To: Distribution

From: Betsy

Date: May 10, 1976

Subject: Approved MCR's from April 16 - 30, 1976

Attached are the MCR's that were approved from April 16 - 30, 1976.
Please note that MCR's 1297, 1298 and 1327 are also included
because they were not published upon their approval.

TITLE:	Referencing Directory in iox-attach	STATUS	DATE

AUTHOR: M. D. MacLaren

		STATUS	DATE
		Written	07.15.75
		Status	P 07/22/75 A 08/05/75
		Expires	02/05/76

-Coded in ☒ PL/I ☒ AIM ☐ 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   1186

Category (Check One)

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

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	subroutines - iox
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	pl1 - iox
Other (Name)	
None (Reason)	

Objections/Comments:

Old interface will be retained indefinitely.

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
                      Detailed Proposal.

SUMMARY: Replace iox_$attach_iocb and iox_$attach_ioname by
iox_$attach_ptr and iox_$attach_name that have a ref_ptr argument
specifying the referencing procedure (if any) for the search
rules. Change pl1io to pass a pointer to the user's procedure as
ref_ptr when the user gives a title. Change ios_$attach to pass
a pointer to the user's procedure. All other system callers of
iox_ pass a null pointer.

REASONS: The name of an I/O module may be given at command level
or it may be built into a program, and the search rules should be
adjusted accordingly. The proposal allows explicit control in the
general case, puts ios_$attach back the way it was before iox_,
and treats the module name in the PL/I title option like a sub-
routine name.

IMPLICATIONS: There is a very-very small chance that the changes
to ios and pl1io will affect some user.

__Note:__   A complete description of the interpretation of the attach
description has been added here. This duplicates a section
in the Reference Guide

*   *   *

Entry: iox_$attach_~~iocb~~ ptr

This entry point attaches an I/O switch in accordance with a specified
attach description. ~~The form of an attach description is given in "Multics
Input/Output System" in Section IV of the MPM Reference Guide.~~ If the switch is
not in the detached state, its state is not changed, and the code
error_table_$not_detached is returned.

Usage

declare iox_$attach_~~iocb~~ ptr entry (ptr, char(*), fixed bin(35));

call iox_$attach_~~iocb~~ ptr (iocb_ptr, atd, ref-ptr, code);

where:

1.   iocb_ptr points to the switch's control block. (Input)

2.   atd   is the attach description. (Input)

4 ~~2~~.   code   is an I/O system status code. (Output)

3.   ref_ptr   is null or a pointer to the segment that is considered the
referencing procedure. See "Notes" below. (Input)

__Notes:__ The attach description has the following form:

module_name -option_1-...-option_n-

The substrings module_name, option_1, ..., option_n must not contain blanks and
must be separated by one or more blanks. The whole attach description may
contain trailing blanks but not leading blanks.

The substring module_name determines the I/O module for the attachment as
follows: If it does not contain any instances of greater-than or less-than
characters (> or <), it is interpreted as a reference name, and the I/O module
is found by the search rules.   If module_name contains any greater-than or
less-than characters, it is interpreted as the pathname (absolute or relative)
of the I/O module.

The directory in which the segment pointed to by ref_ptr is located is used
as the referencing directory for the standard search rules. If ref_ptr is null,
then the standard search rule specifying the referencing directory is skipped.
See "System Libraries and Search Rules" in Section III of the MPM Reference
Guide. ~~Normally ref_ptr is null.~~

The substrings option_1, ..., option_n must conform to the requirements of
the particular I/O module. ~~The I/O modules are described later in this
document.~~

When the attachment is made, if the I/O module is not already initiated by the specified reference name, it is so initiated. When module_name is given as a pathname, the reference name is the final entryname in the pathname.

3.

<u>Entry</u>: iox_$attach_name

This entry point is the same as the iox_$attach_ptr entry point except that the I/O switch is designated by name and a pointer to its control block is returned. The control block is created if it does not already exist.

<u>Usage</u>

        declare iox_$attach_name entry (char(*), ptr, char(*), ptr, fixed bin(35));
        call iox_$attach_name (switchname, iocb_ptr, atd, ref_ptr, code);

where:

1. switchname is the name of the I/O switch. (Input)

2. iocb_ptr   points to the switch's control block. (Output)

3. atd   is the attach description. (Input)

4. ref_ptr   is null or a pointer to the segment that is considered the referencing procedure. See "Notes" under iox_$attach_ptr. (Input)

5. code   is an I/O system status code. (Output)

Multics Change Request

TITLE: Delete the error_table_compiler from the system	STATUS	DATE
AUTHOR: S. Webber	Written	07.15.75

-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)	Status	P 07/22/76 A 08/19/75
		Expires	02/19/76
	Lib. Maint. Tools		DOCUMENTATION CHANGES
	Sys. Anal. Tools		
X	Sys. Prog. Tools	Document	Specify One or More
	355		
	BOS	MPM (Vol, Sect.)	SWG (AK92)
	Salvager		
	Ring Zero	PLMS (AN #)	
	Ring One		
	SysDaemon/Admin.	MOSN (Sect.)	
	Runtime	MPAM (Sect.)	
	User Cmmd/Subr.		
		MSAM (Sect.)	

Objections/Comments:	Info Segs
	Other (Name)
	None (Reason)

Use these headings: **Summary of Proposal, Reasons for Proposal, Implications, Detailed Proposal.**

SUMMARY: Delete the program error_table_compiler from the system. Generate error tables using mexp.

REASONS: Fewer programs to maintain. Less confusion in that error table source is not a separate language of its own but rather (a slightly extended) ALM.

DETAILED PROPOSAL: Provide 4 macros in et_macros.incl.mexp to perform the equivalent functions. These macros would be:

        et_head   header/setup
        ec   define an error code
        system_et   to close out the system error_table_.
        user_et   to close out a user error_table_.

IMPLICATIONS: SWG documentation must be upgraded. In particular mexp must be elevated to SWG support or possibly have the name error_table_compiler added to it (users needn't really know what mexp is).

An exec_com should be provided to convert old style error_table_ source to new style.

TITLE:	Add prelinking to the system	STATUS	DATE

TITLE: Add prelinking to the system

AUTHOR: S. Webber

	STATUS	DATE
	Written	07 29 75
	Status	Pg/5/75 A 11/25/75
	Expires	15/25/76

-Coded in: [X] PL/I [ ] ALM [ ] other- explain in DETAILED PROPOSAL

-Planned for System MR _3.1_

-Fixes Bug Number(s)_____

-Documented in MTB _169, others_

-User/Operations-visible Interface change? [X] yes [ ] 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
X	Ring Zero
	Ring One
	SysDaemon/Admin.
X	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #) 70	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	

Objections/Comments:

Info Segs	
Other (Name)	
None (Reason)	

Use these headings: Summary of Proposal, Reasons for Proposal, Implications, Detailed Proposal.

SUMMARY:

Install a simplified prelinking program to be run during initialization to create prelinked template processes which are fully specified at bootload time.

REASON:

This prelinker will permit considerable performance gains for the initial release of the BASIC and FORTRAN Command and Editing subsystem.

IMPLICATIONS:

Since this version will not solve the general problems of prelinking such as

    variable search rules,
    online installations,
    new primitives, etc.,

there may be (internal) interface changes later on to facilitate introduction of these new features.

DETAILED PROPOSAL:

This version of the prelinker will generate prelinked
template processes from PLDT's which are found in
>system_library_1, hence, which came in on the bootload
tape. (The directory in which the templates are placed
will be specified in the PLDT's).

No problems arise due to changes in KST or RNT format
since all templates are created anew each bootload.

There will be no capability for changing the prelinked
subsystem until the next bootload, i.e., online changes
for programs within the subsystem will have no effect
until the next bootload.

There will be no means for changing the search rules
dynamically within a prelinked process.

Other features described in MTB-169 will be implemented
and/or utilized including:

1. copy-on-write
2. the ISOT
3. separate static
4. static handlers

3.   control_args   can be selected from the following:

    -brief, -bf   suppress   messages   associated   with   a
                                 successful login. If the standard process
                                 overseer is being used, then the message of
                                 the day is not printed.

    -home_dir path, -hd path   set the user's home directory to the path
                                 specified,   if   the   user's   project
                                 administrator allows him to specify his home
                                 directory.

    -process_overseer path,   set the user's process overseer to the
    -po path   procedure given by the path specified, if the
                                 user's project administrator allows him to
                                 specify his process overseer.

