TO: Distribution

FROM: Betsy

DATE: February 14, 1975

DIVISION: CISL/CEO-P

SUBJECT: Multics Change Requests

Attached are the Change Requests that were approved during the
period from February 1 - 15, 1975.

Multics Change Request

TITLE: Fix inconsistency in set_acl	STATUS	DATE
AUTHOR: Steve Herbst		

STATUS	DATE
Written	1-28-75
Status	A 02/05/75
Expires	08/05/75

-Coded in: [X]PL/I [ ]ALM [ ]other-
explain in DETAILED PROPOSAL
-Planned for System MR_____
-Fixes Bug Number(s)_____
-Documented in MTB_____
-User/Operations-visible
Interface change? [ ]yes [X]no
-Incompatible change? [ ]yes [X]no
-Performance: [ ]Better [X]Same
[ ]Worse
-Replaces MCR_____

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
X	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

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

REASONS: set_acl incorrectly assumes it is to work only on segments and MSF's whenever the first access mode argument is "null", "n" or "". As a result, the following command lines do not work correctly:

    sa dirname null Person.Project.tag

    sa ** null Person1.Project1.tag1 sma Person2.Project2.tag2

SUMMARY: Make these cases work right. The first should set access on dirname and the second should set access on directories only.

Multics Change Request

TITLE:	changes to formline_ iteration loops	STATUS	DATE

AUTHOR: L. Johnson

		STATUS	DATE
		Written	1/29/75
		Status	A 02/05/75
		Expires	05/05/75

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

Category (Check One)

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
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	355
	BOS
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	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
X	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	Subroutines
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

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

SUMMARY: The ⌃(and ⌃) control characters in ioa_ do not always seem to
             do the "right" thing. The proposal is to redefine slightly how
             iterations work. Currently, these features are not documented
             in the MPM. (Also ⌃b, ⌃i, and ⌃s are not documented.)

DETAILED
 PROPOSAL: Currently, a ⌃) will never cause an iteration to be repeated,
             regardless of the repetition count, if the argument list has
             been exhausted. The attached addition to the ioa_ MPM write-up
             explains how the new implementation will work.

             Also, a bug will be fixed in ⌃∅(which may not do the correct
             thing if the string contains nested ⌃(or things of the form ⌃⌃).

IMPLICATIONS:
             Probably small, since these features have been documented only
             in a help file, and not in the MPM.

Additions to the ioa_ MPM writeup.

¬i   is identical to ¬d. It exists because the corresponding
Fortran format letter is i.

¬b   assumes bit string input and converts it to character form.
It may be specified in the following forms: ¬b, ¬nb, ¬n.db,
or ¬.db. The value d, when specified, is the byte size
expressed in bits. It may only take on the values 1 thru 4.
If d is omitted, or less than 1, 1 is assumed. If d is
greater than 4, 4 is assumed. A d of 1 results in the
string being outputed in binary. A d of 2 results in
quarternary (base 4) output. A d of 3 results in octal
output, and a d of 4 results in hexadecimal output. If the
field width, n, is omitted, the length of the string is
used. If n is specified, the string will be truncated on
the right, or padded on the right with spaces, which ever
is appropriate.

¬s   causes the next argument in the parameter list to be
ignored. ¬ns will cause the next n arguments to be ingored.
¬0s will do nothing.

¬(starts an iteration loop, which will be ended by a
corresponding ¬). ¬n(specifies that the loop is to be
repeated n times. ¬(specifies a semi-infinte iteration
which will be repeated until the argument list is
exhausted. ¬0(will causes everything in the control
string up to the corresponding ¬) to be ignored. Iterations
may be nested up to 4 deep. The exact rules under which an
iteration will terminate are explained under ¬).

¬)   marks the end of an iteration loop, and will either
terminate the iteration, or cause it to be repeated,
depending on the following rules:

    1. If the iteration was semi-infinite (no repeat factor
       specified) then it will only be repeated if there was
       something in the control string between the ¬(and the
       ¬) which required an argument to be processed (such as
       ¬a, ¬v/, etc.), and there are arguments remaining which
       have not been processed. If either of these conditions
       is not met, the loop terminates.

