

MCR10106

Fix Bad Error Messages in generate_mst

Revision 1.0

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December 21, 2021

1 Problem Description

When the `generate_mst` command encounters errors (for example missing segments), it emits bogus error messages to the output listing segment when the `-list` control argument is used. These error messages look like this:

```
bootload_slm_manager 08/13/93 1647.9 Anthony.SysEng.a alm
bootload_tape_fw 08/13/93 1647.8 Anthony.SysEng.a alm
template_slm_ 08/13/93 1647.7 Anthony.SysEng.a alm
\c \000\000\000\000\000\000\000\000$ \00\000\004\000\000\000\
  \c000\234\400#\006\656\000\000\000\234\400#\006\424\000\000\000\234\400#
\c dd>s\000\234\400#\005h\000\000\000\000\000\000core\0
\c00\247\400#\031\514\000\000\000\247\400#\032:\000\000REWP \000\000\000\000
\c\000\000\000\000?\777\000#\000\001\000\000creation_time_string \00
\c0\000S#\342\663\456\300\000\334\000#
...
\c\000\000\000\000\000\000\000\000\332\400#\000\000\000\000\000\234\400#\005\73
\c0\000\000?\777\000#\000\001\000\000?\777\000#\000\001\000\000\777\777\777\777
\c\777\777\777\777\000\234\400\400\000\000?\777\020\636\777\777\777\777\000:\00
\c0\000\000\000\000:\000^\000\000\014\000\000^\025\552\000\000\000\000\000\
  \c000\247\000\000
```

This ticket for this issue is <https://multics-trac.swenson.org/ticket/19>.

2 Proposed Fix

There are two issues in the sources for `generate_mst`. The first is in the source segment `generate_mst.pl1`. The variable `o_ln` is used to the message to be emitted upon a `cleanup` condition, but it is never initialized prior to establishing the condition handler. Therefore, if an error occurs before this variable is set, garbage will be emitted during the `cleanup` condition.

The proposed fix for this error is shown in the `compare_ascii` output below:

----- generate_mst.pl1

compare_ascii >ldd>tools>source>bound_gm.s.archive::generate_mst.pl1 ==

Inserted in B:

B318 o_ln = ""; /* set up before cleanup condition handler is established */

Preceding:

A318 on cleanup call CLEANUP_CONDITION_HANDLER;

Comparison finished: 1 difference, 1 line.

The fix simply initialized the `o_ln` variable to the empty string.

The second problem is in `gm_error_.pl1`. This is called when errors are to be emitted to the listing output segment. The code uses `iox_$put_chars` to emit lines to the listing segment. However, it uses a fixed length of 500, rather than the actual length of the output line.

The fix for this issue is shown below:

----- gm_error_.pl1

compare_ascii >ldd>tools>source>bound_gm.s.archive::gm_error_.pl1 ==

A80 call iox_\$put_chars (iocb_ptr, line_ptr, 500, code);

Changed by B to:

B80 call iox_\$put_chars (iocb_ptr, line_ptr, length(line_ptr->line),
 code);

Comparison finished: 1 difference, 2 lines.

3 Testing

The fixed version of `generate_mst` was run against a `hardcore.header` segment with a bogus (non-existent) segment. In the original version of `generate_mst`, this resulted in garbage error messages in the listing segment. With the fixed version, it doesn't.

In addition, various MSTs were generated with the updated `generate_mst` and the listing segments were manually inspected to make sure that they were identical to the original version.

4 Documentation

There are no documentation changes required by this change.

5 Version History

2021-12-21	1.0	Initial version of the MCR.
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