

TO: Distribution
FROM: Joan Scott
DATE: 30 July 76
SUBJECT: Multics Change Requests

*Roach
(1 copy available)*

Enclosed are the Multics Change Requests which were approved from 16 July 76 through 31 July 76.

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Ver. 3 741022	MULTICS CHANGE REQUEST	MCR 1938
TITLE: Convert VTOC garbage collector to outer-ring program.		STATUS DATE
AUTHOR: Bernard Greenberg		Written 06/03/76
		Status <i>PL/1/76/12/28/76</i>
		Expires 12/03/76
Planned for System: MR 5.0		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		() 355
Coded in: (<input checked="" type="checkbox"/>) PL/I () ALM () other-see below		() BOS
Performance: () better (<input checked="" type="checkbox"/>) same () worse		(<input checked="" type="checkbox"/>) Salvager
DOCUMENTATION CHANGES (specify one or more)		() 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: Remove the -check_dir option from the VTOC salvager. Introduce a hardcore gate to delete VTOCEs, and write an outer-ring program to walk a VTOC deleting VTOCEs with reverse connection failures.

REASONS: Allow VTOC garbage collection to be done while the system is up and running, and the volumes are in use. Eliminate the complex and operationally awkward maneuver of of Root-Volsalv with a check, by salvaging the RLV while it is in use. Remove a large and complex (although very fine) program from the hardcore.

IMPLICATIONS: Garbage collection of packs will be much slower (maybe several hundred percent) but the advantage of having the system up while this goes on buys all this back. The garbage collection of a volume does not affect use of it.

A highly privileged gate (hphcs_\$delete_vtoce (pvid, uid, vtocx, code)) is necessary. Although this gate will not allow deletion of the VTOCE of an active segment, it has the ability to induce a connection failure on any segment. This function trusts the correctness of the UID pathname in the VTOCE.

DETAILED PROPOSAL: Implement gate hphcs_\$delete_vtoce as described above, which will anonymously lock the suspected father of the segment, lock the AST to verify inactivity, and perform a delete_vtoce operation. The delete_vtoce program must be modified to operate with no branch specified. Obviously, quota used by the segment or kept by it as a directory cannot be returned to anybody if the segment does not exist in the eyes of the hierarchy.

Implement in two phases. First, install new software, check it out by experience. Then, delete the old reverse-connection-failure salvager.

Implement a small program which runs through a VTOC, via phcs_\$get_vtoce, tries to recreate pathnames from UID pathnames (such a program already exists as a tool), and calls the new gate for any VTOCE whose UID pathname has nonexistent components.

Name: sweep_pv

Usage: sweep_pv pvname [-gc] [-delete] [-list]
 [-from first] [-to last] [-only vtocx]
 [-move] [-force]

This command is used to perform utility functions which require walking the VTOC of a mounted physical volume. Among these functions are the listing of contents and unconnected VTOCEs, the deletion of such VTOCEs, and the evacuation of physical volumes (for logical volume compression). The volume is processed in VTOC order. If first is not given, VTOCEs starting at VTOC index 0 are processed. If last is not given, processing proceeds to the end of the VTOC.

-list causes a listing file giving the VTOC index, pathname, and time listed, of every segment on the volume at the time its VTOCE is scanned. An asterisk on the line indicates a reverse connection failure. The convention on incomplete pathnames is the same as that used by the vtoc_pathname tool. The listing file is called pvlist.pvname.time, and is placed in the working directory.

-gc causes a garbage collection to be performed. This means that all VTOCEs will be logged in a "collection" file if a reverse connection failure is encountered in resolving their pathnames. This file will be produced whether or not the "-list" option was specified. At the end of the collection report, the total number of VTOCEs and records held by them in this state will be printed. The report is called pvgc.pvname.time, and is placed in the working directory. Selected information, such as the name in the VTOCE and date/time used and modified, is also put in the report, for each such VTOCE.

-delete (-dl) causes unconnected VTOCEs to be deleted. This option is only legal when the -gc option is specified. Access to hphcs_ is required to use this option. The collection report is modified to indicate that these VTOCEs were deleted.

-move (-mv) causes all segments corresponding to VTOCEs processed to be moved off of this volume onto some other physical volume of the logical volume to which this physical volume belongs. Segments which suffer reverse connection failures will not be moved. Use of the -move control option causes the volume selected to have segment creation upon it inhibited: the volume is left in this state by sweep_pv, until it is demounted. If segments were to be moved for some other purpose than evacuation, the inhibit_pv command should be invoked with the "-off" control argument after such moving has taken place. The sweep_pv command will attempt to target segment moves to the physical volume in the logical volume with the most page space available by inhibiting and disinhibiting volumes dynamically; all volumes save the volume being evacuated will be disinhibited when the

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sweep_pv command is exited. If process directory segments can go on a volume being evacuated, the volume must be inhibited by the use of the inhibit_pv command before such segments can be placed there. Volumes found to be inhibited at the time the command is invoked will not be disinhibited: this facilitates simultaneous evacuation of volumes. Any volume which is completely evacuated by this means should be deregistered before the logical volume is re-accepted. Access to hphcs_ is required to use this control argument.

-force (-fc) causes access to be forced to all directories that need be scanned where status permission is lacking. Status permission is necessary for all components of the pathnames of VTOCES processed. If this option is not used, or status permission cannot be forced, and is lacking, an error is reported.

Any errors encountered during the VTOC sweep are reported to a file called pvef.pyname.time, placed in the working directory. Errors in command usage, such as specifying a non-existent or not-mounted physical volume, are reported to the console.

Name: inhibit_pv

This command sets up for the evacuation of a physical volume. The execution of this command causes further segment creation upon the physical volume to be inhibited. The execution of this command with the "-off" control argument reallows segment creation upon that volume.

Usage: inhibit_pv pvname to inhibit segment
creation on pvname.

inhibit_pv pvname -off to reallow segment creation.

Access to hphcs_ is required.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>1999</u>
TITLE: FIX BUGS IN GCOS SIMULATOR		STATUS DATE
AUTHOR: RH MORRISON		Written 06/30/76
		Status <u>A 7/19/76</u>
		Expires 12/30/76
Planned for System: MR 4.1		
Fixes Bug Number(s): gcs 86		CATEGORY (check one)
Documented in MT3: 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 (X)ALM ()other-see below		() 355
Performance: ()better (X)same ()worse		() BOS
		() 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		(X) User Command/Subr
Other		
None (reason) bug fixes		
OBJECTIONS/COMMENTS:		

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

SUMMARY: Fix bug in gcos_run_activity_ that prevents running the Simulator in not_BAR mode.

REASON: fix bugs.

IMPLICATIONS: Bugs will be fixed.

DETAILED PROPOSAL: Replace:
gcos_run_activity_.pl1
gcos_set_slave_.alm

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <i>2000</i>
TITLE: FIX BUGS IN gcos_card_utility_		STATUS: DAIL
AUTHOR: PH MORRISON		WRITTEN: 10/23/76
		STATUS: <i>A 7/19/76</i>
		EXPIRES: 12/23/76
Planned for System: MR 4.1		
Fixes Bug Number(s): 93 94		CATEGORY (check one)
Documented in MTB: not applicable		<input type="checkbox"/> Lib. Maint. Tools
Incompatible Change: no		<input type="checkbox"/> Sys. Anal. Tools
User/Operations-visible Interface Change: no		<input type="checkbox"/> Sys. Prog. Tools
Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other-see below		<input type="checkbox"/> 355
Performance: <input type="checkbox"/> better <input checked="" type="checkbox"/> same <input type="checkbox"/> worse		<input type="checkbox"/> BOS
		<input type="checkbox"/> Salvager
DOCUMENTATION CHANGES (specify one or more)		<input type="checkbox"/> Ring Zero
MPM (vol,sect)	MPAM (sect)	<input type="checkbox"/> Ring One
MDSN (sect)	MSAM (sect)	<input type="checkbox"/> SysDaemon/Admin
PLMs (AN#)		<input type="checkbox"/> Runtime
Info Segs		<input checked="" type="checkbox"/> User Command/Subr
Other		
None (reason) bug fixes		
OBJECTIONS/COMMENTS:		

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

SUMMARY: (1). Fix bug so that tape blocks less than 320 words long are written with actual block size.

(2). Fix bug so that columns 31-84 of card images are written with blanks instead of zero's.

REASON: Fix bugs

IMPLICATIONS: Bugs will be fixed.

DETAILED PROPOSAL: Replace:
gcos_card_utility_.pl1

Ver. 3 741022	MULTICS CHANGE REQUEST	NIM	MCR <u>2022</u>
TITLE: Fix bug in code conversion module for the printer and spooler.		STATUS	DATE
AUTHOR: J. Phillipps		Written	6/24/76
		Status	07/20/76
		Expires	12/24/76
Planned for System:	not applicable	CATEGORY (check one)	
Fixes Bug Number(s):	not applicable	<input type="checkbox"/> Lib. Maint. Tools	
Documented in MTB:	not applicable	<input type="checkbox"/> Sys. Anal. Tools	
Incompatible Change:	no	<input type="checkbox"/> Sys. Prog. Tools	
User/Operations-visible Interface Change:	no	<input type="checkbox"/> 355	
Coded in:	<input type="checkbox"/> PL/I <input checked="" type="checkbox"/> ALM <input type="checkbox"/> other-see below	<input type="checkbox"/> BOS	
Performance:	<input type="checkbox"/> better <input checked="" type="checkbox"/> same <input type="checkbox"/> worse	<input type="checkbox"/> Salvager	
<u>DOCUMENTATION CHANGES (specify one or more)</u>		<input checked="" type="checkbox"/> Ring Zero	
MPM (vol,sect)	MPAM (sect)	<input type="checkbox"/> Ring One	
MOSN (sect)	MSAM (sect)	<input type="checkbox"/> SysDaemon/Admin	
PLMs (AN#)		<input type="checkbox"/> Runtime	
Info Segs		<input type="checkbox"/> User Command/Subr	
None (reason)	Already documented as should operate.		
OBJECTIONS/COMMENTS:			

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

SUMMARY:

Currently, charging for processing dprint requests differs considerably depending upon whether they are directed to the printer or directed to the spooler. This results from the fact that lines of "printed" output are counted and thus charged according to the slewing mechanics or page positioning scheme peculiar to that device doing the actual output.

For example, if a page of output directed to the printer contains just one line of text followed by a form feed character, the charge is based on only two lines of output, as the printer can slew to the next page without processing the white-space lines in between. The spooler however, when dealing with the same page of output, has to base the charge on 21 lines of output, as it can only slew three lines at a time, each group of three of which must be charged as one printed line. (60 lines = 1 page.)

The number of lines charged for a given dprint request should be essentially the same regardless of the device to which the output has been directed -- transparent to the slewing mechanics of the particular device. This can be done easily by changing the conversion routine to only count lines while not in the process of slewing to a page position. Then line counting and thus charging will be equitable across device types.

REASONS:

The Spooler now charges for substantially more lines than does the printer

printer, particularly when top-of-page and bottom-of-page labels are requested. Since the new IO Daemon pricing scheme of charging for lines of output rather than blocks of output will be in effect, this anomaly will be very visible and offending.

IMPLICATIONS:

Better charging for output requests which are automatically spooled by installation choice.

TITLE: Fix bug in set_acl with -dr or -sm		STATUS	DATE
AUTHOR: S. Herbst JWG		Written	07/08/76
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> AIM <input type="checkbox"/> other- explain in DETAILED PROPOSAL -Planned for System MR 5.0 -Fixes Bug Number(s) _____ -Documented in MTB _____ -User/Operations-visible Interface change? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no -Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same <input type="checkbox"/> Worse -Replaces MCR _____		Status	A 07/20/76
		Expires	01/20/77
		DOCUMENTATION CHANGES	
Category (Check One)		Document	Specify One or More
<input type="checkbox"/> Lib. Maint. Tools			
<input type="checkbox"/> Sys. Anal. Tools			
<input type="checkbox"/> Sys. Prog. Tools			
<input type="checkbox"/> 355			
<input type="checkbox"/> BOS			
<input type="checkbox"/> Salvager			MPM (Vol, Sect.)
<input type="checkbox"/> Ring Zero			PLMS (AN #)
<input type="checkbox"/> Ring One			MOSN (Sect.)
<input type="checkbox"/> SysDaemon/Admin.			MPAM (Sect.)
<input type="checkbox"/> Runtime			MSAM (Sect.)
<input checked="" type="checkbox"/> User Cmmd/Subr.			
Objections/Comments:		Info Segs	
		Other (Name)	
		None (Reason) Documentation O.K.	

