

## NAME

Sys::Syslog - Perl interface to the UNIX syslog(3) calls

## VERSION

This is the documentation of version 0.33

## SYNOPSIS

```
use Sys::Syslog;                                # all except setlogsock()
use Sys::Syslog qw(:standard :macros);          # standard functions & macros

openlog($ident, $logopt, $facility);             # don't forget this
syslog($priority, $format, @args);
$oldmask = setlogmask($mask_priority);
closelog();
```

## DESCRIPTION

Sys::Syslog is an interface to the UNIX syslog(3) program. Call syslog() with a string priority and a list of printf() args just like syslog(3).

## EXPORTS

Sys::Syslog exports the following Exporter tags:

- `:standard` exports the standard syslog(3) functions:  
    openlog closelog setlogmask syslog
- `:extended` exports the Perl specific functions for syslog(3):  
    setlogsock
- `:macros` exports the symbols corresponding to most of your syslog(3) macros and the LOG\_UPTO() and LOG\_MASK() functions. See *CONSTANTS* for the supported constants and their meaning.

By default, Sys::Syslog exports the symbols from the `:standard` tag.

## FUNCTIONS

### openlog(\$ident, \$logopt, \$facility)

Opens the syslog. \$ident is prepended to every message. \$logopt contains zero or more of the options detailed below. \$facility specifies the part of the system to report about, for example LOG\_USER or LOG\_LOCAL0: see *Facilities* for a list of well-known facilities, and your syslog(3) documentation for the facilities available in your system. Check *SEE ALSO* for useful links. Facility can be given as a string or a numeric macro.

This function will croak if it can't connect to the syslog daemon.

Note that openlog() now takes three arguments, just like openlog(3).

**You should use openlog() before calling syslog().**

### Options

- `cons` - This option is ignored, since the failover mechanism will drop down to the console automatically if all other media fail.
- `ndelay` - Open the connection immediately (normally, the connection is opened when the first message is logged).
- `noeol` - When set to true, no end of line character (\n) will be appended to the message. This can be useful for some buggy syslog daemons.

- `nofatal` - When set to true, `openlog()` and `syslog()` will only emit warnings instead of dying if the connection to the syslog can't be established.
- `nonul` - When set to true, no NUL character (`\0`) will be appended to the message. This can be useful for some buggy syslog daemons.
- `nowait` - Don't wait for child processes that may have been created while logging the message. (The GNU C library does not create a child process, so this option has no effect on Linux.)
- `perror` - Write the message to standard error output as well to the system log (added in Sys::Syslog 0.22).
- `pid` - Include PID with each message.

### Examples

Open the syslog with options `ndelay` and `pid`, and with facility `LOCAL0`:

```
openlog($name, "ndelay,pid", "local0");
```

Same thing, but this time using the macro corresponding to `LOCAL0`:

```
openlog($name, "ndelay,pid", LOG_LOCAL0);
```

### `syslog($priority, $message)`

### `syslog($priority, $format, @args)`

If `$priority` permits, logs `$message` or `sprintf($format, @args)` with the addition that `%m` in `$message` or `$format` is replaced with `"$!"` (the latest error message).

`$priority` can specify a level, or a level and a facility. Levels and facilities can be given as strings or as macros. When using the eventlog mechanism, priorities `DEBUG` and `INFO` are mapped to event type `informational`, `NOTICE` and `WARNING` to `warning` and `ERR` to `EMERG` to `error`.

If you didn't use `openlog()` before using `syslog()`, `syslog()` will try to guess the `$ident` by extracting the shortest prefix of `$format` that ends in a `":"`.

### Examples

```
# informational level
syslog("info", $message);
syslog(LOG_INFO, $message);

# information level, Local0 facility
syslog("info|local0", $message);
syslog(LOG_INFO|LOG_LOCAL0, $message);
```

### Note

Sys::Syslog version v0.07 and older passed the `$message` as the formatting string to `sprintf()` even when no formatting arguments were provided. If the code calling `syslog()` might execute with older versions of this module, make sure to call the function as `syslog($priority, "%s", $message)` instead of `syslog($priority, $message)`. This protects against hostile formatting sequences that might show up if `$message` contains tainted data.

### `setlogmask($mask_priority)`

Sets the log mask for the current process to `$mask_priority` and returns the old mask. If the mask argument is 0, the current log mask is not modified. See *Levels* for the list of available levels. You can use the `LOG_UPTO()` function to allow all levels up to a given priority (but it only accept the numeric macros as arguments).

