TO: Distribution
FROM: Joan Archer
DATE: 13 May 75
RE: Multics Change Requests

Enclosed are copies of Multics Change Requests which were approved from 16 April 75 to 30 April 75.

Multics Project internal working documentation. Not to be reproduced or distributed outside the Multics Project.
TITLE: Eliminate extra message in delete

AUTHOR: Steve Herbst

STATUS

DATE

Written 04/15/75
Expires 10/29/75

CATEGORY (CHECK ONE)

Lib. Maint. Tools
Sys. Anal. Tools
Sys. Prog. Tools

DOCUMENTATION CHANGES

BOS
Salvager
Ring Zero
Ring One
SysDaemon/Admin.
Runtime
User Cmnd/Subr.

Fixes Bug Number(s)

Document Specify One or More

Fixes Bug Number(s)

MPM (Vol, Sect.)
PLMS (AN #)
MOSN (Sect.)
MPAM (Sect.)
MSAM (Sect.)

Fixes Bug Number(s)

User/Operations-visible

-Interface change? [ ] yes [X] no
-Incompatible change? [ ] yes [X] no
-Performance: [ ] Better [X] Same [ ] Worse
-Replaces MCR

Objections/Comments:

Use these headings: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

SUMMARY:

Prevent the delete command from printing the error message:

"Segment foo not deleted"

after the user answers no to a query.

REASON:

This extra message occurs for an argument that does not implement the star convention. The stars case works correctly.
TITLE: Fix bug in delete

AUTHOR: S. Herbst

SUMMARY:
Fix bug in delete that prevents an empty directory from being deleted if its safety switch is on.

REASONS:

A recent change (MCR 786) handles the case of an upgraded directory by calling hcs_delentry_file before hcs_del_dir_tree. The code checks for error_table_$fulldir as an acceptable error code but ignores the possibility of getting error_table_$safety_sw_on and passes this code back to the caller without taking further action.
TITLE: Pass order and changemode calls through card format DIMs.

AUTHOR: J. C. Whitmore

ADDED IN: [X] PL/I [X] ALM [ ] OTHER

Explain in DETAILED PROPOSAL

Planned for System MR 2.2

Fixes Bug Number(s) NA

Documented in MTB NA

User/Operations-visible

Interface change? [x] yes [ ] no

Incompatible change? [ ] yes [x] no

Performance: [ ] Better [x] Same

Worse

Replacing MCR

Category (Check One) Document Specify One or More

Lib. Paint. Tools Document

Sys. Anal. Tools Specify

Sys. Prog. Tools

355

303

Salvager MPN (Vol, Sect.)

Ring Zero PLMS (AN #)

Ring One

SysDaemon/Admn. MOSN (Sect.)

User Cmd/Subr. MPAM (Sect.)

Runtime MSAM (Sect.)

Objections/Comments:

INFO SEGS

Other (Name)

None (Reason) only the daemon cares

Use these headings: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

SUMMARY: Add "order" and "changemode" entries in the raw dim IOSIM which will be common to all card format dims (i.e., raw, viipunch, mcc and flipper). Since these dims are spliced between some stream (switch) and a card I/O stream (switch), the new entries will simply pass their arguments on to the stream (switch) to which they are attached.

Reasons: These dims do not implement order and changemode entries. Therefore, a stream name cannot be passed as an argument to a procedure which needs to order a "runout" without also supplying the name of the stream (switch) to which it is attached. Passing these calls through is a more general approach and will lead to cleaner code in the I/O daemon and card daemon.

Implications: The status codes returned from these entries will change. However, since they are not implemented, no one calls them. Only the Daemons' care.
TITLE: Change mail_errfiles for new mail

AUTHOR: S. Herbst

SUMMARY:

Change the program mail_errfiles, used by backup, to work with new mailboxes (and old mailboxes).

REASON:

A new mail command is being installed and many users will only have new ring 1 mailboxes that must be referenced by special calls.
TITLE: Fix bugs in mexp
AUTHOR: Steve Webber

Coded in PL/I □ ALM □ other...

PL/I/AIM/other...

Category (Check One): Lib. Maint. Tools
Sys. Anal. Tools
Sys. Prog. Tools

Expenses

Written
Status
Expires

DATE

PL/I/AIM/other...