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

SUMMARY:

Fix set_acl to fail with an error message in the following cases:

```
set_acl seg r * -directory
set_acl dir s * -segment
```

where seg is a segment and dir is a directory.

REASON:

The control argument is incompatible with the type of entry.

Multics Change Request

TITLE: Change delete_ and dl_handler_ to
AUTHOR: S. Herbst

JWG

STATUS

DATE

Written

07/08/76

Status

A 07/20/76

Expires

01/20/77

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

Category (Check One)

-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

Lib. Maint. Tools

Sys. Anal. Tools

Sys. Prog. Tools

355

BOS

Salvager

Ring Zero

Ring One

SysDaemon/Admin.

Runtime

User Cmmnd/Subr.

DOCUMENTATION CHANGES

Document

Specify One or More

MPM (Vol, Sect.)

PLMS (AN #) 57

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:

Change dl_handler_ to turn off the copy switch
as well as the safety switch.

Change delete_ to call dl_handler_ for entries
protected by the copy switch, as it does for
those protected by the safety switch.

REASON:

These two switches should be handled similarly.
dl_handler_\$noquestion, for example, should
delete entries protected by either switch.

TITLE: Make hcs_\$set_copysw not to work on directories		STATUS	DATE	
AUTHOR: S. Herbst JWG		Written	07/08/76	
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL -Planned for System MR 5.0 -Fixes Bug Number(s) _____ -Documented in MTB _____ -User/Operations-visible Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same <input type="checkbox"/> Worse -Replaces MCR _____	Category (Check One)	Status	A 07/20/76	
		Lib. Maint. Tools	Expires	01/20/77
		Sys. Anal. Tools	DOCUMENTATION CHANGES	
		Sys. Prog. Tools	Document	Specify One or More
	355			
	BOS			
	Salvager		MPM (Vol, Sect.)	
	<input checked="" type="checkbox"/> Ring Zero		PLMS (AN #)	
	Ring One		MOSN (Sect.)	
	SysDaemon/Admin.		MPAM (Sect.)	
	Runtime		MSAM (Sect.)	
	User Cmmd/Subr.			
Objections/Comments:			Info Segs	
			Other (Name)	
			None (Reason) Documentation O.K.	

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

SUMMARY:

Change hcs_\$set_copysw to refuse to turn on the copy switch of a directory. Temporarily, let it retain the ability to turn directory copy switches off.

REASON:

This attribute is not meaningful for directories.

TITLE: Install new reconfiguration software		STATUS	DATE
AUTHOR: Noel I. Morris		Written	7/12/76
		Status	A 07/20/76
		Expires	01/20/77
-Coded in: <input checked="" type="checkbox"/> P/L <input checked="" type="checkbox"/> AIM <input checked="" type="checkbox"/> other- explain in DETAILED PROPOSAL		Category (Check One)	
-Planned for System MR 4.1		<input type="checkbox"/> Lib. Maint. Tools	
-Fixes Bug Number(s) _____		<input type="checkbox"/> Sys. Anal. Tools	
-Documented in MTB _____		<input type="checkbox"/> Sys. Prog. Tools	
-User/Operations-visible		355	
Interface change? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		BOS	
-Incompatible change? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		X Salvager	
-Performance: <input checked="" type="checkbox"/> Better <input type="checkbox"/> Same		Ring Zero	
<input type="checkbox"/> Worse		Ring One	
-Replaces MCR _____		SysDaemon/Admin.	
		Runtime	
		User Cmnd/Subr.	
		MSAM (Sect.)	
Objections/Comments:		Document Specify One or More	
		MPM (Vol, Sect.)	
		PLMS (AN #) 71	
		MOSN (Sect.)	
		MPAM (Sect.)	
		Info Segs	
		Other (Name) AM 81 (MOH)	
		None (Reason)	

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

Summary:

Install new reconfiguration software. Some of the changes to system software mechanisms are as follows:

1. Interrupts are no longer processor-directed. With the exception of the interrupt used to start a new CPU, interrupts may be handled by any processor.
2. The process interrupt mechanism is replaced by the use of the connect fault, which may be directed to a particular processor. Connect faults are used to signal a system trouble condition, to cause clearing of associative memories, to generate pre-empts, process stops, and IPSEs.
3. The reconfiguration software for processor and system controller reconfiguration is rewritten and simplified. No multiple steps with extensive operator interaction are required. The software is capable of recovering from most reconfiguration errors.

Detailed proposal:

A detailed description of the new reconfiguration mechanism can be found in the draft of AN71. A marked-up copy of the MOH is available describing the new simplified reconfiguration procedures.

TITLE: Modify Multics and BOS to run with NSA IOM		STATUS	DATE
AUTHOR: Noel I. Morris		Written	7/13/76
-Coded in: <input type="checkbox"/> PL/I <input checked="" type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL -Planned for System MR _____ -Fixes Bug Number(s) _____ -Documented in MTB _____ -User/Operations-visible Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same <input type="checkbox"/> Worse -Replaces MCR _____		Status	A 07/20/76
		Expires	01/20/77
		DOCUMENTATION CHANGES	
Category (Check One) <input type="checkbox"/> Lib. Maint. Tools <input type="checkbox"/> Sys. Anal. Tools <input type="checkbox"/> Sys. Prog. Tools <input type="checkbox"/> 355 <input checked="" type="checkbox"/> BOS <input type="checkbox"/> Salvager <input checked="" type="checkbox"/> Ring Zero <input type="checkbox"/> Ring One <input type="checkbox"/> SysDaemon/Admin. <input type="checkbox"/> Runtime <input type="checkbox"/> User Cmnd/Subr.		Document	Specify One or More
Objections/Comments:		MPM (Vol, Sect.)	
		PLMS (AN #)	
		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:

The NSA IOM has many features, most of which are not adaptable to Multics. It does, however, support 32 additional payload channels, allowing a total of 56 payload channels. (Payload channels are those channels which are connected to I/O Devices and which do useful work.)

Reasons:

PSIAs in an IOM can tie up up to 8 channels per adapter. Some sites need more than 24 payload channels but do not need the extra capacity of an additional IOM. Hence, Multics should be capable of running an NSA IOM in extended GCOS mode (which is the mode in which we currently run the 6000B IOM).

Detailed Proposal:

Since IOM IMW's can only indicate interrupts for 32 channels, the NSA IOM utilizes additional interrupt levels. Currently, levels 1, 3, 5, and 7 are the interrupt levels for system fault, terminate, marker, and special interrupts. The NSA IOM uses levels 2, 4, and 6 for terminate, marker, and special interrupts for channels 32 through 63. Both Multics and BOS must be modified to fetch the correct IMW for these higher numbered channels.

Implications:

The hardware will not support common peripheral adapters on the high numbered channels. BOS software will be incapable of running with the BOS disk channel on a high numbered channel.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2029</u>
TITLE: Fix tape_mult_ bugs.		STATUS DATE
AUTHOR: Larry Johnson		Written 07/13/76
	DRV	Status <u>A 07/20/76</u>
		Expires 01/13/77
Planned for System: not applicable		CATEGORY (check one) <input type="checkbox"/> Lib. Maint. Tools <input type="checkbox"/> Sys. Anal. Tools <input type="checkbox"/> Sys. Prog. Tools <input type="checkbox"/> 355 <input type="checkbox"/> BOS <input type="checkbox"/> Salvager <input type="checkbox"/> Ring Zero <input type="checkbox"/> Ring One <input type="checkbox"/> SysDaemon/Admin <input type="checkbox"/> Runtime <input checked="" type="checkbox"/> User Command/Subr
Fixes Bug Number(s): not applicable		
Documented in MTB: not applicable		
Incompatible Change: no		
User/Operations-visible Interface Change: no		
Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other-see below		
Performance: <input checked="" type="checkbox"/> better <input type="checkbox"/> same <input type="checkbox"/> worse		
DOCUMENTATION CHANGES (specify one or more)		
MPM (vol,sect)	MPAM (sect)	
MOSN (sect)	MSAM (sect)	
PLMs (AN#)		
Info Segs		
Other		
None (reason)		
OBJECTIONS/COMMENTS:		

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

Summary

The tape_mult_ I/O module treats certain recoverable errors as unrecoverable. It also may take a fault on an unrecoverable error by referencing through a bad pointer. These bugs should be fixed.

Reason

Better performance of tape_mult_, which is used by the new dumper and reloader.

Detailed Proposal

Treat MPC data alerts (which include postamble errors) as recoverable errors. Return an error code when a real unrecoverable error occurs.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2030</u>
TITLE: Fix bug in indent command.		STATUS DATE
AUTHOR: Larry Johnson		Written 07/13/76
MJC		Status <u>07/20/76</u>
Planned for System: MR 5.0		Expires 01/13/77
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
DOCUMENTATION CHANGES (specify one or more)		() Salvager
MPM (vol,sect)	MPAM (sect)	() Ring Zero
MOSN (sect)	MSAM (sect)	() Ring One
PLMs (AN#)		() SysDaemon/Admin
Info Segs		() Runtime
Other		(X) User Command/Subr
None (reason)		
OBJECTIONS/COMMENTS:		

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

Summary

If indent is invoked with no arguments (to print the "Usage:" line), it references an uninitialized pointer, and may take a fault.

Detailed Proposal

Fix the bug.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2031</u>
FILE: fix bug in set_tty -reset		STATUS: DATE
AUTHOR: Robert S. Coren		Written: 01/13/76
	MTG	Status: 807/20/76
	4.1 5.0	Expires: 01/13/77
Planned for System: not applicable		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		() 355
Coded in: (X) PL/I () ALM () other-see below		() BUS
Performance: () better (X) same () worse		() Salvager
DOCUMENTATION CHANGES (specify one or more)		() Ring Zero
MPM (vol,sect) MPAM (sect)		() Ring One
MUSN (sect) MSAM (sect)		() SysDaemon/Admin
PLMS (AN#)		() Runtime
Info Segs		(X) User Command/Subr
Other		
none (reason) bug fix		
OBJECTIONS/COMMENTS:		

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

SUMMARY: fix bug in set_tty command whereby -reset control argument turns off esc and erkl modes.

REASONS: The initial modes tables for most terminal types contain the string "default" as a shorthand for "can,esc,erkl,^rawi,^rawo"; set_tty -reset has to take special care not to turn off can, esc, and erkl. however, this mechanism contains a bug so that the modes left unmolested are edited, taos, and can.

IMPLICATIONS: None.

DETAILED PROPOSAL: Fix the loop that determines what modes to turn off so as to omit the correct modes (can, esc, erkl).

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2004</u>
TITLE: Final mods to new library tools		STATUS DATE
AUTHOR: Gary C. Dixon		Written 06/30/76
		Status <u>27/13 A 7/2/76</u>
		Expires 12/30/76
Planned for System: MR 5.0		CATEGORY (check one)
Fixes Bug Number(s): not applicable		<input checked="" type="checkbox"/> Lib. Maint. Tools
Documented in MTB: 227		<input type="checkbox"/> Sys. Anal. Tools
Incompatible Change: no		<input type="checkbox"/> Sys. Prog. Tools
User/Operations-visible Interface Change: yes		<input type="checkbox"/> 355
Coded in: <input checked="" type="checkbox"/> PL/I <input checked="" type="checkbox"/> ALM <input type="checkbox"/> other-see below		<input type="checkbox"/> BOS
Performance: <input type="checkbox"/> better <input checked="" type="checkbox"/> same <input type="checkbox"/> worse		<input type="checkbox"/> Salvager
Replaces MCR: 1042, 1157		<input type="checkbox"/> Ring Zero
DOCUMENTATION CHANGES (specify one or more)		<input type="checkbox"/> Ring One
MPM (vol,sect)	MPAM (sect)	<input type="checkbox"/> SysDaemon/Admin
MOSN (sect)	MSAM (sect)	<input type="checkbox"/> Runtime
PLMs (AN#)	AN80	<input type="checkbox"/> User Command/Subr
Info Seqs	library_fetch.info	
	library_info.info	
OBJECTIONS/COMMENTS:		
Remove references to prname		

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

SUMMARY:

Install the library maintenance tools, library_cleanup, library_fetch, library_info, library_map, library_print, library_descriptor, and library_descriptor_compiler. These tools are documented in the Draft Library Maintenance PLM, AN80, published as MTB-227.