### Examples

Only log errors:

```
setlogmask( LOG_MASK(LOG_ERR) );
```

Log everything except informational messages:

```
setlogmask( ~(LOG_MASK(LOG_INFO)) );
```

Log critical messages, errors and warnings:

```
setlogmask( LOG_MASK(LOG_CRIT)
            | LOG_MASK(LOG_ERR)
            | LOG_MASK(LOG_WARNING) );
```

Log all messages up to debug:

```
setlogmask( LOG_UPTO(LOG_DEBUG) );
```

### setlogsock()

Sets the socket type and options to be used for the next call to `openlog()` or `syslog()`. Returns true on success, undef on failure.

Being Perl-specific, this function has evolved along time. It can currently be called as follow:

- `setlogsock($sock_type)`
- `setlogsock($sock_type, $stream_location)` (added in Perl 5.004\_02)
- `setlogsock($sock_type, $stream_location, $sock_timeout)` (added in Sys::Syslog 0.25)
- `setlogsock(\%options)` (added in Sys::Syslog 0.28)

The available options are:

- `type` - equivalent to `$sock_type`, selects the socket type (or "mechanism"). An array reference can be passed to specify several mechanisms to try, in the given order.
- `path` - equivalent to `$stream_location`, sets the stream location. Defaults to standard Unix location, or `_PATH_LOG`.
- `timeout` - equivalent to `$sock_timeout`, sets the socket timeout in seconds. Defaults to 0 on all systems except Mac OS X where it is set to 0.25 sec.
- `host` - sets the hostname to send the messages to. Defaults to the local host.
- `port` - sets the TCP or UDP port to connect to. Defaults to the first standard syslog port available on the system.

The available mechanisms are:

- `"native"` - use the native C functions from your `syslog(3)` library (added in Sys::Syslog 0.15).
- `"eventlog"` - send messages to the Win32 events logger (Win32 only; added in Sys::Syslog 0.19).
- `"tcp"` - connect to a TCP socket, on the `syslog/tcp` or `syslogng/tcp` service. See also the `host`, `port` and `timeout` options.
- `"udp"` - connect to a UDP socket, on the `syslog/udp` service. See also the `host`, `port` and `timeout` options.
- `"inet"` - connect to an INET socket, either TCP or UDP, tried in that order. See also

the host, port and timeout options.

- "unix" - connect to a UNIX domain socket (in some systems a character special device). The name of that socket is given by the `path` option or, if omitted, the value returned by the `_PATH_LOG` macro (if your system defines it), `/dev/log` or `/dev/console`, whichever is writable.
- "stream" - connect to the stream indicated by the `path` option, or, if omitted, the value returned by the `_PATH_LOG` macro (if your system defines it), `/dev/log` or `/dev/console`, whichever is writable. For example Solaris and IRIX system may prefer "stream" instead of "unix".
- "pipe" - connect to the named pipe indicated by the `path` option, or, if omitted, to the value returned by the `_PATH_LOG` macro (if your system defines it), or `/dev/log` (added in Sys::Syslog 0.21). HP-UX is a system which uses such a named pipe.
- "console" - send messages directly to the console, as for the "cons" option of `openlog()`.

The default is to try `native`, `tcp`, `udp`, `unix`, `pipe`, `stream`, `console`. Under systems with the Win32 API, `eventlog` will be added as the first mechanism to try if Win32::EventLog is available.

Giving an invalid value for `$sock_type` will croak.

### Examples

Select the UDP socket mechanism:

```
setlogsock("udp");
```

Send messages using the TCP socket mechanism on a custom port:

```
setlogsock({ type => "tcp", port => 2486 });
```

Send messages to a remote host using the TCP socket mechanism:

```
setlogsock({ type => "tcp", host => $loghost });
```

Try the native, UDP socket then UNIX domain socket mechanisms:

```
setlogsock(["native", "udp", "unix"]);
```

### Note

Now that the "native" mechanism is supported by Sys::Syslog and selected by default, the use of the `setlogsock()` function is discouraged because other mechanisms are less portable across operating systems. Authors of modules and programs that use this function, especially its cargo-cult form `setlogsock("unix")`, are advised to remove any occurrence of it unless they specifically want to use a given mechanism (like TCP or UDP to connect to a remote host).

### closelog()

Closes the log file and returns true on success.

