

MCR10194

Console Model 6601 on a Non-IMU IOM

Revision 1.0

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1 Problem Description

Tickets [#156](#) and [#157](#) describe the same problem: if the config deck describes the operator's console as a model 6601 on an IOM that is not an IMU, console I/O does not work and BCE locks up. Real 6601 consoles were only ever connected to IMUs, but an error in editing the config deck (easily made on the simulator) leaves the system unbootable, because without a console the deck cannot be corrected.

1.1 Cause

`ocdcm_` sets up each console from its `prph opc` card. The console models are described in `config_data_`: the 6001 and 6004 do their I/O with PCWs (`io_type "pcw"`), the 6601 with IDCWs. `ocdcm_` records separately whether the console's IOM is an IMU (`oc_entry.imu`, from the `iom` card's model), but never checks that the two are consistent; a 6601 on a non-IMU IOM is driven with IDCW I/O the IOM's console channel does not accept.

2 Proposed Fix

In `ocdcm_`'s console set-up, after the model has been looked up:

```
if ^oc_entry.pcw_io & ^oc_entry.imu then do;
  call report_error (BEEP, entrypoint,
    "Console ^a is model ^i, which requires an IMU, but IOM ^a is not an IMU. It
      will be used as model 6004.",
    oc_entry.name, prph_opc_card.model, substr ("abcd", prph_opc_card.iom, 1));
  oc_entry.model = 6004;
  oc_entry.pcw_io = true;
  oc_entry.flags.read_unechoed_option = false;
end;
```

The console is driven as a 6004 (PCW I/O), so it works, and the operator is told the configuration is wrong. Refusing to boot, as ticket [#156](#) suggests, was considered, but it would leave the operator

with no console with which to correct the deck. The config deck card itself is not changed. Message documentation for the new message is added.

The specific changes are shown below:

cpa [lpn ocdcm_.pl1] ==

Inserted in B:

```
B1569
B1570      /* A 6601 console (IDCW I/O) works only in an IMU. Configured on another IOM,
B1571          console I/O hangs and BCE cannot be used to correct the config deck
B1572          (tickets 156, 157). Drive it as a 6004 (PCW I/O) instead, and say so. */
B1573
B1574          if ^oc_entry.pcw_io & ^oc_entry.imu then do;
B1575              call report_error (BEEP, entrypt,
B1576                  "Console ^a is model ^i, which requires an IMU, but IOM ^a is not an
IMU. It will be used as model 6004.",
B1577                  oc_entry.name, prph_opc_card.model, substr ("abcd",
prph_opc_card.iom, 1));
B1578                  oc_entry.model = 6004;
B1579                  oc_entry.pcw_io = true;
B1580                  oc_entry.flags.read_unechoed_option = false;          /* as for
other PCW consoles...          *
\c/
B1581          end;
Preceding:
A1569
```

Inserted in B:

```
B3044      ocdcm_ (init_all_consoles): Console OPCx is model NNNN, which requires an
B3045          IMU, but IOM X is not an IMU. It will be used as model 6004.
B3046
B3047      S:          $beep
B3048
B3049      T:          $init
B3050
B3051      M:          The config deck describes a console that does its I/O with IDCWs
B3052          (model 6601) on an IOM that is not an IMU. Such a console can only be
B3053          used on an IMU. It is driven as a model 6004 console instead.
B3054
B3055      A:          $config
B3056          Correct the model on the console's prph opc card, or the IOM model.
B3057
B3058      Message:
Preceding:
A3031      ocdcm_ (init_all_consoles): Illegal console name (NAME) specified.
```

Comparison finished: 2 differences, 28 lines.

3 Documentation

New message documented at the end of `ocdcm..pl1`.

4 Test

1. On the simulator, a config deck with `prph opca a 30 6601 ...` on an IOM whose `iom` card model is `iom`: the warning appears, and BCE and Multics console I/O work.
2. The same console on an IOM of model `imu`: no warning, 6601 behavior unchanged.
3. 6001 and 6004 consoles: unchanged.

5 Files Changed

<code>bound_wired_1.s.archive</code>	<code>ocdcm..pl1</code>
<code>>s11</code>	<code>bound_wired_1</code> (hardcore; new system tape)

6 Version History

2026-10-10	1.0	Initial version of the MCR.
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