Stream:	Internet Engineering Task Force (IETF)			
RFC:	9742			
Category:	Standards Track			
Published:	April 2025			
ISSN:	2070-1721			
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RFC 9742
A YANG Data Model for Syslog Management

Abstract

This document defines a YANG data model for the management of a syslog process. It is intended that this data model be used by vendors who implement syslog collectors in their systems.

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at https://www.rfc-editor.org/info/rfc9742.

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1. Introduction

This document defines a YANG [RFC7950] data model that may be used to configure the syslog feature running on a system. YANG data models can be used with network management protocols such as NETCONF [RFC6241] to install, manipulate, and delete the configuration of network devices.

The data model makes use of the YANG "feature" construct that allows implementations to support only those syslog features that lie within their capabilities.

This module can be used to configure the syslog application conceptual layers as implemented on the syslog collector.

Essentially, a syslog process receives messages (from the kernel, processes, applications, or other syslog processes) and processes them. The processing may involve logging to a local file, displaying on console, and/or relaying to syslog processes on other machines. The process is determined by the "facility" that originated the message and the "severity" assigned to the message by the facility.

Such definitions of syslog protocol are defined in [RFC5424] and are used in this RFC.

The YANG data model in this document conforms to the Network Management Datastore Architecture defined in [RFC8342].

1.1. 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 BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

2. Terminology

The following terms are used throughout this document:

Originator: An "originator" refers to an entity that generates syslog content to be carried in a message. The term is defined in [RFC5424].

Relay: A "relay" is an entity that forwards syslog messages. It accepts messages from originators or other relays and sends them to collectors or other relays. The term is defined in [RFC5424].

Collector: A "collector" gathers syslog content for further analysis. The term is defined in [RFC5424].

Action: The term "action" refers to the process that takes place for each syslog message received.

3. NMDA Compliance

The YANG data model in this document conforms to the Network Management Datastore Architecture (NMDA) defined in [RFC8342].

4. Design of the Syslog Model

The syslog model was designed by comparing various syslog features implemented by various vendors in different implementations.

The module defines leafs that are common across implementations. Its simple design is meant to offer maximum flexibility. However, not all optional features defined in this document are present in all vendor implementations. Therefore, vendors need to use the feature statements to specify the optional features they support. At the same time, vendors can augment the model to add proprietary features. "Extending Facilities" (Appendix B.1) shows an example of how that can be realized.

Syslog consists of originators and collectors. The following diagram shows the syslog processing flow from originators to collectors where filtering can take place.

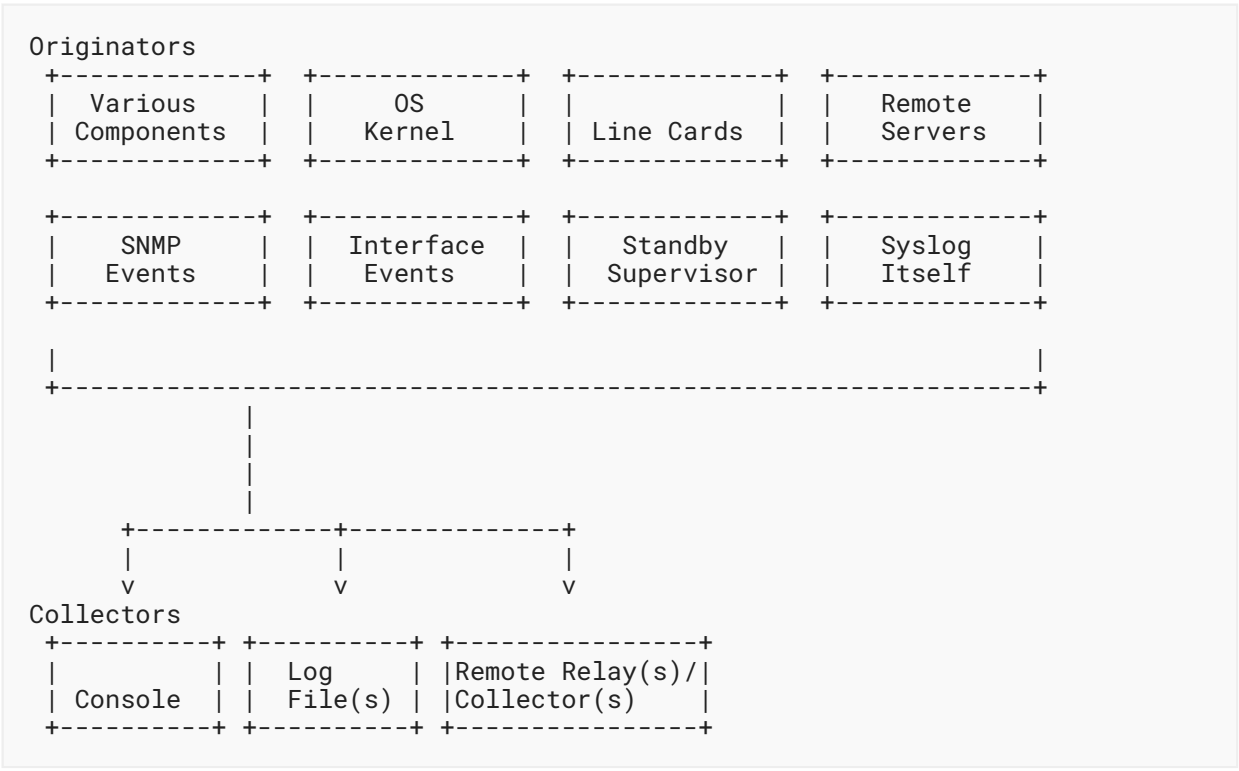

Figure 1: Syslog Processing Flow

Collectors are configured using the leafs in the syslog model "actions" container that correspond to each message collector:

- console
- log file(s)
- remote relay(s)/collector(s)

Within each action, a selector is used to filter syslog messages. A selector consists of a list of one or more filters specified by facility-severity pairs, and, if supported via the select-match feature, an optional regular expression pattern match that is performed on the MSG field described in Section 6.4 of [RFC5424].

```
      A syslog message is processed if there is an element
      of facility-list (F, S) where
          the message facility matches F,
          the message severity matches S,
      and/or the message text matches the regex pattern (if it
          is present)
```

The facility is one of a specific syslog-facility or all facilities.

The model offers the ability to select a transport that a user might want to use for a remote relay or collector. The choice is between using UDP or TLS-based sessions. The user can configure multiple relays or collectors, but they have to use the same transport.

The severity is one of type syslog-severity, all severities, or none. None is a special case that can be used to disable a filter. When filtering severity, the default comparison is that messages of the specified severity and higher are selected to be logged. This is shown in the model as "default equals-or-higher". This behavior can be altered if the select-adv-compare feature is enabled to specify a compare operation and an action. Compare operations are: "equals" to select messages with this single severity, or "equals-or-higher" to select messages of the specified severity and higher. Actions are used to log the message, block the message, or stop the message from being logged.

