

Subject: MCR10154, help and verify_info Subsystem Enhancements
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 Multics Ticket: <http://multics-trac.swenson.org/ticket/371>
<http://multics-trac.swenson.org/ticket/327>

Three minor enhancements are needed within the help subsystem: to complete support of subsystem request documentation within a multi-block info segment; and to fully support analyze_multics subsystem exec_coms. The need for these enhancements is described in the Multics tickets shown in this MCR's header.

- Ticket_371 describes extending verify_info support for info segments describing use of a Multics exec_com script (info segs ending with .ec.info). That same support should be provided for info segments describing use of an analyze_multics exec_com script (info segs ending with .azmec.info).

The two flavors of exec_com can perform the same operation in either the Multics command environment or the azm subsystem environment. While the exec_coms are invoked with the same "ec timestamp ..." command or request content, their differing execution environments require that each is documented separately.

Comparison of timestamp.ec.info with timestamp.azmec.info shows only a few differences that highlight the two operating environments.

```
cpa timestamp.ec.info =.azmec.ec
```

```
A1      :Info: timestamp.ec:  2025-06-21  timestamp.ec
A2
A3      Syntax as a command:  ec timestamp VIRTUAL_PTR
Changed by B to:
B1      :Info: timestamp.azmec: 2025-06-21  timestamp.azmec
B2
B3      Syntax:  ec timestamp VIRTUAL_PTR
```

```
A15      acceptable pointers type:  help virtual_pointers
A16
A17
A18      Examples:
A19      ec timestamp prds$last_recorded_time
Changed by B to:
B15      acceptable pointers type:  .. help virtual_pointers
B16
B17
B18      Examples:
B19      azm:  ec timestamp prds$last_recorded_time
```

```
A27      ec timestamp pds$first_covert_event_time
Changed by B to:
B27      azm:  ec timestamp pds$first_covert_event_time
```

Comparison finished: 3 differences, 18 lines.
 r 09:15 0.206 0

However, the installed `verify_info` (vi) tool reports unexpected errors in `timestamp.azmec.info` because it does not recognize the `.azmec` suffix in the info seg header as an `exec_com` suffix.

```
vi timestamp.(ec azmec).info
```

```
FILE: >udd>m>gd>w>hdd>t>timestamp.ec.info
      structure: Info Segment - with History Comment                      lines: 46
```

```

Line      Kind                      Block Names
---      -
   1 Command                      timestamp.ec
   3 Syntax as a command
   6 Function
  10 Arguments
  18 Examples
---      32 History Comment
```

```
FILE: >udd>m>gd>w>hdd>t>timestamp.azmec.info
      structure: Info Segment - with History Comment                      lines: 46
```

```

Line      Kind                      Block Names
---      -
   1 Subsystem Request            timestamp.azmec
      header: 2025-06-21 timestamp.azmec
Severity 3. Request/active request header words should each be a
           reference_name (begin with a letter, followed by
           letter/digit/underscore characters) and appear in a
           comma-separated list of words ordered by descending lengths.
   3 Syntax
      syntax items:
      | ec timestamp VIRTUAL_PTR |
Severity 4. None of the words in the header line appear in syntax.
   6 Function
  10 Arguments
  18 Examples
---      32 History Comment
```

```
r 09:08 0.361 37
```

The proposed enhancement to `verify_info` would cause both files to be verified with no errors.

- Ticket_327 describes the need to extend the `help -info` control argument to treat `."` and `.."` as non-starname request names that select a single hidden info block describing: the self-identify subsystem request (`.`); or the `command-escape` (`..`) subsystem request.

The `mbuild_pt_2.info` subsystem info segment includes info blocks documenting these two `ssu_`-provided requests. But the installed `help` command does not recognize the dot and dot-dot names as valid entry names.

```
help mbuild_pt_2.info -info (. ..)
help: Invalid syntax in starname.  mbuild_pt_2.info
help: Invalid syntax in starname.  mbuild_pt_2.info
```