REASONS:

Allow other sites to use these useful tools. The new tools make it easier to change library organization and to add new libraries.

IMPLICATIONS:

Tools used at MIT to maintain the system will be available at other sites. Over a period of time, get_library_segment will be replaced by library_fetch. Then qls can be deleted.

DETAILED PROPOSAL:

Install the library tools named above, with the following modifications from the module descriptions in MTB-227:

1. Increase the number of search names allowed in a single command from 30 to 100. It is often useful to get library information about, or to fetch from the library, a list of library segments. This change makes it possible to process up to 100 segments (starnames) without having to scan the libraries more than once.
2. Allow library descriptor to be identified by pathname, in addition to by reference name. It is inconvenient to have to

initiate a descriptor which is not in your object search rules in order to use it with the library tools.

3. Output AIM attributes when -access or -all output argument is given. AIM attributes were not output by the tools, as described in MTB-227.
4. Remove support of peruse_text segments. Delete the -peruse_text, -pt output argument.
5. Replace the -date_time_modified, -dtm output argument with -date_time_contents_modified, -dtcm to conform with usage in the list command. Since this is a new command, there is no need to support -dtm.
6. Replace the -records_used output argument with -records, -rec to conform with usage of the list command.
7. Add -ofs as an abbreviation for -offset output argument to conform with usage of the area_status command.
8. Modify the meaning of the -device output argument to cause output of the son's logical volume for directory and MSF library entries, and the logical volume for all other entries.
9. Add a new output argument, -pvname, to cause the name of the physical volume each library entry resides on to be output. Having -device return this information would be unwise. The lvid obtained in the tools' standard call to hcs_\$status_ is sufficient for many purposes; the extra overhead of calling hcs_\$status_for_backup to obtain the pvid would be unwarranted in such cases.
10. Remove -lv as an abbreviation for the -level control argument. The abbreviation lv is coming to mean logical_volume.

Attached is updated documentation for the library_map command in which the changes have be flaqqed with change bars.

Names: library_map, lm

The library_map command selects entries from a library, and writes the status of these entries into a map file suitable for dprinting. The entries in the file are alphabetized by primary name.

A full range of status information can be included in the map items by using one or more of the output arguments. Besides information returned by the status command, the map items can include access information, object segment attributes and other segment contents information, quota information, etc.

This command uses a library descriptor and library search procedures, as described in Section IV. When no output arguments are given, the information included by default in the map items is controlled by the search program for the particular library being mapped. The default map item includes the information most appropriate for a library map.

Usage

library_map -search_names- -control_args- -output_args-

where:

1. search_names are entrnames which identify the library entries to be output. The Multics star convention may be used to identify a group of entries with a single search name. Up to 100 search names may be given in the command. If none are given, then any default search names specified in the library descriptor are used.
2. control_args are selected from the following list of control arguments and can appear anywhere in the command:

-library library_name,
-lb library_name

Identifies a library which is to be searched for entries matching the search names. The Multics star convention may be used to identify a group of libraries with a single library name. Up to 100 -library control arguments may be given in each command. If none are given, then any default library names specified in the library descriptor are used.

was
30

was
30

- output_file file,**
-of file identifies the output file in which the library map is to be generated. A relative or absolute pathname may be given for the file. If it does not have a suffix of map, then one is assumed. If no **-output_file** control argument is given, then the map is generated in the library.map file which is created in the user's working directory.
- header heading,**
-he heading gives a character string which is used as a heading line on the first page of the map to identify which libraries have been mapped. If the string contains blanks, then it must be enclosed in quotes. Only the first 120 characters of the string are used. If no **-header** control argument is given, then a default heading line is used. See the discussion under "Notes" below.
- footer footing**
-fo footing gives a character string which is used in the footing line at the bottom of each page to identify the libraries being mapped. If the string contains blanks, then it must be enclosed in quotes. Only the first 45 characters of the string are used. If no **-footer** control argument is given, then a default character string is used in the footing line. See the discussion under "Notes" below.
- entry, -et** causes map items to be included in the output only for library entries which match one of the search names.
- components** causes map items for all the components of a matching library entry, in addition to the item for the matching entry. It also causes map items for all components of a library entry containing a matching entry. See the discussion under "Notes" below.
- container** causes a map item for the library entry which contains each matching entry, in addition to the item for the matching entry. See the discussion under "Notes" below. This is the default.

-cross_reference, -cref causes cross reference map items to be included in the output for the secondary names on library entries which are output. See the discussion under "Notes" below. This is the default.

-no_cross_reference, -ncref suppresses cross reference map items.

-chase suppresses map items for any intermediate links which exist between a library link and its eventual target.

-no_chase causes map items for the intermediate links. This is the default.

-retain, -ret causes a map item for library entries awaiting deletion from the libraries (as determined by the library search program).

-omit suppresses the map item for library entries awaiting deletion from the libraries. This is the default.

-search_name search_name identifies a search name which begins with a minus (-) to distinguish the search name from a control argument. There are no other differences between the search names described above and those given with the **-search_name** control argument. One or more **-search_name** control arguments may be given in the command.

-descriptor name gives a pathname or reference name which identifies the library descriptor describing the libraries to be searched. If no **-descriptor** control argument is given, then the default library descriptor is used.

3. **output_args** are selected from the following list of output arguments and can appear anywhere in the command:

pathnames
accepted

library_map

library_map

- all, -a causes all available information to be output.
- default, -dft causes default information to be output, in addition to the information requested by other output arguments. This is the default when no other output arguments are given.
- status, -st causes all status information printed by the command "status -all" to be output, except for access control information.
- access causes all access control information to be output. This includes the user's access mode to the library entry, its ring brackets, ACL, access class, AIM attributes, safety switch setting, and for directory entries the initial ACLs. *AIM new*
- contents causes information describing the contents of library entries to be output. This includes compilation information, object attributes, and segment printability information. *peruse text removed*

The following output arguments are available, but are probably not of interest to every user. They provide more selective control over which status information is included in the output.

- name, -nm causes all names to be output.
- primary, -pri causes the primary name to be output.
- match causes all names which match any of the search names to be output.
- type, -tp causes the type of each library entry to be output. Types include: link, segment, archive, archive component, multisegment file, multisegment file component, and directory.
- pathname, -pn causes the pathname of the parent of each library entry to be output.
- link_target causes the pathname of the target of each library link to be output.

-date, -dt causes the date/time modified, date/time used, date/time entry modified, date/time dumped, and date/time compiled to be output.

-date_time_contents_modified, -dtdm causes the date/time modified to be output.

-dtm
↓
-dtdm

-date_time_used, -dtu causes the date/time used to be output.

-date_time_entry_modified, -dtem causes the date/time entry modified to be output. For archive components, this corresponds to the date/time component updated into the archive.

-date_time_dumped, -dtd causes the date/time dumped to be output.

-date_time_compiled, -dtdc causes the date/time compiled to be output.

-length, -ln causes the records used, current length (if different from the records used), maximum length (if different from sys_info\$max_seg_size), bit count, archive component offset, and directory quota information to be output.

-records, -rec causes the records used to be output.

-records_used
↓
-records,-rec

-current_length causes the current length to be output (if different from records used).

-max_length causes the maximum length to be output (if different from sys_info\$max_seg_size).

-bit_count causes the bit count to be output.

-offset, -ofs causes the word offset of an archive component within its archive to be output.

-ofs
abbrev
added

to conform with
area-status command

- quota** causes directory quota information to be output for library directory entries. This includes: quota set on the directory, quota used, terminal quota switch setting (if on), a count of inferior directories with terminal quota (if nonzero), the time/record product for the directory, and the date/time time/record product updated. If a directory is a master directory, this information is also printed.
- author, -at** causes the author and bit count author (if different from the author) to be output.
- unique_id** causes the unique identifier to be output.
- device, -dv** causes the name of the logical volume on which the entry resides to be output, for non-directory, non-MSF entries; causes the name of the son's logical volume to be output for directory and MSF entries. Also causes the setting of the transparent-to-paging-device switch to be output.
- pvname** causes the name of the physical volume on which the entry resides to be output.
- copy, -cp** causes the setting of the copy-on-write switch to be output (if on).
- safety** causes the setting of the safety switch to be output (if on).
- mode, -md** causes the user's mode of access to the library entry to be output.
- ring_brackets, -rb** causes the ring brackets to be output.
- acl** causes the access control list to be output.
- access_class** causes the access class to be output (if other than system low). Also, the setting of the security-out-of-service switch, the audit switch, and the multiple access class switch is output (if on).
- initial_acl** causes the initial access control lists associated with library directory entries to

new change

be output.

-compiler_name causes the name of the compiler of an object segment to be output.

-compiler_version causes the version information for the compiler of an object segment to be output.

-compiler_options causes the compiler option information stored in an object segment to be output.

-object_info causes information about format of an object segment and its entry bound to be output.

-non_ascii causes an indication that a library entry contains non-ASCII characters to be output.

-error causes messages indicating errors which occurred while obtaining the status information to be output.

-level causes a level number to precede each output entry. This number indicates the relationship between a library entry and its components. Normally, this relationship is indicated only by indenting the component names beneath those of the library entry.

-peruse.text removed

-lv removed; it conflicts with recent abbrevs for logical volume

-new_line, -nl causes a line to be skipped between each level 1 entry in the output. Normally, no lines are skipped between entries.

Notes

Any combination of output arguments may be used in a command since the use of several output arguments merely causes more information to be included in each map entry. However, the following groups of control arguments are mutually exclusive, and only one argument from each group may be given in a command: **-cross_reference** and **-no_cross_reference**; **-chase** and **-no_chase**; **-retain** and **-omit**.

The **-container** and **-components** control arguments are provided to facilitate the mapping of library entries related to a given bound segment. When only one component of a bound segment archive matches one of the search names, **-entry** causes a map item for only the matching library entry; **-container** and

library_map

library_map

-components cause map items for entries related to a matching entry as well. -container and -components may be used singly or together, but neither can be used with -entry.

The following example illustrates the effect of using -container and -components. If a search name is given which matches a component in a source archive, giving -entry would produce a map item for only that component. Giving -container instead would produce a map item for the source archive, as well as one for the matching component. Giving -components would produce map items for all of the components of the source archive containing the matching component. Giving both -container and -components would produce map items for the source archive and all of its components.

When the -cross_reference control argument is used, a cross reference map item is included in the map for each secondary name on a matching library entry. The cross reference item includes the secondary name; the date/time modified for the library entry; and its pathname. The pathname ends with the primary name of the library entry, providing a reference to the map item which includes complete information about the entry.

The library map is generated in an output file identified by the -output_file control argument. If the -output_file control argument is not given, then a file called library.map is created in the user's working directory. If the output file already exists, it is truncated before the new map is created. Thus several library_map commands executed in the same working directory (in the same or different processes) without an -output_file control argument can produce unpredictable results. In such cases, the -output_file control argument should be used to create a different map file in each command.

If the -header control argument is given, then the heading line is centered on the first page of the map beneath the lines:

Map of the nn Entries
of the

The heading line should be worded with this in mind. For example:

Map of the 35 Entries

library_map

library_map

of the
Standard Library Bind Listing Directory

If -header is not given, a default heading line is constructed by concatenating the names of the libraries which were searched, as shown below:

Map of the 350 Entries

of the
Libraries

standard_library.list, unbundled_library.list,
tools_library.list, user_library.list, network_library.list

If the -footer control argument is given, then the footing line placed at the bottom of each page of the library map contains the footing character string given with the control argument, along with a page number, and the names of the first and last map items which appear on the page. If -footer is not given, then the concatenated library names used in the heading line are also used in the footing line.

Examples

```
library_map -lb info -lb mpm *.info *.runoff -of  
documentation
```

creates the documentation.map file in the working directory, which contains a map of the entries in the info and MPM libraries which match the search names *.info or *.runoff.

```
library_map -lb online.* ** -of online -dtd -dft
```

creates the online.map file which contains a map of all of the entries in the online.* libraries. Each map entry includes the date dumped, as well as whatever default information was specified by the library search program.

```
library_map
```

creates a map in the library.map file of the working directory which contains map items for those entries in the default library

library_map

library_map

(or libraries) which match the default search name(s). These default values are specified in the default library descriptor data base.