Fixes Bug Number(s): unreported

- Planed for System MR

- Documented in MTB

- User/Operations-visible Interface change? □ yes □ no

- Performance: □ Better □ Same □ Worse

- Replaces MCR

DOCUMENTATION CHANGES

- Explain in DETAILED PROPOSAL
- Planned for System MR Tools
- Fixes Bug Number(s) reported

- Documented in MTR

- User/Operations-visible Interface change?

- Performance:

- Replaces MCR

Objections/Comments:

SUMMARY:

1. Change mexp to create its output segment (foo.alm) in the working directory by default.

2. Fix bug when an iteration list of the form:

   &(-- &)

   does not specify the argument to iterate over.

REASONS:

1. Standard Multics conventions default to the working directory.

2. Fix bug.
TITLE: Fix bug in illegal_procedure.

AUTHOR: Steve Webber

- Coded in [ ] PL/I [ ] ALM [ ] other- 
  explain in DETAILED PROPOSAL
- Planned for System MR
- Fixes Bug Number(s) unreported
- Documented in MTB
  Category (Check One)
  Lib. Maint. Tools 355
  Sys. Anal. Tools
  Sys. Prog. Tools
- User/Operations-visible
  Interface change? [ ] yes [X] no
  Incompatible change? [X] yes [ ] no
- Performance: [ ] Better [X] Same
  [ ] Worse
  Replaces MCR

Objections/Comments:

Use these headings: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

SUMMARY:

Change illegal_procedure so that it fetches the opcode of interest from the SCU data it is given rather than from the text as pointed to by the instruction counter and procedure pointer register (also in the given machine conditions).

REASONS:

The simulation of zero-length string moves does not work if the EIS instruction being executed is invoked via an XEC instruction.
MULTICS CHANGE REQUEST

TITLE: Fix bugs in cross-reference

AUTHOR: Paul Green

Planned for System: not applicable
Fixes Bug Number(s): not applicable
Documented in MTY: not applicable
Incompatible Changes: no
User/Operations-visible Interface Changes: no
Coded In (□) PL/I (□) ALM (□) other-see below
Performance: (□) better (□) same (□) worse

DOCUMENTATION CHANGES (specify one or more)
MPM (vol, sect) MPAM (sect)
MOSN (sect) MSAM (sect)
PLMs (AN#)
Info Segs
Other
None (reason) no change to documentation

OBJECTIONS/COMMENTS:

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HEADINGS ARE: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (optional)

SUMMARY:
Fix some bugs in the cross referencer accidentally introduced while converting it to Version 2.

REASONS:
Some errors which used to be non-fatal are now fatal (encountering non-object segments in the library, etc).

IMPLICATIONS:
The standard hardcore driving file (hard.crt) will be operable again.

DETAILED PROPOSAL:
Fixes are coded and tested.
### TITLE: Changes condition info to get a pointer to signaller's argument list in a better way

**AUTHOR:** S. Webber

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- **Coded in:** [x] PL/I □ ALM □ other explain in DETAILED PROPOSAL
- **Planned for System MR**
- **Fixes Bug Number(s):**
- **Documented in MTB:** 355
- **User/Operations-visible Interface change?** [ ] yes [x] no
- **Performance:** [ ] Better [ ] Same
- **Incompatible change?** [ ] yes [x] no
- **Worse**
- **Replaces MCR**

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**Objections/Comments:**

- Info Segs
- Other (Name)
- None (Reason) no change

Use these headings: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

**SUMMARY:**

Change `find_condition_info` to get a pointer to signaller's argument list by fetching the argument list pointer from the stack frame of the program signaller called rather than assuming the argument list is at 118 in the stack frame.

**REASONS:**

It is much easier to reformat signaller's stack frame when the need arises.
TITLE: Filter access class in append$create_branch

AUTHOR: A. Kobziar

Objections/Comments:

SUMMARY: Change append$create_branch to zero all illegal bits in an access class argument. This will be done by taking the logical "and" of the access_class and sys_info$access_class_ceiling.