## THE RULES OF SYS::SYSLOG

*The First Rule of Sys::Syslog is:* You do not call `setlogsock`.

*The Second Rule of Sys::Syslog is:* You **do not** call `setlogsock`.

*The Third Rule of Sys::Syslog is:* The program crashes, dies, calls `closelog`, the log is over.

*The Fourth Rule of Sys::Syslog is:* One facility, one priority.

*The Fifth Rule of Sys::Syslog is: One log at a time.*

*The Sixth Rule of Sys::Syslog is: No syslog before openlog.*

*The Seventh Rule of Sys::Syslog is: Logs will go on as long as they have to.*

*The Eighth, and Final Rule of Sys::Syslog is: If this is your first use of Sys::Syslog, you must read the doc.*

## EXAMPLES

An example:

```
openlog($program, 'cons,pid', 'user');
syslog('info', '%s', 'this is another test');
syslog('mail|warning', 'this is a better test: %d', time);
closelog();

syslog('debug', 'this is the last test');
```

Another example:

```
openlog("$program $$", 'ndelay', 'user');
syslog('notice', 'fooprogram: this is really done');
```

Example of use of %m:

```
$! = 55;
syslog('info', 'problem was %m');    # %m == $! in syslog(3)
```

Log to UDP port on \$remotehost instead of logging locally:

```
setlogsock("udp", $remotehost);
openlog($program, 'ndelay', 'user');
syslog('info', 'something happened over here');
```

## CONSTANTS

### Facilities

- LOG\_AUDIT - audit daemon (IRIX); falls back to LOG\_AUTH
- LOG\_AUTH - security/authorization messages
- LOG\_AUTHPRIV - security/authorization messages (private)
- LOG\_CONSOLE - /dev/console output (FreeBSD); falls back to LOG\_USER
- LOG\_CRON - clock daemons (**cron** and **at**)
- LOG\_DAEMON - system daemons without separate facility value
- LOG\_FTP - FTP daemon
- LOG\_KERN - kernel messages
- LOG\_INSTALL - installer subsystem (Mac OS X); falls back to LOG\_USER
- LOG\_LAUNCHD - launchd - general bootstrap daemon (Mac OS X); falls back to LOG\_DAEMON
- LOG\_LFMT - logalert facility; falls back to LOG\_USER
- LOG\_LOCAL0 through LOG\_LOCAL7 - reserved for local use

- LOG\_LPR - line printer subsystem
- LOG\_MAIL - mail subsystem
- LOG\_NETINFO - NetInfo subsystem (Mac OS X); falls back to LOG\_DAEMON
- LOG\_NEWS - USENET news subsystem
- LOG\_NTP - NTP subsystem (FreeBSD, NetBSD); falls back to LOG\_DAEMON
- LOG\_RAS - Remote Access Service (VPN / PPP) (Mac OS X); falls back to LOG\_AUTH
- LOG\_REMOTEAUTH - remote authentication/authorization (Mac OS X); falls back to LOG\_AUTH
- LOG\_SECURITY - security subsystems (firewalling, etc.) (FreeBSD); falls back to LOG\_AUTH
- LOG\_SYSLOG - messages generated internally by **syslogd**
- LOG\_USER (default) - generic user-level messages
- LOG\_UUCP - UUCP subsystem

## Levels

- LOG\_EMERG - system is unusable
- LOG\_ALERT - action must be taken immediately
- LOG\_CRIT - critical conditions
- LOG\_ERR - error conditions
- LOG\_WARNING - warning conditions
- LOG\_NOTICE - normal, but significant, condition
- LOG\_INFO - informational message
- LOG\_DEBUG - debug-level message

## DIAGNOSTICS

Invalid argument passed to setlogsock

**(F)** You gave setlogsock() an invalid value for \$sock\_type.

eventlog passed to setlogsock, but no Win32 API available

**(W)** You asked setlogsock() to use the Win32 event logger but the operating system running the program isn't Win32 or does not provides Win32 compatible facilities.

no connection to syslog available

**(F)** syslog() failed to connect to the specified socket.

stream passed to setlogsock, but %s is not writable

**(W)** You asked setlogsock() to use a stream socket, but the given path is not writable.

stream passed to setlogsock, but could not find any device

**(W)** You asked setlogsock() to use a stream socket, but didn't provide a path, and Sys::Syslog was unable to find an appropriate one.