Many vendors extend the list of facilities available for logging in their implementation. An example is included in "Extending Facilities" (Appendix B.1).

4.1. Syslog Module

A simplified tree representation of the data model is shown in Figure 2. Please see [RFC8340] for tree diagram notation.

```
module: ietf-syslog
 +--rw syslog!
    +--rw actions
       +--rw console! {console-action}?
       |  +--rw filter
       |  |  +--rw facility-list* [facility severity]
       |  |     +--rw facility            union
       |  |     +--rw severity            union
       |  |     +--rw advanced-compare {select-adv-compare}?
       |  |        +--rw compare?   enumeration
       |  |        +--rw action?    identityref
       |  +--rw pattern-match?   string {select-match}?
       +--rw file {file-action}?
       |  +--rw log-file* [name]
       |     +--rw name               inet:uri
       |     +--rw filter
       |     |  +--rw facility-list* [facility severity]
       |     |     +--rw facility            union
       |     |     +--rw severity            union
       |     |     +--rw advanced-compare {select-adv-compare}?
       |     |        +--rw compare?   enumeration
       |     |        +--rw action?    identityref
       |     +--rw pattern-match?     string {select-match}?
       |     +--rw structured-data?   boolean {structured-data}?
       |     +--rw file-rotation
       |        +--rw number-of-files?   uint32 {file-limit-size}?
       |        +--rw max-file-size?     uint32 {file-limit-size}?
       |        +--rw rollover?          uint32
       |        |       {file-limit-duration}?
       |        +--rw retention?         uint32
       |                  {file-limit-duration}?
       +--rw remote {remote-action}?
          +--rw destination* [name]
             +--rw name                 string
             +--rw (transport)
             |  +--:(udp)
             |  |  +--rw udp
             |  |     +--rw udp* [address]
             |  |        +--rw address    inet:host
             |  |        +--rw port?      inet:port-number
             |  +--:(tls)
             |     +--rw tls
             |        +--rw tls* [address]
             |           +--rw address                  inet:host
             |           +--rw port?
             |           |       inet:port-number
             |           +--rw client-identity!
             |           |  +--rw (auth-type)
             |           |        ...
             |           +--rw server-authentication
             |           |  +--rw ca-certs! {server-auth-x509-cert}?
             |           |  |     ...
             |           |  +--rw ee-certs! {server-auth-x509-cert}?
             |           |  |     ...
             |           |  +--rw raw-public-keys!
             |           |  |       {server-auth-raw-public-key}?
             |           |  |     ...
```

```
               |           |  +--rw tls12-psks?        empty
               |           |  |       {server-auth-tls12-psk}?
               |           |  +--rw tls13-epsks?       empty
               |           |          {server-auth-tls13-epsk}?
               |           +--rw hello-params {tlscmn:hello-params}?
               |           |  +--rw tls-versions
               |           |  |     ...
               |           |  +--rw cipher-suites
               |           |        ...
               |           +--rw keepalives {tls-client-keepalives}?
               |              +--rw peer-allowed-to-send?   empty
               |              +--rw test-peer-aliveness!
               |                    ...
               +--rw filter
               |  +--rw facility-list* [facility severity]
               |     +--rw facility            union
               |     +--rw severity            union
               |     +--rw advanced-compare {select-adv-compare}?
               |        +--rw compare?   enumeration
               |        +--rw action?    identityref
               +--rw pattern-match?       string {select-match}?
               +--rw structured-data?     boolean {structured-data}?
               +--rw facility-override?   identityref
               +--rw source-interface?    if:interface-ref
               |       {remote-source-interface}?
               +--rw signing! {signed-messages}?
                  +--rw cert-signers
                     +--rw cert-signer* [name]
                        |  +--rw name              string
                        |  +--rw cert
                        |  |  +--rw public-key-format?
                        |  |  |       identityref
                        |  |  +--rw public-key?                    binary
                        |  |  +--rw private-key-format?
                        |  |  |       identityref
                        |  |  +--rw (private-key-type)
                        |  |  |  +--:(cleartext-private-key)
                        |  |  |  |        {cleartext-private-keys}?
                        |  |  |  |     ...
                        |  |  |  +--:(hidden-private-key)
                        |  |  |  |        {hidden-private-keys}?
                        |  |  |  |     ...
                        |  |  |  +--:(encrypted-private-key)
                        |  |  |           {encrypted-private-keys}?
                        |  |  |        ...
                        |  |  +--rw cert-data?
                        |  |  |       end-entity-cert-cms
                        |  |  +---n certificate-expiration
                        |  |  |       {certificate-expiration-notificati\
on}?
                        |  |  |  +-- expiration-date
                        |  |  |          yang:date-and-time
                        |  |  +---x generate-csr {csr-generation}?
                        |  |     +---w input
                        |  |     |     ...
                        |  |     +--ro output
                        |  |           ...
                        |  +--rw hash-algorithm?   enumeration
```

```
                    +--rw cert-initial-repeat?   uint32
                    +--rw cert-resend-delay?     uint32
                    +--rw cert-resend-count?     uint32
                    +--rw sig-max-delay?         uint32
                    +--rw sig-number-resends?    uint32
                    +--rw sig-resend-delay?      uint32
                    +--rw sig-resend-count?      uint32
```

Figure 2: Tree Diagram for Syslog Model

5. Syslog YANG Module

5.1. The ietf-syslog Module

This module imports typedefs from [RFC6991], [RFC8343], groupings from [RFC9640], and [RFC9645]. It references [RFC5424], [RFC5425], [RFC5426], [RFC5848], [RFC8089], [RFC8174], and [Std-1003.1-2024].

```
<CODE BEGINS> file "ietf-syslog@2025-04-30.yang"

module ietf-syslog {
 yang-version 1.1;
 namespace "urn:ietf:params:xml:ns:yang:ietf-syslog";
 prefix syslog;

 import ietf-inet-types {
   prefix inet;
   reference
     "RFC 6991: Common YANG Data Types";
 }
 import ietf-interfaces {
   prefix if;
   reference
     "RFC 8343: A YANG Data Model for Interface Management";
 }
 import ietf-tls-client {
   prefix tlsc;
   reference
     "RFC 9645: YANG Groupings for TLS Clients and TLS Servers";
 }
 import ietf-crypto-types {
   prefix ct;
   reference
     "RFC 9640: YANG Data Types and Groupings for Cryptography";
 }

 organization
   "IETF NETMOD (Network Modeling) Working Group";
 contact
   "WG Web:   <https://datatracker.ietf.org/wg/netmod/>
    WG List:  <mailto:netmod@ietf.org>

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    Editor:   Clyde Wildes
    <mailto:clyde@clydewildes.com>";
 description
   "This module contains a collection of YANG definitions
    for syslog management.

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```

```
    (https://trustee.ietf.org/license-info).

