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Syslog YANG Model
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Abstract

This document describes a data model for the configuration of syslog.

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[1.](#) Introduction

Operating systems, processes and applications generate messages indicating their own status or the occurrence of events. These messages are useful for managing and/or debugging the network and its services. The BSD syslog protocol is a widely adopted protocol that is used for transmission and processing of the messages.

Since each process, application and operating system was written somewhat independently, there is little uniformity to the content of syslog messages. For this reason, no assumption is made upon the formatting or contents of the messages. The protocol is simply designed to transport these event messages. No acknowledgement of the receipt is made.

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

We are using definitions of syslog protocol from [[RFC5424](#)] in this RFC.

[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 [RFC 2119](#) [[RFC2119](#)].

[1.2.](#) Terminology

The term "message originator" is derived from the term "originator" as defined in [[RFC5424](#)]: an "originator" generates syslog content to be carried in a message.

The term "message distributor" is defined as a function that filters log messages and then distributes them.

The terms "relay" and "collectors" are as defined in [[RFC5424](#)].

[2.](#) Problem Statement

This document defines a YANG [[RFC6020](#)] configuration data model that may be used to configure one or more syslog processes running on a system. YANG 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 which allows implementations to support only those syslog features that lie within their capabilities.

This module can be used to configure the syslog application conceptual layer [[RFC5424](#)].

[3.](#) Design of the Syslog Model

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

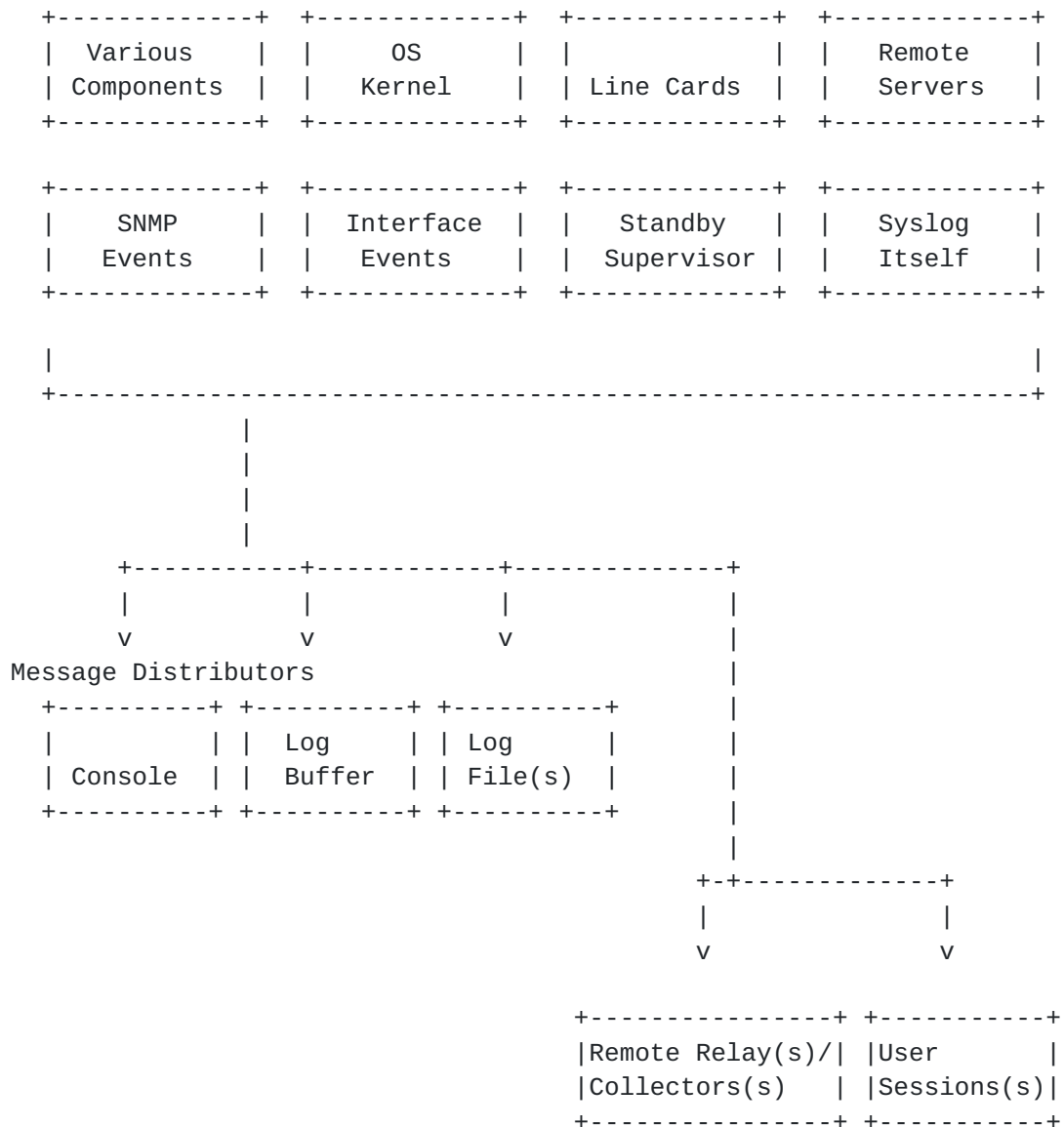
This draft addresses the common leafs between implementations and creates a common model, which can be augmented with proprietary features, if necessary. The base model is designed to be very simple for maximum flexibility.