INSERT ⟶

    -no_print_off, -npf   cause the system to overtype a string of
                                 characters to provide a black area for the
                                 user to type his password.

    -print_off, -pf   suppress overtyping for the password, since
                                 the user's terminal responds to the printer
                                 off control sequence.

    -no_preempt, -np   refuse to log the user in if he can only be
                                 logged in by preempting some other user in
                                 his load control group.

    -no_start_up, -ns   instruct the standard process overseer not to
                                 execute the user's start_up.ec segment, if he
                                 has one, and if the project administrator
                                 allows him to avoid it.

    -account id, -ac id   set the normal account identifier for the
                                 user to the one specified. (This control
                                 argument currently has no effect.)

    -force   log the user in if at all possible if the
                                 user has the guaranteed login attribute.
                                 Only system users who perform   emergency
                                 repair   functions   have   the   necessary
                                 attribute.

    -change_password, -cpw   change the user's password to a newly given
                                 password. The login command requests the old
                                 password before it requests the new password.
                                 If the old password is correct, the new
                                 password replaces the old for subsequent
                                 logins, and the message "password changed" is
                                 printed at the user's terminal. The user
                                 should not type the new password as part of
                                 the control argument.

INSERT

If path ends in the characters ",direct", the specified
procedure will be called directly during process initia-
lization rather than by the "init_admin" procedure provided
by the system. This means that the program specified by
path must perform the tasks which would have been performed
by the system's "init_admin" procedure.

If path ends in ",subsystem" the process created will be
initialized by using template data bases existing in the
directory specified by path. Use of this suffix causes
the effect of having specified ",direct" as well.

er. 4
0508

Multics Change Request

JWG

MCR   1686
Page   1   of   2

TITLE: Install carry_total active function

AUTHOR: Steve Herbst

	STATUS	DATE
	Written	2/26/76
	Status	P 3/9/76 A-04/22/76
	Expires	10/27/76

-Coded in: [x] PL/I [ ] AIM [ ] other-
explain in DETAILED PROPOSAL
-Planned for System MR   4.0
-Fixes Bug Number(s)____X____
-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
X	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	AG92
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	

Objections/Comments:

Info Segs	
Other (Name)	
None (Reason)	

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
Detailed Proposal.

SUMMARY: Install a new active function, carry_total, that
returns the number of requests in a given carry queue,
for example:

$$\left[\text{carry\_total -admin -ds MIT} \right]$$

REASON: Useful in administrative exec_com's.

Name: carry_total

This active function returns the total number of
requests in a given carry queue.

Usage:
$$\Big[\text{carry\_total -control\_args-} \Big]$$

where control args can be:

  -admin   All requests, not just those belonging
          to the user. Status permission is required
          on the queue in order to use this control
          argument.

  -ds XXX   Use the queue for destination XXX. The
          string XXX can be MIT, PCO, DEV or CISL.
          If this control argument is not specified,
          the default queue carry.ms is used.

  -queue_path PN,
  -qp PN   Look for carry queues in the directory
          PN rather than the system default carry
          directory >daemon_dir_dir>carry_dir.

Multics Change Request

TITLE:	Improve the carry facility		STATUS	DATE
AUTHOR:	S. Herbst	JWG	Written	2-27-76

	STATUS	DATE
Written		2-27-76
Status	Po3|09|76 A04|22|76	
Expires	10/27/76	

-Coded in: ☒PL/I ☐ALM ☐other-
explain in DETAILED PROPOSAL
-Planned for System MR 4.0
-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
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.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications, Detailed Proposal.

SUMMARY:

Install the programs comprising the carry facility as tools. Currently, they are not officially installed.

Update the carry facility to do the following:

1. Send users mail when their requests are loaded.
2. Send users mail when a request cannot be dumped for whatever reason.
3. Be more crash-proof.
4. Change the access rules for an entry to be carried:

        r Carry.Multics.*
        r for the requestor

    on a segment or on all segments in a subtree, and:

        sma Carry.Multics.*
        sma for the requestor

    on the parent directory of the entry to be carried.

REASONS:

1. In case a crash occurs during loading, a segment can be loaded a second time. In the future, users will be warned not to update the contents of a carried segment until carry has mailed him a notification that it has been loaded.
2. Notification of errors while dumping currently has to be done by the person who looks at carry_dump error files. In the future, the owner of an entry that cannot be dumped finds out the same day.
3. Requests are often lost because a crash occurs during the absentee job that dumps carry requests. Only those requests that are on the tape at the time of the crash are carried. In the future, the carry_dump absentee job will resubmit itself in case of a crash and cancel the resubmission when the tape is complete.
4. The above rules define minimum access requirements for an entry to be carried. w access is not required, because it can be forced given sma. There is no way to check for sma on the target parent, so we settle for sma on the parent here as an approximation.

IMPLICATIONS:

The last change affects the carry exec_com's, which are not installed and vary from system to system. The others affect the programs carry, carry_dump, carry_load and carry_dump_dp, which should be standard tools.

Note on MCR 1691

Documentation follows for the proposed new carry commands. Access requirements for entries to be carried have changed. Description of these new access requirments make use of the phrase "carry administrator". The old carry facility assumed the carry administrator, the user who dumps and loads carry tapes, to be Carry.Multics.*. The new facility regards anyone having r and d access to a carry queue to be a carry administrator for that queue.

Any user who has r and d access to a carry queue is able to make carry tapes from that queue. Therefore, any user having r and d access to a carry queue should also have appropriate access to entries named by requests in that queue. In most cases, only one user is allowed to run carries and only that user should be on the queue's ACL with r and d extended access. Access to >ddd>carry_dir>carry.ms at MIT, for example, should be changed to deny d access to *.SysDaemon.* and *.SysMaint.*. The access on a new carry queue is always adros to the creator, who is usually the carry administrator, and ao to everybody else.

Name: carry

    This command requests that one or more segments or directory
subtrees be moved from one Multics site to another. It can also
be used to list or cancel pending carry requests. Requests are
stored in a message segment queue and are carried daily.

Usage:
        carry paths -control_args-

where:

1. paths   are pathnames of segments and directories. For a
            directory, the entire subtree is carried.

2. control_args can be:

-destination DS,
-ds DS   carry to, or list or cancel requests for, the
            destination DS. Queues are named DS.carry.ms. The
            valid destinations depend on the particular Multics
            site. Examples of destinations are:

            PCO   System M in Phoenix (default at MIT)
            MIT   MIT Service System (default at PCO)
            CISL   a synonym for MIT
            DEV   CISL Development Machine (from MIT only)

            The default queue carry.ms is used when this argument
            is not supplied.

-queue_path dirpath,
-qp dirpath specifies the pathname of a directory in which carry
            queues reside. This control argument allows the user
            to use a carry facility other than the system default
            carry facility. Queues are named DS.carry.ms in this
            directory, where DS is specified by the -destination
            control argument. If the -queue_path control
            argument is not specified, queues reside in the
            directory >daemon_dir_dir>carry_dir.

-list, -ls list the user's pending carry requests for the
            specified destination. If the -admin control
            argument is also given, list all requests in the
            queue.

-cancel   remove the carry requests named by paths from the
            queue for the specified destination. Each pathname
            must exactly match the pathname in the request, as
            listed with the -list control argument. A message is
            typed for each request cancelled.

-admin   allows the user to list all requests or cancel any
            request in the queue, assuming he has proper access

(r and d extended access to the queue).

Notes:

In order to carry, the user must be registered by the same name at both sites. If any directories in the pathname of the entry to be carried do not exist at the target site, they are created.

Carries are performed by the carry administrator, who has r and d extended access on the given carry queues and requires appropriate access to the entries to be carried. In most cases, there is only one carry administrator, for example Carry.Project.*. The carry command checks that the following access requirements are met:

1. sma to the requestor and to all carry administrators on the parent directory of the entry being carried.

2. sma to the requestor and to all carry administrators on all directories in a subtree.

3. r to the requestor and to all carry administrators on a segment being carried or on all segments in a subtree.

(Administrative document)

Name: carry_dump

This command dumps carry requests from a given queue on a given tape.

Usage:

carry_dump path tape_number

where:

path   is the pathname of a carry queue.

tape_number is the number of the desired tape.

Notes:

The user must have r and d extended access to the queue.

The following output segments are produced in the same directory as the carry queue:

A dump map named carry_dump.<date>.<time>.map.
An error file named carry_dump.<date>.<time>.ef.
A directory named carry_dump.<date>.<time>.map_dir, containing individual dump maps for the requestors. These are dprinted by the command carry_dump_dp.
A tape log named <tape_number>.tape_log listing the contents of the tape dumped.
An exec_com segment named <destination>.send_mail.ec which is dumped on the tape and used by carry_load at the target site to send mail to users when their requests have been loaded.