    This version of this YANG module is part of RFC 9742
    (https://www.rfc-editor.org/info/rfc9742);
    see the RFC itself for full legal notices.

    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 BCP 14 (RFC 2119)
    (RFC 8174) when, and only when, they appear in all capitals,
    as shown here.";

  revision 2025-04-30 {
    description
      "Initial Revision";
    reference
      "RFC 9742: Syslog YANG Module";
  }

  feature console-action {
    description
      "This feature indicates that the local console action is
       supported.";
  }

  feature file-action {
    description
      "This feature indicates that the local file action is
       supported.";
  }

  feature file-limit-size {
    description
      "This feature indicates that file logging resources
       are managed using size and number limits.";
  }

  feature file-limit-duration {
    description
      "This feature indicates that file logging resources
       are managed using time based limits.";
  }

  feature remote-action {
    description
      "This feature indicates that the remote server action is
       supported.";
  }

  feature remote-source-interface {
    description
      "This feature indicates that source-interface is supported
       for the remote-action.";
  }

  feature select-adv-compare {
    description
```

```
      "This feature represents the ability to select messages
       using the additional comparison operators when comparing
       the syslog message severity.";
  }

  feature select-match {
    description
      "This feature represents the ability to select messages
       based on a Posix 1003.2 regular expression pattern
       match.";
  }

  feature structured-data {
    description
      "This feature represents the ability to log messages
       in structured-data format.";
    reference
      "RFC 5424: The Syslog Protocol";
  }

  feature signed-messages {
    description
      "This feature represents the ability to configure signed
       syslog messages.";
    reference
      "RFC 5848: Signed Syslog Messages";
  }

  typedef syslog-severity {
    type enumeration {
      enum emergency {
        value 0;
        description
          "The severity level 'Emergency' indicates that the
           system is unusable.";
      }
      enum alert {
        value 1;
        description
          "The severity level 'Alert' indicates that an
           action must be taken immediately.";
      }
      enum critical {
        value 2;
        description
          "The severity level 'Critical' indicates a
           critical condition.";
      }
      enum error {
        value 3;
        description
          "The severity level 'Error' indicates an error
           condition.";
      }
      enum warning {
        value 4;
        description
          "The severity level 'Warning' indicates a warning
```

```
          condition.";
      }
      enum notice {
        value 5;
        description
          "The severity level 'Notice' indicates a normal
           but significant condition.";
      }
      enum info {
        value 6;
        description
          "The severity level 'Info' indicates an
           informational message.";
      }
      enum debug {
        value 7;
        description
          "The severity level 'Debug' indicates a
           debug-level message.";
      }
    }
    description
      "The definitions for Syslog message severity.
       Note that a lower value is a higher severity. Comparisons
       of equal-or-higher severity mean equal-or-lower numeric
       value";
    reference
      "RFC 5424: The Syslog Protocol";
  }

  identity syslog-facility {
    description
      "This identity is used as a base for all syslog
       facilities.";
    reference
      "RFC 5424: The Syslog Protocol";
  }

  identity kern {
    base syslog-facility;
    description
      "The facility for kernel messages (numerical code 0).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity user {
    base syslog-facility;
    description
      "The facility for user-level messages (numerical code 1).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity mail {
    base syslog-facility;
    description
      "The facility for the mail system (numerical code 2).";
```

```
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity daemon {
    base syslog-facility;
    description
      "The facility for the system daemons (numerical code 3).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity auth {
    base syslog-facility;
    description
      "The facility for security/authorization messages (numerical
       code 4).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity syslog {
    base syslog-facility;
    description
      "The facility for messages generated internally by a syslog
       daemon facility (numerical code 5).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity lpr {
    base syslog-facility;
    description
      "The facility for the line printer subsystem (numerical code
       6).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity news {
    base syslog-facility;
    description
      "The facility for the network news subsystem (numerical code
       7).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity uucp {
    base syslog-facility;
    description
      "The facility for the Unix-to-Unix Copy (UUCP) subsystem
       (numerical code 8).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity cron {
```

```
    base syslog-facility;
    description
      "The facility for the clock daemon (numerical code 9).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity authpriv {
    base syslog-facility;
    description
      "The facility for privileged security/authorization messages
       (numerical code 10).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity ftp {
    base syslog-facility;
    description
      "The facility for the FTP daemon (numerical code 11).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity ntp {
    base syslog-facility;
    description
      "The facility for the NTP subsystem (numerical code 12).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity audit {
    base syslog-facility;
    description
      "The facility for log audit messages (numerical code 13).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity console {
    base syslog-facility;
    description
      "The facility for log alert messages (numerical code 14).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity cron2 {
    base syslog-facility;
    description
      "The facility for the second clock daemon (numerical code
       15).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local0 {
```

```
    base syslog-facility;
    description
      "The facility for local use 0 messages (numerical code 16).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local1 {
    base syslog-facility;
    description
      "The facility for local use 1 messages (numerical code 17).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local2 {
    base syslog-facility;
    description
      "The facility for local use 2 messages (numerical code 18).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local3 {
    base syslog-facility;
    description
      "The facility for local use 3 messages (numerical code 19).";
    reference
      "RFC 5424: The Syslog Protocol";
  }

  identity local4 {
    base syslog-facility;
    description
      "The facility for local use 4 messages (numerical code 20).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local5 {
    base syslog-facility;
    description
      "The facility for local use 5 messages (numerical code 21).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local6 {
    base syslog-facility;
    description
      "The facility for local use 6 messages (numerical code 22).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity local7 {
    base syslog-facility;
    description
```

```
      "The facility for local use 7 messages (numerical code 23).";
    reference
      "RFC 5424: The Syslog Protocol, Section 6.2.1.";
  }

  identity action {
    description
      "Base identity for action for how a message will be
       handled.";
  }

  identity log {
    base action;
    description
      "This identity specifies that if the compare operation is
       true, the message will be logged.";
  }

  identity block {
    base action;
    description
      "This identity specifies that if the compare operation is
       true, the message will not be logged.";
  }

  identity stop {
    base action;
    description
      "This identity specifies that if the compare operation is
       true, the message will not be logged and no further
       processing will occur for it.";
  }

  grouping severity-filter {
    description
      "This grouping defines the processing used to select
       log messages by comparing syslog message severity using
       the following processing rules:
       - if 'none', do not match.
       - if 'all', match.
       - else, compare message severity with the specified
         severity according to the default compare rule (all
         messages of the specified severity and greater match)
         or if the select-adv-compare feature is present, use
         the advance-compare rule.";
    leaf severity {
      type union {
        type syslog-severity;
        type enumeration {
          enum none {
            value 2147483647;
            description
              "This enum describes the case where no
               severities are selected.";
          }
          enum all {
            value -2147483648;
            description
```