    2. If the iteration was finite (n specified) and there was
       nothing in the control string between the ¬(and the ¬)
       which required an argument to be processed, the
       iteration will be repeated until the repetition count is
       exhausted. If another repetition will require an
       argument, the loop is repeated only if arguments remain
       to be processed, regardless of the value of n.

```
|---------------------------------------------------|-----------------------------|
| Ver. 3                                            |                             |
| 741022          MULTICS CHANGE REQUEST            |  MCR___1010_____        |
|---------------------------------------------------|-----------------------------|
| TITLE:  Install tape_ansi_ and tape_ibm_ I/O      | _STATUS__|_DATE_____       |
|         Modules                                   | _Written_|_01/29/75_        |
| AUTHOR: Ross E. Klinger                           | _Status__ Aog/05/75         |
|---------------------------------------------------| _Expires_|_07/29/75_        |
| Planned for  System:  xxxxxxxxxxxxxxxxxx 3.0      |                             |
| Fixes Bug Number(s):  not applicable              | _CATEGORY_(check_one)|      |
| Documented in MTB:  not applicable                | ( )Lib. Maint. Tools |      |
| Incompatible Change:  no                          | ( )Sys. Anal. Tools  |      |
| User/Operations-visible Interface Change:  yes    | ( )Sys. Prog. Tools  |      |
| Coded in: (■)PL/I (X)ALM (X)other-see below       | ( )355               |      |
| Performance: ( )better ( )same ( )worse           | ( )BOS               |      |
|_____| ( )Salvager          |      |
| _DOCUMENTATION_CHANGES_(specify_one_or_more)____  | ( )Ring Zero         |      |
| MPM (vol,sect) II/10        MPAM (sect)           | ( )Ring One          |      |
| MOSN (sect)                 MSAM (sect)           | ( )SysDaemon/Admin   |      |
| PLMs (AN#)      AN57 - in preparation             | ( )Runtime           |      |
| Info Segs                                         | (■)User Command/Subr |      |
| Other                                             |                      |      |
|_____|_____|      |
| OBJECTIONS/COMMENTS:                                                             |
|                                                                                  |
|                                                                                  |
|_____|
```

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

SUMMARY: Install the tape_ansi_ and tape_ibm_ I/O Modules in the Standard
Service System (as bound_tape_ansi_).

REASON: Enhance support of tapes on Multics.

IMPLICATIONS: Providing an interchange tape facility opens whole new
realms to the Multics user. In addition, such a facility is certainly a
marketing "plus".

DETAILED PROPOSAL: Documentation available in M. D. MacLaren's office. Note: one
module is coded in ALM, and another in error_table_ language.

TITLE: New list command

AUTHOR: T. Casey

STATUS	DATE
Written	29 Jan 75
Status	A 02/05/75
Expires	08/05/75

-Coded in: [X]PL/I [ ]ALM [ ]other-
explain in DETAILED PROPOSAL
-Planned for System MR _____
-Fixes Bug Number(s) _____
-Documented in MTB 125,149
-User/Operations-visible
 Interface change? [X] yes [ ] no
-Incompatible change? [X] yes [ ] no
-Performance: [ ] Better [X] Same
 [ ] Worse
-Replaces MCR _____

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
X	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	Commands
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	

Objections/Comments:

Info Segs	list.info
Other (Name)	
None (Reason)	

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

SUMMARY: Install the new list command described in MTB's 125 and 149.

REASONS: The current list command is deficient in many ways, and
           there exist several private versions of the command.

IMPLICATIONS:

       This is an incompatible interface change. The method of
       specifying certain functions is changing, and one feature -
       the ability to list several directories at once - is being
       removed.

DETAILED PROPOSAL:

       See MTB's 125 and 149; and the attached MPM writeup.

NAME: list, ls

The list command prints information about entries in a single
directory. Arguments allow the user to specify the directory to
be listed, the entry types, names, and dates for which
information is to be printed, the amount of information to be
printed for each entry, and the order in which entries are to be
listed.

The default, when no arguments are given, is to list files
(segments and multi-segment files) of all names, in the working
directory. For each entry, the mode, records used, primary name,
and any additional names, will be printed. The two entry types
will be listed in the order: segments, multi-segment files;
within each entry type, entries will be printed in the order in
which they are found in the directory. Preceding the listing of
each entry type will be a line giving the total number of entries
of that type and the total records used.