(Administrative document)

Name: remake_carry_tape

This command uses the segment <tape_number>.tape_log to remake a carry tape by a specified number.

Usage:

remake_carry_tape old_number new_number

where:

old_number   is the number of the tape to be remade.   There must
              be a segment <tape_number>.tape_log in the user's
              working directory.

new_number   is the desired number of the remade tape.

(Administrative document)

Name: carry_load

     This command loads a carry tape at its target site.

Usage:
         carry_load control_path --debug-

where:

control_path is the pathname of a backup_load control file. The contents of this control file can be just ">**" to reload everything on the tape.

-debug   specifies that the load is to be performed in "debug" mode. See backup_load for a description of this mode.

Notes:

     The following output segments are produced in the directory containing the control file:

        A load map named carry_load.<date>.<time>.map.
        An error file named carry_load.<date>.<time>.ef.
        An exec_com segment named <destination>.send_mail.ec which, after being updated with a list of errors from the error file, is used to send mail to users when their requests have been loaded.

TITLE: Fix quota bug in pool_manager_	STATUS	DATE

AUTHOR: J. C. Whitmore

		STATUS	DATE
		Written	04-09-76
		Status	A 04120 76
		Expires	10 / 20 / 76

-Coded in: ☒PL/I ☐ALM ☐other-
 explain in DETAILED PROPOSAL
-Planned for System MR 4.0
-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
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.)	
Info Segs	
Other (Name)	
None (Reason) No Interface Change	

Objections/Comments:

Use these headings: **Summary of Proposal, Reasons for Proposal, Implications, Detailed Proposal.**

Reasons: The card_input daemon gets a record quota overflow error code under certain conditions when trying to move quota back to a user directory in the card pool. This occurs because the pool_manager_$close_user_pool entry fails to check if the quota move would make the access class directory quota non-terminal.

Summary: Modify the close_user_pool entry of pool_manager_ to check for a code of error_table_$rqover or error_table_$invalid_move_quota from hcs_$quota_move. When this occurs, the pool_manager_ will move an extra two pages of quota from the pool root to the access class directory and attempt the move one more time.

Multics Change Request

TITLE: Card Input Daemon bug fixes	STATUS	DATE
AUTHOR: J. C. Whitmore	Written	04/09/76
	Status	A 04/20/76
	Expires	10/20/76

- 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
X	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

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

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications, Detailed Proposal.

Summary:

1) change control card parsing to allow a semicolon to terminate the deck id card (it will be optional).

2) change the quit handler to reset read the input command stream.

Reasons:

1) Currently a semicolon is required on the access id card and forbidden on the deck id card. This change will make the card formats consistent. The semicolon will be optional on the deck id card for upward compatability.

2) The message coordinator can queue up several card daemon commands before they are read. These should be reset when a quit is sent to the Card Input Daemon.

The deck_id card has the following format:

DECK_NAME   PUNCH_FORMAT ;

where:

1.   DECK_NAME   is the name used to identify the card image segment in
                      System Pool Storage. It should be unique among the user's
                      decks recently submitted. In the event of name
                      duplications, the system card reading process appends a
                      numeric component to the end of the supplied name and
                      creates a duplicate card image segment for DECK_NAME.

2.   PUNCH_FORMAT   is the punch code conversion to use in reading the card
                      deck.   It must be MCC, VIIPUNCH, or RAW. If this field is
                      omitted, MCC format is assumed.

     If name duplications are encountered then there may be more than   cne   deck
in System Pool Storage whose first component is DECK_NAME.   The copy_cards
command retrieves all of these copies when invoked.

     The control cards should be produced on a standard IBM 029 key punch.   The
fields   on   the control cards are free format with spaces separating the fields.
The only restrictions are:

     1.   the first access_id card must contain the PERSON_ID, plus ·the
          PROJECT_ID and first component of the ACCESS_CLASS if the PROJECT_ID
          and ACCESS_CLASS are specified.

     2.   the deck_id card must contain the DECK_NAME, plus the PUNCH_FORMAT if
          the PUNCH_FORMAT is specified. *Use of a Terminating semi colon
          is optional.*

     All *alphabetic* characters on the control cards are mapped to lower case except those
immediately following an escape character (backslash or cent sign).   For example
\MY_\DECK.PL1 is mapped to My_Deck.pl1.

Example

     Suppose user Doe working on project Proj, wishes to read a   FORTRAN   source
deck   into a segment called alpha.fortran, with an access class of "proprietary,
my_company".   The access_id card is:

     \DOE.\PROJ   PROPRIETARY, MY_COMPANY;

and the deck_id card is:

     ALPHA.FORTRAN   MCC ;

where MCC is the format of the data cards.   The control cards followed by the
data   cards   are   submitted to operations personnel for reading.   When the cards

Multics Change Request

TITLE: Provide separate definitions during Multics initialization	STATUS	DATE
AUTHOR: Noel I. Morris	Written	4/12/76

-Coded in: ☒PL/I ☒ALM ☐other-
 explain in DETAILED PROPOSAL
-Planned for System MR 4.1
-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	A 04/20/76
Expires	10/20/76

Category (Check One)

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

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 of Proposal, Reasons for Proposal, Implications,
                       Detailed Proposal.

Summary:
Modify the Multics System Tape contents to contain separate definitions.
Modify Multics system initialization to load the definitions separately.

Reasons:
Currently, the definitions are written onto a Multics System Tape as
part of the text. In the case of wired-down segments with many
external references, one or more pages of wired-down memory can
be wasted by needlessly wiring the definitions. Separating the
definitions from the text will enable them to be loaded separately.
It is hoped that up to 10 more pages of main memory can be made
available with this scheme. In addition, the initialization "high water mark"
will be lowered.

Detailed Proposal:
Modify the generate_mst command to write definitions separately on to
the Multics system tape. Add a bit to the SLT entry to identify
definitions segments.

Provide a fabricated segment to contain all loaded definitions.
Modify bootstrap1 and segment_loader to load linkage segments
directly into the appropriate combined linkage segment and to set
the lot entry for the text segment. Modify bootstrap1 and segment_loader
to load definitions segments directly into the definitions segment and
to set the correct definitions pointer in the linkage section.

Modify pre_link_1 to remove the code which combines linkage sections
and sets lot entries.

Implications:
System initialization should be faster.

TITLE: Rewrite the generate_mst command

AUTHOR: Noel I. Morris

STATUS	DATE
Written	4/12/76
Status	A 041201 36
Expires	101201 36

-Coded in: [X] PL/I [ ] AIM [ ] 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
X	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

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

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
                       Detailed Proposal.

Reasons:
The current MST generator contains unreadable, convoluted, and
obscure code. It is impossible to follow the flow of control through
the program. It is close to impossible to implement new keywords.

Proposal:
Reimplement the generate_mst command so that the flow of control
is straightforward and clear.

Multics Change Request

TITLE: Detect Fatal Process Error Loops		STATUS	DATE
AUTHOR: T. Casey SHW		Written	4/13/76
		Status	A 04120134
		Expires	10/20/76

-Coded in ☒PL/I ☐ALM ☐other-
 explain in DETAILED PROPOSAL
-Planned for System MR 4.0
-Fixes Bug Number(s) 8458, 9269
-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	
X	SysDaemon/Admin.
Runtime	
User Cmmd/Subr.	

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	66
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	

Objections/Comments:

Info Segs	
Other (Name)	
None (Reason)	

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

SUMMARY:

1) Have answering service detect three fatal process errors (per line) within a
   one-minute interval, stop creating new processes, print an appropriate message
   to the user, and hang up the phone.

2) Define a new process termination wakeup message: "initxxxx" where xxxx is a word
   containing an error_table_ code. This wakeup will indicate that process initialization
   is impossible with the given login (or default) parameters, and a new process
   should not be created even once more.

3) Have init_proc stop calling syserr when it detects an error, but merely terminate
   the process with "initxxxx", replacing xxxx with an appropriate error_table_ code.

4) Have the default initial procedures terminate the process with the "initxxxx"
   wakeup message when terminations are necessary.

REASONS:

Fatal process error loops tie up the Initializer process; some of them also generate
many useless syserr messages (potentially causing messages to be lost).

IMPLICATIONS:

Problems in a user process will not cause problems for the system.

