MCR10166
Fix Answering Service to Properly Prefix Login Messages During FTP Logins
Revision 1.1

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1 Problem Description

When using FTP to login to a host for file transfers, the server must prefix messages with a 3-digit numeric code, according to the protocol documentation. A bare message, without the prefix is interpreted by FTP clients as an error.

The Multics answering service handles the login dialog during the prologue of an FTP session when the user logs in. It does prefix most messages with the correct 3-digit prefix (which sometimes must be followed by the "-" continuation character. However, there are a few cases, notably these:

- "You have N disconnected processes."
- "This is your Nth interactive login instance"

where the messages are sent as "bare" messages, without the required 3-digit prefix.

Multics ticket https://multics-trac.swenson.org/ticket/396 describes this deficiency.

2 Proposed Fix

The answering service's lg_ctl_ module is responsible for the login dialog, including the one used during an FTP session. It already knows about how to check for FTP service and how to prefix messages. It just doesn't do that in a few cases.

The fix is to add two more conditional blocks before the messages are sent to the tty via a call to `astty_$tty_force` that check for `cdte.service_type` being equal to `FTP_SERVICE` and if that condition is found to be true, to prefix the message with the proper 3-digit code and contination character.

The proposed fix is shown below:

```
cpa [lpn lg_ctl_.pl1] ==

Inserted in B:
```

```
B1020                           if cdte.service_type = FTP_SERVICE then do;
B1021                                   /* FTP control channel: same "230-" continuation
    treatment as
B1022                                       SCAN_ANSWER_TABLE's multiple-login message
    below, so this
B1023                                       line becomes part of the multiline 230
    response that
B1024                                       ftp_server_overseer_ will terminate with a
    "230 <name>
B1025                                       logged in.". Without this, the raw text is
    not prefixed
B1026                                       with any FTP reply code, and the client's
    reply parser
B1027                                       reports "Login failed" even though login
    succeeds. */
B1028                                   call ioa_$rsnnl ("230-^a", answer, l, substr
    (answer, 1, l));
B1029                           end;
Preceding:
A1020                           call astty_$tty_force (cdtep, addr (answer), l, (0));


Inserted in B:
B1123                   if cdte.service_type = FTP_SERVICE then do;
B1124                           /* FTP control channel: prefix with "230-" continuation so
    this
B1125                              message becomes part of the multiline 230 response that
B1126                              ftp_server_overseer_ will terminate with a "230 <name>
    logged
B1127                              in.". */
B1128                           call ioa_$rsnnl ("230-^a", answer, i, substr (answer, 1,
    i));
B1129                   end;
Preceding:
A1113                   call astty_$tty_force (cdtep, addr (answer), i, code);

Comparison finished: 2 differences, 17 lines.
```

The first insertion is for the "You have N disconnected processes" case. The context is seen below:

```
        else do;                                    /* user does have disconnected
            processes */
            if ute.active < NOW_LOGGED_IN then do;  /* if we didn't already do this */
                vlonginfo = convert_message (as_error_table_$n_disconnected_procs_msg);
                if (vlonginfo ^= "") & (^ute.at.brief | cdte.disconnected_proc_command =
                    0)
                then do;                            /* if site hasn't turned off the
                    message, say
                                                       You have N disconnected processes.
                                                           */
```

```
                call ioa_$rs (vlonginfo, answer, 1, user.n_disconnected,
                    (user.n_disconnected > 1));
                if cdte.service_type = FTP_SERVICE then do;
                        /* FTP control channel: same "230-" continuation treatment
                           as
                           SCAN_ANSWER_TABLE's multiple-login message below, so
                               this
                           line becomes part of the multiline 230 response that
                           ftp_server_overseer_ will terminate with a "230 <name>
                           logged in.". Without this, the raw text is not prefixed
                           with any FTP reply code, and the client's reply parser
                           reports "Login failed" even though login succeeds. */
                        call ioa_$rsnnl ("230-^a", answer, 1, substr (answer, 1,
                            1));
                end;
                call astty_$tty_force (cdtep, addr (answer), 1, (0));
            end;
        end;
```

The second insertion is for the "This is your 3rd interactive login instance" case. The context is:

```
    else if n_processes > 0                     /* he has other processes */
    then do;                                    /* print "This is your Nth
        interactive login instance." */
        n_processes = n_processes + 1;          /* add in this new process, too. */
        xlonginfo = convert_message (as_error_table_$multiple_login_msg);
        if (n_processes > 9) & (n_processes < 20)
        then xdebg = as_data_$teens_suffix (n_processes);
        else xdebg = as_data_$suffix (mod (n_processes, 10));

        call ioa_$rs (xlonginfo, answer, i, n_processes, xdebg);
                                                /* "This is your 3rd interactive
                                                    login instance." */
        if cdte.service_type = FTP_SERVICE then do;
                /* FTP control channel: prefix with "230-" continuation so this
                   message becomes part of the multiline 230 response that
                   ftp_server_overseer_ will terminate with a "230 <name> logged
                   in.". */
                call ioa_$rsnnl ("230-^a", answer, i, substr (answer, 1, i));
        end;
        call astty_$tty_force (cdtep, addr (answer), i, code);
    end;
```

3 Documentation

No changes to the documentation are required as none of this is documented now.

4 Test

These changes have already been tested on MR12.9 systems where the fix has been installed. Prior to the fix, ftp would report "Login failed." if a login resulted in one of those messages being emitted. With the fix applied, login succeeds.

5 Version History

2026-07-30	1.0	Initial version of the MCR.
2026-07-31	1.1	Removed superfluous text from Documentation section.