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YANG Data Model for IS-IS L2 Bundle Member Link Attributes PICS  
draft-ietf-lsr-isis-pics-l2member-attr-yang-01

## 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.

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## 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.

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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 specified in this document define a schema for data that is designed to be accessed via network management protocols such as NETCONF [RFC6241] or RESTCONF [RFC8040]. The lowest NETCONF layer is the secure transport layer, and the mandatory-to-implement secure transport is Secure Shell (SSH) [RFC6242]. The lowest RESTCONF layer is HTTPS, and the mandatory-to-implement secure transport is TLS [RFC8446].

The NETCONF access control model [RFC8341] provides the means to restrict access for particular NETCONF or RESTCONF users to a pre-configured 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>>.
- [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>>.
- [RFC6242] Wasserman, M., "Using the NETCONF Protocol over Secure Shell (SSH)", RFC 6242, DOI 10.17487/RFC6242, June 2011, <<https://www.rfc-editor.org/info/rfc6242>>.
- [RFC6991] Schoenwaelder, J., Ed., "Common YANG Data Types", RFC 6991, DOI 10.17487/RFC6991, July 2013, <<https://www.rfc-editor.org/info/rfc6991>>.
- [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>>.
- [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-01, 5 May 2025, <<https://datatracker.ietf.org/doc/html/draft-ietf-lsr-isis-pics-yang-01>>.

## 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>>.

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