Multics Change Request

TITLE:	Re-implement &command_line off for absentee	STATUS	DATE
AUTHOR: Steve Herbst		Written	4/9/76

JWG

	STATUS	DATE
	Status	A 04/20/76
	Expires	10/20/76

-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? [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.)	
PLMS (AN #)	
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason) doc ok	

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
                       Detailed Proposal.

SUMMARY:

Make the &command_line off and &input_line off features
work in absentee jobs. These were de-activated last
year but are needed.

REASON:

absin file that does &command_line off followed by
a file_output puts command lines in the output file.
If a user writes an absin with &command_line off or
intentionally adds an absin name to an exec_com that
uses this feature, he should know not to expect a full
script with his output.

TITLE: Install bind_fnp

AUTHOR: Susan Barr   JWG

STATUS	DATE
Written	4/9/76
Status	A 04/20/76
Expires	10/20/76

-Coded in ☒PL/I ☐AIM ☐other-
 explain in DETAILED PROPOSAL
-Planned for System MR 5.0
-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
	Lib. Maint. Tools
	Sys. Anal. Tools
X	Sys. Prog. Tools
	355
	BOS
	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	51 tools
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
                       Detailed Proposal.

SUMMARY:

     Install bind_fnp to create fnp core image segments
     from FNP object segments.

REASONS:

     The current method of producing fnp core images
     requires that the system be run under the GCOS simulation.
     The size limit of 32 K makes it impossible to build a core
     image to support a configuration with 3HSLA'S.

Name: bind_fnp

The bind_fnp command produces a segment which contains a FNP core
image from several unbound FNP object segments. It uses two
driver segments: the search rules segment which specifies the
directories to be searched; and the bindfile, which specifies the
configuration that the FNP will support, the ordering of the
object segments and the size of certain software tables.

Usage:

    bind_fnp path -control_arg-

where:

1. path   specifies the path of the bindfile. If path
                        does not have a suffix of bind_fnp, it is
                        assumed.

2. control_arg   can be one of the following two optional
                        control arguments:

    -list, -ls   produces a listing segment whose name is
                            derived from the name of the bindfile,
                            with the suffix changed to list. The
                            listing segment is generated for the
                            purpose of dprinting; it contains the a
                            copy of the bindfile and a load map as
                            well as any error messages.

    -search, -se   is an optional control argument
                            indicating that the user wishes to
                            specify the search rules for the FNP
                            object segments. If used, there must be
                            a segment in the working directory
                            containing an ASCII list of relative
                            pathnames of directories to be searched
                            in the order in which the the search is
                            desired. This list must have the same
                            segment name as the bindfile, but with
                            the suffix changed to search.

Following is a list of the delimiters used:

:   keyword delimiter. It is used to identify a
                    keyword followed by one or more parameters.
                    A keyword that is followed by no parameters
                    is delimited by a statement delimiter.

;   statement delimiter.

,   parameter delimiter (the last parameter is
                    delimited by a statement delimiter).

/*   begin comment.

*/   end comment.

Keywords_and_End_Statement

hsla   the parameter is the maximum number of high
                    speed line adapters (HSLA) that this core
                    image will support.

lsla   the parameter is the maximum number of low
                    speed line adapters (LSLA) that this core
                    image will support.

memory   the parameter is the amount of memory
                    available on the FNP expressed in units of
                    1024 18 bit words.

console   the parameter can be:
                      yes   console can be configured.
                      no   console can not be configured.

printer   the parameter can be:
                      yes   printer can be configured.
                      no   printer can not be configured.

order   the parameters are a list of FNP object
                    segments in the order they are to be loaded.
                    The suffix objdk is assumed for all object
                    segments.

entry   the parameter specifies the name of the entry
                    at which execution is to begin after the
                    segment is loaded into the FNP.

module   the parameter specifies the name of the FNP
                      object segment that will be described by the
                      following keywords.

type   the parameter specifies the type of FNP
                      object segment. It can be one of the
                      following: hsla, lsla or trace.

size   the parameter is the number of 18 bit words
                      required for table space.   The use of the
                      size statement depends on the type specified
                      for this module. If the type is trace, then
                      size represents the size of the trace table.
                      If the type is HSLA or LSLA, then the size
                      represents the size of each HSLA table (or
                      LSLA table).   If a site is configuring less
                      than the maximum HSLA's, bind_fnp will remove
                      unused table space from the end of the
                      module.

mask   the parameter is a 6 digit octal number that
                      specifies the modules to be traced. This
                      keyword can only be used if a trace type was
                      also specified.   This is used by system
                      programmers for debugging FNP software. (See
                      AN85, Multics Communications)

end;   specifies the end of information to be
                      processed from the bindfile. It must be
                      present at the end of the bindfile.

Notes

Default search rules:

    1.   Search the working directory.
    2.   Search >ldd>bos>355_object
    3.   If the segment is not found in 1. or 2., it is missing.

The segment containing the core image is stored in the working
directory. It has the name of the bindfile without the suffix
bind_fnp.

Multics Change Request

TITLE:	Install a new put_field_		STATUS	DATE
AUTHOR:	R. Schoeman	RAB	Written	4/13/76
			Status	A 04/20/76
			Expires	10/20/76

	Category (Check One)		
-Coded in: ☐PL/I ☒AIM ☐other- explain in DETAILED PROPOSAL	Lib. Maint. Tools		DOCUMENTATION CHANGES
-Planned for System MR 4.0	Sys. Anal. Tools		
-Fixes Bug Number(s) 1486	Sys. Prog. Tools	Document	Specify One or More
-Documented in MTB	355		
-User/Operations-visible	BOS	MPM (Vol, Sect.)	
Interface change? ☐yes ☒no	Salvager		
-Incompatible change? ☐yes ☒no	Ring Zero	PLMS (AN #)	
-Performance: ☒Better ☐Same	Ring One		
☐ Worse	SysDaemon/Admin.	MOSN (Sect.)	
-Replaces MCR	X Runtime	MPAM (Sect.)	
	User Cmmd/Subr.		
		MSAM (Sect.)	

Objections/Comments:	Info Segs
	Other (Name)
	None (Reason)

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

SUMMARY: Install a new put_field_.

REASONS: 1)   Bug 1486 must be fixed. Presently, quick put list requests requiring
                      the outputting of more than 848 characters fail.

                2)   put_field_chk, an operator which the compiler does not yet
                      produce, has a bug which would keep it from working properly in some
                      cases when it does eventually get put out by the compiler.

                3)   There is a very minor speed improvement.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR 1792	

TITLE: Fix reset-read bug in 355	STATUS	DATE
	Written	04/12/76
AUTHOR: Robert S. Coren *JWG*	Status	Accepted
	Expires	10/12/76

Planned for System: MR 4.0
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Change: no
User/Operations-visible Interface Change: yes
Coded in: ( )PL/I ( )ALM (X)other-see below
Performance: ( )better (X)same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
(X)355
( )BOS
( )Salvager
( )Ring Zero
( )Ring One
( )SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)
MPM (vol,sect)   MPAM (sect)
MOSN (sect)   MSAM (sect)
PLMs (AN#)   AN85
Info Segs
Other

OBJECTIONS/COMMENTS:

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

SUMMARY: Fix bug in current 355 software's handling of reset-read.

REASONS: The current implementation of reset-read in the 355 can cause the beginning of a typed line to be thrown away while the remainder of the line is sent as input, without the user's being aware of it. As of MR 3.1 this is an occasional problem in echoplex mode; however, it will be a more frequent problem in polite mode starting with MR 4.0.

IMPLICATIONS: Occasional extra characters printed on the terminal in echoplex mode (see Detailed Proposal).

DETAILED PROPOSAL: Modify 355 control_tables as follows:
1. In polite mode: if a reset-read order arrives when a partial line of input is present, remember the fact and discard the entire line when the user types newline. (The error message that presumably accompanied the reset-read order will not appear until after the user types newline.)

2. In echoplex, polite: echo an "@" character at the point where the reset-read arrived to indicate that all characters up to that point have been thrown away. The "@" character has been chosen because it is the default kill character; however, it will continue to be used even if the user changes his/her kill character.

NOTE: Coded in 355map.