tcp passed to setlogsock, but tcp service unavailable

**(W)** You asked setlogsock() to use a TCP socket, but the service is not available on the system.

syslog: expecting argument %s

(F) You forgot to give `syslog()` the indicated argument.

```
syslog: invalid level/facility: %s
```

(F) You specified an invalid level or facility.

```
syslog: too many levels given: %s
```

(F) You specified too many levels.

```
syslog: too many facilities given: %s
```

(F) You specified too many facilities.

```
syslog: level must be given
```

(F) You forgot to specify a level.

```
udp passed to setlogsock, but udp service unavailable
```

(W) You asked `setlogsock()` to use a UDP socket, but the service is not available on the system.

```
unix passed to setlogsock, but path not available
```

(W) You asked `setlogsock()` to use a UNIX socket, but `Sys::Syslog` was unable to find an appropriate an appropriate device.

## HISTORY

`Sys::Syslog` is a core module, part of the standard Perl distribution since 1990. At this time, modules as we know them didn't exist, the Perl library was a collection of `.pl` files, and the one for sending syslog messages with was simply `lib/syslog.pl`, included with Perl 3.0. It was converted as a module with Perl 5.0, but had a version number only starting with Perl 5.6. Here is a small table with the matching Perl and `Sys::Syslog` versions.

Sys::Syslog	Perl
-----	----
undef	5.0.0 ~ 5.5.4
0.01	5.6.*
0.03	5.8.0
0.04	5.8.1, 5.8.2, 5.8.3
0.05	5.8.4, 5.8.5, 5.8.6
0.06	5.8.7
0.13	5.8.8
0.22	5.10.0
0.27	5.8.9, 5.10.1 ~ 5.14.2
0.29	5.16.0, 5.16.1

## SEE ALSO

### Other modules

*Log::Log4perl* - Perl implementation of the Log4j API

*Log::Dispatch* - Dispatches messages to one or more outputs

*Log::Report* - Report a problem, with exceptions and language support

### Manual Pages

*syslog(3)*

SUSv3 issue 6, IEEE Std 1003.1, 2004 edition,  
<http://www.opengroup.org/onlinepubs/000095399/basedefs/syslog.h.html>

GNU C Library documentation on syslog,

[http://www.gnu.org/software/libc/manual/html\\_node/Syslog.html](http://www.gnu.org/software/libc/manual/html_node/Syslog.html) Solaris 10 documentation on syslog,  
<http://docs.sun.com/app/docs/doc/816-5168/syslog-3c?a=view>

Mac OS X documentation on syslog,  
<http://developer.apple.com/documentation/Darwin/Reference/ManPages/man3/syslog.3.html>

IRIX 6.5 documentation on syslog,  
<http://techpubs.sgi.com/library/tpl/cgi-bin/getdoc.cgi?coll=0650&db=man&fname=3c+syslog>

AIX 5L 5.3 documentation on syslog,  
<http://publib.boulder.ibm.com/infocenter/pseries/v5r3/index.jsp?topic=/com.ibm.aix.basetechref/doc/basetrf2/syslog.htm>

HP-UX 11i documentation on syslog, <http://docs.hp.com/en/B2355-60130/syslog.3C.html>

Tru64 5.1 documentation on syslog,  
[http://h30097.www3.hp.com/docs/base\\_doc/DOCUMENTATION/V51\\_HTML/MAN/MAN3/0193\\_\\_\\_\\_.HTM](http://h30097.www3.hp.com/docs/base_doc/DOCUMENTATION/V51_HTML/MAN/MAN3/0193____.HTM)

Stratus VOS 15.1,  
<http://stratadoc.stratus.com/vos/15.1.1/r502-01/wwhelp/wwhimpl/js/html/wwhelp.htm?context=r502-01&file=ch5r502-01bi.html>

## RFCs

*RFC 3164 - The BSD syslog Protocol*, <http://www.faqs.org/rfcs/rfc3164.html> -- Please note that this is an informational RFC, and therefore does not specify a standard of any kind.

*RFC 3195 - Reliable Delivery for syslog*, <http://www.faqs.org/rfcs/rfc3195.html>

## Articles

*Syslogging with Perl*, <http://lexington.pm.org/meetings/022001.html>

## Event Log

Windows Event Log,  
[http://msdn.microsoft.com/library/default.asp?url=/library/en-us/wes/wes/windows\\_event\\_log.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/wes/wes/windows_event_log.asp)

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UNIX domain sockets added by Sean Robinson <[robinson\\_s \(at\) sc.maricopa.edu](mailto:robinson_s (at) sc.maricopa.edu)> with support from Tim Bunce <[Tim.Bunce \(at\) ig.co.uk](mailto:Tim.Bunce (at) ig.co.uk)> and the `perl5-porters` mailing list.