```
            "This enum describes the case where all
             severities are selected.";
        }
      }
    }
    mandatory true;
    description
      "This leaf specifies the syslog message severity.";
  }
  container advanced-compare {
    when "../severity != \"all\" and
          ../severity != \"none\"" {
      description
        "The advanced compare container is not applicable
         for severity 'all' or severity 'none'";
    }
    if-feature "select-adv-compare";
    leaf compare {
      type enumeration {
        enum equals {
          description
            "This enum specifies that the severity
             comparison operation will be equals.";
        }
        enum equals-or-higher {
          description
            "This enum specifies that the severity
             comparison operation will be equals or
             higher.";
        }
      }
      default "equals-or-higher";
      description
        "The compare operation can be used to specify the comparison
         operator that should be used to compare the syslog
         message severity with the specified severity.";
    }
    leaf action {
      type identityref {
        base action;
      }
      default "log";
      description
        "The action can be used to specify how the message
         should be handled. This may include logging the
         message, not logging the message (i.e., blocking
         it), or stopping further processing.";
    }
    description
      "This container describes additional severity compare
       operations that can be used in place of the default
       severity comparison.  The compare leaf specifies the
       type of compare operation that is done and the
       action leaf specifies the intended result.
       Example: compare->equals and action->block means
       messages that have a severity that are equal to the
       specified severity will not be logged.";
  }
```

```
  }

  grouping selector {
    description
      "This grouping defines a syslog selector, which is used to
       select log messages for the log-actions (console, file,
       remote, etc.).  Choose one or both of the following:
          facility [<facility> <severity>...]
          pattern-match regular-expression-match-string
       If both facility and pattern-match are specified, both
       must match in order for a log message to be selected.";
    container filter {
      description
        "This container describes the syslog filter
         parameters.";
      list facility-list {
        key "facility severity";
        ordered-by user;
        description
          "This list describes a collection of syslog
           facilities and severities.";
        leaf facility {
          type union {
            type identityref {
              base syslog-facility;
            }
            type enumeration {
              enum all {
                description
                  "This enum describes the case where
                   all facilities are requested.";
              }
            }
          }
          description
            "The leaf uniquely identifies a syslog
             facility.";
        }
        uses severity-filter;
      }
    }
    leaf pattern-match {
      if-feature "select-match";
      type string;
      description
        "This leaf describes a Posix 1003.2 regular expression
         string that can be used to select a syslog message for
         logging.  The match is performed on the SYSLOG-MSG
         field.";
      reference
        "RFC 5424: The Syslog Protocol
         Std-1003.1-2024 Regular Expressions";
    }
  }

  grouping structured-data {
    description
      "This grouping defines the syslog structured data option,
```

```
       which is used to select the format used to write log
       messages.";
    leaf structured-data {
      if-feature "structured-data";
      type boolean;
      default "false";
      description
        "This leaf describes how log messages are written.
         If true, messages will be written with one or more
         STRUCTURED-DATA elements; if false, messages will be
         written with STRUCTURED-DATA = NILVALUE.";
      reference
        "RFC 5424: The Syslog Protocol";
    }
  }

  container syslog {
    presence "Enables logging.";
    description
      "This container describes the configuration parameters for
       syslog.";
    container actions {
      description
        "This container describes the log-action parameters
         for syslog.";
      container console {
        if-feature "console-action";
        presence "Enables logging to the console";
        description
          "This container describes the configuration
           parameters for console logging.";
        uses selector;
      }
      container file {
        if-feature "file-action";
        description
          "This container describes the configuration
           parameters for file logging.  If file-archive
           limits are not supplied, it is assumed that
           the local implementation defined limits will
           be used.";
        list log-file {
          key "name";
          description
            "This list describes a collection of local
             logging files.";
          leaf name {
            type inet:uri {
              pattern 'file:.*';
            }
            description
              "This leaf specifies the name of the log
               file, which MUST use the uri scheme
               file:.";
            reference
              "RFC 8089: The file URI Scheme";
          }
          uses selector;
```

```
          uses structured-data;
          container file-rotation {
            description
              "This container describes the configuration
               parameters for log file rotation.";
            leaf number-of-files {
              if-feature "file-limit-size";
              type uint32;
              default "1";
              description
                "This leaf specifies the maximum number
                 of log files retained.  Specify 1 for
                 implementations that only support one
                 log file.";
            }
            leaf max-file-size {
              if-feature "file-limit-size";
              type uint32;
              units "megabytes";
              description
                "This leaf specifies the maximum log
                 file size.";
            }
            leaf rollover {
              if-feature "file-limit-duration";
              type uint32;
              units "minutes";
              description
                "This leaf specifies the length of time
                 that log events should be written to a
                 specific log file.  Log events that
                 arrive after the rollover period cause
                 the current log file to be closed and
                 a new log file to be opened.";
            }
            leaf retention {
              if-feature "file-limit-duration";
              type uint32;
              units "minutes";
              description
                "This leaf specifies the length of time
                 that completed/closed log event files
                 should be stored in the file system
                 before they are removed.";
            }
          }
        }
      }
      container remote {
        if-feature "remote-action";
        description
          "This container describes the configuration
           parameters for forwarding syslog messages
           to remote relays or collectors.";
        list destination {
          key "name";
          description
            "This list describes a collection of remote logging
```

```
            destinations.";
          leaf name {
            type string;
            description
              "An arbitrary name for the endpoint to connect to.";
          }
          choice transport {
            mandatory true;
            description
              "This choice describes the transport option.";
            case udp {
              container udp {
                description
                  "This container describes the UDP transport
                   options.";
                reference
                  "RFC 5426: Transmission of Syslog Messages over
                              UDP";
                list udp {
                  key "address";
                  description
                    "List of all UDP sessions.";
                  leaf address {
                    type inet:host;
                    description
                      "The leaf uniquely specifies the address of the
                       remote host. One of the following must be
                       specified:
                       - an ipv4 address,
                       - an ipv6 address, or a
                       - host name.";
                  }
                  leaf port {
                    type inet:port-number;
                    default "514";
                    description
                      "This leaf specifies the port number used to
                       deliver messages to the remote server.";
                  }
                }
              }
            }
            case tls {
              container tls {
                description
                  "This container describes the TLS transport
                   options.";
                reference
                  "RFC 5425: Transport Layer Security (TLS) Transport
                              Mapping for Syslog ";
                list tls {
                  key "address";
                  description
                    "List of all TLS-based sessions.";
                  leaf address {
                    type inet:host;
                    description
                      "The leaf uniquely specifies the address of the
```