USAGE: list -entry_names- -control_arguments-

1) entry_names   are the (optional) names of entries to be
                       listed. If entry names are given, only
                       entries having at least one name matching one
                       of the entry names will be listed. The star
                       convention may be used in the entry names.
                       Except when the -exclude control argument is
                       used, the positions of the entry names
                       (before, after, or among the control
                       arguments) have no significance.

2) control_arguments may be chosen from the following:

   -pathname dir_path
   -pn dir_path   causes the directory dir_path to be listed,
                       instead of the working directory.

The following control arguments are used to specify the entry
types to be listed:

   -segment, -sm   print information about segments.

   -multisegment_file,
   -msf   print information about multi-segment files.

   -file, -f   print information about files (i.e., segments
                       and multi-segment files, in that order). This
                       is the default.

   -directory, -dr   print information about directories.

   -branch, -br   print information about branches (i.e.,
                       segments, multi-segment files, and

-1-

directories, in that order).

    -link, -lk   print information about links.

    -all, -a   print information about all entry types
                            (segments, multi-segment files, directories,
                            and links, in that order).

The following control arguments are used to specify whether
totals information, or detailed information for each entry, or
both, should be printed:

    -total, -tt   print only the heading lines giving total
                            entries and total records used, for each
                            entry type specified.

    -no_header, -nhe omit the heading lines (which are printed by
                            default when detailed information about each
                            entry is being printed).

The default is to print totals information, plus detailed
information for each entry. When detailed information is being
printed, it is arranged in columns, in the order (from left to
right): date-time modified, date-time used, mode, records used,
names, name count. By default, only the mode, records, and names
columns are printed. If the -brief control argument (see below)
or any of the control arguments corresponding to these default
columns is given, then this default is overridden, and only the
names column, plus any columns selected explicitly by control
arguments, will be printed.

The following control arguments are used to specify which columns
should be printed:

    -name, -nm   print the names column.

    -record, -rec   print the records column.

    -mode, -md   print the mode column.

    -date_time_used,
    -dtu   print the date-time used column.

    -date_time_modified,
    -dtm   print the date-time modified column.

The following control arguments are used to specify the printing
of information about multiply-named entries:

    -primary, -pri   print the primary name, but not the
                            additional names, of multiply-named entries.

-match   print only those names that match one of the
                 given starnames.

The default is to print all of the names of multiply-named
entries.

    -count, -ct   for multiply-named entries, print the total
                     number of names.

The following control arguments are used to decrease the amount
of information printed, or cause it to be printed in a more
compact format:

    -brief, -bf   This argument has two meanings, depending on
                     whether or not detailed information is being
                     printed. If just totals information is being
                     printed, this argument will cause the totals
                     information for all selected entry types to
                     be abbreviated and printed on a single line.
                     Otherwise, it will suppress the printing of
                     the   default   columns when they are not
                     explicitly named in control arguments. For
                     example, list -dtu -brief will cause names
                     and date_time_used, but not mode and records,
                     to be printed.

    -short, -sh   print link pathnames starting two spaces
                     after their entry names, instead of aligning
                     them in column 35.

The items: mode, records, and date_time_used have no meaning for
links, and there is an additional item, link_path, associated
with each link. There is no control argument to specify that
link_path should be printed. It will be printed in all cases
except the following:

1)   when only totals information is being printed;

2)   when the only column being printed is the names column;

3)   when the -brief control argument is given.

The following control arguments specify the order in which
entries will be printed, within each entry type:

    -sort sort_key   sort entries according to either   name,
                     records,   mode,   date_time_used,   or
                     date_time_modified, as   specifed   by   the
                     sort_key, or by the default described below.

The sort_key can be one of the following keywords:

name, nm   sort entries by primary name.

record, rec   sort entries by records used (largest first).

mode, md   sort entries by mode.

date_time_used,
dtu   sort entries by date_time_used (most recent
                    first).

date_time_modified,
dtm   sort entries by date_time_modified (most
                    recent first).

If sort_key is omitted, the default column on which to sort is
determined as follows: if neither date is being printed, sort by
primary name; if one of the dates is being printed, sort by that
date; if both dates are being printed, sort by date-time
modified.

Links can only be sorted by name or date-time modified. When
sorting by any other column is specified, links will remain in
the order in which they are found in the directory.