Dependency on `syslog.ph` replaced with XS code by Tom Hughes <[tom \(at\) compton.nu](mailto:tom (at) compton.nu)>.

Code for `constant()`s regenerated by Nicholas Clark <[nick \(at\) ccl4.org](mailto:nick (at) ccl4.org)>.

Failover to different communication modes by Nick Williams <[Nick.Williams \(at\) morganstanley.com](mailto:Nick.Williams (at) morganstanley.com)>.

Extracted from core distribution for publishing on the CPAN by Sébastien Aperghis-Tramoni <[sebastien \(at\) aperghis.net](mailto:sebastien (at) aperghis.net)>.

XS code for using native C functions borrowed from `Unix::Syslog`, written by Marcus Harnisch <[marcus.harnisch \(at\) gmx.net](mailto:marcus.harnisch (at) gmx.net)>.

Yves Orton suggested and helped for making `Sys::Syslog` use the native event logger under Win32 systems.

Jerry D. Hedden and Reini Urban provided greatly appreciated help to debug and polish `Sys::Syslog` under Cygwin.



## BUGS

Please report any bugs or feature requests to `bug-sys-syslog` (at) `rt.cpan.org`, or through the web interface at <http://rt.cpan.org/Public/Dist/Display.html?Name=Sys-Syslog>. I will be notified, and then you'll automatically be notified of progress on your bug as I make changes.

## SUPPORT

You can find documentation for this module with the `perldoc` command.

```
perldoc Sys::Syslog
```

You can also look for information at:

\* AnnoCPAN: Annotated CPAN documentation

<http://annocpan.org/dist/Sys-Syslog>

\* CPAN Ratings

<http://cpanratings.perl.org/d/Sys-Syslog>

\* RT: CPAN's request tracker

<http://rt.cpan.org/Dist/Display.html?Queue=Sys-Syslog>

\* Search CPAN

<http://search.cpan.org/dist/Sys-Syslog/>

\* MetaCPAN

<https://metacpan.org/module/Sys::Syslog>

\* Perl Documentation

<http://perldoc.perl.org/Sys/Syslog.html>

## COPYRIGHT

Copyright (C) 1990-2012 by Larry Wall and others.

## LICENSE

This program is free software; you can redistribute it and/or modify it under the same terms as Perl itself.

Notes for the future maintainer (even if it's still me..) - - - - -

Using Google Code Search, I search who on Earth was relying on `$host` being public. It found 5 hits:

\* First was inside Indigo Star Perl2exe documentation. Just an old version of Sys::Syslog.

\* One real hit was inside DalWeathDB, a weather related program. It simply does a

```
$Sys::Syslog::host = '127.0.0.1';
```

- <http://www.gallistel.net/nparker/weather/code/>

\* Two hits were in TPC, a fax server thingy. It does a

```
$Sys::Syslog::host = $TPC::LOGHOST;
```

but also has this strange piece of code:

```
# work around perl5.003 bug
sub Sys::Syslog::hostname {}
```

I don't know what bug the author referred to.

- <http://www.tpc.int/> - <ftp://ftp-usa.tpc.int/pub/tpc/server/UNIX/>

\* Last hit was in Filefix, which seems to be a FIDOnet mail program (!). This one does not use \$host, but has the following piece of code:

```
sub Sys::Syslog::hostname
{
    use Sys::Hostname;
    return hostname;
}
```

I guess this was a more elaborate form of the previous bit, maybe because of a bug in Sys::Syslog back then?

- <ftp://ftp.kiae.su/pub/unix/fido/>

Links ----- Linux Fast-STREAMS - <http://www.openss7.org/streams.html>

II12021: SYSLOGD HOWTO TCPIPINFO (z/OS, OS/390, MVS) -  
<http://www-1.ibm.com/support/docview.wss?uid=isg1II12021>

Getting the most out of the Event Viewer - <http://www.codeproject.com/dotnet/evtvwr.asp?print=true>

Log events to the Windows NT Event Log with JNI -  
<http://www.javaworld.com/javaworld/jw-09-2001/jw-0928-ntmessages.html>