Syslog consists of message originators, and message distributors. The following digram shows syslog messages flowing from a message

originator, to message distributors where suppression filtering can take place.

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

Message Originators



The leaves in the base syslog model log-input-transport container correspond to remote message originators or remote message relays.

The leaves in the base syslog model log-actions container correspond to each message distributor:


```
console
log buffer
log file(s)
remote relay(s)/collector(s)
user session(s).
```

Optional features are used to specified functionality that is present in specific vendor configurations.

3.1. Syslog Module

A simplified graphical representation of the complete data tree is presented here.

Each node is printed as:

```
<status> <flags> <name> <opts> <type> <if-features>
```

<status> is one of:

```
+ for current
x for deprecated
o for obsolete
```

<flags> is one of:

```
rw for configuration data
ro for non-configuration data
-x for rpcs
-n for notifications
```

<name> is the name of the node

```
(<name>) means that the node is a choice node
:(<name>) means that the node is a case node
```

If the node is augmented into the tree from another module, its name is printed as <prefix>:<name>.

<opts> is one of:

```
? for an optional leaf or choice
! for a presence container
* for a leaf-list or list
[<keys>] for a list's keys
```

<type> is the name of the type for leafs and leaf-lists

If the type is a leafref, the type is printed as "-> TARGET", where TARGET is either the leafref path, with prefixed removed if possible.

<if-features> is the list of features this node depends on, printed within curly brackets and a question mark "{...}?"

```

module: ietf-syslog
  +--rw syslog
    +--rw actions
      +--rw console!
        | +--rw log-selector
        |   +--rw (selector-facility)
        |   | +--:(no-log-facility)
        |   | | +--rw no-facilities?    empty
        |   | +--:(log-facility)
        |   |   +--rw log-facility* [facility]
        |   |     +--rw facility        union
        |   |     +--rw severity        union
        |   |     +--rw compare-op?    enumeration {select-sev-compare}?
        |   +--rw pattern-match?    string {select-match}?
      +--rw buffer
        | +--rw log-selector
        | | +--rw (selector-facility)
        | | | +--:(no-log-facility)
        | | | | +--rw no-facilities?    empty
        | | | +--:(log-facility)
        | | |   +--rw log-facility* [facility]
        | | |     +--rw facility        union
        | | |     +--rw severity        union
        | | |     +--rw compare-op?    enumeration {select-sev-compare}?
        | | +--rw pattern-match?    string {select-match}?
        | +--rw buffer-limit-bytes?    uint64 {buffer-limit-bytes}?
        | +--rw buffer-limit-messages? uint64 {buffer-limit-messages}?
        | +--rw structured-data?       boolean {structured-data}?
      +--rw file
        | +--rw log-file* [name]
        |   +--rw name                inet:uri
        |   +--rw log-selector
        |   | +--rw (selector-facility)
        |   | | +--:(no-log-facility)
        |   | | | +--rw no-facilities?    empty
        |   | | +--:(log-facility)
        |   | |   +--rw log-facility* [facility]
        |   | |     +--rw facility        union
        |   | |     +--rw severity        union
        |   | |     +--rw compare-op?    enumeration {select-sev-
compare}?
        |   | +--rw pattern-match?    string {select-match}?