If -sort is not given, entries will be printed in the order in
which they are found in the directory.

    -reverse, -rv   This argument is used to reverse the order in
                        which entries are printed. If -sort is also
                        given, the sort will be reversed. Otherwise
                        entries will be printed in the reverse of the
                        order in which they are found in the
                        directory.

The following control arguments are used to specify that only a
subset of all entries in the directory be listed:

    -exclude entry_name
    -ex entry_name   do not list any entries that have a name that
                        matches entry_name. The star convention can
                        be used in entry_name.

                        Multiple exclude entry names can be given
                        (each immediately preceded by the -exclude
                        control argument). They will operate together
                        with include entry names (those not preceded
                        by -exclude), to limit the entries listed.
                        All entries having a name that matches any of
                        the exclude entry names will be excluded from
                        the listing, and from the entries that
                        remain, all those that have a name matching
                        any of the include entry names will be
                        listed.

The following control arguments are used to limit the entries listed to those having date-times (either date-time modified or date-time used) before or after specified date-times. The date-time that is used in this comparison will be date-time modified, in all cases except when date-time used is being printed or sorted on, and date-time modified is neither being printed nor sorted on, in which case, date-time used will be used in this comparison.

    -from date-time
    -fm date-time   do not list entries whose date-time (selected
                         as described above) is before the specified
                         date-time.

    -to date-time   do not list entries whose date-time (selected
                         as described above) is after the specified
                         date-time.

If both are given, the from date-time must be earlier than the to date-time. The value after -from or -to must be a string acceptable to the convert_date_to_binary_ subroutine, described in MPM Volume III (Subroutines). If the date-time string contains blanks, it must be enclosed in quotation marks. Note that the from and to values are date-times, and that the default time supplied by convert_date_to_binary_, when only a date is given, is the current time of day.

EXAMPLES:

            list -pri -ct

lists all files in the working directory: for multiply-named files, the primary name is printed, but not any of the secondary names, and the total number of names that the file has is printed after the primary name, on the same line. In addition to the names column, the mode and records used columns are printed. (This is the default, and it will not be mentioned in the examples below, when only the default columns are printed.)

            list -sm *.* -ex *.pl1

lists all the segments in the working directory having two-component names whose second component is not "pl1".

            list -ex *.*

lists all the files in the working directory having other than two-component names.

            list -dtm -sort

lists all files in the working directory, sorted by date-time modified. The date-time modified column is printed, in addition to the mode, records, and names columns.

        list -name -sort dtm

lists all files in the working directory, sorted by date-time modified. Only the file names are printed.

        list -sm -name -pri -nhe

lists the primary name of each segment in the working directory, without printing a heading line or other extraneous lines.

        list -mode -pri

lists the mode and primary name of each file in the working directory.

Multics Change Request

STATUS	**DATE**
Written	31 Jan 75
Status	A 02/05/75
Expires	08/05/75

TITLE: Install record_stream_module

AUTHOR: M. Asherman

-Coded in: [X] PL/I [ ] ALM [ ] other-
explain in DETAILED PROPOSAL
-Planned for System MR 3.0
-Fixes Bug Number(s) _____
-Documented in MTB _____
-User/Operations-visible
 Interface change? [X] yes [ ] no
-Incompatible change? [ ] yes [X] no
-Performance: [ ] Better [X] Same
 [ ] Worse
-Replaces MCR _____

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
X	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	2
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	record_stream_info
Other (Name)	
None (Reason)	

Objections/Comments:

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

SUMMARY:

REASONS: To allow record i/o on unstructured data and stream
           i/o on sequential data.
           Scheduled for 3.0

NOTE: MTB documentation attached. This is a simplification
           of the original proposal in MTB-061.

Name: record_stream_

This I/O module attaches an I/O switch to a target I/O switch so that record I/O operations on the attached switch are translated into stream I/O operations on the target switch, or so that stream I/O operations on the attached switch are translated into record I/O operations on the target switch. In this way a program that uses only record I/O may process unstructured files and do I/O from/to the console. Similarly a program that used only stream I/O may process some structured files.

Entries in this module are not called directly by users; rather the module is accessed through the I/O system. See the MPM Section, the Multics I/O System, for a general description of the I/O system.

