

TO: Distribution
FROM: M. S. Hodges
DATE: June 17, 1974
SUBJECT: Multics Change Requests

Attached are copies of Multics Change Requests which were approved from June 1 - 15, 1974.

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MULTICS CHANGE REQUEST		MCR <u>581</u>
TITLE: Install a pause command in TOOLS		STATUS
AUTHOR: Roger A. Roach		DATE
SOURCE: (if external; e.g., "User", "Marketing") MIT (PDO)		Written <u>06/07/74</u>
		Approved <u>6/11/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>
CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCR
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Implemented in System
<input type="checkbox"/> Restriction	<input checked="" type="checkbox"/> Increased Consistency	Objections/Comments:
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
	<input type="checkbox"/> Bug Fix	

Use these headings: REASONS, SUMMARY, IMPLICATIONS, and optionally DETAILED PROPOSAL

REASONS: It is sometimes necessary to have a process wait for a given t before continuing with the next command. Examples: initializing the IO Daemons, logging out the Network Daemons, starting up a metering run, etc.

SUMMARY: Install a simple command that calls timer_manager_\$sleep for a number of seconds as specified in the argument. (If no argument, a time of "10" seconds is used.)

IMPLICATIONS: None, the command is currently being used for the above purposes and works fine.

MULTICS CHANGE REQUEST		MCR <u>547</u> Page <u>1</u> of <u>1</u> Pages	
TITLE: Fix bug preventing system from doing a cold boot with more than 9 disks (191's) on-line.		STATUS	DATE
AUTHOR: <u>Steve Webber</u>		Written	5-28-7
SOURCE: (if external) e.g., "User", "Marketing"		Approved <i>H</i>	6/4/7
		Rejected	
		Postponed	
		Withdrawn	
		Expires	12/4/79

CLASSIFICATION	JUSTIFICATION		Replaced by proposal MCR _____
Incompatible Change	<input checked="" type="checkbox"/>	Marketing Requirement	Implemented in System _____
Extension	<input type="checkbox"/>	Conformance to Standard	Objections/Comments:
Restriction	<input checked="" type="checkbox"/>	Increased Consistency	
Performance Improvement	<input type="checkbox"/>	Simplification	
Reliability Improvement	<input type="checkbox"/>	Generalization	
	<input checked="" type="checkbox"/>	Bug Fix 258	
	<input type="checkbox"/>		

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

REASONS: The system currently cannot be cold booted if there are many disks on line due to a limit in the size of the initial fsdct. This limit is unnecessary and should be removed.

SUMMARY:
Change constant in initialize_dims.

MULTIPLI CHANGE REQUEST		MCR 548 Page 1 of 1
TITLE: Fix bug in tty_free		STATUS
AUTHOR: M.J. Grady		Written 5/24 Approved H 6/4/74 Rejected
SOURCE: (if external) e.g., "User", "Marketing"		Postponed Withdrawn Expires 12/4/74

CLASSIFICATION	JUSTIFICATION	
Incompatible Change	Marketing Requirement	Replaced by proposal MCR _____
Extension	Conformance to Standard	Implemented in System _____
Restriction	Increased Consistency	Objections/Comments:
Performance Improvement	Simplification	
X Reliability Improvement	Generalization	
	unreported X Bug Fix	

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

REASONS: There is a bug in tty_free which causes a free chain call to fail if the first buffer in tty_buf is in the chain.

SUMMARY:
Fix the bug.

IMPLICATIONS:
None

MULTICS CHANGE REQUEST		MCR <u>549</u> Page <u>1</u> of <u>1</u> Pages
TITLE: <u>System handling of the finish condition</u>		STATUS
AUTHOR: <u>M. Weaver</u>		Written <u>5-28-74</u>
SOURCE: (if external) e.g., "User", "Marketing"		Approved <u>H</u> <u>6/4/7</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/4/74</u>

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCR _____
<input checked="" type="checkbox"/> Extension	<input checked="" type="checkbox"/> Conformance to Standard	Implemented in System _____
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	Objections/Comments:
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS: The handler for the finish condition (which is currently signalled by `logout` and `new_proc`) should close all open files.