TITLE: Install new fortran compiler and command program in >ldd>exl>o

AUTHOR: D. Levin SHW

STATUS

DATE

Written 07/06/76

Status P 7/13/76 A 07/27/76
Expires 01/27/77

-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
- SysDaemon/Admin.
- Runtime
- User Cmnd/Subr.
- experimental

DOCUMENTATION CHANGES

Document Specify One or More

MPM (Vol, Sect.)

PLMS (AN #)

MOSN (Sect.)

MPAM (Sect.)

MSAM (Sect.)

Objections/Comments:

lib

Info Segs

Other (Name)

None (Reason)

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

SUMMARY:

Install two segments in >ldd>exl>o, new_fortran and bound_fort_. The second already is available in >unb, at a user's request. This series of installations would allow users to have access to a more up-to-date version of the compiler as well as provide greater exposure for this new compiler. The segment new_fortran is not expected in >unb before MR5.0.

REASONS:

Greater exposure for the new compiler.

IMPLICATIONS:

Users can begin to use this much improved compiler before MR5.0

new_fortran

new_fortran

Name: new_fortran

EXPERIMENTAL LIBRARY --- TEMPORARY

The new_fortran command provides an interface to the new FAST FORTRAN compiler. When the compiler is installed as standard FORTRAN, a version of this command will be upgraded to be the standard command fortran.

Usage

new_fortran path -control_args-

where:

- 1. path is the pathname of the fortran source program to be compiled.
- 2. control_args are, for the most part, identical to those in the current fortran command. The following control args are described in the WPM writeup for fortran:

- optimize, -ot *
- card
- source; -sc *
- symbols, -sb *
- map *
- list, -ls *
- brief_table, -bftb
- table, -tb *
- profile, -pf *
- check, -ck
- severityn, -svn
- subscriptrange, -subpro

The control args marked with an asterisk are not yet implemented.

The following control args are intended for internal use of the fortran development project:

new_fortran

new_fortran

-time, -tm
-debug, -db
-debug_co

The following control args are new to this compiler:

-line_numbers, -ln
causes the compiler to ignore line numbers on each source line.

-fold
causes all upper case letters not occurring within character-string constants to be mapped into their lower-case form. (Useful in some forms of program conversion.)

TITLE: Change send_message error message		STATUS	DATE
AUTHOR: S. Herbst JWG		Written	07/08/76
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL		Status	P 7/20 A 07/27/76
		Expires	01/20/77
-Planned for System MR 5.0		DOCUMENTATION CHANGES	
-Fixes Bug Number(s) _____		Lib. Maint. Tools	Document Specify One or More
-Documented in MPB _____		Sys. Anal. Tools	
-User/Operations-visible		Sys. Prog. Tools	
Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		355	
-Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		BOS	MPM (Vol, Sect.)
-Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same		Salvager	PLMS (AN #)
<input type="checkbox"/> Worse		Ring Zero	MOSN (Sect.)
-Replaces MCR _____		Ring One	MPAM (Sect.)
		SysDaemon/Admin.	MSAM (Sect.)
		Runtime	
		X User Cmmd/Subr.	
Objections/Comments:			Info Segs
			Other (Name)
			None (Reason) Documentation O.K.

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

SUMMARY:

Change send_message's error message:

Warning-Wakeups cannot be sent.

to:

Warning-Messages will not be received immediately.

REASON:

More informative to the casual user.

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2032</u>
741022		
TITLE: Spool Driver Bug Fix and Update to Maintain Printer Driver Compatibility.		STATUS: <u>DATE</u>
AUTHOR: J. B. Philipps	TVV	Written: <u>7/8/76</u>
		Status: <u>R 07/27/76</u>
		Expires: <u>01/08/77</u>
Planned for System: not applicable		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		() 355
Coded in: <input checked="" type="checkbox"/> PL/I () ALM () other-see below		() BOS
Performance: () better <input checked="" type="checkbox"/> 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#)		() User Command/Subr
Info Segs		<input checked="" type="checkbox"/> SysDaemon/Admin.
Other		
None (reason) no change		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

1. Declare modes string char (256) instead of char (128).
2. Set ordata.output_mode (in output_request_data structure) to null each time user line modes are parsed.
3. Fix problem of last spooled dprint request not always being deleted from its daemon queue.

REASONS:

1. See MCR 1829, "IO Daemon Driver Bug Fixes". Spool Driver changes required to maintain compatibility with Printer Driver.
2. Same as above, see MCR 1829 attached.
3. Operations finds it confusing to see the last dprint request to be spooled remaining in the dprint queue. Also, users dislike receiving two copies of the same listing, when only one copy was requested.

Note: already installed at MIT as an emergency fix.

TITLE: IO Daemon Driver Bug Fixes		STATUS	DATE
AUTHOR: J. C. Whitmore		Written	4-28-76
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL -Planned for System MR 4.0 -Fixes Bug Number(s) MPRF -Documented in MTB -User/Operations-visible Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same <input type="checkbox"/> Worse -Replaces MCR	Category (Check One)		
	<input type="checkbox"/> Lib. Maint. Tools	DOCUMENTATION CHANGES	
	<input type="checkbox"/> Sys. Anal. Tools	Document	Specify One or More
	<input type="checkbox"/> Sys. Prog. Tools	MPM (Vol, Sect.)	
<input type="checkbox"/> 355	PLMS (AN #)		
<input type="checkbox"/> BOS	MOSN (Sect.)		
<input type="checkbox"/> Salvager	MPAM (Sect.)		
<input type="checkbox"/> Ring Zero	MSAM (Sect.)		
<input type="checkbox"/> Ring One	Info Segs		
<input checked="" type="checkbox"/> SysDaemon/Admin.	Other (Name)		
<input type="checkbox"/> Runtime	None (Reason) no changes		
<input type="checkbox"/> User Cmnd/Subr.			
Objections/Comments:			

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

- Summary:
1. Change the declarations of mode strings from char (128) to char (256). (printer_driver_, G115_driver_, iodd_command_processor_)
 2. Initialize the mode string in the output_request_data structure to null at the start of each copy requested.
 (printer_driver_, G115_driver_)

- Reasons:
1. Recent MCS changes, adding to the mode string length, have caused mode truncation and undertermined results after an error during request processing. This change will correct this and allow for future expansion. **MPRF 9467**
 2. For certain combinations of output modes, the user's requested mode, printed on the tail sheet, will get concatenated with itself on each subsequent copy.

Example: copy 1 "noskip, single"
 copy 2 "noskip, single, noskip, single"
 copy 3 "noskip, single, noskip, single, noskip, single"

This is rare but ugly!

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2033</u>
741022		
TITLE: Spooler Bug Fixes and Update for Printer DIM Compatibility		STATUS: <u>DATE</u>
AUTHOR: J.B. Philipps	TVV	Written: <u>7/12/76</u>
		Status: <u>A07/27/76</u>
		Expires: <u>01/12/77</u>
Planned for System: not applicable		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		() 355
Coded in: (<input checked="" type="checkbox"/>) PL/I () ALM () other-see below		() BOS
Performance: () better (<input checked="" type="checkbox"/>) 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		(<input checked="" type="checkbox"/>) SysDaemon/Admin.
None (reason) no changes.		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

1. Update include file spooling_sdb.incl.pl1 to reflect RCP additions made to prt_sdb.incl.pl1.
2. Update the modes string in spooling_dim_changemode_ from char (128) to char (256).
3. Fix bug in get_spooling_data_ so that operations can renew spooling limit stops properly (according to the documentation).
4. Fix bug in file_monitor_ such that an error message does not occur if operations tries to halt the spooler and switch to a new device, namely the printer, without logging out the spooler.
5. Fix Spooler line counting of dprint requests so that charges are essentially the same (within one or two lines for line length of 132) as the charges made for using the Printer.

REASONS:

1. Change required to maintain compatibility with the Printer DIM. Both Printer and Spooler use same stream and depend on the same layout of the sdb.
2. Update for Printer DIM compatibility.

3. One data base was not properly updated to restrict volume array size to three volume ids.
4. Spurious error message comes out if try to take down a spooling volume that is already dismounted. Need a check for dismount event.
5. The charging, based on line count of dprint requests, must be calculated essentially the same whether a dprint request is put out on the Printer or thru the Spooler. New IO Daemon charging for lines magnifies any error in lines counting here.

IMPLICATIONS:

Users will see a more equitable charging for queue 3 dprint requests that are spooled at installation choice. Operations will see smoother spooling sessions with less spurious error messages.

Note: Already installed at MIT as an emergency fix.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2,034</u>
TITLE: Answering Service Auto Call Fixes		STATUS DATE
AUTHOR: David M. Jordan	MTG	Written 07/16/76 Status A07/27/76 Expires 01/16/77
Planned for System: not applicable		
Fixes Bug Number(s): not applicable		
Documented in MTB: not applicable		
Incompatible Changes: no		
User/Operations-visible Interface Changes: yes		
Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other-see below		
Performance: <input type="checkbox"/> better <input checked="" type="checkbox"/> same <input type="checkbox"/> worse		
DOCUMENTATION CHANGES (specify one or more)		CATEGORY (check one)
MPM (vol,sect)	MPAM (sect)	<input type="checkbox"/> Lib. Maint. Tools
MOSN (sect)	MSAM (sect)	<input type="checkbox"/> Sys. Anal. Tools
PLMs (AN#)		<input type="checkbox"/> Sys. Prog. Tools
Info Segs		<input type="checkbox"/> 355
Other		<input type="checkbox"/> BOS
None (reason) No significant changes		<input type="checkbox"/> Salvager
		<input type="checkbox"/> Ring Zero
		<input type="checkbox"/> Ring One
		<input checked="" type="checkbox"/> SysDaemon/Admin
		<input type="checkbox"/> Runtime
		<input type="checkbox"/> User Command/Subr
OBJECTIONS/COMMENTS:		

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

SUMMARY:

Install Answering Service changes for improved reliability and functionality. See accompanying documentation of specific changes which may be made.

REASONS:

Experience with the Auto Call facility has pointed out numerous minor problems and areas for improvement.

IMPLICATIONS:

None of the proposed changes will alter significantly any interface, with the exception that many initializer terminal messages will now only be logged instead of being logged and printed.

Possible Answering Service Auto Call Facility fixes and changes

1. Change most `sys_log` messages to severity 0. Currently all messages are printed and logged at severity 1. This change will cause most messages except an initial connection and eventual termination message to be logged but not printed.
2. Update the Channel Definition Table Auto Call entries to include the telephone number called for the most recently completed connection. This change will allow a single initializer message, including the number called, to be printed when a connection has been made and the line assigned to a user. Also, this will allow various status reporting procedures to determine what number is currently being called.
3. Fix a bug which sometimes results in the Auto Call channel name not being included in some initializer messages.
4. Correct a problem which causes GDT entry meters for Auto Call channels not to be maintained.
5. Correct a problem which causes an Auto Call channel not to be available until the system is rebooted after the channel has been "attach"ed.
6. Correct such other bugs/problems as may be discovered during the course of working on the above.

Ver. 3	MULTICS CHANGE REQUEST	MCR 2035
741022		
TITLE: Fix problems in trace used with long entrypoint names.		STATUS DATE
AUTHOR: Txom McGary		Written: 07/09/76
		Status: 07/07/76
		Expires: 07/09/77
Planned for System: not applicable		
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: (<input checked="" type="checkbox"/>) PL/I () ALM () other-see below		() 355
Performance: (<input checked="" type="checkbox"/>) better () same () worse		() BOS
		() 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 Current doc ok		(<input checked="" type="checkbox"/>) user command
OBJECTIONS/COMMENTS:		

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

SUMMARY: trace incorrectly truncates the character string specifying the entrypoint to trace to 32 characters. Thus it only works consistently when the entrypoint to be traced is specified by 'refname' -- the cases 'refname\$entryname', 'dirpath>segname' and 'dirpath>segname\$entryname' can fall unintelligibly. Change trace not to copy a char(*) command line argument into a char(32) local variable, but use the argument directly.

