the `iana-isis-pics` YANG module. The following statement is suggested:

```
identity isis-pics-l2-member-attr {  
  base "isis-pics";  
  description  
    "The identity for IS-IS PICS support of L2 bundle member link  
    attributes.";  
  reference  
    "RFC 8668: Advertising Layer 2 Bundle Member Link Attributes  
    in IS-IS";  
}
```

This document registers a URI in the IETF XML registry [RFC3688]. Following the format in [RFC3688], the following registration is requested to be made:

```
URI: urn:ietf:params:xml:ns:yang:ietf-isis-pics-l2-member-attr  
Registrant Contact: The IESG.  
XML: N/A, the requested URI is an XML namespace.
```

This document registers a YANG module in the YANG Module Names registry [RFC6020].

```
name: ietf-isis-pics-l2-member-attr  
namespace: urn:ietf:params:xml:ns:yang:ietf-isis-pics-l2-member-attr  
prefix: isis-pics-l2-mem-attr  
reference: RFC XXXX
```

7. Acknowledgements

The YANG model was developed using the suite of YANG tools written and maintained by numerous authors.

8. 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>>.
- [RFC3688] Mealling, M., "The IETF XML Registry", BCP 81, RFC 3688, DOI 10.17487/RFC3688, January 2004, <<https://www.rfc-editor.org/info/rfc3688>>.
- [RFC4252] Ylonen, T. and C. Lonvick, Ed., "The Secure Shell (SSH) Authentication Protocol", RFC 4252, DOI 10.17487/RFC4252, January 2006, <<https://www.rfc-editor.org/info/rfc4252>>.
- [RFC6020] Bjorklund, M., Ed., "YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)", RFC 6020, DOI 10.17487/RFC6020, October 2010, <<https://www.rfc-editor.org/info/rfc6020>>.
- [RFC6241] Enns, R., Ed., Bjorklund, M., Ed., Schoenwaelder, J., Ed., and A. Bierman, Ed., "Network Configuration Protocol (NETCONF)", RFC 6241, DOI 10.17487/RFC6241, June 2011, <<https://www.rfc-editor.org/info/rfc6241>>.
- [RFC7950] Bjorklund, M., Ed., "The YANG 1.1 Data Modeling Language", RFC 7950, DOI 10.17487/RFC7950, August 2016, <<https://www.rfc-editor.org/info/rfc7950>>.
- [RFC8040] Bierman, A., Bjorklund, M., and K. Watsen, "RESTCONF Protocol", RFC 8040, DOI 10.17487/RFC8040, January 2017, <<https://www.rfc-editor.org/info/rfc8040>>.
- [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>>.
- [RFC8341] Bierman, A. and M. Bjorklund, "Network Configuration Access Control Model", STD 91, RFC 8341, DOI 10.17487/RFC8341, March 2018, <<https://www.rfc-editor.org/info/rfc8341>>.
- [RFC8342] Bjorklund, M., Schoenwaelder, J., Shafer, P., Watsen, K., and R. Wilton, "Network Management Datastore Architecture (NMDA)", RFC 8342, DOI 10.17487/RFC8342, March 2018, <<https://www.rfc-editor.org/info/rfc8342>>.
- [RFC8446] Rescorla, E., "The Transport Layer Security (TLS) Protocol Version 1.3", RFC 8446, DOI 10.17487/RFC8446, August 2018, <<https://www.rfc-editor.org/info/rfc8446>>.

- [RFC8668] Ginsberg, L., Ed., Bashandy, A., Filsfils, C., Nanduri, M., and E. Aries, "Advertising Layer 2 Bundle Member Link Attributes in IS-IS", RFC 8668, DOI 10.17487/RFC8668, December 2019, <<https://www.rfc-editor.org/info/rfc8668>>.
- [RFC9000] Iyengar, J., Ed. and M. Thomson, Ed., "QUIC: A UDP-Based Multiplexed and Secure Transport", RFC 9000, DOI 10.17487/RFC9000, May 2021, <<https://www.rfc-editor.org/info/rfc9000>>.
- [ISO10589] ISO, "Intermediate system to Intermediate system routing information exchange protocol for use in conjunction with the Protocol for providing the Connectionless-mode Network Service (ISO 8473)", August 1987, <ISO/IEC 10589:2002>.
- [I-D.ietf-lsr-isis-pics-yang]
Qu, Y., Ginsberg, L., Przygienda, A., Decraene, B., and Y. Zhu, "YANG Model for IS-IS Protocol Implementation Conformance Statement (PICS)", Work in Progress, Internet-Draft, draft-ietf-lsr-isis-pics-yang-02, 20 October 2025, <<https://datatracker.ietf.org/doc/html/draft-ietf-lsr-isis-pics-yang-02>>.

9. Informative References

- [RFC8340] Bjorklund, M. and L. Berger, Ed., "YANG Tree Diagrams", BCP 215, RFC 8340, DOI 10.17487/RFC8340, March 2018, <<https://www.rfc-editor.org/info/rfc8340>>.

Authors' Addresses

Yingzhen Qu
Futurewei Technologies
Email: yingzhen.ietf@gmail.com

Les Ginsberg
Cisco Systems
Email: ginsberg@cisco.com

Antoni Przygienda
Juniper Networks
Email: prz@juniper.net

Bruno Decraene
Orange

Email: bruno.decraene@orange.com

Yongqing Zhu

China Telecom

Email: zhuyq8@chinatelecom.cn