Attach Description

The attach description has the following form:

record_stream_ switchname2 -options-

where:

1.	switchname2	is the name of the target I/O switch. It need not be attached when this attachment is made. If omitted, the -target option must be present.
2.	options	are chosen from the following to control the transformation of records into a stream of bytes and vice-versa, or to control the target attachment:
	-nnl	means that a record is transformed into a stream without appending a newline character.
	-length n	means that the stream of bytes is converted to a sequence of records each of which has length n.
	-target attach_descrip	specifies the attachment of a uniquely named target switch. This option must occur if and only if switchname2 is omitted, and it must be the last option in the attach description, if present.

If neither -nnl or -length n occurs, lines are transformed into records after deleting trailing newlines and records into lines by appending newlines.

Opening

The attached I/O switch may be opened for stream_input, stream_output, sequential_input, or sequential_output. The implications of the opening mode are as follows (in addition to the usual implications described in the MPM

Section, I/O System).

1.   Stream_input.   The   target   I/O   switch   must   be   open   for
      sequential_input,   open   for   sequential_input_output, or attached and
      closed. In the last case, it is opened for sequential_input.   The
      sequence of records read from the target switch is transformed into a
      stream of bytes which are transmitted to the calling program by
      get_line and get_chars operations. The operation read_record is used
      to read the records from the target switch.

2.   Stream_output.   The   target   I/O   switch   must   be   open   for
      sequential_output,   open   for sequential_input_output, or attached and
      closed.   In the last case, it is opened for sequential_output.   The
      stream of bytes written to the attached switch by the put_chars
      operation is transformed into a sequence of records which are written
      to the target switch by use of the write_record operation.

3.   Sequential_input.   The   target   I/O   switch   must   be   open   for
      stream_input,   open   for   stream_input_output, or attached and closed.
      In the last case, it is opened for stream_input. The stream of bytes
      read from the target switch is transformed into a sequence of records,
      which   are   transmitted   to   the   calling   program by read_record
      operations. If the attach description specifies the default line to
      record transformation, the get_line operation is used to read bytes
      from the target switch. If the attach description specifies -length,
      the get_chars operation is used to read bytes from the target switch.

4.   Sequential_output.   The   target   I/O   switch   must   be   open   for
      stream_output,   open   for stream_input_output, or attached and closed.
      In the last case, it is opened for stream_output.   The sequence of
      bytes written to the attached switch by the write_record operation is
      transformed into a stream of bytes which are written to the target
      switch by use of the put_chars operation.

Transformations

     The transformation from record to stream form can be described in terms of
taking records from a _record switch_ and giving bytes to a _stream switch_, and
similarly for stream to record. Which switch is the record switch and which the
stream switch depends on the opening mode as explained under "Opening." The
transformation is controlled by the options in the attach description.   The
details are as follows. (Note that a record is a string of bytes.)

1.   Record to stream (default)

      A record is taken from the record switch, a newline character is
      appended, and the resulting string is given to the stream switch.

2.   Record to stream -nnl

      A record is taken from the record switch and given to the stream
      switch without modification.

3.   Stream to record (default)

A line (string of bytes ending with a newline character) is taken from the stream switch, the newline character is deleted, and the resulting string is given to the record switch.

4.   Stream to record -length <u>n</u>

To form a record, n bytes are taken from the stream switch and given to the record switch as one record.

uffering

The I/O module may hold data in buffers between operations when the switch is opened for stream_output or stream_input, or for sequential_input.

lose Operation

The I/O module closes the target switch if and only if it opened it.

etach Operation

The I/O module detaches the target switch if and only if it attached it via he -target option.

osition Operation

Only positioning to the beginning of file or end of file and skipping orward are supported, except in the default sequential case which also permits ackward skipping. These operations are only supported to the extent the ttachment of the target I/O switch supports them.

ontrol and Modes Operations

These are supported for   **opened switches**   in the sense hat they are passed along to the I/O module for the target switch.

rror Codes

In addition to the error codes specified in the description of iox_ for the arious I/O operations, this I/O module returns error codes returned by the I/O

module for the target switch.

Example

The following commands would permit sequential input operations from the user's terminal:

```
io_call attach sysin record_stream_ user_input
io_call open sysin sequential_input
```

Each record accessed through sysin corresponds to a line read through user_input, with its trailing newline character deleted.