Reasons: The access class is checked by aim_check for the correct value of the first 54 bits only. Any value in the last 18 bits is currently acceptable to create_branch, but only 0 is acceptable to the salvager since it uses these bits for a validity check. If any of these bits are on, then the whole access class is assumed clobbered. Append should insure that the initial setting of these bits is 0.
**Title:** Fix bug in qedx regular expression matching

**Author:** M.A. Meer

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**Category:**

- 355 Document

**Document Changes:**

- Specify One or More

**User/Operations-visible Interface change?**

- Yes [ ] No [x]

**Incompatible change?**

- Yes [x] No [ ]

**Performance:**

- Better [x] Same [ ]
- Worse [ ]

**Replaces MCR**

- [x]

**Objections/Comments:**

- Info Segs
- Other (Name)
- None (Reason)

**Use these headings:** SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

**Summary:**

1) Fix bug which caused error in regular expression matching using certain .* configurations.

2) Update search_file_, the module involved, to EIS.

3) Make search_file_ externally available by adding its name to bound_qedx_ and retaining it in the bind file.
Fix the following bugs:

1) out of bounds on large segment sometimes.

2) fix error output which caused double printing of some errors.

3) does not recognize & after escaped new line but does if space inserted after the new line.

Update to EIS qedx and edx_util.
TITLE: Resource Control Package

AUTHOR: B. Silver

SUMMARY:
This MCR describes the complete installation procedure for the initial implementation of the Resource Control Package.

REASONS: IMPLICATIONS: (See MTB 184)

DETAILED PROPOSAL:

Phase I - Install a dummy `rcp_init` and dummy RCP gates. These gates will support most of the RCP facilities. They will use existing ring Ø facilities.

Phase II - Update and install all of the required users of RCP.
- all I/O modules that interface directly with IOI
- T&D programs
- answering service
- RCP commands

Phase III - install the real RCP. `pioi`, `tape_attach` and `io_disk_attach` will be deleted from ring Ø.

Phase IV - Delete any tools and answering service programs that were needed during Phase II but have become obsolete due to Phase III.
Ver. 3
741022 MULTICS CHANGE REQUEST

TITLE: New version of system_control

AUTHOR: VanVleck

Planned for System: not applicable
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Changes: no
User/Operations-visible Interface Change: no
Coded in: ( )PL/I ( )ALM ( )other-see below
Performance: ( )better ( )same ( )worse

DOCUMENTATION CHANGES (specify one or more)
| MPM (vol,sect) | MPAM (sect) |
| MOSN (sect)    | MSAM (sect) |
| PLMs (AN#)     | an66        |
| Info Segs      |
| Other          |

OBJECTIONS/COMMENTS:

Headings are: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (optional)

Summary:

Split the current program system_control_ into seventeen smaller programs.
Six of these programs need not be on the system tape; move them to
bound_oprcons_.

Convert system_control_ to lox_.

Reasons:

The current system_control_ module is 1194 lines of source long. In
addition, it includes the declarations of the answer table and the
mc_anspbl, making it very difficult to change the format of these data
bases. The convoluted flow of control within the program has caused
confusing and disheartening bugs in the past and will no doubt do so in the
future. The use of the obsolete los_interfaces must be eliminated; if
system_control_ is converted, we can move a step closer to deleting los_
from the system tape.

Implications:

No change to functions provided by system_control_. No measurable
improvement in performance. Considerable improvement in reliability and
maintainability.
Detailed Proposal

**Bound_system_control** will consist of:

- `system_control_` main loop
- `sc_parse_` command parse and lookup
- `sc_command_handlers_` command execution
- `sc_init_` initialization
- `sc_admin_command_` admin command execution
- `sc_command` command interface for ec's
- `sc_signal_handler_` error reporting
- `fin_admin_` utility
- `kill_sc_process_` utility
- `find_communications_seg_` utility

The following programs will be added to `bound_oprcons_1`:

- `mc_tty_` tty input: executes commands
- `turn_on_mc_` initialization
- `mc_write_` utility
- `restart_mc_tty_` error recovery
- `borrow_tty_from_mc_` admin mode support
- `return_tty_to_mc_` admin mode support

Minor changes will be made to the answering service to make `as_$shutdown` return an error code if a shutdown cannot be done because users are logged in.