```

| +--rw structured-data? boolean {structured-data}?

```

|     +--rw file-archive
|         +--rw number-of-files?    uint32 {file-limit-size}?
|         +--rw max-file-size?      uint64 {file-limit-size}?
|         +--rw rollover?           uint32 {file-limit-duration}?
|         +--rw retention?          uint16 {file-limit-duration}?
+--rw remote
|   +--rw destination* [name]
|       +--rw name                  string
|       +--rw (transport)
|           | +--:(tcp)
|           | | +--rw tcp
|           | |     +--rw address?  inet:host
|           | |     +--rw port?     inet:port-number
|           | +--:(udp)
|           | | +--rw udp
|           | |     +--rw address?  inet:host
|           | |     +--rw port?     inet:port-number
|           | +--:(tls)
|           | +--rw tls
|       +--rw log-selector
|           | +--rw (selector-facility)
|           | | +--:(no-log-facility)
|           | | | +--rw no-facilities?  empty
|           | | +--:(log-facility)
|           | | | +--rw log-facility* [facility]
|           | | |     +--rw facility    union
|           | | |     +--rw severity    union
|           | | |     +--rw compare-op? enumeration {select-sev-
compare}?
|           | | +--rw pattern-match?  string {select-match}?
|       +--rw destination-facility?  identityref
|       +--rw source-interface?      if:interface-ref
|       +--rw structured-data?       boolean {structured-data}?
|       +--rw syslog-sign! {signed-messages}?
|           +--rw cert-initial-repeat  uint16
|           +--rw cert-resend-delay    uint16
|           +--rw cert-resend-count    uint16
|           +--rw sig-max-delay        uint16
|           +--rw sig-number-resends   uint16
|           +--rw sig-resend-delay     uint16
|           +--rw sig-resend-count     uint16
+--rw session
|   +--rw all-users!
|       +--rw log-selector
|           +--rw (selector-facility)
|           | +--:(no-log-facility)
|           | | +--rw no-facilities?  empty
|           | | +--:(log-facility)

```

| | +--rw log-facility* [facility]

```

|      |      +--rw facility      union
|      |      +--rw severity      union
|      |      +--rw compare-op?   enumeration {select-sev-
compare}?
|      +--rw pattern-match?   string {select-match}?
+--rw user* [name]
    +--rw name                  string
    +--rw log-selector
        +--rw (selector-facility)
        |   +--:(no-log-facility)
        |   |   +--rw no-facilities?   empty
        |   +--:(log-facility)
        |       +--rw log-facility* [facility]
        |           +--rw facility      union
        |           +--rw severity      union
        |           +--rw compare-op?   enumeration {select-sev-
compare}?
        +--rw pattern-match?   string {select-match}?

