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IS-IS YANG Model Augmentations for Additional Features - Version 1
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Abstract

This document defines YANG data modules augmenting the IETF IS-IS YANG model to provide support for IS-IS Minimum Remaining Lifetime as defined in [RFC 7987](#).

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[1.](#) Overview

YANG [[RFC6020](#)] [[RFC7950](#)] is a data definition language used to define the contents of a conceptual data store that allows networked devices to be managed using NETCONF [[RFC6241](#)]. YANG is proving relevant beyond its initial confines, as bindings to other interfaces (e.g., ReST) and encodings other than XML (e.g., JSON) are being defined. Furthermore, YANG data models can be used as the basis for implementation of other interfaces, such as CLI and programmatic APIs.

This document defines YANG data modules augmenting the IETF IS-IS YANG model [[I-D.ietf-isis-yang-isis-cfg](#)], which itself augments [[RFC8349](#)], to provide support for configuration and operational state for the following IS-IS features:

[RFC7987](#): IS-IS Minimum Remaining Lifetime[RFC7987].

The augmentations defined in this document requires support for the IS-IS base model[I-D.ietf-isis-yang-isis-cfg] which defines basic IS-IS configuration and state. The IS-IS YANG model augments the ietf-routing YANG model defined in [[RFC8022](#)].

[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](#)].

[2.](#) YANG Module for IS-IS Minimum Remaining Lifetime

This document defines a YANG module for IS-IS Minimum Remaining Lifetime as defined in [[RFC7987](#)]. It is an augmentation of the IS-IS base model.

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```
module: ietf-isis-remaining-lifetime
```

```
  notifications:
```

```
    +---n corrupt-remaining-lifetime
```

```
      +--ro routing-protocol-name?  -> /rt:routing
                                      /control-plane-protocols
                                      /control-plane-protocol/name
```

```
      +--ro isis-level?              level
```

```
      +--ro lsp-id?                  isis:lsp-id
```

```
<CODE BEGINS> file "ietf-isis-remaining-lifetime@2020-05-06.yang"
```

```
module ietf-isis-remaining-lifetime {
```

```
  yang-version 1.1;
```

```
  namespace "urn:ietf:params:xml:ns:yang:ietf-isis-remaining-lifetime";
```

```
  prefix isis-remaining-lifetime;
```

```
  import ietf-isis {
```

```
    prefix "isis";
```

```
  }
```

```
  organization
```

```
    "IETF LSR - Link State Routing Working Group";
```

```
  contact
```

```
    "WG Web:  <http://tools.ietf.org/wg/lsr>
```

```
    WG List:  <mailto:lsr@ietf.org>
```

```
    Author:   Yingzhen Qu
```

```
              <mailto:yingzhen.qu@futurewei.com>
```

```
    Author:   Acee Lindem
```

```
              <mailto:acee@cisco.com>
```

```
    Author:   Stephane Litkowski
```

```
              <mailto:slitkows.ietf@gmail.com>;
```

description

"This YANG module defines the configuration and operational state for IS-IS Minimum Remaining Lifetime feature as defined in [RFC 7987](#).

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Relating to IETF Documents

(<http://trustee.ietf.org/license-info>).

This version of this YANG module is part of RFC XXXX; see the RFC itself for full legal notices.";

reference "RFC XXXX";

revision 2020-05-06 {

description

"Initial version";

reference

"RFC XXXX: A YANG Data Model for IS-IS.";

}

notification corrupt-remaining-lifetime {

uses isis:notification-instance-hdr;

leaf lsp-id {

type isis:lsp-id;

description "LSP ID";

}

description

"This notification is sent when the system detects corrected lifetime of an LSP.";

}

}

<CODE ENDS>

[3.](#) 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 [[RFC5246](#)].

The NETCONF access control model [[RFC6536](#)] 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.

There are a number of data nodes defined in the modules that are writable/creatable/deletable (i.e., config true, which is the default). These data nodes may be considered sensitive or vulnerable in some network environments. Write operations (e.g., edit-config)

to these data nodes without proper protection can have a negative effect on network operations.

Some of the readable data nodes in the modules 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. The exposure of the Link State Database (LSDB) will expose the detailed topology of the network. This may be undesirable since both due to the fact that exposure may facilitate other attacks. Additionally, network operators may consider their topologies to be sensitive confidential data.

[4.](#) IANA Considerations

This document registers URIs in the IETF XML registry [[RFC3688](#)]. Following the format in [[RFC3688](#)], the following registrations is requested to be made:

URI: urn:ietf:params:xml:ns:yang:ietf-isis-remaining-lifetime
Registrant Contact: The IESG.
XML: N/A, the requested URI is an XML namespace.

This document registers the YANG modules in the YANG Module Names registry [[RFC6020](#)].

```
name: ietf-isis-remaining-lifetime
namespace: urn:ietf:params:xml:ns:yang:ietf-isis-remaining-lifetime
prefix: isis-remaining-lifetime
reference: RFC XXXX
```

[5.](#) Acknowledgements

This document was produced using Marshall Rose's `xml2rfc` tool.

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

[6.](#) References

[6.1.](#) Normative References

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[6.2.](#) Informative References

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