```
                    remote host.  One of the following must be
                    specified: an ipv4 address, an ipv6 address,
                    or a host name.";
                }
                leaf port {
                  type inet:port-number;
                  default "6514";
                  description
                    "TCP port 6514 has been allocated as the
                     default port for syslog over TLS.";
                }
                uses tlsc:tls-client-grouping;
              }
            }
          }
        }
        uses selector;
        uses structured-data;
        leaf facility-override {
          type identityref {
            base syslog-facility;
          }
          description
            "If specified, this leaf specifies the facility used
             to override the facility in messages delivered to the
             remote server.";
        }
        leaf source-interface {
          if-feature "remote-source-interface";
          type if:interface-ref;
          description
            "This leaf sets the source interface to be used to
             send messages to the remote syslog server. If not set,
             messages can be sent on any interface.";
        }
        container signing {
          if-feature "signed-messages";
          presence "If present, syslog-signing options is
                    activated.";
          description
            "This container describes the configuration
             parameters for signed syslog messages.";
          reference
            "RFC 5848: Signed Syslog Messages";
          container cert-signers {
            description
              "This container describes the signing certificate
               configuration for Signature Group 0, which covers
               the case for administrators who want all Signature
               Blocks to be sent to a single destination.";
            list cert-signer {
              key "name";
              description
                "This list describes a collection of syslog message
                 signers.";
              leaf name {
                type string;
                description
```

```
                "This leaf specifies the name of the syslog
                 message signer.";
            }
            container cert {
              uses ct:asymmetric-key-pair-with-cert-grouping;
              description
                "This is the certificate that is periodically
                 sent to the remote receiver.  The certificate is
                 inherently associated with its private
                 and public keys.";
            }
            leaf hash-algorithm {
              type enumeration {
                enum SHA1 {
                  value 1;
                  description
                    "This enum describes the SHA1 algorithm.";
                }
                enum SHA256 {
                  value 2;
                  description
                    "This enum describes the SHA256 algorithm.";
                }
              }
              description
                "This leaf describes the syslog signer hash
                 algorithm used.";
            }
          }
          leaf cert-initial-repeat {
            type uint32;
            default "3";
            description
              "This leaf specifies the number of times each
               Certificate Block should be sent before the first
               message is sent.";
          }
          leaf cert-resend-delay {
            type uint32;
            units "seconds";
            default "3600";
            description
              "This leaf specifies the maximum time delay in
               seconds until resending the Certificate Block.";
          }
          leaf cert-resend-count {
            type uint32;
            default "0";
            description
              "This leaf specifies the maximum number of other
               syslog messages to send until resending the
               Certificate Block.";
          }
          leaf sig-max-delay {
            type uint32;
            units "seconds";
            default "60";
            description
```

```
                  "This leaf specifies when to generate a new
                   Signature Block. If this many seconds have elapsed
                   since the message with the first message number
                   of the Signature Block was sent, a new Signature
                   Block should be generated.";
              }
              leaf sig-number-resends {
                type uint32;
                default "0";
                description
                  "This leaf specifies the number of times a
                   Signature Block is resent.  (It is recommended to
                   select a value of greater than 0 in particular
                   when the UDP transport as in RFC 5426 is used.)";
              }
              leaf sig-resend-delay {
                type uint32;
                units "seconds";
                default "5";
                description
                  "This leaf specifies when to send the next
                   Signature Block transmission based on time.  If
                   this many seconds have elapsed since the previous
                   sending of this Signature Block, resend it.";
              }
              leaf sig-resend-count {
                type uint32;
                default "0";
                description
                  "This leaf specifies when to send the next
                   Signature Block transmission based on a count.
                   If this many other syslog messages have been sent
                   since the previous sending of this Signature
                   Block, resend it. A value of 0 means that you
                   don't resend based on the number of messages.";
              }
            }
          }
        }
      }
    }
  }
}

<CODE ENDS>
```

Figure 3: Syslog YANG Module

6. Usage Examples

The following examples are in XML [W3C.REC-xml-20081126].

6.1. Syslog Configuration for Severity Critical

This example shows how the console logging of syslog of severity critical can be enabled.

```
<?xml version="1.0" encoding="UTF-8"?>
<syslog xmlns="urn:ietf:params:xml:ns:yang:ietf-syslog">
 <actions>
   <console>
     <filter>
       <facility-list>
         <facility>all</facility>
         <severity>critical</severity>
       </facility-list>
     </filter>
   </console>
 </actions>
</syslog>
```

Figure 4: Syslog Configuration for Severity Critical

6.2. Remote Syslog Configuration

This example shows how the remote logging of syslogs to UDP destination foo.example.com for facility auth and severity error can be enabled.

```
<?xml version="1.0" encoding="UTF-8"?>
<syslog xmlns="urn:ietf:params:xml:ns:yang:ietf-syslog">
 <actions>
   <remote>
     <destination>
       <name>remote1</name>
       <udp>
         <udp>
           <address>foo.example.com</address>
         </udp>
       </udp>
       <filter>
         <facility-list>
           <facility>auth</facility>
           <severity>error</severity>
         </facility-list>
       </filter>
     </destination>
   </remote>
 </actions>
</syslog>
```

Figure 5: Remote Syslog Configuration

7. IANA Considerations

7.1. The IETF XML Registry

This document registers one URI in the "IETF XML Registry", following the format defined in [RFC3688]:

URI: urn:ietf:params:xml:ns:yang:ietf-syslog
Registrant Contact: The IESG.
XML: N/A; the requested URI is an XML namespace.

7.2. The YANG Module Names Registry

This document registers one YANG module in the "YANG Module Names" registry [RFC8525], following the format in [RFC7950]:

Name: ietf-syslog
Namespace: urn:ietf:params:xml:ns:yang:ietf-syslog
Prefix: syslog
Reference: RFC 9742

8. Security Considerations

This section is modeled after the template defined in [YANG-GUIDELINES].

The "ietf-syslog" YANG module defines a data model that is 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.

This module imports groupings from ietf-crypto-types YANG module defined in YANG Groupings for Crypto Types [RFC9640]. Security considerations described in that document apply to this module also.

There are a number of data nodes defined in this YANG module that are writable/creatable/deletable (i.e., "config true", which is the default). All writable data nodes are likely to be reasonably sensitive or vulnerable in some network environments. Write operations (e.g., edit-config) and delete operations to these data nodes without proper protection or authentication can have a negative effect on network operations. The following subtrees and data nodes have particular sensitivities/vulnerabilities:

facility-filter/pattern-match: When writing this node, implementations **MUST** ensure that the regular expression pattern match is not constructed to cause a regular expression denial-of-service attack due to a pattern that causes the regular expression implementation to work very slowly (exponentially related to input size).

remote/destination/signing/cert-signer: When writing this subtree, implementations **MUST NOT** specify a private key that is used for any other purpose.

Some of the readable data nodes in this 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. Specifically, the following subtrees and data nodes have particular sensitivities/ vulnerabilities:

remote/destination/transport: This subtree contains information about other hosts in the network, the services available on those hosts, and the TLS transport certificate properties if TLS is selected as the transport protocol. Knowing that a service like syslog (udp/514) is enabled on the host will allow a malicious user to spam the host on that port.

remote/destination/signing: This subtree contains information about the syslog message signing properties, including signing certificate information.

There are no particularly sensitive RPC or action operations.

9. References

9.1. Normative References

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Appendix A. Tree Diagrams

A.1. Complete Tree Diagram