Ver. 3 741022	MULTICS CHANGE REQUEST JWG	MCR 1793

		STATUS	DATE
TITLE: Fix isot fault handler.		Written	04/07/76
AUTHOR: Richard Bratt		Status	AD4120/76
		Expires	10/07/76

	CATEGORY (check one)
Planned for System: not applicable	
Fixes Bug Number(s): not applicable	( )Lib. Maint. Tools
Documented in MTB: not applicable	( )Sys. Anal. Tools
Incompatible Change: no	( )Sys. Prog. Tools
User/Operations-visible Interface Change: no	( )355
Coded in: (B)PL/I ( )ALM ( )other-see below	( )BOS
Performance: ( )better (B)same ( )worse	( )Salvager
DOCUMENTATION CHANGES (specify one or more)	( )Ring Zero
MPM (vol,sect) MPAM (sect)	( )Ring One
MOSN (sect) MSAM (sect)	( )SysDaemon/Admin
PLMs (AN#)	( )Runtime
Info Segs	( )User Command/Subr
Other	(B)runtime
None (reason) - PLM not yet written.	
OBJECTIONS/COMMENTS:	

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

SUMMARY: Prevent isot_fault_handler_   from   attempting   to   reference pds$stacks in the outer ring.

REASONS: You can't get there from here.

SPECIAL THANKS: I wish to extend my special thanks to create_if_not_found links for allowing testing to proceed without detecting this error.

Ver. 3 741022	MULTICS CHANGE REQUEST _TVV_	MCR 1794

		STATUS	DATE
TITLE: Dumper speedups.		Written	04/07/76
		Status	A 04/20/76
AUTHOR: Richard Bratt		Expires	10/07/76

	CATEGORY (check one)
Planned for System: MR 4.0	
Fixes Bug Number(s): not applicable	( )Lib. Maint. Tools
Documented in MTB: not applicable	( )Sys. Anal. Tools
Incompatible Change: no	( )Sys. Prog. Tools
User/Operations-visible Interface Change: no	( )355
Coded in: (■)PL/I ( )ALM ( )other-see below	( )BOS
Performance: (■)better ( )same ( )worse	( )Salvager
Replaces MCR: 1752	(■)Ring Zero
DOCUMENTATION CHANGES (specify one or more)	( )Ring One
MPM (vol,sect) MPAM (sect)	( )SysDaemon/Admin
MOSN (sect) MSAM (sect)	( )Runtime
PLMs (AN#) AN51	( )User Command/Subr
Info Segs	
Other	

OBJECTIONS/COMMENTS:

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

SUMMARY: Add three new per-process segment attributes. These attributes, ich will be stored in the KST, allow processes to influence page control and segment control's behavior toward a segment or directory.

REASONS: The dumper has three unfortunate effects upon the system.

1.   It has write permission to many segments. This causes it to force these segments out of the cache when they are dumped.

2.   if only the dumper is using a segment it will still migrate to the paging device. This is highly undesirable for two reasons. First, the dumper will not reference these pages again (within a PD lap time), so the I/O to move these pages to the paging device is wasted. Second, these "useless" pages effectively reduce the size of the paging device.

3.   the dumper knows it will not reference a dumped data segment for a long time, yet the AST replacement algorithm has no way of taking advantage of this knowledge. As a result, the dumper unnecessarily reduces the effective size of the AST.

DETAILED PROPOSAL:

        Add three segment attributes to a KST entry.

1.   tpd   if set then prevent the system from moving pages of
                    this object to the paging device if only this process

is using the segment.

2.   allow_write if not set then do not grant write permission to this process.

3.   allow_deactivate if set then allow this process to request deactivation of the object. Only if all processes using the object specified allow_deactivate will hardcore honor the request.

Add a new gate, phcs_$set_kst_attributes, to change these attributes (and the existing attributes: tms, tus, and audit).

Add a new primitive, phcs_$deactivate, which allows a process to suggest the deactivation of an object (see the description of the allow_deactivate kst attribute).

Change the dumper to call phcs_$set_kst_attributes to set tms, tus, tpd, allow_deactivate and to reset allow_write on segments which it dumps but does not use.

Change the dumper to call phcs_$deactivate after dumping a segment.

Name: change_kst_attributes

This command allows a user to change selected
per-process attributes of an object.

Usage: change_kst_attributes -target- -attributes-

where:

1.   target   specifies the object whose kst attributes are
                     to be changed. Either a relative pathname or
                     an octal segment number may be specified. If
                     the name looks like a segment number it must
                     be preceeded by "-name".

2.   attributes   specifies those attributes which are to be
                     changed. If an attribute is preceeded by the
                     character "-" then the attribute is reset.
                     Otherwise, the attribute is set. Attributes
                     not mentioned are not affected.

     tpd   don't place pages of this object on the
                     paging device on my account.

     allow_deactivate   I agree to user suggested
                     deactivations of this object.

     allow_write   don't prevent me from writing into
                     this object if I have permission to do so.

     audit   enable auditing.

Note: This command requires phcs_ access.

Name: priv_change_kst_attributes

        This command allows a user to change selected
per-process attributes of an object.

Usage: change_kst_attributes -target- -attributes-

where:

1.   target   specifies the object whose kst attributes are
                   to be changed. Either a relative pathname or
                   an octal segment number may be specified. If
                   the name looks like a segment number it must
                   be preceeded by "-name".

2.   attributes   specifies those attributes which are to be
                   changed. If an attribute is preceeded by the
                   character "-" then the attribute is reset.
                   Otherwise, the attribute is set. Attributes
                   not mentioned are not affected.

        tpd   don't place pages of this object on the
                   paging device on my account.

        tms   don't update date-time-modified on my
                   account.

        tus   don't update date-time-used on my account.

        allow_deactivate   I agree to user suggested
                   deactivations of this object.

        allow_write   don't prevent me from writing into
                   this object if I have permission to do so.

        audit   enable auditing.

Note: This command requires hphcs_ access.

Name: deactivate_seg

This command allows a user to suggest the deactivation
of a segment or directory to ring zero. This suggestion will be
taken if the object in question is active and if all processes
connected to the object have declared their willingness to have
users influence the deactivation of the object (see
change_kst_attributes and phcs_$set_kst_attributes).

Usage: deactivate_seg -target-

where: target   specifies the object to be deactivated.
                         Either a relative pathname or an octal
                         segment number may be specified. If the name
                         looks like a segment number it must be
                         preceeded by "-name".

Note: This command requires phcs_ access.

Name: reset_tpd

This command resets the transparent paging device switch of a directory entry. Resetting this switch allows pages of the segment or directory to be placed on the paging device. If the system is not using a paging device then this switch has no effect.

Usage: reset_tpd -path-

where: path   specifies the relative pathname of the object whose transparent paging device switch is to be reset.

Note: This command requires access to the gate hphcs_.

Name: set_tpd

       This command sets the transparent paging device switch of a directory entry. Setting this switch prevents pages of the segment or directory from being placed on the paging device. If the system is not using a paging device then this switch has no effect.

Usage: set_tpd -path-

where: path   specifies the relative pathname of the object whose transparent paging device switch is to be set.

Note:

1.   This command requires access to the gate hphcs_.

2.   The paging device is not flushed of pages of the object when the transparent paging device switch is set.

Name: phcs_$deactivate_seg

        This gate allows a process to suggest the deactivation
of a segment or directory to ring zero. This suggestion will be
taken if the object in question is active and if all processes
connected to the object have declared their willingness to have
users influence the deactivation of the object (see
change_kst_attributes and phcs_$set_kst_attributes).

Usage: declare phcs_$deactivate entry (ptr, fixed binary
            (35));
            call phcs_$deactivate_seg (segptr, code);

where:

            segptr   is a pointer to an object.

            code   is a status code.

Name: phcs_$set_kst_attributes

This gate allows a process to change selected per-process attributes of an object.

Usage: declare phcs_$set_kst_attributes entry (fixed bin (17), pointer, fixed binary (35));
call phcs_$set_kst_attributes (segno, kstap, code);

where:

segno   is a segment number.

kstap   is a pointer to the structure described below.

code   is a status code.

```
dcl 1 kst_attributes aligned based (kstap),
    2 set unaligned,
     3 (allow_write,
    must_be_zero_1,
    must_be_zero_2,
    tpd,
    audit,
    explicit_deactivate_ok) bit (1),
     3 pad bit (39),
    2 value unaligned,
     3 (allow_write,
    tms,
    tus,
    tpd,
    audit,
    explicit_deactivate_ok) bit (1),
     3 pad bit (30);
```

Name: hphcs_$set_kst_attributes

This gate allows a process to change selected per-process attributes of an object.

