

To: Distribution
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Subject: Proposed New Syserr Codes
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Introduction

This document describes a proposed change to the syserr codes in order to make them more useful.

Current syserr Codes

Below is a list of the currently valid syserr codes. The action specified by each syserr code is also given. Note, if the logging mechanism is enabled, all syserr messages are logged regardless of their syserr code.

<u>CODE</u>	<u>ACTION</u>
0	write message without alarm
1	write message with alarm, crash system
2	write message with alarm, terminate the process
3	write message with alarm
4	do not write message unless there is no room for it in the wired log buffer
5	do not write message even if there is no room for it in the wired log buffer
6 - 9	reserved for future use - currently mapped into code 5

Proposed New syserr Codes

The initial experience using the syserr log indicates that it would be very useful to be able to sort syserr messages by syserr codes. The current syserr codes are too restrictive to make this feature more than marginally useful. It is proposed here that each syserr code be broken up into two codes, an action code and a log code.

The action code will be the syserr code mod(10). Thus the action codes will correspond to the current syserr codes. The log code will be the syserr code divided by 10. The limits of the log code are 0 to 31. Log codes greater than 31 will be taken mod(32). The current syserr codes will all map into log code 0. No change will be required of any of the procedures which call syserr.

Note, the meaning of the log codes is entirely a convention among the callers of syserr. For example, log code 1 could be assigned to all peripheral device error messages. Log code 2 could be assigned to all security error messages. Log code 3 could be assigned to all message that come through ring_0_message. Currently, there are no log codes defined other than 0.

Both the action code and the log code will be placed in the syserr log along with its message. The print_syserr_log command should be changed to return messages based upon one, or the other, or both, of these codes. The new declaration of the syserr log message entry header is given below. Note that this new format is completely compatible with the present format until syserr is actually called with codes greater than 9.

```

dcl    1 smess_header based aligned,
      ( 2 next          bit(18),
        2 prev          bit(18),
        2 seq_num       fixed bin(17),
        2 log_code      bit(5),
        2 action_code   bit(4),
        2 len           fixed bin(8)) unal,
        2 time (2)      fixed bin(35);

```