```

4. Syslog YANG Modules

4.1. The ietf-syslog-types Module

This module references [\[RFC5424\]](#).

```

<CODE BEGINS> file "ietf-syslog-types.yang"
module ietf-syslog-types {
  namespace "urn:ietf:params:xml:ns:yang:ietf-syslog-types";
  prefix syslogtypes;

  organization "IETF NETMOD (NETCONF Data Modeling Language) Working
    Group";

  contact
    "WG Web:  <http://tools.ietf.org/wg/netmod/>
    WG List:  <mailto:netmod@ietf.org>

    WG Chair: Lou Berger
              <mailto:lberger@labn.net>

    WG Chair: Kent Watsen
              <mailto:kwatsen@juniper.net>

    Editor:   Kiran Agrahara Sreenivasa
              <mailto:kkoushik@cisco.com>

    Editor:   Clyde Wildes
              <mailto:cwildes@cisco.com>";

  description
    "This module contains a collection of YANG type definitions for

```

SYSLOG.

Wildes & Koushik

Expires January 9, 2017

[Page 8]

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This version of this YANG module is part of RFC XXXX (<http://tools.ietf.org/html/rfcXXXX>); see the RFC itself for full legal notices.";

reference

"[RFC 5424](#): The Syslog Protocol";

```
revision 2016-07-08 {  
  description  
    "Initial Revision";  
  reference  
    "RFC XXXX: SYSLOG YANG Model";  
}
```

```
typedef severity {  
  type enumeration {  
    enum "emergency" {  
      value 0;  
      description  
        "Emergency Level Msg";  
    }  
    enum "alert" {  
      value 1;  
      description  
        "Alert Level Msg";  
    }  
    enum "critical" {  
      value 2;  
      description  
        "Critical Level Msg";  
    }  
    enum "error" {  
      value 3;
```



```
        description
            "Error Level Msg";
    }
    enum "warning" {
        value 4;
        description
            "Warning Level Msg";
    }
    enum "notice" {
        value 5;
        description
            "Notification Level Msg";
    }
    enum "info" {
        value 6;
        description
            "Informational Level Msg";
    }
    enum "debug" {
        value 7;
        description
            "Debugging Level Msg";
    }
}
description
    "The definitions for Syslog message severity as per RFC 5424.";
}

identity syslog-facility {
    description
        "This identity is used as a base for all syslog facilities as
        per RFC 5424.";
}

identity kern {
    base syslog-facility;
    description
        "The facility for kernel messages (0) as defined in RFC 5424.";
}

identity user {
    base syslog-facility;
    description
        "The facility for user-level messages (1) as defined in RFC 5424.";
}

identity mail {
    base syslog-facility;
```



```
    description
        "The facility for the mail system (2) as defined in RFC 5424.";
}

identity daemon {
    base syslog-facility;
    description
        "The facility for the system daemons (3) as defined in RFC 5424.";
}

identity auth {
    base syslog-facility;
    description
        "The facility for security/authorization messages (4) as defined
        in RFC 5424.";
}

identity syslog {
    base syslog-facility;
    description
        "The facility for messages generated internally by syslogd
        facility (5)as defined in RFC 5424.";
}

identity lpr {
    base syslog-facility;
    description
        "The facility for the line printer subsystem (6) as defined in
        RFC 5424.";
}

identity news {
    base syslog-facility;
    description
        "The facility for the network news subsystem (7) as defined in
        RFC 5424.";
}

identity uucp {
    base syslog-facility;
    description
        "The facility for the UUCP subsystem (8) as defined in RFC 5424.";
}

identity cron {
    base syslog-facility;
    description
        "The facility for the clock daemon (9) as defined in RFC 5424.";
}
```



```
}

identity authpriv {
    base syslog-facility;
    description
        "The facility for privileged security/authorization messages (10)
        as defined in RFC 5424.";
}

identity ftp {
    base syslog-facility;
    description
        "The facility for the FTP daemon (11) as defined in RFC 5424.";
}

identity ntp {
    base syslog-facility;
    description
        "The facility for the NTP subsystem (12) as defined in RFC 5424.";
}

identity audit {
    base syslog-facility;
    description
        "The facility for log audit messages (13) as defined in RFC 5424.";
}

identity console {
    base syslog-facility;
    description
        "The facility for log alert messages (14) as defined in RFC 5424.";
}

identity cron2 {
    base syslog-facility;
    description
        "The facility for the second clock daemon (15) as defined in
        RFC 5424.";
}

identity local0 {
    base syslog-facility;
    description
        "The facility for local use 0 messages (16) as defined in
        RFC 5424.";
}

identity local1 {
```



```
    base syslog-facility;
    description
        "The facility for local use 1 messages (17) as defined in
        RFC 5424.";
}

identity local2 {
    base syslog-facility;
    description
        "The facility for local use 2 messages (18) as defined in
        RFC 5424.";
}

identity local3 {
    base syslog-facility;
    description
        "The facility for local use 3 messages (19) as defined in
        RFC 5424.";
}

identity local4 {
    base syslog-facility;
    description
        "The facility for local use 4 messages (20) as defined in
        RFC 5424.";
}

identity local5 {
    base syslog-facility;
    description
        "The facility for local use 5 messages (21) as defined in
        RFC 5424.";
}

identity local6 {
    base syslog-facility;
    description
        "The facility for local use 6 messages (22) as defined in
        RFC 5424.";
}

identity local7 {
    base syslog-facility;
    description
        "The facility for local use 7 messages (23) as defined in
        RFC 5424.";
}
}
```