An Iox compatibility write-around has been provided for the oc_ dim already.
### Multics Change Request

**Title:** Fix msf_manager to handle the root

**Author:** S. Herbst

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**Status**
- **Written:** 04/21/75
- **Status:** A 04/29/75
- **Expires:** 06/29/75

**Explain in DETAILED PROPOSAL**

**Lib. Maint. Tools**

**Sys. Anal. Tools**

**Sys. Prog. Tools**

**Document**

**Specify One or More**

**User/Operations-visible**

- **BOS**
- **Salvager**
- **MPM (Vol, Sect.)**
- **Ring Zero**
- **Ring One**
- **PLMS (AN #)**
- **SysDaemon/Admin.**
- **MOGN (Sect.)**
- **Runtime**
- **MPAM (Sect.)**
- **MSAM (Sect.)**
- **X User Cmd/Subr.**

**Objections/Comments:**

- **Info Segs**
- **Other (Name)**
- **None (Reason) NO interface change**

**Use these headings:** SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

**Summary:**

Fix bug in msf_manager causing it to work improperly on MSF's off the root.

**Reasons:**

The concatenated pathname of the MSF directory, stored in the file control block and used to reference components, contains an extra ">" for an MSF off the root.
SUMMARY

There exists a locking bug in the installation tools such that two lock segments are created when only one is needed. This proposal will modify the locking program so that only one lock segment is used.

At this time a minor ACL setting bug in the same program will also be fixed, allowing the installer access (if possible) to the created Installations.log segment even if the initial ACL put on the segment doesn't.
 TITLE: Fix bugs in BASIC

AUTHOR: Melanie Weaver

MCR 1146

TITLE: Fix bugs in BASIC

AUTHOR: Melanie Weaver

Multics Change Request

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PL/1 [X] ALM [X] Other explain in DETAILED PROPOSAL

- Planned for System MR 2.2
- Fixes Bug Number(s) see below
- Documented in MTR
- User/Operations-visible Interface change? [X] yes [ ] no
- Incompatible change? [ ] yes [X] no
- Performance: [ ] Better [X] Same [ ] Worse
- Replaces MCR [X]

Objections/Comments:

Use these headings: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

SUMMARY:

Fix basic bugs 48, 49, 50, 51, 52, 53, 54, 55 and other unreported bugs.

Eliminate call to establish_cleanup_proc_.
Both the compiler and the runtime are involved.

REASONS:

Install cleaned-up version of basic for MR2.2

This file contains a list of all bugs in the Multics BASIC compiler.

bugs marked with ! have been fixed in the installed basic.
bugs marked with * have been fixed in the basic located in >ldd>exl</.

- 056 next free number
- 055*75.04.04 global variables in user defined functions
- 055*75.04.044 sometimes addressed incorrectly after invocations
- 055*75.04.044 of math functions elsewhere in program
- 054*75.02.06 bad line at end of source segment causes looping
- 054*75.02.06 with confusing message
- 053*75.01.23 numerical constants with large negative exponents are
- 053*75.01.23 sometimes incorrectly picked up by compiler
- 052*75.01.22 mat input reads only 1 line
- 051*75.01.23 mod(n,0) returns 0
- 050*75.01.23 basic program's any other handler should be reverted
- 049*74.11.15 before calling non-Basic procedure
- 049*74.11.15 array redimensioning doesn't work if second
- 049*74.11.15 dim is an expression
- 049*74.11.15 dot product blows up
TITLE: Fix 2-process bug in msf_manager_$get_ptr

AUTHOR: S. Herbst

STATUS DATE
Written 04/24/75
Status 04/29/75
Expires 04/29/75

CATEGORY (CHECK ONE)
Lib. Maint. Tools
Sys. Anal. Tools
Sys. Prog. Tools
Document
Specify One or More

DOCUMENTATION CHANGES
Salvager
Ring Zero
Ring One
SysDaemon/Admin.
Runtime
User Cmd/Subr.

Objections/Comments:
Info Segs
Other (Name)
None (Reason) no change

Use these headings: SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (Optional)

SUMMARY:
Make msf_manager_$get_ptr always try to initiate a component even when it is after the last known component.

REASONS:
A component added to an MSF by process 1 updates the number of components known to process 1 but does not change the number known to process 2. If process 2 asks msf_manager_ for a pointer to the new component it immediately returns the code error_table_$noentry because the component is after the last component known to process 2.

IMPLICATION:
Last get_ptr call takes longer.