```
[note: '\' line wrapping for formatting only]

module: ietf-syslog
  +--rw syslog!
     +--rw actions
        +--rw console! {console-action}?
        |  +--rw filter
        |  |  +--rw facility-list* [facility severity]
        |  |     +--rw facility            union
        |  |     +--rw severity            union
        |  |     +--rw advanced-compare {select-adv-compare}?
        |  |        +--rw compare?   enumeration
        |  |        +--rw action?    identityref
        |  +--rw pattern-match?   string {select-match}?
        +--rw file {file-action}?
        |  +--rw log-file* [name]
        |     +--rw name               inet:uri
        |     +--rw filter
        |     |  +--rw facility-list* [facility severity]
        |     |     +--rw facility            union
        |     |     +--rw severity            union
        |     |     +--rw advanced-compare {select-adv-compare}?
        |     |        +--rw compare?   enumeration
        |     |        +--rw action?    identityref
        |     +--rw pattern-match?     string {select-match}?
        |     +--rw structured-data?   boolean {structured-data}?
        |     +--rw file-rotation
        |        +--rw number-of-files?   uint32 {file-limit-size}?
        |        +--rw max-file-size?     uint32 {file-limit-size}?
        |        +--rw rollover?          uint32
        |        |       {file-limit-duration}?
        |        +--rw retention?         uint32
        |                {file-limit-duration}?
        +--rw remote {remote-action}?
           +--rw destination* [name]
              +--rw name                string
              +--rw (transport)
              |  +--:(udp)
```

```
               |  |  +--rw udp
               |  |     +--rw udp* [address]
               |  |        +--rw address    inet:host
               |  |        +--rw port?      inet:port-number
               |  +--:(tls)
               |     +--rw tls
               |        +--rw tls* [address]
               |           +--rw address                  inet:host
               |           +--rw port?
               |           |       inet:port-number
               |           +--rw client-identity!
               |           |  +--rw (auth-type)
               |           |     +--:(certificate)
               |           |     |        {client-ident-x509-cert}?
               |           |     |  +--rw certificate
               |           |     |     +--rw (inline-or-keystore)
               |           |     |        +--:(inline)
               |           |     |        |        {inline-definition\
s-supported}?
               |           |     |        |  +--rw inline-definition
               |           |     |        |     +--rw public-key-form\
at?
               |           |     |        |     |       identityref
               |           |     |        |     +--rw public-key?
               |           |     |        |     |       binary
               |           |     |        |     +--rw private-key-for\
mat?
               |           |     |        |     |       identityref
               |           |     |        |     +--rw (private-key-ty\
pe)
               |           |     |        |     |  +--:(cleartext-pri\
vate-key)
               |           |     |        |     |  |        {cleartex\
t-private-keys}?
               |           |     |        |     |  |  +--rw cleartext\
-private-key?
               |           |     |        |     |  |          binary
               |           |     |        |     |  +--:(hidden-privat\
e-key)
               |           |     |        |     |  |        {hidden-p\
rivate-keys}?
               |           |     |        |     |  |  +--rw hidden-pr\
ivate-key?
               |           |     |        |     |  |          empty
               |           |     |        |     |  +--:(encrypted-pri\
vate-key)
               |           |     |        |     |           {encrypte\
d-private-keys}?
               |           |     |        |     |     +--rw encrypted\
-private-key
               |           |     |        |     |        +--rw encryp\
ted-by
               |           |     |        |     |        +--rw encryp\
ted-value-format
               |           |     |        |     |        |       iden\
tityref
               |           |     |        |     |        +--rw encryp\
ted-value
```

```
               |           |     |        |     |               bina\
ry
               |           |     |        |     +--rw cert-data?
               |           |     |        |     |       end-entity-ce\
rt-cms
               |           |     |        |     +---n certificate-exp\
iration
               |           |     |        |     |       {certificate-\
expiration-notification}?
               |           |     |        |     |  +-- expiration-dat\
e
               |           |     |        |     |          yang:date-\
and-time
               |           |     |        |     +---x generate-csr
               |           |     |        |             {csr-generati\
on}?
               |           |     |        |        +---w input
               |           |     |        |        |  +---w csr-forma\
t
               |           |     |        |        |  |       identit\
yref
               |           |     |        |        |  +---w csr-info
               |           |     |        |        |          csr-inf\
o
               |           |     |        |        +--ro output
               |           |     |        |           +--ro (csr-type\
)
               |           |     |        |              +--:(p10-csr\
)
               |           |     |        |                 +--ro p10\
-csr?
               |           |     |        |                       p\
10-csr
               |           |     |        +--:(central-keystore)
               |           |     |                 {central-keystore-\
supported,asymmetric-keys}?
               |           |     |           +--rw central-keystore-r\
eference
               |           |     |              +--rw asymmetric-key?\

               |           |     |              |       ks:central-as\
ymmetric-key-ref
               |           |     |              |       {central-keys\
tore-supported,asymmetric-keys}?
               |           |     |              +--rw certificate?
               |           |     |                      leafref
               |           |     +--:(raw-public-key)
               |           |     |        {client-ident-raw-public-ke\
y}?
               |           |     |  +--rw raw-private-key
               |           |     |     +--rw (inline-or-keystore)
               |           |     |        +--:(inline)
               |           |     |        |        {inline-definition\
s-supported}?
               |           |     |        |  +--rw inline-definition
               |           |     |        |     +--rw public-key-form\
at?
               |           |     |        |     |       identityref
```

```
               |           |     |         |     +--rw public-key?
               |           |     |         |     |       binary
               |           |     |         |     +--rw private-key-for\
mat?
               |           |     |         |     |       identityref
               |           |     |         |     +--rw (private-key-ty\
pe)
               |           |     |         |        +--:(cleartext-pri\
vate-key)
               |           |     |         |        |        {cleartex\
t-private-keys}?
               |           |     |         |        |  +--rw cleartext\
-private-key?
               |           |     |         |        |          binary
               |           |     |         |        +--:(hidden-privat\
e-key)
               |           |     |         |        |        {hidden-p\
rivate-keys}?
               |           |     |         |        |  +--rw hidden-pr\
ivate-key?
               |           |     |         |        |          empty
               |           |     |         |        +--:(encrypted-pri\
vate-key)
               |           |     |         |                 {encrypte\
d-private-keys}?
               |           |     |         |           +--rw encrypted\
-private-key
               |           |     |         |              +--rw encryp\
ted-by
               |           |     |         |              +--rw encryp\
ted-value-format
               |           |     |         |              |       iden\
tityref
               |           |     |         |              +--rw encryp\
ted-value
               |           |     |         |                      bina\
ry
               |           |     |        +--:(central-keystore)
               |           |     |                 {central-keystore-\
supported,asymmetric-keys}?
               |           |     |           +--rw central-keystore-r\
eference?
               |           |     |                ks:central-asymm\
etric-key-ref
               |           |     +--:(tls12-psk)
               |           |     |        {client-ident-tls12-psk}?
               |           |     |  +--rw tls12-psk
               |           |     |     +--rw (inline-or-keystore)
               |           |     |     |  +--:(inline)
               |           |     |     |  |        {inline-definition\
s-supported}?
               |           |     |     |  |  +--rw inline-definition
               |           |     |     |  |     +--rw key-format?
               |           |     |     |  |     |       identityref
               |           |     |     |  |     +--rw (key-type)
               |           |     |     |  |        +--:(cleartext-sym\
metric-key)
               |           |     |     |  |        |  +--rw cleartext\
```