Proposed Changes

The enhancement for Ticket_371 involves two support routines called by `verify_info`. The changes cause words in the header lines ending in `.ec` or `.azmec` to be treated the same, to eliminate the extra checks causing the spurious errors in the `.azmec.info` segment verification.

```
mbuild:  compare info*.pl1
```

```
-----  info_seg_parse_.pl1
```

```
compare_ascii >ldd>sss>source>bound_help_.s.archive::info_seg_parse_.pl1 ==
```

```
Inserted in B:
```

```
B11      2) change(2025-06-21,GDixon):
```

```
B12      A) Change verify_info to treat XXX.azmec.info as an info segment
```

```
B13      describing an analyze_multics exec_com script.
```

```
Preceding:
```

```
A12                                           END HISTORY COMMENTS */
```

```
A1433      else if word_ends(iBlok.word(1), ".ec") then
```

```
A1434      return;                               /* Don't attempt to examine .ec syntax */
```

```
Changed by B to:
```

```
B1435      else if word_ends(iBlok.word(1), ".ec") then
```

```
B1436      return;                               /* Don't attempt to examine .ec syntax */
```

```
B1437      else if word_ends(iBlok.word(1), ".azmec") then
```

```
B1438      return;                               /* Don't attempt to examine .azmec syntax */
```

```
Comparison finished: 3 differences, 10 lines.
```

```
-----  info_seg_verify_iFile_.pl1
```

```
compare_ascii >ldd>sss>source>bound_help_.s.archive::info_seg_verify_iFile_.pl1 ==
```

```
Inserted in B:
```

```
B6      2) change(2025-06-21,GDixon):
```

```
B7      A) Change verify_info to treat XXX.azmec.info as an info segment
```

```
B8      describing an analyze_multics exec_com script.
```

```
Preceding:
```

```
A6                                           END HISTORY COMMENTS */
```

```
A2924  else if word_ends(words(wdI), ".ec") then;    /* Accept header words in *.ec.info */
```

```
A2925                                           /* segs like compare_pl1.ec.info */
```

```
Changed by B to:
```

```
B2927  else if word_ends(words(wdI), ".ec") then;    /* Accept header words in *.ec.info */
```

```
B2928                                           /* segs like compare_pl1.ec.info */
```

```
B2929  else if word_ends(words(wdI), ".azmec") then; /* Accept header wds in *.azmec.info */
```

```
B2930                                           /* event_channel_info.azmec.info */
```

```
B2931
```

```
Comparison finished: 2 differences, 10 lines.
```

The enhancement for Ticket_327 requires a small change in help.pl1.

```
mbuild: compare help.pl1
```

```
----- help.pl1
```

```
compare_ascii >ldd>sss>source>bound_help_.s.archive::help.pl1 ==
```

```
Inserted in B:
```

```
B68      5) change(2023-12-18,GDixon):
```

```
B69      A) Change -Info INFO_NAME to accept "." and ".." as non-star info names.
```

```
Preceding:
```

```
A68
```

```
END HISTORY COMMENTS */
```

```
A429
```

```
if op = "?" then
```

```
A430
```

```
help_args.path (j).info_name_not_sturname = TRUE;
```

```
Changed by B to:
```

```
B431
```

```
if op = "?"          /* ssu_request: summary-of-requests          */
```

```
B432
```

```
| op = "."          /* ssu_request: subsystem_version          */
```

```
B433
```

```
| op = ".." then    /* ssu_pseudo_request: cpescape to Multics    */
```

```
B434
```

```
help_args.path (j).info_name_not_sturname = TRUE;
```

```
Comparison finished: 2 differences, 8 lines.
```

The build script for these changes is shown below.

```
help_dot_dot.mb      06/21/25  1044.7 pdt Sat
```

Description --

A) Ticket_327:

Change help.pl1 -Info control_arg to accept . and .. as non-star names.

B) Ticket_371:

Change info_seg_parse.pl1 and info_seg_verify_iFile.pl1 to accept XXX.azmec.info as a new style of exec_com segment whose header and Syntax lines permit more flexible content which includes appearance of the ec command/request in those lines.

C) Split timestamp.azmec.info into two info blocks in the same segment.

Each block documents the execution environment for timestamp.ec.info or timestamp.azmec.info.

Changes --

```
Bound_obj:    bound_help_          IN: sss  UPDATE;
source:       help.pl1             REPLACE compiler: pl1 -ot;
source:       info_seg_parse.pl1    REPLACE compiler: pl1 -ot;
source:       info_seg_verify_iFile.pl1 REPLACE compiler: pl1 -ot;
```

```
Info:         timestamp.ec.info     IN: priv.info  REPLACE;
              add_name: timestamp.azmec.info;
```

Testing

The changes were tested against the revised timestamp.azmec.info segment using both installed and revised verify_info command to ensure Ticket_371 was implemented OK.

The changes for Ticket_327 were tested manually by correctly displaying the info blocks for mbuild's . and .. requests in >doc>priv>mbuild_pt_2.info.

Documentation

Corrections to timestamp.ec.info and timestamp.azmec.info were shown at the beginning of this MCR.

Version History

Date	Revision	Author	Comment
2025-06-21	1.0	Gary Dixon	Initial draft of this MCR.
2025-06-21	1.1	Gary Dixon	Clarify introductory paragraphs.