SUMMARY:
`Default_error_handler` will maintain a static array of entry variables to call when it handles finish. An entry point will be added to fill in the entry variables; the fortran and PL/I I/O support packages will be changed to call this when they are first entered. When `default_error_handler` handles finish, it will call all the entry variables that have been filled in and then it will loop through all the I/O control blocks calling `iocb.close`.

IMPLICATIONS:
 This solution enables the support packages to be called only when they are being used and the mechanism can be used by user packages.

MULTI-CHANGE REQUEST		MCR 551 Page 1 of 1 Pages	
TITLE: Fix to tty_ctl		STATUS	DATE
AUTHOR: Snyder		Written	5/29/74
SOURCE: (if external) e.g., "User", "Marketing"		Approved H	6/4/74
Phoenix		Rejected	
		Postponed	
		Withdrawn	
		Expires	12/4/74

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
Incompatible Change	Marketing Requirement	Implemented in System _____
Extension	Conformance to Standard	Objections/Comments:
Restriction	Increased Consistency	
Performance Improvement	Simplification	
<input checked="" type="checkbox"/> Reliability Improvement	Generalization	
	Reported by Phoenix	
	<input checked="" type="checkbox"/> Bug Fix	

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

REASONS: Once a Terminet 300 with correct answerback dials into a 110 baud line, that line will never correctly handle tty 33's or 35's or 38's again.

SUMMARY:

When a terminal hangs up, the default device type will be reset based on the baud rate (right now it remains at whatever it was for the last dialup on that line)

IMPLICATIONS:

The problem will be corrected.

MULTI-COM CHANGE REQUEST		MCR 552 Page 1 of 1 Pages
TITLE: Add entries to error_table_ for trace package.		STATUS
AUTHOR: <u>Barry L. Wolman</u>		Written 740530 Approved <i>H</i> 6/4/74 Rejected
SOURCE: (if external) e.g., "User", "Marketing"		Postponed Withdrawn Expires 12/4/74

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCF _____
<input type="checkbox"/> Extension	<input checked="" type="checkbox"/> Conformance to Standard	Implemented in System _____
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	Objections/Comments:
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS: The trace package requires four error messages to be added to error_table_.

SUMMARY: The four error names, and their associated messages, are:

cannot_trace	This entry cannot be traced.
not_in_trace_table	Entry not found in trace table.
trace_table_empty	Trace table is empty.
trace_table_full	Trace table is full.

MULTI-STEP CHANGE PROJECT		MCR <u>553</u> Page <u>1</u> of <u>1</u>
TITLE: Add new tool "post_purge_meters" to system		STATUS: <u>1</u>
AUTHOR: <u>Steve Webber</u>		Written: <u>5-29</u>
SOURCE: (if external) e.g., "User", "Marketing"		Approved: <u># 6/4/74</u>
		Rejected:
		Postponed:
		Withdrawn:
		Expires: <u>12/4/74</u>

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	Marketing Requirement	Replaced by proposal MCR _____
<input type="checkbox"/> Extension	Conformance to Standard	Implemented in System _____
<input checked="" type="checkbox"/> Restriction	Increased Consistency	Objections/Comments:
<input type="checkbox"/> Performance Improvement	Simplification	
<input type="checkbox"/> Reliability Improvement	Generalization	
<input type="checkbox"/>	Bug Fix	
<input type="checkbox"/>		

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

REASONS: A measure of the post purging activity and overhead is useful.

SUMMARY:

Provide a command (tool) to display the interesting meters kept by the system.

MUTUOUS CHANGE REQUEST		MCR <u>554</u> Page <u>1</u> of <u>1</u> Pages
TITLE: Implementation of a DIM for the terminet 1200	STATUS	DATE
	Written	5/30/74
	Approved H	6/4/74
	Rejected	
AUTHOR: <u>M. S. G.</u>	Postponed	
SOURCE: (if external) e.g., "User", "Marketing"	Withdrawn	
	Expires	12/4/74

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	<input checked="" type="checkbox"/> Marketing Requirement	Implemented in System _____
<input checked="" type="checkbox"/> Extension	Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	Increased Consistency	
<input type="checkbox"/> Performance Improvement	Simplification	
<input type="checkbox"/> Reliability Improvement	Generalization	
<input type="checkbox"/>	Bug Fix	
<input type="checkbox"/>		

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

REASONS: The terminet 1200 when used at 1200 baud with the Vadic modems requires various special timing considerations which are not supported by the ring 0 tty_dim.