REASONS: trace will behave more reasonably, and it will be possible to trace entrypoints specified by all the methods mentioned in the MPM writeup on trace.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2036</u>
TITLE: Multi-ring problems: nonlocal_goto_\$different_ring		STATUS: DATE
AUTHOR: H. Jeff Goldberg	SHW	Written: 07/15/76
		Status: <u>A 07/27/76</u>
		Expires: 01/15/77
Planned for System: not applicable		CATEGORY (check one)
Fixes Bug Number(s): N. A.		() Lib. Maint. Tools
Documented in MTB: N. A.		() Sys. Anal. Tools
Incompatible Change: yes		() Sys. Prog. Tools
User/Operations-visible Interface Change: no		() 355
Coded in: (<input checked="" type="checkbox"/>) PL/I (<input checked="" type="checkbox"/>) ALM () other-see below		() BOS
Performance: () better (<input checked="" type="checkbox"/>) same () worse		() Salvager
Replaces MCR: N. A.		() Ring Zero
DOCUMENTATION CHANGES (specify one or more)		() Ring One
MPM (vol,sect) MPAM (sect)		() SysDaemon/Admin
MOSN (sect) MSAM (sect)		(<input checked="" type="checkbox"/>) Runtime
PLMs (AN#)		() User Command/Subr
Info Segs		
Other		
None (reason) (don't know)		
OBJECTIONS/COMMENTS:		

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

SUMMARY-

Currently, nonlocal_goto_\$different_ring completely resets the inner ring stack when transferring out. It should only reset the stack to the point of entry for the current activation of the lower ring. The two system programs that call nonlocal_goto_\$different_ring (unwinder_ and signal_) both can find out the frame of entry and should tell nonlocal_goto_\$different_ring about it.

REASONS-

This will allow inner ring stack history of an outstanding invocation to be preserved. Consider an inner ring making an outward call which expects a return, thus leaving some stack history in the inner ring. Should an inward call be made, which faults in the inner ring, the crawlout mechanism would reset the entire inner ring stack.

IMPLICATIONS-

Since we only have one invocation of an inner ring at a time now, the change would not affect current operation.

DETAILED PROPOSAL-

Add a new entrypoint to nonlocal_goto_ that accepts an additional pointer which is the first frame of the current activation in the lower ring. The inner ring stack should be reset only to that point. Change unwinder_ and signal_ to call the new entrypoint with the additional argument. A pointer to the first frame of the last activation can, and should, be gotten from unwind_stack_ which steps down through the stack invoking cleanup handlers. It currently stops at the point where a cross-ring (or cross segment stack) transfer has been made, anyway.

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2037</u>
741022		
TITLE: Changes to Answering Service Network Software		STATUS DATE
AUTHOR: D. M. Wells		Written 07/16/76
	THVV	Status <u>07/27/76</u>
		Expires 01/16/77
Planned for System: not applicable		
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 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)		() Ring Zero
MPM (vol,sect) MPAM (sect)		() Ring One
MOSN (sect) MSAM (sect)		(X) SysDaemon/Admin
PLMs (AN#) AN64		() Runtime
Info Segs		() User Command/Subr
Other		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

- 1) Update Network portion of Answering Service to correspond to AS 8.3.
- 2) Remove pre-MR3.1 compatibility code in the Network portion of the Answering Service.
- 3) Fix minor bugs.

REASON:

- 1) The changes made in Answering Service version 8.3 exposed some bugs in previously unused code in the Network software which apparently allow users to get attached to processes which belong to other users. Also, that Answering Service introduced some compatibility features to allow the Network interface and the TTYDIM interface to appear more similar.
- 2) Since RADC is now running MR3.1, there is no longer any need for the Network software to be able to run with previous systems.
- 3) The bugs are causing anomalous messages to be produced in the AS Network log.

IMPLICATIONS:

- 1) Users should no longer get attached to processes which belong to another user. The compatibility code in the Answering Service can be removed sometime in the future, leading to a simpler Answering Service.
- 2) The programs may take advantage of new features and subroutines released with MR 3.1.
- 3) The logs will contain less superfluous messages.

DETAILED PROPOSAL:

- 1) First, the program controlling the internal state transitions (e.g., Listening, Attached to User Process, etc.) has been entirely rewritten. It should now be the case that a pseudo-TTY can never be used in a new connection (with a new user) until the higher level programs in the Answering Service (e.g., dialup_) have given explicit permission to do so. Second, the internal signalling mechanism has been changed so that the dialup_ procedure is informed by an actual IPC message; the Network programs no longer call as_\$dialup_ directly with a fake IPC message. This should lead to better separation between the normal AS programs and the Network AS programs (and hopefully a safer AS environment). Third, a number of order calls have been added, e.g., set_type, set_line_type, store_id.
- 2) The programs have been changed to take advantage of changes in the MR3.1 Network Control Program.
- 3) Due to the changes in the state transition coding, each of the pseudo-channels is now more fully initialized, and the anomalous conditions that prompted the anomalous messages no longer occur.

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2038</u>
741022		
TITLE: Changes to Network File Transfer Server		STATUS DATE
AUTHOR: D. M. Wells		Written 07/16/76
	THVV	Status <u>07/27/76</u>
		Expires 01/16/77
Planned for System: not applicable		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: yes		() 355
Coded In: (X) PL/I () ALM () other-see below		() 80S
Performance: () better (X) 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#) AN64	FTP protocol style documentation attached	(X) Runtime
Info Segs		() User Command/Subr
Other		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

- 1) Change File Transfer Protocol (FTP) server to understand about Network pseudo-channels of the form "ftpxxx".
- 2) Change FTP server to use newer interfaces to the Network Control Program (NCP).
- 3) Add experimental commands to allow requesting of dprints via FTP.

REASONS:

- 1) Changes are being made to the Answering Service to have special channels, whose normal name form is "ftpxxx", to be used for FTP. The current FTP server requires that the channels it uses be of the form "netxxx".
- 2) It is contemplated that there will be changes made in the calling sequences of the ring-zero gates to the NCP. The newer interfaces will not be changed, so most Network programs in the system are being changed to use these newer interfaces.
- 3) A particular Multics host is often used as a convenient printer driver for a network user who is using a system much farther away. Currently, these users must first transfer the data files using FTP, and then login again in order to dprint these data files. With the addition of these new commands, the users now can request the dprint from within the FTP environment. (The term experimental applied to these commands means that: 1) the command is not a standard network-wide command, and 2) the normal network user documentation will not include these commands.)

IMPLICATIONS:

- 1) The FTP server will continue to function with the new Answering Service changes.
- 2) The FTP server will continue to function when the interfaces to the NCP are changed.
- 3) The use of Multics as a local line printer driver will be more convenient.

DETAILED PROPOSAL:

- 3) Two new commands will be added to the FTP server: XDPR (Experimental Dprint Request), and XDPP (Experimental Dprint Parameter). The XDPP command will take parameters to allow the setting of all dprint and dpunch parameters, e.g., heading, destination, number of copies, etc.

for RIP server section of AN64

Daemon Printing Commands

Dprint Request (XDPR) - This command causes the submission of a request for background printing of a file. The argument to this command is the pathname of the file. The request is submitted with the dprint parameters currently in effect. The dprint parameters may be changed via the XDPP command.

Dprint Parameter (XDPP) - This command changes the characteristics of the delayed printing requested via the XDPR command. Upon initial connection, a set of default parameters are in effect. Each invocation of this command changes one parameter which is in effect for all future dprint requests (unless superseded by a subsequent command to change the parameter). This command requires one or two arguments -- the first is the name of the parameter to be changed, the second, if required, is the new value of that parameter. The following parameter codes are recognized:

- RSET - reset all values to the initial defaults (no parameter value is required).
- BLBL - set the bottom label (parameter is character string)
- CARR - set the carriage control field (parameter is ASCII bit-string of carriage control field).
- COPY - set the number of copies to be produced (parameter is ASCII decimal number).
- DEST - set the destination field (parameter is character string).
- DTYP - set the device type (parameter is ASCII decimal number).
- FORM - set the forms type (parameter is character string).
- HEAD - set the heading field (parameter is character string).
- LLEN - set the line length (parameter is ASCII decimal number).
- MARG - set the left margin width (parameter is ASCII decimal number).
- OUTM - set the outer module type (parameter is ASCII decimal number).
- PLEN - set the page length (parameter is ASCII decimal number).
- QUEUE - set the priority queue level (parameter is ASCII decimal number).
- RTYP - set the request type (parameter is character string).
- TLBL - set the top label (parameter is character string)

Command Forms:

The forms for these commands are as follows:

X DPR <pathname> CRLF

X DPP <parameter type> <parameter value> CRLF

Command-Reply Correspondence Table

COMMAND	SUCCESS	REPLY
X DPP	200	500-506
X DPR	200	451,500-506

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2029</u>
741022		
TITLE: Addition of Special Dialup Module to Handle FTP Channels		STATUS DATE
AUTHOR: D. M. Wells & R. P. Planalp		Written 07/16/76
	THVV	Status 07/27/76
		Expires 01/16/77
Planned for System: not applicable		
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: (X)PL/I ()ALM ()other-see below		() 355
Performance: ()better (X)same ()worse		() BOS
		() Salvager
DOCUMENTATION CHANGES (specify one or more)		() Ring Zero
MPM (vol,sect) MPAM (sect)		() Ring One
MOSN (sect) MSAM (sect)		(X) SysDaemon/Admin
PLMs (AN#) AN64	<i>Draft documentation changes attached</i>	() Runtime
Info Segs		() User Command/Subr
Other		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

Create a new module (ftp_dialup_) to handle FTP service type channels. Finish implementation of FTP service type channels.

REASON:

Currently, File Transfer Protocol (FTP) is handled by performing a transmogrification inside the Network portion of the Answering Service. Obviously, this scheme is subject to gross failure if the normal Answering Service messages are changed -- whether because of system changes or because a local site has chosen to alter the messages in as_error_table_.

It has long been thought that it would be desirable to have a separate module (parallel to dialup_) that would understand the FTP language directly. This change will perform an initial part of this functionality -- there will exist a module parallel to dialup_, but it will continue to use a language very similar to that used by dialup_. A later change will change ftp_dialup_ to talk the FTP language directly. This procedure of installing the FTP Answering Service function in two phases has a couple of benefits:

- 1) Most changes to device interfaces have been done and other work in other areas (e.g., MCS changes for MR 5.0) can proceed without interference,
- 2) The creation of special channels to handle FTP service allows system administrators to explicitly disallow FTP service if they so desire (as is sometimes the case during special sessions in which users are allowed to log in),

- 3) The exposure of this system with the transmogrification still being performed allows us to verify the operation of the accompanying network software when it is distributed to RAOC to run with earlier system releases.

IMPLICATIONS:

It should be noted that there are NO changes in the interface to the normal Answering Service. All changes (see attached draft documentation for Operators and System Administrators) are seen only at ARPA Network Multics sites.

As stated above, the local interference of work within the Answering Service is reduced by this change.

DETAILED PROPOSAL:

- 1) Add a module ftp_dialup_.pl1, which is very similar to the current dialup_.pl1.
- 2) Change asu_.pl1 to set this new module as the Answering Service module for channels with service type FTP_SERVICE.
- 3) Change admin.pl1 to allow operators to manipulate FTP channels with the normal "attach", "remove", etc., commands.
- 4) Change miscellaneous modules throughout the aAS to recognize "ftpxxx" channels as valid terminal channels.
- 5) Change system administration tools to understand about FTP channels and treat them much the same way that normal network channels are treated.

changes for AN 64 - SAM section

name statement:

The channel names for Network pseudo-channels has a three-letter prefix, describing the channel type (e.g., "net", "ftp"), and then three numbers which specify a network "userid". Only one network channel may have a particular userid. (For example, either channel "net034" or channel "ftp034" may exist, but not both simultaneously.) The network userids must be in the range 1 to 511, inclusive. Thus channel net000 or net512 may not be created.

service statement:

The service statement is optional. The default is "login" meaning that only normal logins are allowed.

An additional service type of "ftp" is allowed for network channels. Channels with this service type may be used by a user at a foreign network host to create a process on Multics to transfer data using the ARPA Network File Transfer Protocol (FTP). If there are no network channels with this service type, then users at other network hosts can not create Multics processes to transfer data; also, users at other network hosts may not send mail to local Multics users.