Example

Consider a pl1 statement of the form:

```
open file(x) title ("record_stream_ -target vfile_ foo") -opening_mode-;
```

The opening mode may be "stream input", "stream output", "sequential input", or "sequential output". Sequential operations on file(x) will generate stream operations on "foo" and vice-versa, with lines transformed into records without trailing newlines or records transformed into lines by appending newlines, depending upon the mode of opening.

Example

Consider the command:

```
io_call attach switch record_stream_ -target record_stream_
    -length 100 -target vfile_ foo
```

If "switch" is opened for stream_input, "foo" must be an existing unstructured file. The effect is equivalent to that of inserting a newline after every 100 characters of "foo" referenced by get_chars, get_line or position operations through "switch".

Alternatively, "switch" may be opened for sequential_output. In this case variable length records written through "switch" are given trailing newlines and restructured into 100 character records, which are then transmitted to the sequential file, "foo".

MULTICS CHANGE REQUEST	MCR 862
	Page 1 of 1 Pages

		STATUS	
TITLE: Spooling Facility for Print Requests		Written	11/11/74
		Approved	2/11/75
AUTHOR: Janice B. Phillipps		Rejected	
SOURCE: (if external) e.g., "User", "Marketing"		Postponed	11/19/7
		Withdrawn	
MIT (PDO)		Expires	8/4/75

CLASSIFICATION		JUSTIFICATION		Replaced by proposal MCR _____
	Incompatible Change	•	Marketing Requirement	Implemented in System _____
X	Extension		Conformance to Standard	Objections/Comments:
	Restriction		Increased Consistency	
	Performance Improvement		Simplification	Determine how this facility could be used with Multics and GCOS.
	Reliability Improvement		Generalization	
			Bug Fix	
		X	Service Improvement	

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

REASONS: Need a method to process print requests when Multics printer(s) down.

Summary: MTB 117 - with the following changes:

    1) Control arguments will be preceeded by keywords i.e. (-files)

    2) Additional control argument will be provided to specify the maximum line length of the target printer (132 for IBM printers)

Implications: None, new facility.

TITLE:	Change format of iocb's.		STATUS	DATE
AUTHOR:	S. Webber		Written	1/8/75

			Status	P 1/14/75, A 2/11/75
-Coded in: ☐PL/I ☒AIM ☐other- explain in DETAILED PROPOSAL	Category (Check One)		Expires	8 11 75
-Planned for System MR ____	Lib. Maint. Tools		DOCUMENTATION CHANGES	
-Fixes Bug Number(s) ____	Sys. Anal. Tools			
-Documented in MTB ____	Sys. Prog. Tools			
-User/Operations-visible not yet	355		Document	Specify One or More
Interface change? ☐yes ☐no	EOS			
-Incompatible change? ☒yes ☐no	Salvager		MPM (Vol, Sect.)	
-Performance: ☒Better ☐Same	Ring Zero			
☐ Worse	Ring One		PLMS (AN #) AN57	
-Replaces MCR ____	SysDaemon/Admin.		MOSN (Sect.)	
	Runtime		MPAM (Sect.)	
	X	User Cmmd/Subr.	MSAM (Sect.)	

Objections/Comments:	Info Segs
Needs an installation plan for all sites.	Other (Name)
	None (Reason)

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

SUMMARY: It is proposed that the entry variables in an iocb be replaced by a packed pointer.

REASONS: The size of an iocb (of which usually >5 exist) will be reduced from 96 words to 48 words. (In addition, there are several other pointers in an iocb which could be made packed. If this were done the total size could be reduced to 39 words. It is not proposed here that this be done, although...)

IMPLICATIONS:

Every program which includes the iocb include file will have to be recompiled. In addition, any program using or setting an entry variable will have to be (trivially) changed. Since the iocb format is not yet public, now is our last chance to do this change easily. There are already some programs converted which will have to be updated.

DETAILED PROPOSAL:

It is proposed that due warning be given to all users, system and otherwise, so they can convert their programs to accept either format of iocb. The version number is filled in by the iox_ primitives that generate iocb's so this is easy to do.

At a given time a new version of bound_iox_, and all system code that includes the iocb structure will be installed. This is a combined hardcore/online installation change. User programs must be converted by the time this changeover occurs.

Currently there are few, if any, user IOSIM's using iox_.