<CODE ENDS>

4.2. The ietf-syslog Module

This module imports typedefs from [RFC6021] and [RFC7223], and it references [RFC5424], [RFC5425], [RFC5426], [RFC6587], and [RFC5848].

```
<CODE BEGINS> file "ietf-syslog.yang"
module ietf-syslog {
  namespace "urn:ietf:params:xml:ns:yang:ietf-syslog";
  prefix syslog;

  import ietf-inet-types {
    prefix inet;
  }

  import ietf-interfaces {
    prefix if;
  }

  //import ietf-tls-client {
  //  prefix tlsc;
  //}

  import ietf-syslog-types {
    prefix syslogtypes;
  }

  organization "IETF NETMOD (NETCONF Data Modeling Language)
  Working Group";
  contact
    "WG Web:  <http://tools.ietf.org/wg/netmod/>
    WG List:  <mailto:netmod@ietf.org>

    WG Chair: Lou Berger
               <mailto:lberger@labn.net>

    WG Chair: Kent Watsen
               <mailto:kwatsen@juniper.net>

    Editor:   Kiran Agrahara Sreenivasa
               <mailto:kkoushik@cisco.com>

    Editor:   Clyde Wildes
               <mailto:cwildes@cisco.com>";
  description
    "This module contains a collection of YANG definitions
    for syslog configuration.
```


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The key words 'MUST', 'MUST NOT', 'REQUIRED', 'SHALL', 'SHALL NOT', 'SHOULD', 'SHOULD NOT', 'RECOMMENDED', 'MAY', and 'OPTIONAL' in the module text are to be interpreted as described in [RFC 2119](#) (<http://tools.ietf.org/html/rfc2119>).

This version of this YANG module is part of RFC XXXX (<http://tools.ietf.org/html/rfcXXXX>); see the RFC itself for full legal notices.";

