

## Textual Conventions for Syslog Management

### Status of This Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

### Copyright Notice

Copyright (c) 2009 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to BCP 78 and the IETF Trust's Legal Provisions Relating to IETF Documents in effect on the date of publication of this document (<http://trustee.ietf.org/license-info>). Please review these documents carefully, as they describe your rights and restrictions with respect to this document.

This document may contain material from IETF Documents or IETF Contributions published or made publicly available before November 10, 2008. The person(s) controlling the copyright in some of this material may not have granted the IETF Trust the right to allow modifications of such material outside the IETF Standards Process. Without obtaining an adequate license from the person(s) controlling the copyright in such materials, this document may not be modified outside the IETF Standards Process, and derivative works of it may not be created outside the IETF Standards Process, except to format it for publication as an RFC or to translate it into languages other than English.

### Abstract

This MIB module defines textual conventions to represent Facility and Severity information commonly used in syslog messages. The intent is that these textual conventions will be imported and used in MIB modules that would otherwise define their own representations.

## Table of Contents

|   |   |
|---|---|
| 1. The Internet-Standard Management Framework ..... | 2 |
| 2. Background .....                                 | 2 |
| 3. The Syslog Textual Conventions MIB .....         | 3 |
| 4. Security Considerations .....                    | 7 |
| 5. IANA Considerations .....                        | 7 |
| 6. References .....                                 | 8 |
| 6.1. Normative References .....                     | 8 |
| 6.2. Informative References .....                   | 8 |
| 7. Acknowledgments .....                            | 8 |

### 1. The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to section 7 of RFC 3410 [RFC3410].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580 [RFC2580].

### 2. Background

Operating systems, processes, and applications, collectively termed "Facilities" in the following, generate messages indicating their own status or the occurrence of events. These messages have come to be known as syslog messages. A syslog message in general will contain among other things a code representing the Facility that generated the message and a code representing the Severity of the message. The Facility and the Severity codes are commonly used to categorize and select received syslog messages for processing and display. The Facility codes have been useful in qualifying the originator of the content of the messages but in some cases they are not specific enough to explicitly identify the originator. Implementations of the syslog protocol [RFC5424] that contain structured data elements (SDEs) should use these SDEs to clarify the entity that originated the content of the message.

This document defines a set of textual conventions (TCs) that can be used to represent Facility and Severity codes commonly used in syslog messages.

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].

### 3. The Syslog Textual Conventions MIB

**SYSLOG-TC-MIB DEFINITIONS ::= BEGIN**

**IMPORTS**

**MODULE-IDENTITY**, mib-2  
FROM SNMPv2-SMI -- [RFC2578]  
**TEXTUAL-CONVENTION**  
FROM SNMPv2-TC; -- [RFC2579]

**syslogTCMIB MODULE-IDENTITY**

**LAST-UPDATED** "200903300000Z" -- 30 March 2009

**ORGANIZATION** "IETF Syslog Working Group"

**CONTACT-INFO**

"

Glenn Mansfield Keeni  
Postal: Cyber Solutions Inc.  
6-6-3, Minami Yoshinari  
Aoba-ku, Sendai, Japan 989-3204.  
Tel: +81-22-303-4012  
Fax: +81-22-303-4015  
EMail: glenn@cysols.com

Support Group EMail: syslog@ietf.org

"

**DESCRIPTION**

"The MIB module containing textual conventions for syslog messages.

Copyright (c) 2009 IETF Trust and the persons identified as authors of the code. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- Neither the name of Internet Society, IETF or IETF Trust, nor the names of specific contributors, may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS 'AS IS' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This version of this MIB module is part of RFC 5427;  
see the RFC itself for full legal notices.  
"

REVISION "200903300000Z" -- 30 March 2009

DESCRIPTION

"The initial version, published as RFC 5427."

::= { mib-2 173 }

-- -----  
-- Textual Conventions  
-- -----

SyslogFacility ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"This textual convention enumerates the Facilities that originate syslog messages.

The Facilities of syslog messages are numerically coded with decimal values. For interoperability and backwards-compatibility reasons, this document specifies a normative mapping between a label, which represents a Facility, and the corresponding numeric value. This label could be used in, for example, SNMP Manager user interfaces.

The label itself is often semantically meaningless because it is impractical to attempt to enumerate all possible Facilities, and many daemons and processes do not have an explicitly assigned Facility code or label. For example, there is no Facility label corresponding to an HTTP service. An HTTP service implementation might log messages as coming from, for example, 'local7' or 'uucp'. This is typical current practice, and originators, relays, and collectors can be configured to properly handle this situation. For improved accuracy, an application can also include an APP-NAME structured data element.

Note that operating system mechanisms for configuring syslog, such as syslog.conf, have not yet been standardized and might use different sets of Facility labels and/or mapping between Facility labels and Facility codes than the MIB.