Usage: declare hphcs_$set_kst_attributes entry (fixed bin (17), pointer, fixed binary (35));
call hphcs_$set_kst_attributes (segno, kstap, code);

where:

segno   is a segment number.

kstap   is a pointer to the structure described below.

code   is a status code.

```
dcl 1 kst_attributes aligned based (kstap),
    2 set unaligned,
     3 (allow_write,
     tms,
     tus,
     tpd,
     audit,
     explicit_deactivate_ok) bit (1),
     3 pad bit (39),
    2 value unaligned,
     3 (allow_write,
     tms,
     tus,
     tpd,
     audit,
     explicit_deactivate_ok) bit (1),
     3 pad bit (30);
```

14. bit_count   is the bit count associated with the segment.

15. did   specifies the secondary storage device (if any) on   which   the
                   segment currently resides.

16. pad3   is unused space in this structure.

17. copy_sw   contains the setting of the segment copy switch.
18. tpd-sw   contains the setting of the segment transparent-paging-device switch.
19. pad4   is unused space in this structure.

20. rbs   contains the ring brackets of the segment right justified in
                   the 6-bit field.

21. uid   is the segment unique identifier.

Entry: hcs_$status_minf

     The hcs_$status_minf entry point returns the bit count and entry type given
a directory and entryname. Status permission on the directory or nonnull access
on the entry is required to use this entry point.

Usage

        declare hcs_$status_minf entry (char(*),   char(*),   fixed   bin(1),
            fixed bin(2), fixed bin(24), fixed bin(35));

        call hcs_$status_minf (dir_name, entryname, chase, type, bit_count, code);

where:

1.   dir_name is the same as for the hcs_$status_ entry point above. (Input)

2.   entryname is the same as for the hcs_$status_ entry point above. (Input)

3.   chase   is the same as for the hcs_$status_ entry point above. (Input)

4.   type   specifies the type of entry. (Output) It can be:
               0 link
               1 segment
               2 directory

5.   bit_count is the bit count. (Output)

6.   code   is a storage system status code. (Output)

Entry: hcs_$status_mins

     This entry point returns the bit count and entry type given a pointer to
the segment. Status permission on the directory or nonnull access to the
segment is required to use this entry point.

TITLE: Change pl1 to use get_line_length_

AUTHOR: R.A. Barnes

	STATUS	DATE
	Written	04/14/76
	Status	A 04/21/76
	Expires	10/21/76

-Coded in: [X] PL/I [ ] AIM [ ] other-
 explain in DETAILED PROPOSAL
-Planned for System MR 4.0
-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)

	Category
	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 of Proposal, Reasons for Proposal, Implications,
Detailed Proposal.

SUMMARY:

Have pl1 use get_line_length_$switch   rather than ios_ $changemode
to derive the line length. which is used when formatting error
messages.

REASONS:

The knowledge of how to calculate the line length should be in
as few places as possible as mode strings get longer (as they have
for MR 4.0). PL1 won't have to be changed to use a longer character
string to pass to ios_$changemode.

```
------------------------------------------------- -----------------------------
I Ver. 3                                          I                             I
I 741022            MULTICS CHANGE REQUEST        I  MCR 1796                   I
I                                                 I                             I
------------------------------------------------- -----------------------------
I TITLE:  Fix message coordinator to work with   I  STATUS  I DATE             I
I         28.3                                    I  Written I 04/14/76         I
I AUTHOR: Robert S. Coren                         I  Status  I A04/27/76        I
I                                     TVV         I  Expires I 10/14/76         I
------------------------------------------------- -----------------------------
I Planned for  System:    MR 4.0                  I                             I
I Fixes Bug Number(s):    not applicable          I CATEGORY (check one)        I
I Documented  In  MTB:    not applicable          I( )Lib. Maint. Tools         I
I Incompatible Change:    no                      I( )Sys. Anal. Tools          I
I User/Operations-visible Interface Change:  no   I( )Sys. Prog. Tools          I
I Coded In: (B)PL/I ( )ALM ( )other-see below     I( )355                       I
I Performance: ( )better (B)same ( )worse         I( )BOS                       I
I                                                 I( )Salvager                  I
I DOCUMENTATION CHANGES (specify one or more)     I( )Ring Zero                 I
I MPM (vol,sect)            MPAM (sect)           I( )Ring One                  I
I MOSN (sect)               MSAM (sect)           I(B)SysDaemon/Admin           I
I PLMs (AN#)                                      I( )Runtime                   I
I Info Segs                                       I( )User Command/Subr         I
I Other                                           I                             I
I None (reason) bug fix                           I                             I
------------------------------------------------- -----------------------------
I OBJECTIONS/COMMENTS:                                                          I
I                                                                               I
I                                                                               I
I                                                                               I
-------------------------------------------------------------------------------
Headings are:  SUMMARY, REASONS, IMPLICATIONS, DETAILED PROPOSAL (optional)
```

SUMMARY: Fix mc_tty_ to be able to handle returned modes string of more
than 128 characters.

REASONS: With new modes invented for 28-3 (4.0) the string returned by
hcs_$tty_order is longer than 128 characters.

IMPLICATIONS: None

DETAILED PROPOSAL: Change buffer in mc_tty_ for modes string to be 256
characters, and make it ignore error_table_$smallarg when returned by
hcs_$tty_order ("modes").

NOTE: Submitted to MIT as emergency fix.

```
: Ver. 3                                             |              |
: 741022            MULTICS CHANGE REQUEST           | MCR 1797     |
```

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR _1797_
TITLE: NSS Bug Fixes, round 3, emergencies AUTHOR: Bernard Greenberg TVV	STATUS | DATE	
	Written | 04/15/76	
	Status | A 04/27/76	
	Expires | 10/15/76	

```
: Planned for System:     MR 4.0                  |
: 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:  no   : ( )Sys. Prog. Tools
: Coded in: (X)PL/I ( )ALM ( )other-see below     : ( )355
: Performance: ( )better (X)same ( )worse         : ( )BOS
:                                                 : ( )Salvager
: DOCUMENTATION CHANGES (specify one or more)     : (X)Ring Zero
: MPM (vol,sect)           MPAM (sect)            : ( )Ring One
: MOSN (sect)              MSAM (sect)            : ( )SysDaemon/Admin
: PLMs (AN#)       61                             : ( )Runtime
: Info Segs                                       : ( )User Command/Subr
: Other                                           :
:
: OBJECTIONS/COMMENTS:
:
:
```

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

SUMMARY: Fix critical bugs in NSS involving the On-line Salvager and the disk dim.

REASONS: The online salvager produces damage in certain instances, and the disk dim crashes the system erroneously in other circumstances.

IMPLICATIONS: Greater reliability.

DETAILED PROPOSAL: Fix an **uninitialized** variable in a syserr call in disk_control. Change the on-line salvager to correctly compute directory header size. Do not allow VTOCE freeing of active segments by salv_truncate if deactivation failed. Correct file-map size computation in salv_check_map.

          (installed emergency fixes, NSS 26.2a)

TITLE: Add -pvname option to Dumper.	STATUS	DATE
	Written	04/15/76
AUTHOR: Bernard Greenberg _TVV_	Status AD4/27 Re
	Expires	10/15/76

Planned for System: MR 4.0
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Change: no
User/Operations-visible Interface Change: yes
Coded in: (X)PL/I ( )ALM ( )other-see below
Performance: ( )better (X)same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
( )355
( )BOS
( )Salvager
( )Ring Zero
( )Ring One
(X)SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)
MPM (vol,sect)   MPAM (sect)
MOSN (sect)   MSAM (sect)
PLMs (AN#)   51
Info Segs
Other moH

OBJECTIONS/COMMENTS:

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

SUMMARY: Add an option to the backup dumper (current 4.0 version) to dump only segments on a selected physical volume.

REASONS: Although the current plans for the storage system include schemes for moving segments between physical volumes on demand via system faults, interim measures are needed to condense logical volumes by removing a physical volume. A simple and reliable way to do this is to dump all of the segments on a given physical volume via a (partial) hierarchy walk of the complete dumper, while the system is running. The system may then be brought up without that physical volume, via changing logical (hierarchy) volume registration data, and the dumps so produced, plus all incrementals since, reloaded with the -pvname option. The connection failures which result from the vanished pack are transparent to the delete operation, modulo quota accounting.

