

Subject: MCR-10042, Fix billing programs for 21st century

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Introduction

Running the bills involves multiple steps which basically execute the following:

- ec master bill prepare
- ec master bill run MM DD YY
- ec master bill accept XXXXX

The “bill run” phase accepts a MM DD YY, where the code has been written to assume that YY is a 2-digit year in the 20th century. It emits a string to reports that has a hardcoded “19” prior to the 2-digit year. It checks to make sure that the YY value is ≥ 69 (e.g. 1969). If you try to enter “18”, it fails, since $18 < 69$.

It does work to provide “2018” as the year, except that the reports specify the year as 192018.

There are three affected programs: `write_billing_summary`, `write_acct_bill`, and `punch_MIT_deck`. All three are afflicted in the same way.

Ticket <http://multics-trac.swenson.org/ticket/97> represents this issue, which this MCR addresses.

Problem

The problem is straightforward. A string is parsed from the command line in the YY position. It is passed to `cv_dec_check_` to convert the string to a fixed bin (17) value. It is then checked to be ≥ 69 . If it isn't, an error exit takes place. Then, it is used in format strings as a 2-digit value and prefixed with “19” to form a 4-digit year.

Proposed Changes

Change the code to check the length of the string and ensure it is a 4-digit year. This will prevent ambiguities and allow the second change, which is to change the check against 69 to be a check against 1969. Finally, the “19” is removed from the format strings.

Testing of the Change

Testing the change involves running the billing routines (“ec master bill run”) with valid and invalid arguments and making sure that the output produced in the various reports is correct.

Bug Reference

- Reference URL of Multics Change Ticket: <http://multics-trac.swenson.org/ticket/97>.

Documentation

The info segments for write_billing_summary and write_acct_bill will be updated to make clear that the year parameter must be specified as a 4-digit year. The punch_MIT_deck command, which produces card output with billing into is not documented, not used by default, and applicable only when running bills on MIT-MULTICS.

Version History

Date	Revision	Author	Comment
2018-01-16	1.0	Eric Swenson	Initial version of MCR.