```
-symmetric-key?
               |           |     |     |  |        |          binary
               |           |     |     |  |        |          {cleart\
ext-symmetric-keys}?
               |           |     |     |  |        +--:(hidden-symmet\
ric-key)
               |           |     |     |  |        |        {hidden-s\
ymmetric-keys}?
               |           |     |     |  |        |  +--rw hidden-sy\
mmetric-key?
               |           |     |     |  |        |          empty
               |           |     |     |  |        +--:(encrypted-sym\
metric-key)
               |           |     |     |  |                 {encrypte\
d-symmetric-keys}?
               |           |     |     |  |           +--rw encrypted\
-symmetric-key
               |           |     |     |  |              +--rw encryp\
ted-by
               |           |     |     |  |              +--rw encryp\
ted-value-format
               |           |     |     |  |              |       iden\
tityref
               |           |     |     |  |              +--rw encryp\
ted-value
               |           |     |     |  |                     bina\
ry
               |           |     |     |  +--:(central-keystore)
               |           |     |     |           {central-keystore-\
supported,symmetric-keys}?
               |           |     |     |     +--rw central-keystore-r\
eference?
               |           |     |     |             ks:central-symme\
tric-key-ref
               |           |     |     +--rw id?
               |           |     |              string
               |           |     +--:(tls13-epsk)
               |           |              {client-ident-tls13-epsk}?
               |           |        +--rw tls13-epsk
               |           |           +--rw (inline-or-keystore)
               |           |           |  +--:(inline)
               |           |           |  |        {inline-definition\
s-supported}?
               |           |           |  |  +--rw inline-definition
               |           |           |  |     +--rw key-format?
               |           |           |  |     |       identityref
               |           |           |  |     +--rw (key-type)
               |           |           |  |        +--:(cleartext-sym\
metric-key)
               |           |           |  |        |  +--rw cleartext\
-symmetric-key?
               |           |           |  |        |          binary
               |           |           |  |        |          {cleart\
ext-symmetric-keys}?
               |           |           |  |        +--:(hidden-symmet\
ric-key)
               |           |           |  |        |        {hidden-s\
ymmetric-keys}?
```

```
               |           |           |  |        |  +--rw hidden-sy\
mmetric-key?
               |           |           |  |        |          empty
               |           |           |  |        +--:(encrypted-sym\
metric-key)
               |           |           |  |                 {encrypte\
d-symmetric-keys}?
               |           |           |  |           +--rw encrypted\
-symmetric-key
               |           |           |  |              +--rw encryp\
ted-by
               |           |           |  |              +--rw encryp\
ted-value-format
               |           |           |  |              |       iden\
tityref
               |           |           |  |              +--rw encryp\
ted-value
               |           |           |  |                     bina\
ry
               |           |           |  +--:(central-keystore)
               |           |           |           {central-keystore-\
supported,symmetric-keys}?
               |           |           |     +--rw central-keystore-r\
eference?
               |           |           |             ks:central-symme\
tric-key-ref
               |           |           +--rw external-identity
               |           |           |       string
               |           |           +--rw hash?
               |           |           |       tlscmn:epsk-supported-\
hash
               |           |           +--rw context?
               |           |           |       string
               |           |           +--rw target-protocol?
               |           |           |       uint16
               |           |           +--rw target-kdf?
               |           |                   uint16
               |           +--rw server-authentication
               |           |  +--rw ca-certs! {server-auth-x509-cert}\
?
               |           |  |  +--rw (inline-or-truststore)
               |           |  |     +--:(inline)
               |           |  |     |        {inline-definitions-supp\
orted}?
               |           |  |     |  +--rw inline-definition
               |           |  |     |     +--rw certificate* [name]
               |           |  |     |        +--rw name
               |           |  |     |        |       string
               |           |  |     |        +--rw cert-data
               |           |  |     |        |       trust-anchor-cer\
t-cms
               |           |  |     |        +---n certificate-expira\
tion
               |           |  |     |                {certificate-exp\
iration-notification}?
               |           |  |     |           +-- expiration-date
               |           |  |     |                   yang:date-and\
-time
```

```
               |           |  |     +--:(central-truststore)
               |           |  |              {central-truststore-supp\
orted,certificates}?
               |           |  |        +--rw central-truststore-refer\
ence?
               |           |  |                ts:central-certificate\
-bag-ref
               |           |  +--rw ee-certs! {server-auth-x509-cert}\
?
               |           |  |  +--rw (inline-or-truststore)
               |           |  |     +--:(inline)
               |           |  |     |        {inline-definitions-supp\
orted}?
               |           |  |     |  +--rw inline-definition
               |           |  |     |     +--rw certificate* [name]
               |           |  |     |        +--rw name
               |           |  |     |        |       string
               |           |  |     |        +--rw cert-data
               |           |  |     |        |       trust-anchor-cer\
t-cms
               |           |  |     |        +---n certificate-expira\
tion
               |           |  |     |                {certificate-exp\
iration-notification}?
               |           |  |     |           +-- expiration-date
               |           |  |     |                   yang:date-and\
-time
               |           |  |     +--:(central-truststore)
               |           |  |              {central-truststore-supp\
orted,certificates}?
               |           |  |        +--rw central-truststore-refer\
ence?
               |           |  |                ts:central-certificate\
-bag-ref
               |           |  +--rw raw-public-keys!
               |           |  |       {server-auth-raw-public-key}?
               |           |  |  +--rw (inline-or-truststore)
               |           |  |     +--:(inline)
               |           |  |     |        {inline-definitions-supp\
orted}?
               |           |  |     |  +--rw inline-definition
               |           |  |     |     +--rw public-key* [name]
               |           |  |     |        +--rw name
               |           |  |     |        |       string
               |           |  |     |        +--rw public-key-format
               |           |  |     |        |       identityref
               |           |  |     |        +--rw public-key
               |           |  |     |                binary
               |           |  |     +--:(central-truststore)
               |           |  |              {central-truststore-supp\
orted,public-keys}?
               |           |  |        +--rw central-truststore-refer\
ence?
               |           |  |                ts:central-public-key-\
bag-ref
               |           |  +--rw tls12-psks?        empty
               |           |  |       {server-auth-tls12-psk}?
               |           |  +--rw tls13-epsks?       empty
```

