

YANG Model for IS-IS Protocol Implementation Conformance Statement (PICS)

[draft-qgp-lsr-isis-pics-yang](#)

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Design of IS-IS PICS YANG

- A Protocol Implementation Conformance Statement (PICS) is an offline document, which provides what aspects of a protocol are implemented by a given node in a network.
- The model should be easily extensible for future features.
- The query of IS-IS PICS should be independent of whether IS-IS is running on a node.

IANA IS-IS PICS
YANG Module

IS-IS PICS YANG
Module

IS-IS PICS YANG
Module for IS-IS
Support of SR
MPLS

Module iana-isis-pics.yang

- The document requests IANA to create a "IS-IS PICS" registry, and iana-isis-pics YANG module is intended to reflect the the registry.
- When a new identity is added to the "IS-IS PICS" registry, the iana- isis-pics YANG module is updated by IANA.

```
identity isis-pics {  
    description  
        "This identity is used as a base for all ISIS pics defined  
        in the 'IS-IS PICS' registry.";  
}  
  
identity isis-pics-sr-mpls {  
    base "isis-pics";  
    description  
        "The identity for support of SR MPLS.";  
    reference  
        "RFC 8667: IS-IS Extensions for Segment Routing.";  
}
```

Module ietf-isis-pics.yang

Module `ietf-isis-pics.yang` is a device model and designed to query a node with IS-IS PICS status.

```
module: ietf-isis-pics
  +-rw isis-pics
    +-rw supported-isis-pics*  identityref
    +-rw isis-pics-mptlv
```

Module ietf-isis-pics-sr-mpls.yang – an example

- The YANG module is used to query an IS-IS implementation of Segment Routing on MPLS data plane [RFC8667] for the conformance of the protocol implementation.
- Container "isis-pics-sr-mpls" only exists when "isis-pics-sr-mpls" is included in the list of "supported-isis-pics" in ietf-isis-pics module.

```
+--rw isis-pics-sr-mpls
  +-rw sr-capability-sub-tlv-support!
    |  +-rw i-bit-support?  isis-pics:support
    |  +-rw v-bit-support?  isis-pics:support
  +-rw prefix-sid-sub-tlv-support?          isis-pics:support
  +-rw adj-sid-sub-tlv-support?            isis-pics:support
  +-rw lan-adj-sid-sub-tlv-support?        isis-pics:support
  +-rw sid-label-tlv-support?              isis-pics:support
  +-rw sid-label-binding-tlv-support?     isis-pics:support
  +-rw mt-sid-label-binding-tlv-support?   isis-pics:support
  +-rw sr-algorithm-tlv-support!
    |  +-rw algo-support*  uint8
  +-rw sr-lb-tlv-support?                  isis-pics:support
  +-rw srms-preference-tlv-support?       isis-pics:support

augment /isis-pics:isis-pics/isis-pics:isis-pics-mptlv:
  +-rw sid-label-binding-support?        isis-pics:support
  +-rw mt-sid-label-binding-support?    isis-pics:support
```

Module ietf-isis-pics-sr-mpls.yang – Details

```
container sr-capability-sub-tlv-support {
    presence "Support of sr-capability sub-tlv.";
    description
        "Support of sr-capability sub-tlv.";

    leaf i-bit-support {
        type isis-pics:support;
        description
            "support mpls-ipv4 capability.";
    }
    leaf v-bit-support {
        type isis-pics:support;
        description
            "support mpls-ipv6 capability.";
    }
}

augment "/isis-pics:isis-pics/isis-pics:isis-pics-mptlv"
{
    description
        "Augment isis-pics-mptlv container with the TLVs defined
         in RFC 8667.";

    leaf sid-label-binding-support {
        type isis-pics:support;
        description
            "MP-TLV support of Segment Identifier/Label Binding TLV
             (type 149).";
    }

    leaf mt-sid-label-binding-support {
        type isis-pics:support;
        description
            "MP-TLV support of Multi-Topology Segment Identifier/Label
             Binding TLV(type 150).";
    }
}
```

An example of details

Support of Multi-part TLVs

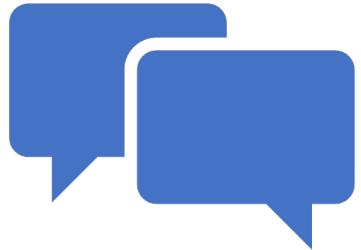
What a future draft needs to do?

Assume there is a draft defining feature called isis-foo will be published, the following should be included in the draft:

1. A new entry in the IANA "IS-IS PICS" registry is created.
2. Module iana-isis-pics.yang is updated by IANA to reflect the change by adding a new identity.
3. The draft should include a module ietf-isis-pics-foo.yang to query detail protocol implementation. Protocol features supported by the module will be based on WG/Operator interest.

Enforced by the LSR WG!

Next Steps



Feedbacks and suggestions are
welcome



Welcome collaborators