reference

"[RFC 5424](#): The Syslog Protocol
[RFC 5425](#): Transport Layer Security (TLS) Transport Mapping for Syslog
[RFC 5426](#): Transmission of Syslog Messages over UDP
[RFC 6587](#): Transmission of Syslog Messages over TCP
[RFC 5848](#): Signed Syslog Messages";

```
revision 2016-07-08 {  
  description  
    "Initial Revision";  
  reference  
    "RFC XXXX: Syslog YANG Model";  
}
```

```
feature buffer-limit-bytes {  
  description  
    "This feature indicates that local memory logging buffers  
    are limited in size using a limit expressed in bytes.";  
}
```

```
feature buffer-limit-messages {  
  description  
    "This feature indicates that local memory logging buffers  
    are limited in size using a limit expressed in number  
    of log messages.";  
}
```

```
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 select-sev-compare {
  description
    "This feature represents the ability to select messages
    using the additional operators equal to, or not equal to
    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 as per RFC 5424.";
}

feature signed-messages {
  description
    "This feature represents the ability to configure signed
    syslog messages according to RFC 5848.";
}

grouping log-severity {
  description
    "This grouping defines the severity value that is used to
    select log messages.";
  leaf severity {
    type union {
      type syslogtypes:severity;
      type enumeration {
        enum all {
          value -1;
          description
            "This enum describes the case where all severities
            are selected.";
        }
      }
    }
  }
}
```



```
    }
    enum none {
        value -2;
        description
            "This enum describes the case where no severities
            are selected.";
    }
}
mandatory true;
description
    "This leaf specifies the syslog message severity. When
    severity is specified, the default severity comparison
    is all messages of the specified severity and greater are
    selected. 'all' is a special case which means all severities
    are selected. 'none' is a special case which means that
    no selection should occur or disable this filter.";
}
leaf compare-op {
    when '../severity != "all" and
        ../severity != "none"' {
        description
            "The compare-op is not applicable for severity 'all' or
            severity 'none'";
    }
}
if-feature select-sev-compare;
type enumeration {
    enum equals-or-higher {
        description
            "This enum specifies all messages of the specified
            severity and higher are logged according to the
            given log-action";
    }
    enum equals {
        description
            "This enum specifies all messages that are for
            the specified severity are logged according to the
            given log-action";
    }
    enum not-equals {
        description
            "This enum specifies all messages that are not for
            the specified severity are logged according to the
            given log-action";
    }
}
default equals-or-higher;
description
```



```
    "This leaf describes the option to specify how the
      severity comparison is performed.";
  }
}

grouping selector {
  description
    "This grouping defines a syslog selector which is used to
    select log messages for the log-action (buffer, file,
    etc). Choose one of the following:
      no-log-facility
      log-facility [<facility> <severity>...]";
  container log-selector {
    description
      "This container describes the log selector parameters
      for syslog.";
    choice selector-facility {
      mandatory true;
      description
        "This choice describes the option to specify no
        facilities, or a specific facility which can be
        all for all facilities.";
      case no-log-facility {
        description
          "This case specifies no facilities will match when
          comparing the syslog message facility. This is a
          method that can be used to effectively disable a
          particular log-action (buffer, file, etc).";
        leaf no-facilities {
          type empty;
          description
            "This leaf specifies that no facilities are selected
            for this log-action.";
        }
      }
    }
    case log-facility {
      description
        "This case specifies one or more specified facilities
        will match when comparing the syslog message facility.";
      list log-facility {
        key facility;
        description
          "This list describes a collection of syslog
          facilities and severities.";
        leaf facility {
          type union {
            type identityref {
              base syslogtypes: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 log-severity;
}
}
}
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 RFC 5424
      SYSLOG-MSG field.";
}
}
}

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 to
        the log file. If true, messages will be written
        with one or more STRUCTURED-DATA elements as per
        RFC5424; if false, messages will be written with
        STRUCTURED-DATA = NILVALUE.";
  }
}

container syslog {
  description
```



```
"This container describes the configuration parameters for
syslog.";
container actions {
  description
    "This container describes the log-action parameters
    for syslog.";
  container console {
    presence "Enables logging console configuration";
    description
      "This container describes the configuration parameters for