TITLE: Install EIS version of listen_ and command_processor_	STATUS	DATE
AUTHOR: S. Webber	Written	2/6/75
	Status	A 2/11/75
	Expires	X 11 75

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

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
X	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason) none needed. Done.	

Objections/Comments:

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

SUMMARY: Install new versions of listen_ and command_processor_ that use new
    buffering strategies and EIS code.

REASONS: Performance improvement.

IMPLICATIONS: None.

Multics Change Request

TITLE: Fix bugs in admin_util and parse_attributes_

AUTHOR: T. Casey

STATUS	DATE
Written	January 5, 1975
Status	A 2/11/75
Expires	8/11/75

-Coded in: [X] PL/I [ ] ALM [ ] other-
explain in DETAILED PROPOSAL
-Planned for System MR 2.1
-Fixes Bug Number(s) unreported
-Documented in MTB
-User/Operations-visible
  Interface change? [ ] yes [X] no
-Incompatible change? [ ] yes [XX] no
-Performance: [ ] Better [X] Same
  [ ] Worse
-Replaces MCR

Category (Check One)

	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
X	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	

Objections/Comments:

Info Segs	
Other (Name)	
None (Reason)	

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

SUMMARY: Fix bugs in admin_util and parse_attributes_ so that the default attributes for a new project, which are kept in sys_admin_data, can be successfully initialized by asu.ec and modified by a system administrator.

REASONS: Bug in parse_attributes_ prevented attributes from being set by admin_util. Bug in admin_util caused three attributes to be set to the reverse of the proper values.

TITLE: Add routines to process entry values

AUTHOR: M. Weaver

STATUS	DATE
Written	4 January 75
Status	A2 11 75
Expires	8 11 75

-Coded in: ☐PL/I ☒ALM ☐other-
explain in DETAILED PROPOSAL
-Planned for System MR_____
-Fixes Bug Number(s)_____
-Documented in MTB_____
-User/Operations-visible
  Interface change? ☒ yes ☐ no
-Incompatible change? ☐ yes ☒ no
-Performance: ☐ Better ☐ Same
  ☒ Worse
-Replaces MCR_____

Category (Check One)

	Lib. Maint. Tools	
	Sys. Anal. Tools	
	Sys. Prog. Tools	
	355	
	BOS	
	Salvager	
	Ring Zero	
	Ring One	
	SysDaemon/Admin.	
	Runtime	
X	User Cmmd/Subr.	

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	SWG, subroutine section
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

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

SUMMARY: Add to cu_ the entry $decade_entry_value   to return
the pointer components of an entry value   and the entry
$make_entry_value to convert an external entry pointer to
an entry variable.

See attached documentation.

REASONS: These operations currently can only be programmed in
"cheating PL/I", by structure overlays on entry variables.
The first is needed by I/O modules to set the packed
pointers in iocbs. The second is needed by programs that
get a pointer to a procedure via hcs_$make_ptr and save
it as a PL/I entry value.

IMPLICATIONS: Although these routines would be coded in alm, calling
them would be much more expensive than direct code. For
example, calling cu_$make_entry_value would use about 27
instructions, whereas the compiler would use 4. For this
reason, programmers might avoid calling them.

Entry: cu_$decade_entry_value
        This entry extracts the pointer components of an entry value..

Usage
        dcl cu_$decade_entry_value entry (entry,ptr,ptr);

        call cu_$decade_entry_value (entry_value,ep_ptr, env_ptr);

1)   entry_value   is the entry value to be decoded. (Input)

2)   ep_ptr   is the entry point pointer.   (Output)

3)   env_ptr   is the environment pointer.   (Output)

Entry: cu_$make_entry_value
        This entry constructs an entry value   from its input pointer.

Usage
        dcl cu_$make_entry_value entry (ptr,entry);

        call cu_$make_entry_value (ep_ptr, entry_var);

1)   ep_ptr   points to an external entry point. (Input)

2)   entry_var   is an entry variable to be filled in. (Output)

Note
        entry_var is set to an entry value with ep_ptr as its entry
point pointer and a null pointer as its environment pointer.