In particular, the labels corresponding to Facility codes 4, 10, 13, and 14, and the code corresponding to the Facility label 'cron' are known to vary across different operating systems. To distinguish between the labels corresponding to Facility codes 9 and 15, a label of 'cron2' is assigned to the Facility code 15. This list is not intended to be exhaustive; other differences might exist, and new differences might be introduced in the future.

The mapping specified here **MUST** be used in a MIB network management interface, even though a particular syslog implementation might use a different mapping in a different network management interface.

REFERENCE "The Syslog Protocol (RFC5424): Table 1"

SYNTAX INTEGER  
{

|          |  |
|----------|--|
| kern     | (0), -- kernel messages                                |
| user     | (1), -- user-level messages                            |
| mail     | (2), -- mail system messages                           |
| daemon   | (3), -- system daemons' messages                       |
| auth     | (4), -- authorization messages                         |
| syslog   | (5), -- messages generated internally by<br>-- syslogd |
| lpr      | (6), -- line printer subsystem messages                |
| news     | (7), -- network news subsystem messages                |
| uucp     | (8), -- UUCP subsystem messages                        |
| cron     | (9), -- clock daemon messages                          |
| authpriv | (10), -- security/authorization messages               |

```
ftp          (11),-- ftp daemon messages
ntp          (12),-- NTP subsystem messages
audit        (13),-- audit messages
console      (14),-- console messages
cron2        (15),-- clock daemon messages
local0       (16),
local1       (17),
local2       (18),
local3       (19),
local4       (20),
local5       (21),
local6       (22),
local7       (23)
}
```

**SyslogSeverity ::= TEXTUAL-CONVENTION**

**STATUS** current

**DESCRIPTION**

"This textual convention enumerates the Severity levels of syslog messages.

The Severity levels of syslog messages are numerically coded with decimal values. For interoperability and backwards-compatibility reasons, this document specifies a normative mapping between a label, which represents a Severity level, and the corresponding numeric value. This label could be used in, for example, SNMP Manager user interfaces.

The label itself is often semantically meaningless because it is impractical to attempt to strictly define the criteria for each Severity level, and the criteria that is used by syslog originators is, and has historically been, implementation-dependent.

Note that operating system mechanisms for configuring syslog, such as `syslog.conf`, have not yet been standardized and might use different sets of Severity labels and/or mapping between Severity labels and Severity codes than the MIB.

For example, the `foobar` application might log messages as `'crit'` based on some subjective criteria. Yet the operator can configure syslog to forward these messages, even though the criteria for `'crit'` may differ from one originator to another. This is typical current practice, and originators, relays, and collectors can be configured to properly handle this situation.

```

"
REFERENCE "The Syslog Protocol (RFC5424): Table 2"
SYNTAX  INTEGER
{
    emerg          (0),  -- emergency; system is unusable
    alert          (1),  -- action must be taken immediately
    crit           (2),  -- critical condition
    err            (3),  -- error condition
    warning        (4),  -- warning condition
    notice         (5),  -- normal but significant condition
    info           (6),  -- informational message
    debug          (7)   -- debug-level messages
}

```

END

#### 4. Security Considerations

This module does not define any management objects. Instead, it defines a set of textual conventions which may be used by other MIB modules to define management objects. Meaningful security considerations can only be written in the MIB modules that define management objects. This document has therefore no impact on the security of the Internet. Since objects defined using the TCs defined in this document may introduce security issues, the user of these TCs should read the security considerations section of [RFC5424].

#### 5. IANA Considerations

The MIB modules in this document use the following IANA-assigned OBJECT IDENTIFIER values recorded in the SMI Numbers registry:

| Descriptor  | OBJECT IDENTIFIER value |
|-------------|-------------------------|
| -----       | -----                   |
| syslogTCMIB | { mib-2 173 }           |

## 6. References

### 6.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.
- [RFC2578] McCloghrie, K., Perkins, D., and J. Schoenwaelder, "Structure of Management Information Version 2 (SMIv2)", STD 58, RFC 2578, April 1999.
- [RFC2579] McCloghrie, K., Perkins, D., and J. Schoenwaelder, "Textual Conventions for SMIv2", STD 58, RFC 2579, April 1999.
- [RFC2580] McCloghrie, K., Perkins, D., and J. Schoenwaelder, "Conformance Statements for SMIv2", STD 58, RFC 2580, April 1999.
- [RFC5424] Gerhards, R., "The Syslog Protocol", RFC 5424, March 2009.

### 6.2. Informative References

- [RFC3410] Case, J., Mundy, R., Partain, D., and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", RFC 3410, December 2002.

## 7. Acknowledgments

This document is a product of the Syslog Working Group. The author would like to thank Chris Lonvick, David Harrington, Juergen Schoenwaelder, and Pasi Eronen for their comments and suggestions.

### Author's Address

Glenn Mansfield Keeni  
Cyber Solutions Inc.  
6-6-3 Minami Yoshinari  
Aoba-ku, Sendai 989-3204  
Japan

Phone: +81-22-303-4012  
EMail: glenn@cysols.com