Example

The following is an example of a CMF which includes nnetwork pseudo-channels:

```
/* Channel Master File for a (very) small system which */
/* includes an ARPA Network attachment. */

/* Created 05/28/75 */

name: tty000; attributes: hardwired;
      comment: " 300 - hardwired initializer "; service: mc;
name: tty001; comment: " 300 - 555-1267";

name: net001; line_type: Network; charge: network;
name: net002; line_type: Network; charge: network;

name: ftp101; line_type: Network; charge: network;
      service: ftp;
name: ftp102; line_type: Network; charge: network;
      service: ftp;

end;
```

In AN 64 operator AS Command section.

not applicable to this NCR

INTRODUCTION

ANG4
The function of this section of the Network Program Logic Manual is to provide a supplement to the Multics Operator's Handbook (A???) for Multics sites that are connected to the ARPA Network. The Multics software for interfacing the ARPA Network is currently maintained by the MIT Laboratory for Computer Science rather than by Honeywell Information Systems, Inc.

Answering Service Commands

attach

There are two additional types of channels which be be attached. Attachments with the name "netxxx" will attach channels so that users can log in to Multics from other ARPA Network hosts. Attachments with the name "ftpxxx" will attach channels so that users can log in to Multics to transfer files (segments) to and from Multics.

for AS messages section of AN64

MISCELLANEOUS MESSAGES

Error detected in ftp_dialup_! event calls were masked

Source: sc (user_output)

Time: While the system is running.

Meaning: This message indicates a serious error in the
Initializer programs. The system attempts to recover
and keep running.

Action: Notify the programming staff.

ANSWERING SERVICE MESSAGES

ftp_dialup_! channel definition table garbaged at XXX!YYY

Source: as (severity3)

Time: While the system is running.

Meaning: A bad value has been found in the cdt. This may
be the result of a store error, a programming
error, or a bad patch. This is a fatal error that
causes the initializer to crash.

Action: First perform a dump, then a bootload operation.
If the error occurs again, contact the system
programming staff.

ftp_dialup_! called while ansp = null

Source: as (severity2)

Time: While the system is running.

Meaning: A programming error in the Answering Service or an
incorrect library installation has caused the
Answering Service to be called before being
initialized. The system will ignore the error and
attempt to continue.

Action: Shut down the system and perform a bootload
operation.

ftp_dialup_: called with bad ptr XXXIYYY by WWWWXXXXXXXXXX

Source: as (severity2)

Time: While the system is running.

Meaning: A programming error in the interprocess communication system or the Answering Service itself has occurred. An invalid message pointer has been passed to the Answering Service. The system ignores the message and attempts to continue. This message may be the result of an incorrect library installation.

Action: Shut down the system and perform a bootload operation.

ftp_dialup_: called with null message ptr

Source: as (severity2)

Time: While the system is running.

Meaning: A programming error in the interprocess communication system or the Answering Service itself has occurred. An invalid pointer has been passed to the Answering Service. The system ignores the message and attempts to continue. This message may be the result of an incorrect library installation.

Action: Shut down the system and perform a bootload operation. Inform the system programming staff.

ftp_dialup_: Entry not found. as_error_table_

Source: as (severity2)

Time: During system startup.

Meaning: The segment as_error_table_ could not be located. Many informative messages normally typed to users can not be typed to them. This message may be the result of an incorrect library installation.

Action: Inform the system administrator.

ftp_dialup_: Entry not found. ftp_as_

Source: as (severity2)

Time: During system startup.

Meaning: The segment ftp_as_ is missing. This segment contains data about File Transfer Protocol (FTP) logins. The system will be unable to create processes for File Transfer, but will otherwise continue normally.

Action: Inform the system administrator.

ftp_dialup_: Entry not found. login_help

Source: as (severity1)

Time: During system startup.

Meaning: The segment login_help is missing. The ftp_dialup_ procedure types the contents of this segment to a user if he cannot determine how to log in. The system runs normally but nothing is printed out if a user types help instead of login.

Action: Inform the system administrator.

ftp_dialup_: Error CONDITION TTYxxx NAME.PROJ IDCOD N

Source: as (severity2)

Time: While the system is running.

Meaning: A supervisor error has prevented the user NAME.PROJ from being logged in or out successfully. The user's wait point is N. If N is 8, the user was trying to log out. If N is less than 8, the user was trying to log in. The user got the message "hangup" and his phone hung up. All system tables were salvaged as far as possible, an Answering Service dump was performed, and the Answering Service attempted to continue.

Action: Note the error for system administrator or programming staff action. If this message comes up on every login and logout, it is probably wise to shut the system down and perform a bootload operation.

ftp_dialup_: ERROR_MESSAGE. creating proc for NAME.PROJ

Source: as (severity2).

Time: While the system is running.

Meaning: The system was unable to create a process for the user with name NAME and project PROJ.

Action: If possible, get in touch with the user. (He got a message to contact you.) Ask him to try again and to tell you of any peculiarities of his login. Note all particulars and contact the programming staff.

ftp_dialup_: fatal error during process creation for NAME.PROJ
TTYxxx

Source: as (severity1)

Time: While the system is running.

Meaning: The system encountered an error while creating a process for the user with name NAME and project PROJ.

Action: If this message recurs, inform the system programming staff.

ftp_dialup_: terminating fatal process error loop for NAME.PROJ
TTYxxx

Source: as (severity1)

Time: While the system is running.

Meaning: The user with name NAME and project PROJ appears to be in a loop whereby he is getting his process terminated before he can do any useful work. He has been given a message to contact the system programmers.

Action: If the user should call you, get the particulars of his login attempt and notify the system programmers.

ftp_dialup_: ttydim error, removing chn TTYxxx

Source: as (severity2).

Time: While the system is running.

Meaning: A supervisor error has caused channel TTYxxx to be unusable. It has been removed from the list of known channels.

Action: Inform the system programming staff. An attach TTYxxx command can be tried; if the channel is to be left detached, busy out the modem.

ftp_dialup_: Ignored FFFFFFFF for TTYxxx N M

Source: as (severity2).

Time: While the system is running.

Meaning: A spurious signal has arrived from some terminal. The state of the channel is N and the wait point is M.

Action: Inform the programming staff if the message recurs.

ftp_dialup_: Ignored FFFFFFFF from NAME.PROJ for TTYxxx N m

Source: as (severity2)

Time: While the system is running.

Meaning: A spurious signal from user NAME.PROJ has arrived for channel TTYxxx. The state of the channel is N and the wait point is M.

Action: This may be some user trying to disrupt the system. Do a who and save it for the programming staff.

ftp_dialup_: trace event TTYxxx FFFFFFFF WWWWWWWWWW
RRRRRRDDDDDD SS XXXX st N wp M

Source: as (severity1)

Time: While the system is running.

Meaning: This is trace output. When net_as_\$ftp_dial_loud is called, these messages are printed out for every signal concerning a device channel. FFFFFFFF is the function being performed. WWWWWWWWWW is the sending process ID. RRRRRR is the ring origin of the signal. DDDDDD is the device signal information. The pointer SS XXXX

locates the cdt entry for TTYxxx. The channel state is N and the wait point is M.

Action: No operator action is required. To turn these messages off, type net_as_\$ftp_dial_soft while in admin mode.

ftp_dialup: wrong answerback on TTYxxx; expected "ID1", got "ID2"

Source: as (severity2)

Time: While the system is running.

Meaning: The terminal dialed to the Initializer process on channel TTYxxx is restricted to a specific answerback and did not return the expected value. ID1 is the answerback expected; ID2 is the answerback actually received. The terminal is hung up.

Action: No operator action is required.

TITLE: Install Ring 0 Support for New Volume Dumping Facility
 AUTHOR: D. Vinograd

STATUS	DATE
Written	07/20/76
Status	A 07/27/76
Expires	01/27/77

-Coded in: PL/I ALM other-
 explain in DETAILED PROPOSAL
 -Planned for System MR 5.0
 -Fixes Bug Number(s) _____
 -Documented in MTB 232
 -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 Cmnd/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 of Proposal, Reasons for Proposal, Implications, Detailed Proposal.

SUMMARY:

This MCR does not install the new volume dumper, only those changes necessary in Ring 0 to support it. These consist of

- the maintenance of per volume bit maps which specify what VTOC entries are to be dumped.
- specialized support for a dumper process during seg fault and process destruction.
- a method to allow activation of an object without activating its parent.

REASONS:

The volume dumping facility is planned for system 5.0. With this facility installed testing can be conducted during normal system operation rather than during boot load time exclusively and thus allow the facility to be exposed at MIT that much sooner.

DETAILED PROPOSAL:

The dump control bit maps, mentioned above are maintained by the system in a manner similar to the individual volume maps. The bit maps for each volume are allocated in paged ring 0

data base, dbm.seg at the same time the volume map is copied into the fsdct. It is updated at update_v~~time~~ time if the segment has been modified. Bits are reset by the dumping mechanism. The maps can easily be reset to "0"b at any time by running a dump pass with no output. All dumper access to ring 0 is through the new gate, hc_backup_. This will allow MIT operations to easily control access to the new facility during the test period.

IMPLICATIONS:

No changes to any user interface or operation procedures will result from this installation.

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2041</u>
741022		
TITLE: Send message to administrator about table installation.		STATUS DATE
AUTHOR: VanVleck		Written 07/13/76
	JW6	Status 07/27/76
		Expires 01/13/77
Planned for System: not applicable		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: yes		() 355
Coded in: <input checked="" type="checkbox"/> PL/I () ALM () other-see below		() 80S
Performance: () better <input checked="" type="checkbox"/> same () worse		() Salvager
DOCUMENTATION CHANGES (specify one or more)		() Ring Zero
MPM (vol,sect) MPAM (sect)		() Ring One
MOSN (sect) MSAM (sect)		<input checked="" type="checkbox"/> SysDaemon/Admin
PLMs (AN#) 66		() Runtime
Info Segs		<input checked="" type="checkbox"/> User Command/Subr
Other		
OBJECTIONS/COMMENTS:		
	Documentation needs to be updated.	

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

SUMMARY:

Currently, when a system or project administrator installs a system table, the install command establishes an event channel and an event-call handler which responds to a wakeup from the initializer when the table is installed. Replace this mechanism with a call to send_mail_ so that the administrator gets a regular inter-user message.

REASONS:

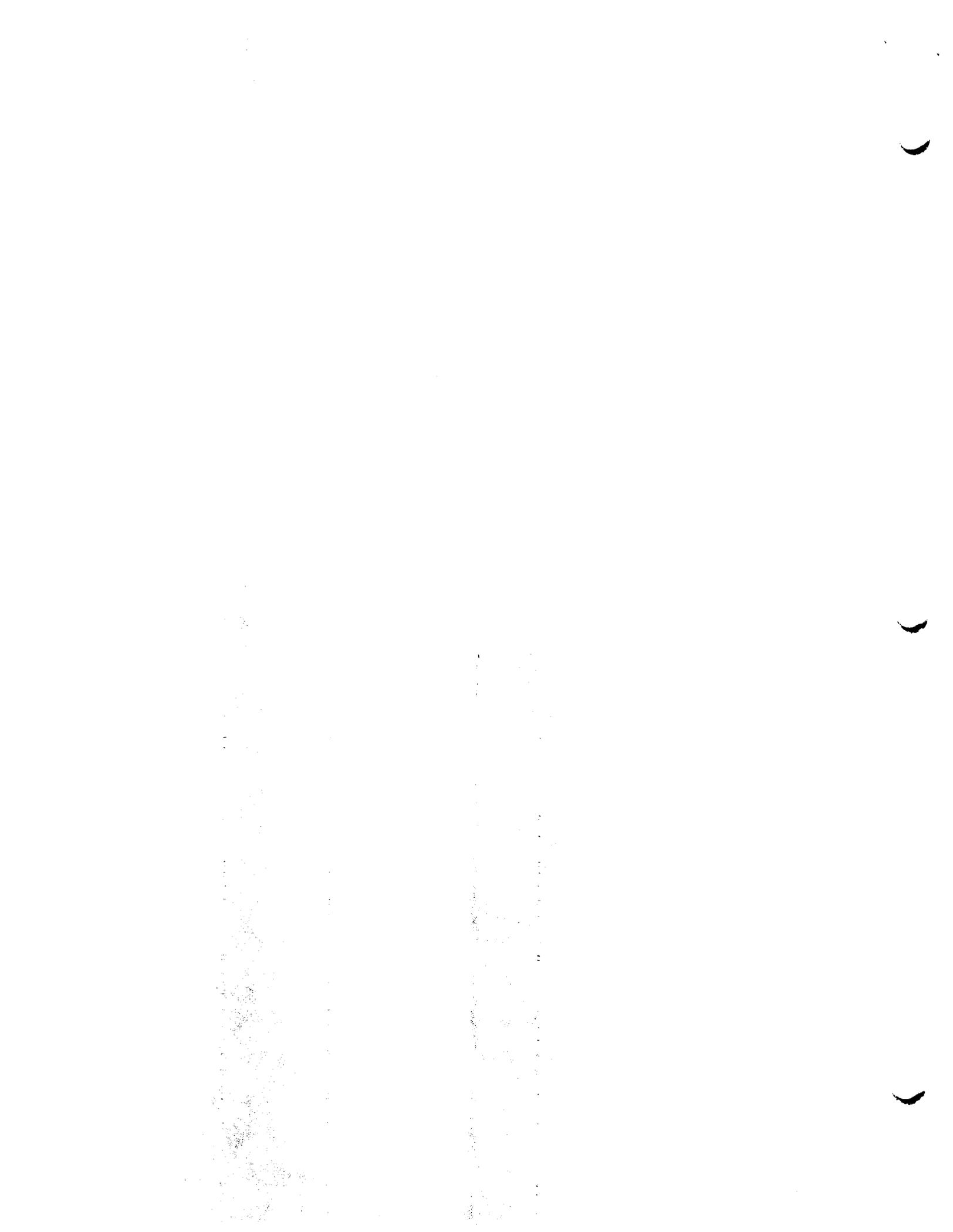
This change will allow the notification to be made even if the administrator logs out or does a new_proc.

If errors prevent the installation, the error message typed online can be sent to the administrator, providing more information than the current interface, which allows only an integer error code. The name of the segment installed can also be placed in the message.

IMPLICATIONS:

This change is visible but nothing should stop working.

Administrators will get more, and more explicit, messages -- which should please them.



Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2042</u>
TITLE: Use message facility for user warnings if possible.		STATUS: <u>Written</u> DATE: <u>07/13/76</u>
AUTHOR: VanVleck		Status: <u>A07/13/76</u>
		Expires: <u>01/13/77</u>
Planned for System: not applicable		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: yes		() 355
Coded in: (X) PL/I () ALM () other-see below		() 80S
Performance: () better (X) same () worse		() Salvager
DOCUMENTATION CHANGES (specify one or more)		() Ring Zero
MPM (vol,sect)	MPAM (sect)	() Ring One
MOSN (sect)	MSAM (sect)	(X) SysDaemon/Admin
PLMs (AN#) 66		() Runtime
Info Segs		() User Command/Subr
Other		
OBJECTIONS/COMMENTS:		
Document in MPM Ref Guide		

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

SUMMARY:

There are several cases now where the answering service sends a user process a "warning" by seizing the user terminal and writing on it. Change all such cases to try to send the user a message via the message facility first. Write on the user terminal only if no mailbox exists for the user.

REASONS:

- Writing on the user's terminal from the answering service has many drawbacks.
- o Added complexity is needed in the tty dim.
 - o If the user has changed type ball or code table, or is running a plotter or graphic device, the message is garbled.
 - o Inserting the message into user output may spoil a page of output.

The -no_warning login argument shuts these messages off; but it is effective for a whole session only.

IMPLICATIONS:

This change is user-visible but no program can depend on it.
Making this change will encourage users to have .mbx segments.

At a future time we can propose removing the old way of sending warnings
and -no_warning mode.

pending_changes.info

Answering service! will be changed to send warning messages via Inter-user message facility if .mbx segment exists.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2043</u>
TITLE: Set flag when doing manual RTB		STATUS DATE
AUTHOR: VanVleck	NIM	Written 07/14/76
		Status 07/15/76
		Expires 01/14/77
Planned for System: not applicable		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		() 355
Coded in: <input checked="" type="checkbox"/> PL/I () ALM () other-see below		<input checked="" type="checkbox"/> BOS
Performance: () better <input checked="" type="checkbox"/> same () worse		() Salvager
<u>DOCUMENTATION CHANGES (specify one or more)</u>		<input checked="" type="checkbox"/> Ring Zero
MPM (vol,sect) MPAM (sect)		() Ring One
MOSN (sect) moh MSAM (sect)		() SysDaemon/Admin
PLMs (AN#)		() Runtime
Info Segs		() User Command/Subr
Other		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

Change BOS toehold and hardcore program call _bos to set toehold flag 5 ON.

REASONS:

If BOS is entered intentionally, the unattended-operation RUNCOM should not take a dump or reboot.

Currently there is no way to distinguish between crashes and intentional operations or manual returns.

IMPLICATIONS:

The RUNCOM will print a message and await instructions if it is entered manually. Resetting the flag is the responsibility of the RUNCOM.

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2045</u>
741022		
TITLE: Extend message facility.		STATUS DATE
AUTHOR: VanVleck	MSG	Written 07/16/76
		Status 07/27/76
		Expires 01/16/77
Planned for System: not applicable		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		() 355
Coded in: (X) PL/I () ALM () other-see below		() BOS
Performance: () better (X) same () worse		() Salvager
		() Ring Zero
<u>DOCUMENTATION CHANGES (specify one or more)</u>		() Ring One
MPM (vol,sect) comm MPAM (sect)		() SysDaemon/Admin
MOSN (sect) MSAM (sect)		() Runtime
PLMs (AN#)		(X) User Command/Subr
Info Segs		
Other		
OBJECTIONS/COMMENTS:		

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

SUMMARY: Add a new mode to the operation of accept_messages useful for users who do not wish to have messages deleted as soon as they are printed.

Add new control arguments to accept_message to prefix output by a given string or to pass the output to a program instead of printing it.

REASONS:

Users of small-screen terminals or those who encounter many terminal transmission errors may wish to have messages held until they explicitly acknowledge that they have been read.

Consultants and operators who may be required to act upon messages sent to them need an operational mode in which the request remains "pending" until an action is taken to satisfy it.

The -prefix option allows users to place a specified character string before each message printed. This will help Network users, since the Network does not provide a newline before interrupted input the way the TTY dim does. If more complex formatting operations are wanted, they can be handled by -call.

DETAILED PROPOSAL:

Add the new options to `accept_message`

- hold
- nohold
- flush TIME
- time N
- call commandline
- prefix STRING

If either `-hold` or `-time` is specified, do not delete messages when they are printed, and print in a slightly different format, giving an identifying number with each message.

If `-call` is specified, execute

```
commandline NUMBER SENDER TIME MESSAGE
```

instead of printing.

Provide a new command, `delete_message (dim)`, to delete a message by number.

If `-time` is specified, print undeleted messages every N minutes, preceded by a message on error_output of the form:

```
You have 6 messages
```

The `-flush` mode is specifically for operator and consultant use. It causes messages sent before the time specified to be discarded.

`-prefix STRING` puts STRING in front of all messages typed out by the interrupt handler. The string may be up to 12 characters long, and may contain `loa_` control strings `~/ ~!` and `~-` if desired.

`-nohold` resets hold mode.

Several bugs have been fixed in argument handling and it is now possible to accept messages on multiple message segments.

07/15/76 accept_messages, am

Function: initializes or reinitializes the segment named Person_id.mbx in the user's home directory for accepting messages.

Syntax: am -control_args-

Control arguments:

- brief, -bf does not inform the user when creating a mbx
- long precedes every message with the sender's Person_id and Project_id (default).
- print prints all messages sent since the last time the user was accepting messages.
- short causes repeated messages from the same sender to be preceded by "=1" instead of the Person_id and Project_id.
- hold hold messages until explicitly deleted (see dim.info)
- prefix SSSS prefix all messages by string SSSS (12 chars, ~/ ok)
- time TT set hold mode and print undeleted messages every TT mins
- pathname PATH, -pn PATH use PATH as a mbx
- call COMM instead of printing execute COMM num time message
- flush DT discard all messages sent before time DT

07/15/76 delete_message, dim

Function: delete a message sent by send_message which is held in a .mbx segment because am -hold was used.

Syntax: delete_message mesno

Arguments: mesno is a message number

Control arguments: -all deletes all held messages

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2046</u>
TITLE: Fix bugs in help	JWG	STATUS: <u>DATE</u> <u>Written</u> : 07/16/76 <u>Status</u> : <u>A07/07/76</u> <u>Expires</u> : 01/16/77
AUTHOR: VanVleck		
Planned for System: not applicable		
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: <input checked="" type="checkbox"/> PL/I () ALM () other-see below		() 355
Performance: () better <input checked="" type="checkbox"/> same () worse		() BOS
		() 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		<input checked="" type="checkbox"/> User Command/Subr
Other		
None (reason) bug fix		
OBJECTIONS/COMMENTS:		

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

SUMMARY:

1. If segment not found, say "type help for instructions"
2. call com_err_ to report incorrect access errors.
3. Fix help -title to find first title.
4. Replying "foo" to the more help query can get "foo request invalid for old style info segment" which is true but misleading. Make it say "foo request invalid."

REASONS:

Users complain.

Ver. 3 741022	MULTICS CHANGE REQUEST	MCR <u>2047</u>
TITLE: Allow directory quota moves involving master directories.		STATUS: <u>DATE</u> <u>Written</u> : 07/19/76 <u>Status</u> : <u>A07/07/76</u> <u>Expires</u> : 01/19/77
AUTHOR: VanVleck	JWG	
Planned for System: not applicable		
Fixes Bug Number(s): not applicable		
Documented in MTB: not applicable		
Incompatible Change: no		
User/Operations-visible Interface Change: no		
Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other-see below		
Performance: <input type="checkbox"/> better <input checked="" type="checkbox"/> same <input type="checkbox"/> worse		
<u>DOCUMENTATION CHANGES (specify one or more)</u>		
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:

Allow directory quota to be moved regardless of the master directory switch.

REASONS:

Currently an error code is returned if an attempt is made to move directory quota down to or up from a master directory. This operation should be allowed for directory quota because all directory quota refers to the same volume, the RLV.

IMPLICATIONS: none

Ver. 3 741022	MULTICS CHANGE REQUEST	SHW	MCR <u>2049</u>
TITLE: Fix Bug in prelink_parse_.		STATUS	DATE
AUTHOR: Richard Bratt		Written	07/21/76
		Status	<u>A07/27/76</u>
		Expires	01/21/77
Planned for System: not applicable		CATEGORY (check one)	
Fixes Bug Number(s): not applicable		<input type="checkbox"/> Lib. Maint. Tools	
Documented in MTB: not applicable		<input type="checkbox"/> Sys. Anal. Tools	
Incompatible Change: no		<input type="checkbox"/> Sys. Prog. Tools	
User/Operations-visible Interface Change: no		<input type="checkbox"/> 355	
Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other-see below		<input type="checkbox"/> BOS	
Performance: <input type="checkbox"/> better <input checked="" type="checkbox"/> same <input type="checkbox"/> worse		<input type="checkbox"/> Salvager	
DOCUMENTATION CHANGES (specify one or more)		<input type="checkbox"/> Ring Zero	
MPM (vol,sect)	MPAM (sect)	<input type="checkbox"/> Ring One	
MOSN (sect)	MSAM (sect)	<input type="checkbox"/> SysDaemon/Admin	
PLMs (AN#)		<input type="checkbox"/> Runtime	
Info Segs		<input checked="" type="checkbox"/> User Command/Subr	
Other			
None (reason)	bug fix		
OBJECTIONS/COMMENTS:			

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

SUMMARY: If the last end statement is omitted from a pldt, prelink_parse_ while trying to resume the parse, accidently loops, running pldt.list up to 256K (quota permitting), producing error messages. Fix it.

