

Galleon Log Interface

version 1



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Purpose

The Log Interface may be used by Galleon system components to record messages about system activity.

The interface provides standards for how logs should be generated, formatted, and reported to the system.

Design

The Log Interface is designed to allow Galleon system components to contribute log messages to a system-wide log. The interface specifies that a system should use Syslog for logging and provides conventions for its use.

Syslog

Syslog is a standard for computer logging that isolates software that generates log messages from those that store and analyze them. Syslog has been standardized by the Internet Engineering Task Force (IETF) in RFC 5424.

Syslog messages are composed of three parts: priority, header, and message.

The priority field is a number that defines the facility and severity of the message. The severity records the message's urgency and is stored in the three least significant bits. The facility is stored in the next five significant bits and records the type of program that generated the message.

The header field is composed of the timestamp when the log was generated and the hostname or IP address of the machine that generated it.

The message field is composed of a tag and content field. The tag is typically used to record the name of the program or subsystem that generated the message.

Message Tag

Galleon system components should use the tag subfield of the Syslog message field to report a unique name for their component.

On most Syslog implementations, the Tag field is set by providing an `ident` argument to `openlog()` before generating log messages. By default, the basename of `argv[0]` is used.

Facility

Galleon system components should use the predefined facility value most appropriate for their program. The Log Interface does not define any meaning for the "Local Use" facility values.

Components that run as daemons should use the `LOG_DAEMON (3)` facility. Components that are not long running (CLI tools, CGI programs) should use the `LOG_USER (1)` facility.

Severity

Galleon system components should use the severity level most appropriate for any given message. Severity represents the urgency with which the message should be delivered to a system user.

Syslog defines the following severity levels:

0	EMERGENCY	System is unusable, compromised
1	ALERT	Emergency is imminent
2	CRITICAL	Errors that may cause a loss of data
3	ERROR	Errors that do not cause data loss, may introduce unexpected behavior
4	WARNING	Errors may occur if action is not taken
5	NOTICE	Normal but significant events
6	INFORMATION	Normal events
7	DEBUG	Debug information

Implementation

Configuration

A system implementing the Log Interface should define the following keys within the system configuration file:

<code>interface.log.version</code>	The version of the Log Interface that has been implemented by the system. The current version is '1'. Only one version key may be defined at a time.
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Appendix A: Version History

Date	Description
28 Jul 2014	Version 1, Revision 1 Log Interface initialized and submitted for design review.
1 Dec 2014	Version 1, Revision 2 Log Interface revised after second Galleon pilot.
1 Jun 2015	Version 1, Final Log Interface finalized and delivered.