Multics Change Request

TITLE: Fix page counting error in print conversion

AUTHOR: Noel I. Morris

STATUS	DATE
Written	75.02.06
Status	A 2 11 75
Expires	8 11 75

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

Category (Check One)	
Lib. Maint. Tools	
Sys. Anal. Tools	
Sys. Prog. Tools	
355	
BOS	
Salvager	
Ring Zero	
Ring One	
SysDaemon/Admin.	
Runtime	
User Cmmd/Subr.	
X	I/O

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

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

SUMMARY:
A bug in the printer conversion module caused page counts to be tabulated incorrectly in certain cases.

Proposal:
Correct the bug.

Multics Change Request

TITLE: GCOS SIMULATOR

AUTHOR: R.H. MORRISON

STATUS	DATE
Written	1/29/75
Status	A 2 11/75
Expires	8 1/75

-Coded in: [X] PL/I [X] ALM [ ] other-
 explain in DETAILED PROPOSAL
-Planned for System MR 2.1
-Fixes Bug Number(s) gcs00003*
-Documented in MTB
-User/Operations-visible
 Interface change? [ ] yes [X] no
-Incompatible change? [ ] yes [X] no
-Performance: [X] Better [ ] Same
  [ ] Worse
-Replaces MCR
*gcs00025; gcs00066
*gcs00039 (partially)

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.
X	GCOS

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	No interface change

Objections/Comments:

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

SUMMARY: 1   Install new procedure (gcos_mme_snpl_) to implement
               MME GESNAP and the DUMP option.

          2.   Change gcos_mme_fadd_ & gcos_mme_fcon_ to report a
               real device code.

          3.   Change gcos_gein_passl to recognize label cards &
               implement the "endfc" option.

          4.   Change gcos_mme_inos to handle 1600 bpi tapes.

          5.   Fix bug in gcos_fault_proc_ handling of prefix vector.

          6.   Change gcos_set_slave_ so that gcos_slave_area_seg_
               appears in stack.

          7.   Speed up ascii/gebcd conversion routines with EIS code.

          8.   Minor changes to other procedures dependent on the above.

REASONS: Fix bugs

IMPLICATIONS: Better simulation of GCOS

Multics Change Request

TITLE: Fix Bug in Metering of IOM Interrupts

AUTHOR: Noel I. Morris

STATUS	DATE
Written	75.02.05
Status	A 2 11/75
Expires	8 11/75

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

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
X	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.
X	Metering

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
XPLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

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

SUMMARY:
The interrupt_meters command currently prints out negative numbers
for the interrupt information for "Other" (i.e. non-IOM) interrupts.
This problem is caused by the fact that one IOM interrupt may result
in the handling of interrupt conditions for several channels. Thus,
the total of the interrupt counts for each IOM channel exceeds the
total number of IOM interrupts handled.

Proposal:
Modify the iom_manager to count the number of times it has been called
from the interrupt interceptor. Use this figure in computing the
statistics for "Other" interrupts.

Multics Change Request

MCR   1021

Page   1 of 1

TITLE: Improve Multics Disk DIM

AUTHOR: Noel I. Morris

-Coded in: ☒PL/I ☐ALM ☐other-
explain in DETAILED PROPOSAL
-Planned for System MR   2.1
-Fixes Bug Number(s)_____
-Documented in MTB_____
-User/Operations-visible
 Interface change? ☐yes ☒no
-Incompatible change? ☐yes ☒no
-Performance: ☒Better ☐Same
   ☐ Worse
-Replaces MCR_____

STATUS	DATE
Written	75.02.05
Status	A 2 11 75
Expires	8 11 75

DOCUMENTATION CHANGES

Category (Check One)	
	Lib. Maint. Tools
	Sys. Anal. Tools
	Sys. Prog. Tools
	355
	BOS
	Salvager
X	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

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

SUMMARY:

The disk DIM must be opened up in order to provide I/O Interfacer
access to disk. At that time, several simple changes can be made
which should result in improved disk performance.

Proposal:

1.   A data base lock will be provided for the disk data base   It will
     not be necessary to have the page table lock set in order to
     process disk interrupts and initiate disk I/O. This lock may be
     set when the page table lock is already locked. The page table lock,
     however, may not be set by the disk DIM with the disk database lock set.

2.   The disk DIM will be changed to initiate a new I/O operation
     before calling page$done to post a completed operation. This
     scheme will help avoid undue delays trying to lock the page table
     lock at disk interrupt time.