TITLE: Update legal_f_	STATUS	DATE
AUTHOR: S. Barr	Written	07/20/76
	Status	A 07/27/76
	Expires	01/27/77

-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL -Planned for System MR 5.0 -Fixes Bug Number(s) _____ -Documented in MTB _____ -User/Operations-visible Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same <input type="checkbox"/> Worse -Replaces MCR _____	Category (Check One)	
	<input type="checkbox"/> Lib. Maint. Tools <input type="checkbox"/> Sys. Anal. Tools <input type="checkbox"/> Sys. Prog. Tools <input type="checkbox"/> 355 <input type="checkbox"/> BOS <input type="checkbox"/> Salvager <input type="checkbox"/> Ring Zero <input type="checkbox"/> Ring One <input type="checkbox"/> SysDaemon/Admin. <input checked="" type="checkbox"/> Runtime <input type="checkbox"/> User Cmmnd/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 of Proposal, Reasons for Proposal, Implications, Detailed Proposal.

SUMMARY:

The procedure legal_f_ performs validity checks on a stack frame pointer. Some of these checks are obsolete. Since a logical stack may be composed of several segments, the procedure should be rewritten.

PROPOSAL:

The new version will check that the current, previous and next stack frames are at modulo 16 words locations.

If the current frame and the next frame are in the same segment, it will check that the next frame follows the current one. A similar check will be made for the previous stack frame.

Ver. 3	MULTICS CHANGE REQUEST	MCR <u>2051</u>
741022		
TITLE: Increased User Control over Terminal Behavior		STATUS DATE
AUTHOR: Robert S. Coren		Written 07/15/76
	MJG	Status 07/27/76
		Expires 01/15/77
Planned for System: MR 5.0		
Fixes Bug Number(s): not applicable		CATEGORY (check one)
Documented in MTB: 290		() Lib. Maint. Tools
Incompatible Change: no		() Sys. Anal. Tools
User/Operations-visible Interface Change: yes		() 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) SWG MPAM (sect)		() Ring One
MOSN (sect) MSAM (sect)		() SysDaemon/Admin
PLMs (AN#)		() Runtime
Info Segs		() User Command/Subr
Other		
OBJECTIONS/COMMENTS:		

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

SUMMARY: Add new order calls to tty_DIM as described in MTB 290.

REASONS: These features have been planned (and desired) for a long time.

IMPLICATIONS: Users will have an additional way to wreck their own processes (by providing the hardcore tty_DIM with bad tables).

DETAILED PROPOSAL: See MTB 290.

From: Robert S. Coren
 To: MCR Board Members
 Date: 07/22/76
 Subject: Supplement to MCRs 2051/2052

RECEIVED

JUL 26 1976

C. T. CLINGEN, CISL

It is proposed to eliminate the division of 512 in the delay calculations, and use floating point arithmetic for the per-column factors instead. Accordingly, the structure passed with the "set_delay" order (as described in MTB 290) would be like this:

```
dcl 1 delay based aligned,
    2 version fixed bin,
    2 default fixed bin,
    2 vert_nl fixed bin,
    2 horz_nl float bin,
    2 const_tab fixed bin,
    2 var_tab float bin,
    2 backspace fixed bin,
    2 vt_ff fixed bin;
```

version, default, vert_nl, const_tab, backspace, nad vt_ff are as described in MTB 290.

horz_nl is a number to be multiplied by the column position to obtain the number of delays to be added for the carriage return portion of a newline. The formula for calculating the number of delay characters to be output following a newline is:

$$ndelays = vert_nl + fixed (horz_nl * column)$$

var_tab is the number of additional delays associated with a horizontal tab for each column traversed. The formula for calculating the number of delays to be output following a horizontal tab is:

$$ndelays = const_tab + fixed (var_tab * n_columns)$$

The interpretation of the second and fourth values provided with the -delay control argument to set_tty is also changed in accordance with the above description.

TITLE: Revise translator bind orderings	STATUS	DATE
AUTHOR: R. Mullen TVV	Written	07/15/76

-Coded in: <input type="checkbox"/> PL/I <input type="checkbox"/> ALM <input checked="" type="checkbox"/> other- explain in DETAILED PROPOSAL -Planned for System MR <u>5.0</u> -Fixes Bug Number(s) _____ -Documented in MTB _____ -User/Operations-visible Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no -Performance: <input checked="" type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse -Replaces MCR _____	Category (Check One) <input type="checkbox"/> Lib. Maint. Tools <input type="checkbox"/> Sys. Anal. Tools <input type="checkbox"/> Sys. Prog. Tools <input type="checkbox"/> 355 <input type="checkbox"/> BOS <input type="checkbox"/> Salvager <input type="checkbox"/> Ring Zero <input type="checkbox"/> Ring One <input type="checkbox"/> SysDaemon/Admin. <input type="checkbox"/> Runtime <input checked="" type="checkbox"/> User Cmnd/Subr.	Expires <u>01/20/77</u> Status <u>A 07/27/76</u> DOCUMENTATION CHANGES Document Specify One or More <input type="checkbox"/> MPM (Vol, Sect.) <input type="checkbox"/> PLMS (AN #) <input type="checkbox"/> MOSN (Sect.) <input type="checkbox"/> MPAM (Sect.) <input type="checkbox"/> MSAM (Sect.)
--	--	--

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

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

SUMMARY:

Install new bindfiles for translators with Order statements modified to reduce paging on translator object segments.

REASONS:

Bindfiles generated by an experimental bind optimizing program are available. Indications are that object segment paging will be reduced by about 15%.

IMPLICATIONS:

These bindfiles are not sensitive to module length. If care is not taken in the placement of new modules additional paging overhead will be merely local.

DETAILED PROPOSAL:

Only the Order statement is changed.

Multics Change Request

TITLE: Fix bug in ms_delete_acl		STATUS	DATE
AUTHOR: S. Herbst		JWG	
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> AIM <input type="checkbox"/> other- explain in DETAILED PROPOSAL		Written	07/14/76
-Planned for System MR 5.0		Status	A 07/27/76
-Fixes Bug Number(s)		Expires	01/27/77
-Documented in MTB		DOCUMENTATION CHANGES	
-User/Operations-visible		Document	Specify One or More
Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		MPM (Vol, Sect.)	
-Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		PLMS (AN #)	
-Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same		MOSN (Sect.)	
<input type="checkbox"/> Worse		MPAM (Sect.)	
-Replaces MCR		MSAM (Sect.)	
Objections/Comments:		Info Segs	
		Other (Name)	
		None (Reason)	doc. ok

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

SUMMARY:

Fix bug in ms_delete_acl and mbx_delete_acl, when using star convention with no access arguments (delete caller from ACL), that causes a reference through null pointer.

TITLE: Fix delete_ again		STATUS	DATE
AUTHOR: S. Herbst		Written	07/14/76
JWG		Status	A 07/27/76
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> AIM <input type="checkbox"/> other- explain in DETAILED PROPOSAL		Expires	01/20/77
-Planned for System MR 5.0		DOCUMENTATION CHANGES	
-Fixes Bug Number(s) _____		Document	Specify One or More
-Documented in MTB _____		355	
-User/Operations-visible		BOS	
Interface change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Salvager	MPM (Vol, Sect.)
-Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Ring Zero	PLMS (AN #)
-Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same		Ring One	MOSN (Sect.)
<input type="checkbox"/> Worse		SysDaemon/Admin.	MPAM (Sect.)
-Replaces MCR _____		Runtime	MSAM (Sect.)
		X User Cmnd/Subr.	
Objections/Comments:		Info Segs	
		Other (Name)	
		None (Reason)	DOC. O.K.

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

SUMMARY:

Fix delete_ when deleting a directory to delete message segments and mailboxes inside it that have the safety and copy switches on.

REASON:

Should force deletion of entries in a subtree being deleted.

Multics Change Request

TITLE: Change do interface for setting modes		STATUS	DATE
AUTHOR: S. Herbst		JWG	
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL		Written	07/14/76
-Planned for System MR 5.0		Status	A 07/27/76
-Fixes Bug Number(s)		Expires	01/20/77
-Documented in MTB		DOCUMENTATION CHANGES	
-User/Operations-visible Interface change? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		Document	Specify One or More
-Incompatible change? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		MPM (Vol, Sect.)	AG92
-Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same <input type="checkbox"/> Worse		PLMS (AN #)	
-Replaces MCR		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:

Change the do command to accept any number of control arguments when changing modes.

REASON:

Interface is more general and easier to remember. Currently, "do -bf -nogo" changes mode to brief but not to nogo, and does not complain about the extra control argument.

do

do

Modes

The do command has three modes, the long/brief mode, the nogo/go mode, and the absentee/interactive mode. These modes are kept in internal static storage and are thus remembered from call to call within a process. The modes are set by invoking the do command as follows:

modes
do ~~mode~~

modes are among
where ~~mode is one of~~ the following: -long (-lg), -brief (-bf), -nogo, -go, -absentee, or -interactive.

If the long/brief mode is long, then the expanded command line is printed on error_output before it is executed or passed back. If the long/brief mode is brief, then the command line is not printed. The default for this mode is brief.

If the nogo/go mode is nogo, then the expanded command line is not passed to the command processor for execution. If the nogo/go mode is go, then the expanded line is passed to the command processor (if the do command was invoked as a command). If do is invoked as an active function, then the nogo/go mode is ignored. The default for this mode is go.

If the absentee/interactive mode is absentee, then the do command establishes an on unit for the any_other condition during the execution of the expanded command line. This is mainly of use in an absentee environment, in which any invocation of the default any_other on unit terminates the process. In the absentee mode, any signal caught by do merely terminates execution of the command line, not the process. A number of conditions, however, are not handled by do but are passed on for their standard Multics treatment; they are cput, alm, quit, program_interrupt, command_error, command_query_error, command_question, and record_quota_overflow. (For a description of these conditions see "List of System Conditions and Default Handlers" in Section VI of the MPM Reference Guide.) If the absentee/interactive mode is interactive, then do does not catch any signals. The default for this mode is interactive.

Quote-Doubling and Requoting

In addition to the parameter designators &1 ... &9, the do command also recognizes two more sets of parameter designators. They are &q1 ... &q9, to request quote-doubling in the actual argument as it is substituted into the expanded command line, and &r1 ... &r9, to request that the actual argument be requoted as well as have its quotes doubled during substitution.

Quote-doubling can be described as follows. Each parameter designator in the command_string to be expanded is found nested a certain level deep in quotes. If a designator is found to not be within quotes, then its quote-level is zero; if it is found between a single pair of quotes, then its quote-level is one; and so on. If the parameter designator &q_i is found nested to quote-level L, then, as control_arg_i is substituted into the expanded command line each quote character found in control_arg_i is replaced by 2**L quote characters during insertion. This permits the quote character to survive the

Multics Change Request

TITLE: Implement unlink -force		STATUS	DATE
AUTHOR: S. Herbst		JWG	
-Coded in: <input checked="" type="checkbox"/> PL/I <input type="checkbox"/> ALM <input type="checkbox"/> other- explain in DETAILED PROPOSAL		Written	07/20/76
-Planned for System MR 5.0		Status	A 07/27/76
-Fixes Bug Number(s) _____		Expires	01/27/77
-Documented in MTB _____		DOCUMENTATION CHANGES	
-User/Operations-visible		Document	Specify One or More
Interface change? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		MPM (Vol, Sect.)	AG92
-Incompatible change? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		PLMS (AN #)	
-Performance: <input type="checkbox"/> Better <input checked="" type="checkbox"/> Same		MOSN (Sect.)	
<input type="checkbox"/> Worse		MPAM (Sect.)	
-Replaces MCR _____		MSAM (Sect.)	
Objections/Comments:		Info Segs	
		Other (Name)	
		None (Reason)	

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

SUMMARY:

Implement the -force control argument to the unlink command.
"unlink foo** -force" does not query the user before un-
linking all links in foo.

IMPLICATION:

Incompatible change. Will no longer be able to unlink a
link named "-force". The user can always rename such a link.

unlink

unlink

Name: unlink, ul

The unlink command deletes the specified link entry. For a discussion of links see "Segment, Directory, and Link Attributes" in Section III of the MPM Reference Guide.

Usage

unlink paths *-control_arg-*

where: paths specify storage system link entries to be deleted.

1.
2. *control_arg*

*can be -force to suppress the query
"Do you want to unlink ** in
<dir-path>?" when appropriate.*

Notes

The user must have modify access in the directory containing the link.

The star convention can be used.

The delete, delete_force, and delete_dir commands can be used to delete segment and directory entries.