IMPLICATIONS: An interim method of condensing logical hierarchy volumes, which is needed at MIT in the immediate future. A vtoce-check directory salvage must be performed after a volume is so vanished, to correctly recompute quota used totals, so that the reload will not record-quota overflow, and so that quota may be kept accurate.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR *1799*

TITLE: Invoke Online Salvager when Problems are Suspected.	STATUS	DATE
	Written	04/15/76
AUTHOR: Bernard Greenberg TvV	Status	A 04/27/76
	Expires	10/15/76

Planned for System: MR 4.0
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Change: no
User/Operations-visible Interface Change: no
Coded in: (X)PL/I ( )ALM ( )other-see below
Performance: ( )better (X)same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
( )355
( )BOS
(X)Salvager
( )Ring Zero
( )Ring One
( )SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)
MPM (vol,sect)   MPAM (sect)
MOSN (sect)   MSAM (sect)
PLMs (AN#)   61
Info Segs
Other

OBJECTIONS/COMMENTS:

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

SUMMARY: The Online salvager is currently invoked on crawlouts from the hardcore ring when a directory is locked for modification. Change the policy so that it is invoked whenever a crawlout occurs with a director locked.

REASONS: The rationale behind invoking the Salvager when a crawlout with a locked-for-mod directory occurs is that the program which is crawling out may have left the directory in an inconsistent state. More usually, crashes or other mishaps leave directories in an inconsistent state, and a later user of the directory, who may be only reading it, crawls out while he has it locked because the directory itself is bad, e.g., contains bad relative pointers. The system should protect itself by salvaging any directory it suspects may have caused it to crawl out.

IMPLICATIONS: Greater reliability. The situation of "Every time I list the directory i get a crawlout, can someone please online-salvage it?" goes away. A more subtle implication is that the process of a directory reader now has one more reason for needing raw write access to directories on which he/she does not have modify permission. This contradicts some models of time-shared computer systems.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR **1802**

TITLE: Move FNP software to new library		STATUS	DATE
		Written	04/09/76
AUTHOR: Mike Grady JWG		Status	~~04/27/76~~
		Expires	10/09/76

Planned for System: MR 5.0
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Change: yes
User/Operations-visible Interface Change: yes
Coded in: ( )PL/I ( )ALM (⊠)other-see below
Performance: ( )better (⊠)same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
(⊠)355
( )BOS
( )Salvager
( )Ring Zero
( )Ring One
( )SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)

MPM (vol,sect)	MPAM (sect)
MOSN (sect)	MSAM (sect)
PLMs (AN#) AN85	
Info Segs	
Other	

OBJECTIONS/COMMENTS:

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

Summary

Move FNP software from the BOS libraries to a new library.

Reasons

Since FNP software will soon be loaded by Multics instead of BOS, it seems
like a good time to move the FNP software out of the BOS libraries. This
will also provide a structure for new and different kinds of FNP and
possibly RNP software.

Detailed Proposal

Create the directory >ldd>communications with the added name comm. Create
the following directories:

          >ldd>comm>fnp
          >ldd>comm>fnp>source   (addname s)
          >ldd>comm>fnp>object   (addname o)
          >ldd>comm>fnp>info

The object directory will contain, besides all assembled object, the core
image created by bind_fnp.

The info directory will contain the bind_fnp search and control files and
the macro library file (355_macros), which will be moved from the tools
library.

The hardcore object library will have to contain a link to >ldd>com>fnp>o>mcs to allow mcs to be put on hardcore tapes. This link can be put in the BOS directory until MCS is loaded by Multics.

The FNP directory is required to allow for expansion of this library to contain other type of communications software.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR 1803

TITLE: Replace ioam_ and delete DST		STATUS	DATE
AUTHOR: Mike Grady	NIM	Written	04/15/76
		Status	A 04/27/76
		Expires	10/15/76

Planned for System: MR4.0
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Change: yes
User/Operations-visible Interface Change: no
Coded in: (X)PL/I ( )ALM ( )other-see below
Performance: (X)better ( )same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
( )355
( )BOS
( )Salvager
(X)Ring Zero
( )Ring One
( )SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)
MPM (vol,sect)   MPAM (sect)
MOSN (sect)   MSAM (sect)
PLMs (AN#)   AN65
Info Segs
Other

OBJECTIONS/COMMENTS:

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

SUMMARY

Install a new I/O assignment manager with very simple goals and a corresponding implementation. The new ioam_ will be used only to call the appropriate subsystem when the process which owns one of its devices is being destroyed.

The DST will be deleted at this time, since it is no longer used.

REASONS

The current ioam_ provides features which are no longer used or required. Most of these were implemented in RCP, since it now manages peripheral I/O devices. Other features of the ioam_ are no longer used because of their inefficiency.

IMPLICATIONS

Certain tools (gds, unassign_force) become obsolete and should be deleted.

DETAILED PROPOSAL

Provide a new ioam_ with the following entries:

        assign (devx, unassign_handler, code)
        unassign (devx, code)
        preempt (processid, devx, code)
        process_release (processid)

The assign and unassign entries are used by the subsystem to register their devices with the ioam_. The preempt entry is used by the subsystem to get back one of its own devices, and will result in a call to the unassign_handler passed in the assign call. The process_release entry is used by deact_proc to force calls to the unassign_handler for each device owned by the indicated process.

The NCP and tty DIM will be converted to call these routines.

NOTES

This MCR affects MCR 1626 and MTB 254, which recommend the unwiring of the DST. This phase of implementation will be skipped, since this MCR proposes the deletion of the DST.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR **1804**

TITLE: FNP load/dump hardcore primitives

AUTHOR: Mike Grady   JWG

<table>
<tr><td>STATUS</td><td>DATE</td></tr>
<tr><td>Written</td><td>04/15/76</td></tr>
<tr><td>Status</td><td>A 04/27/76</td></tr>
<tr><td>Expires</td><td>10/15/76</td></tr>
</table>

Planned for System: MR5.0
Fixes Bug Number(s): not applicable
Documented in MTB: not applicable
Incompatible Change: no
User/Operations-visible Interface Change: no
Coded in: (■)PL/I ( )ALM ( )other-see below
Performance: ( )better ( )same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
( )355
( )BOS
( )Salvager
(■)Ring Zero
( )Ring One
( )SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)
MPM (vol,sect)   MPAM (sect)
MOSN (sect)   MSAM (sect)
PLMs (AN#)   AN85
Info Segs
Other

OBJECTIONS/COMMENTS:

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

SUMMARY

Add hardcore primitives to support loading and dumping of FNP's.

REASONS

This change will enable Multics to load and dump FNP's during normal system operation. It will also simplify FNP software maintainence (no more simultaneous BOS/hardcore installations), and should increase system availability since Multics will automatically reload an FNP after it crashes.

```
Ver. 3                                                       MCR 1805
741022          MULTICS CHANGE REQUEST

TITLE:  Modify MCS for new binder          STATUS  | DATE
                                           Written | 04/15/76
AUTHOR: Mike Grady              JWG        Status  | A 04/27/76
                                           Expires | 10/15/76

Planned for  System:   MR5.0              CATEGORY (check one)
Fixes Bug Number(s):  not applicable      ( )Lib. Maint. Tools
Documented  in  MTB:  not applicable      ( )Sys. Anal. Tools
Incompatible Change:  no                  ( )Sys. Prog. Tools
User/Operations-visible Interface Change:  no   (X)355
Coded in: ( )PL/I ( )ALM (X)other-see below     ( )BOS
Performance: ( )better (X)same ( )worse         ( )Salvager
                                          ( )Ring Zero
DOCUMENTATION CHANGES (specify one or more)     ( )Ring One
MPM (vol,sect)          MPAM (sect)        ( )SysDaemon/Admin
MOSN (sect)             MSAM (sect)        ( )Runtime
PLMs (AN#)     AN85                        ( )User Command/Subr
Info Segs
Other

OBJECTIONS/COMMENTS:
```

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

SUMMARY

Delete all pre-init code from MCS modules to simplify builds with new MCS
binder.

REASONS

The old binder ran as a simulated 355 and was able to execute small pieces
of code in each module that performed certain "pre-initialization"
functions. The new binder will not be able to execute this code and these
functions will be preformed at actual 355 initialization time.

DETAILED PROPOSAL

Coded in 355map.

TITLE:	Define New Salvager Options		STATUS	DATE
AUTHOR:	A. Kobziar	TVV	Written	4/20/76
			Status	A 04/27/76
			Expires	10/27/76

-Coded in: [XX] PL/I [ ] ALM [ ] other-
  explain in DETAILED PROPOSAL
-Planned for System MR __4.0__
-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
X	Salvager
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

Document	Specify One or More
MPM (Vol, Sect.)	
PLMS (AN #)	
MOSN (Sect.)	A001, rev. 1
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications, Detailed Proposal.

SUMMARY: Implement the following options for the directory salvager:

  -rebuild   rebuild every directory.
  -pathname   print the pathname of every directory.
  -check_vtoce   check branch→vtoce connections.
  -long   all of the above.
  -level n   salvage only to a hierarchy depth of n.