      console logging.";
    uses selector;
  }
  container buffer {
    description
      "This container describes the configuration parameters for
      local memory buffer logging. The buffer is circular in
      nature, so newer messages overwrite older messages after
      the buffer is filled. The method used to read syslog messages
      from the buffer is supplied by the local implementation.";
    uses selector;
    leaf buffer-limit-bytes {
      if-feature buffer-limit-bytes;
      type uint64;
      units "bytes";
      description
        "This leaf configures the amount of memory (in bytes) that
        will be dedicated to the local memory logging buffer.
        The default value varies by implementation.";
    }
    leaf buffer-limit-messages {
      if-feature buffer-limit-messages;
      type uint64;
      units "log messages";
      description
        "This leaf configures the number of log messages that
        will be dedicated to the local memory logging buffer.
        The default value varies by implementation.";
    }
  }
  uses structured-data;
}
container file {
  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:.";
}
uses selector;
uses structured-data;
container file-archive {
  description
    "This container describes the configuration
    parameters for log file archiving.";
  leaf number-of-files {
    if-feature file-limit-size;
    type uint32;
    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 uint64;
    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 uint16;
    units "hours";
```



```
        description
        "This leaf specifies the length of time that
        completed/closed log event files should be stored
        in the file system before they are deleted.";
    }
}
}
}
container remote {
    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 tcp {
                container tcp {
                    description
                    "This container describes the TCP transport
                    options.";
                    reference
                    "RFC 6587: Transmission of Syslog Messages over TCP";
                    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 udp {
    container udp {
      description
        "This container describes the UDP transport
        options.";
      reference
        "RFC 5426: Transmission of Syslog Messages over UDP";
      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 ";
    // uses tlsc:initiating-tls-client-grouping {
    //   refine port {
    //     default 6514;
    //     description
    //       "TCP port 6514 has been allocated as the default
    //       port for syslog over TLS.";
    //   }
    // }
  }
}
}
uses selector;
leaf destination-facility {
  type identityref {
    base syslogtypes:syslog-facility;
```



```
    }
    default syslogtypes:local7;
    description
      "This leaf specifies the facility used in messages
        delivered to the remote server.";
  }
  leaf source-interface {
    type if:interface-ref;
    description
      "This leaf sets the source interface for the remote
        syslog server. Either the interface name or the
        interface IP address can be specified. If not set,
        messages sent to a remote syslog server will
        contain the IP address of the interface the syslog
        message uses to exit the network element";
  }
  uses structured-data;
  container syslog-sign {
    if-feature signed-messages;
    presence
      "If present, syslog-sign is activated.";
    description
      "This container describes the configuration
        parameters for signed syslog messages as described
        by RFC 5848.";
    reference
      "RFC 5848: Signed Syslog Messages";
    leaf cert-initial-repeat {
      type uint16;
      mandatory true;
      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 uint16;
      mandatory true;
      description
        "This leaf specifies the maximum time delay in
          seconds until resending the Certificate Block.";
    }
    leaf cert-resend-count {
      type uint16;
      mandatory true;
      description
        "This leaf specifies the maximum number of other
          syslog messages to send until resending the
```



```
        Certificate Block.";
    }
    leaf sig-max-delay {
        type uint16;
        mandatory true;
        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 uint16;
        mandatory true;
        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 [RFC5426] is used).";
    }
    leaf sig-resend-delay {
        type uint16;
        mandatory true;
        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 uint16;
        mandatory true;
        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.";
    }
}
}
}
}
container session {
    description
        "This container describes the configuration parameters for
        user CLI session logging configuration.";
    container all-users {
```



```
        presence "Enables logging to all user sessions.";
        description
            "This container describes the configuration
            parameters for all users.";
        uses selector;
    }
    list user {
        key "name";
        description
            "This list describes a collection of user names.";
        leaf name {
            type string;
            description
                "This leaf uniquely describes a user name which
                is the login name of the user whose session
                is to receive log messages.";
        }
        uses selector;
    }
}
}
}
}
}
<CODE ENDS>
```