```
               |           |          {server-auth-tls13-epsk}?
               |           +--rw hello-params {tlscmn:hello-params}?
               |           |  +--rw tls-versions
               |           |  |  +--rw min?   identityref
               |           |  |  +--rw max?   identityref
               |           |  +--rw cipher-suites
               |           |     +--rw cipher-suite*
               |           |             tlscsa:tls-cipher-suite-algo\
rithm
               |           +--rw keepalives {tls-client-keepalives}?
               |              +--rw peer-allowed-to-send?   empty
               |              +--rw test-peer-aliveness!
               |                 +--rw max-wait?       uint16
               |                 +--rw max-attempts?   uint8
               +--rw filter
               |  +--rw facility-list* [facility severity]
               |     +--rw facility            union
               |     +--rw severity            union
               |     +--rw advanced-compare {select-adv-compare}?
               |        +--rw compare?   enumeration
               |        +--rw action?    identityref
               +--rw pattern-match?       string {select-match}?
               +--rw structured-data?     boolean {structured-data}?
               +--rw facility-override?   identityref
               +--rw source-interface?    if:interface-ref
               |       {remote-source-interface}?
               +--rw signing! {signed-messages}?
                  +--rw cert-signers
                     +--rw cert-signer* [name]
                     |  +--rw name              string
                     |  +--rw cert
                     |  |  +--rw public-key-format?
                     |  |  |       identityref
                     |  |  +--rw public-key?                    binar\
y
                     |  |  +--rw private-key-format?
                     |  |  |       identityref
                     |  |  +--rw (private-key-type)
                     |  |  |  +--:(cleartext-private-key)
                     |  |  |  |        {cleartext-private-keys}?
                     |  |  |  |  +--rw cleartext-private-key?   binar\
y
                     |  |  |  +--:(hidden-private-key)
                     |  |  |  |        {hidden-private-keys}?
                     |  |  |  |  +--rw hidden-private-key?      empty\

                     |  |  |  +--:(encrypted-private-key)
                     |  |  |           {encrypted-private-keys}?
                     |  |  |     +--rw encrypted-private-key
                     |  |  |        +--rw encrypted-by
                     |  |  |        +--rw encrypted-value-format
                     |  |  |        |       identityref
                     |  |  |        +--rw encrypted-value
                     |  |  |                binary
                     |  |  +--rw cert-data?
                     |  |  |       end-entity-cert-cms
                     |  |  +---n certificate-expiration
                     |  |  |       {certificate-expiration-notificati\
```

```
on}?
                        |  |  |  +-- expiration-date
                        |  |  |          yang:date-and-time
                        |  |  +---x generate-csr {csr-generation}?
                        |  |     +---w input
                        |  |     |  +---w csr-format    identityref
                        |  |     |  +---w csr-info      csr-info
                        |  |     +--ro output
                        |  |        +--ro (csr-type)
                        |  |           +--:(p10-csr)
                        |  |              +--ro p10-csr?   p10-csr
                        |  +--rw hash-algorithm?   enumeration
                        +--rw cert-initial-repeat?   uint32
                        +--rw cert-resend-delay?     uint32
                        +--rw cert-resend-count?     uint32
                        +--rw sig-max-delay?         uint32
                        +--rw sig-number-resends?    uint32
                        +--rw sig-resend-delay?      uint32
                        +--rw sig-resend-count?      uint32
```

Appendix B. Implementer Guidelines

B.1. Extending Facilities

Many vendors extend the list of facilities available for logging in their implementation. Additional facilities may not work with the syslog protocol as defined in [RFC5424]. Thus, such facilities apply for local syslog-like logging functionality.

The following is an example that shows how additional facilities could be added to the list of available facilities (two facilities are added in this example):

```
module example-vendor-syslog-types {
  namespace "http://example.com/ns/vendor-syslog-types";
  prefix vendor-syslogtypes;

  import ietf-syslog {
    prefix syslog;
  }

  organization
    "Example, Inc.";
  contact
    "Example, Inc.
     Customer Service

     Email: syslog-yang@example.com";
  description
    "This module contains a collection of vendor-specific YANG type
     definitions for Syslog.";

  revision 2025-04-30 {
    description
      "Version 1.0";
    reference
      "Vendor Syslog Types: Syslog YANG Module";
  }

  identity vendor_specific_type_1 {
    base syslog:syslog-facility;
    description
      "Adding vendor-specific type 1 to syslog-facility";
  }

  identity vendor_specific_type_2 {
    base syslog:syslog-facility;
    description
      "Adding vendor-specific type 2 to syslog-facility";
  }
}
```

B.2. Syslog Terminal Output

Terminal output with requirements more complex than the console subtree currently provides are expected to be supported via vendor extensions rather than handled via the file subtree.

B.3. Syslog File Naming Convention

The syslog/file/log-file/file-rotation container contains configuration parameters for syslog file rotation. This section describes how these fields might be used by an implementer to name syslog files in a rotation process. This information is offered as an informative guide only.

When an active syslog file with a name specified by log-file/name reaches log-file/max-file-size and/or syslog events arrive after the period specified by log-file/rollover, the logging system can close the file, compress it, and name the archive file <log-file/ name>.0.gz. The logging system can then open a new active syslog file <log-file/name>.

When the new syslog file reaches either of the size limits referenced above, <log-file/name>.0.gz can be renamed <log-file/name>.1.gz and the new syslog file can be closed, compressed, and renamed <log-file/ name>.0.gz. Each time that a new syslog file is closed, each of the prior syslog archive files named <log-file/name>.<n>.gz can be renamed to <log-file/name>.<n + 1>.gz.

Removal of archive log files could occur when either or both:

- log-file/number-of-files is specified. The logging system can create up to log-file/number-of-files syslog archive files, after which the contents of the oldest archived file could be overwritten.
- log-file/retention is specified. The logging system can remove those syslog archive files whose file expiration time (file creation time plus the specified log-file/retention time) is prior to the current time.

Acknowledgements

The authors wish to thank the following who commented on this proposal:

Andy Bierman, Martin Bjorklund, Alex Campbell, Alex Clemm, Francis Dupont, Jim Gibson, Jeffrey Haas, Bob Harold, John Heasley, Giles Heron, Lisa Huang, Mahesh Jethanandani, Warren Kumari, Jeffrey K Lange, Jan Lindblad, Chris Lonvick, Alexey Melnikov, Kathleen Moriarty, Tom Petch, Adam Roach, Juergen Schoenwaelder, Phil Shafer, Yaron Sheffer, Jason Sterne, Peter Van Horne, Kent Watsen, Bert Wijnen, Dale R Worley, and Aleksandr Zhdankin.

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