Implement the following options for both directory and volume salvaging:

  -dump   dump directories and/or vtoces that have significant
           inconsistencies.

  -debug   output messages about the normal deletions of
           >process_dir_dir and >system_library_1 segments, and deciduous
           and per_process vtoces.

  -console direct output to the operator's console rather than
           to a printer, and suppress dump, debug, and pathname
           options.

Implement the following options for volume salvaging:

  -all   salvage all registered but not in use disks.
  -check_dir check vtoce→branch connection.
  -copy   salvage a copy of an in-use disk (necessary for a
              check_dir of all rlv disks).

The salv card allows administrative specification of same options.
Preceding an option with "no", as "nodump" will override the
card specification.

Multics Change Request

MCR 1809
Page 1 of 1

TITLE: Change cutoff messages printed at login

AUTHOR: T. Casey   TVV

STATUS	DATE
Written	4/20/76
Status	A 04/27/76
Expires	10/27/76

-Coded in: [X] PL/I [ ] ALM [ ] other-
  explain in DETAILED PROPOSAL
-Planned for System MR 4.0
-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
X	SysDaemon/Admin.
	Runtime
	User Cmmd/Subr.

DOCUMENTATION CHANGES

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

Objections/Comments:

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
                       Detailed Proposal.

Summary: Replace the messages "Your account is almost out of funds" and
           "Your account is near its termination date" by messages that have more
           useful information; and make the thresholds at which these messages
           start appearing settable by each project administrator for the users
           on his project.

REASONS: These messages are usually printed during the entire last month of
           the fiscal year, for every user, and are therefore, considered an
           annoyance, and ignored. Thus, people in real danger of being cut
           off do not get warned.

DETAILED
PROPOSAL: Print the following messages (when appropriate):

           Your project's account has less than ^d days until its termination
               date (^d/^d/^d).

           Your project's account has less than $^.2f(^d%) of its funds remaining.

           Accept the following statements in PMF's.

           Warn_days: N;   /* warn users starting N days from cutoff*/
           Warn_percent: P;   /* warn users when less than P% of funds left*/
           Warn_dollars: D;   /* warn users when less than $D.00 left*/

           If project administrators do not specify a value for any one of these
           variables, the defaults will be as they are now: N=P=D=10. Those default
           values will continue to be used to flag projects near cutoff in the
           cutrpt. The figures set by the project administrator will only be
           used when deciding whether to print a message at login time.

Multics Change Request

TITLE: Fix bugs in list command

AUTHOR: T. Casey   JWG

STATUS	DATE
Written	04/20/76
Status	A 04/27/74
Expires	10/29/76

-Coded in: [X] PL/I [ ] ALM [ ] other-
 explain in DETAILED PROPOSAL
-Planned for System MR 4.0
-Fixes Bug Number(s) 9347, 9305
-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
	Ring Zero
	Ring One
	SysDaemon/Admin.
	Runtime
X	User Cmnd/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)	no interface change

Objections/Comments:

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

SUMMARY: Fix several bugs related to the printing of lengths and records:

1. use of the -records control argument interferes with the printing
    of link paths, when both branches and links are being printed.

2. "Lengths=" is printed in the long heading in all but one of the
    appropriate cases.

3. The brief heading always says "recs=", even when lengths
    are being printed.

Fix error checking to:

1. not complain when the same (set of) control argument(s) is
    repeated.

2) when unable to get status on a directory (to see if it is really
    an msf), report the error but continue rather than aborting.

```
I Ver. 3                                                    I
I 741022          MULTICS CHANGE REQUEST    EDS    I  MCR__1811_____
I_____I_____
I TITLE:  Fix bug in hcs_$make_seg.            I  STATUS   I DATE_____
I                                              I  Written  I 04/13/76
I AUTHOR: Richard Bratt                        I  Status   I ND0412#136
I_____ I  Expires  I 10/13/76
I Planned for  System:   not applicable        I_____
I Fixes Bug Number(s):   not applicable        I CATEGORY (check one)
I Documented  in  MTB:   not applicable        I( )Lib. Maint. Tools
I Incompatible Change:   yes                    I( )Sys. Anal. Tools
I User/Operations-visible Interface Change:  yes I( )Sys. Prog. Tools
I Coded in: (B)PL/I ( )ALM ( )other-see below   I( )355
I Performance: ( )better (B)same ( )worse       I( )BOS
I_____I( )Salvager
I DOCUMENTATION CHANGES (specify one or more)   I(B)Ring Zero
I MPM (vol,sect) subr      MPAM (sect)          I( )Ring One
I MOSN (sect)              MSAM (sect)          I( )SysDaemon/Admin
I PLMs (AN#)                                    I( )Runtime
I Info Segs                                     I( )User Command/Subr
I Other                                         I
I_____I_____
I OBJECTIONS/COMMENTS:                                          I
I                                                               I
I                                                               I
I_____I
```

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

SUMMARY: hcs_$make_seg behaves differently when given directory names of
"" and " ". Since the PL/I string comparison operator does not
distinguish these two strings this behavior is confusing to users.   As a
result, it is proposed that the "if length (dname) = 0 then ..." test in
make_seg be replaced by "if dname = "" then ..." .

Multics Change Request

TITLE: Fix bugs in as_init_ and load_ctl_

AUTHOR: T. Casey   JWG

STATUS	DATE
Written	4/16/76
Status	A 04/23/76
Expires	10/23/76

- Coded in: ☒ PL/I ☐ AIM ☐ other-
  explain in DETAILED PROPOSAL
- Planned for System MR 4.0
- Fixes Bug Number(s) see below
- Documented in MTB
- User/Operations-visible
  Interface change? ☐ yes ☒ no
- Incompatible change? ☐ yes ☒ no
- Performance: ☐ Better ☒ Same
  ☐ Worse
- Replaces MCR

  failures at MIT and GM

Objections/Comments:

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 #)	66
MOSN (Sect.)	
MPAM (Sect.)	
MSAM (Sect.)	
Info Segs	
Other (Name)	
None (Reason)	

Use these headings: Summary of Proposal, Reasons for Proposal, Implications,
                     Detailed Proposal.

SUMMARY:

Change answering service initialization to
1) initialize work classes only after other required initialization
    has been done;
2) print error messages on initializer console for all errors that
    occur during initialization, even if callee may have already done
    so;
3) allow the priority scheduler to be turned on by installing a new
    MGT, if it was off at startup time.

REASONS:
1) work class initialization fails in some unusual circumstances.
2) when it does fail , no error messages are printed; the initializer
    process just returns to command level. The way as_init_ is written,
    there might be other errors that also cause this behavior.
3) If the priority scheduler is turned off to get around this problem, it
    cannot be turned back on until the next bootload.

IMPLICATIONS:

    Failures during initialization will result in one to three
    different messages, rather than zero or one message.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR 1813

TITLE: Fix bug in tty_write white-space handling AUTHOR: Robert S. Coren	STATUS	DATE
	Written	04/21/76
	Status	A 04/27/76
	Expires	10/21/76

Planned for System: MR 4.0
Fixes Bug Number(s): MPRF 9433
Documented in MTB: not applicable
Incompatible Change: no
User/Operations-visible Interface Change: no
Coded in: (■)PL/I ( )ALM ( )other-see below
Performance: ( )better (■)same ( )worse

CATEGORY (check one)
( )Lib. Maint. Tools
( )Sys. Anal. Tools
( )Sys. Prog. Tools
( )355
( )BOS
( )Salvager
(■)Ring Zero
( )Ring One
( )SysDaemon/Admin
( )Runtime
( )User Command/Subr

DOCUMENTATION CHANGES (specify one or more)
MPM (vol,sect)   MPAM (sect)
MOSN (sect)   MSAM (sect)
PLMs (AN#)
Info Segs
Other
None (reason) bug fix

OBJECTIONS/COMMENTS:

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

SUMMARY: Fix tty_write so as not to put out extraneous white space at the ends of certain lines.

REASONS: When tty_write only converts part of the user-supplied output, and the portion converted ends in white space not followed by a newline, the white space is sent to the terminal; if the remainder of the line consists exclusively of white space, the white space sent with the first call should not be transmitted.

IMPLICATIONS: None.

DETAILED PROPOSAL: Have tty_write remember not only the current column position for each channel, but also the position implied by trailing white space; if it is necessary to break up the user's output and the first portion ends in white space, don't send it until it is known to be followed by a printing graphic.