5. Usage Examples

Requirement:

Enable console logging of syslogs of severity critical

Here is the example syslog configuration xml:

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <edit-config>
    <target>
      <candidate/>
    </target>
    <config xmlns:xc="urn:ietf:params:xml:ns:netconf:base:1.0">
      <syslog xmlns="urn:ietf:params:xml:ns:yang:ietf-syslog"
        xmlns:syslog="urn:ietf:params:xml:ns:yang:ietf-syslog">
        <actions>
          <console>
            <log-selector>
              <log-facility>
                <facility>all</facility>
                <severity>critical</severity>
              </log-facility>
            </log-selector>
          </console>
        </actions>
      </syslog>
    </config>
  </edit-config>
</rpc>
```



```
        </actions>
      </syslog>
    </config>
  </edit-config>
</rpc>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ok/>
</rpc-reply>
```

Enable remote logging of syslogs to udp destination 2001:db8:a0b:12f0::1
for facility auth, severity error

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <edit-config>
    <target>
      <candidate/>
    </target>
    <config xmlns:xc="urn:ietf:params:xml:ns:netconf:base:1.0">
      <syslog xmlns="urn:ietf:params:xml:ns:yang:ietf-syslog"
        xmlns:syslog="urn:ietf:params:xml:ns:yang:ietf-syslog">
        <actions>
          <remote>
            <destination>
              <name>remote1</name>
              <udp>
                <address>2001:db8:a0b:12f0::1</address>
              </udp>
              <log-selector>
                <log-facility>
                  <facility xmlns:syslogtypes=
                    "urn:ietf:params:xml:ns:yang:ietf-syslog-types">
                    syslogtypes:auth</facility>
                  <severity>error</severity>
                </log-facility>
              </log-selector>
            </destination>
          </remote>
        </actions>
      </syslog>
    </config>
  </edit-config>
</rpc>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
```


<ok/>
</rpc-reply>

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7. IANA Considerations

This document registers two URIs in the IETF XML registry [[RFC3688](#)].

Following the format in [RFC 3688](#), the following registration is requested to be made:

URI: urn:ietf:params:xml:ns:yang:ietf-syslog-types

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-syslog-types namespace: urn:ietf:params:xml:ns:yang:ietf-syslog-types

prefix: ietf-syslog-types reference: RFC XXXX

Following the format in [RFC 3688](#), the following registration is requested to be made:

URI: urn:ietf:params:xml:ns:yang:ietf-syslog

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-syslog namespace: urn:ietf:params:xml:ns:yang:ietf-syslog

prefix: ietf-syslog

reference: RFC XXXX

8. Security Considerations

The YANG module defined in this memo is designed to be accessed via the NETCONF protocol [[RFC6241](#)]. The lowest NETCONF layer is the secure transport layer and the mandatory-to-implement secure transport is SSH [[RFC6242](#)]. The NETCONF access control model [[RFC6536](#)] provides the means to restrict access for particular NETCONF users to a pre-configured subset of all available NETCONF protocol operations and content.

There are a number of data nodes defined in the YANG module which 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.

8.1. Resource Constraints

Network administrators must take the time to estimate the appropriate memory limits caused by the configuration of actions/buffer using buffer-limit-bytes and/or buffer-limit-messages where necessary to limit the amount of memory used.

Network administrators must take the time to estimate the appropriate storage capacity caused by the configuration of actions/file using file-archive attributes to limit storage used.

It is the responsibility of the network administrator to ensure that the configured message flow does not overwhelm system resources.

8.2. Inappropriate Configuration

It is the responsibility of the network administrator to ensure that the messages are actually going to the intended recipients.

9. References

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9.2. Informative References

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Appendix A. Implementor Guidelines

A.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](#)] and hence 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 (in this example two facilities are added):


```
module vendor-syslog-types-example {
  namespace "urn:vendor:params:xml:ns:yang:vendor-syslog-types";
  prefix vendor-syslogtypes;

  import ietf-syslog-types {
    prefix syslogtypes;
  }

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

     E-mail: syslog-yang@vendor.com";

  description
    "This module contains a collection of vendor-specific YANG type
     definitions for SYSLOG.";

  revision 2016-03-20 {
    description
      "Version 1.0";
    reference
      "Vendor SYSLOG Types: SYSLOG YANG Model";
  }

  identity vendor_specific_type_1 {
    base syslogtypes:syslog-facility;
  }

  identity vendor_specific_type_2 {
    base syslogtypes:syslog-facility;
  }
}
```

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