- SUMMARY:
- A. Modify tw_ to recognize a Terminet 1200 during attachment of user_i/o by calling hcs_\$tty_order to obtain the baud rate of the terminal. If it is 1200 baud, special pad characters will be added for new line, form feed, vertical tab and backspace characters.
 - B. The ring 0 tty dim must be changed to return the baud rate for the "info" order call.

MULTICS CHANGE REQUEST		MCR <u>555</u> Page <u>1</u> of <u>1</u> Pages
TITLE: Installation of the net_host_status command	STATUS	DATE
	Written	05/29
AUTHOR: <u>Kenneth T. Pogran</u>	Approved <i>H</i>	<i>6/4/74</i>
	Rejected	
SOURCE: (if external) e.g., "User", "Marketing"	Postponed	
	Withdrawn	
	Expires	<i>12/4/74</i>

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Implemented in System _____
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	<input checked="" type="checkbox"/> Increased Consistency	
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS: net_host_status (nhs) is a command which prints the up/down status of one or more ARPA Network hosts. It has been supported in the CompNet library for about a year and a half, and, with the advent of the Network library, it should be officially installed.

SUMMARY: net_host_status will print information about hosts specified as arguments to the command, or about all hosts if no arguments are given. In the "normal" form of output, net_host_status prints the host's number, its official host name, and its current up/down status. The "brief" form prints a host's Multics host abbreviation and its up/down status. The "long" form prints the information given by the "normal" form plus information of interest to Network systems programmers.

net_host_status is documented in the Network User's Supplement to the MPM.

IMPLICATIONS:

A command which was previously privately supported will be officially installed in the system.

MULTICS CHANGE REQUEST		MCR <u>556</u> Page <u>1</u> of <u>1</u> Pages	
TITLE: Bug in get_equal_name		STATUS	DATE
		Written	5/30/74
AUTHOR: <u>Steve Herbst</u>		Approved <i>#</i>	6/4/74
		Rejected	
SOURCE: (if external) e.g., "User", "Marketing"		Postponed	
		Withdrawn	
		Expires	12/4/74
CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Implemented in System _____	
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:	
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency		
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification		
<input checked="" type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization		
<input type="checkbox"/>	<input checked="" type="checkbox"/> Bug Fix #289		

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

REASONS: get_equal_name constructs a target name (output) from an equal name and an entry name (input). When the equal name is "=", "==", "==" or "==" and the target name equals the entry name (source), get_equal_name does not initialize the return code properly.

SUMMARY: Set code =0 before returning in the above case.

MULTICS CHANGE REQUEST		MCR <u>557</u> Page <u>1 of 1</u>
TITLE: <u>Bug in copy/move</u>	STATUS	
	Written	5/30/74
	Approved	# 6/4/74
	Rejected	
AUTHOR: <u>Steve Herbst</u>	Postponed	
	Withdrawn	
	Expires <u>12/4/74</u>	
SOURCE: (if external) e.g., "User", "Marketing"	Postponed	
	Withdrawn	
	Expires	

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Implemented in System _____
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input checked="" type="checkbox"/> Improvement	<input type="checkbox"/>	
<input type="checkbox"/>	<input checked="" type="checkbox"/> Bug Fix 292	

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

REASONS: move calls term_ to terminate the old segment before deleting it with delete_\$path. The segment is terminated whether or not it is deleted. The proper thing to do is to unsnap links and remove reference names, not to actually terminate the segment.

SUMMARY: Remove the call to term_. (delete_ already calls term_\$makeunknown)

MULTICS CHANGE REQUEST		MCR 558 Page 1 of 1 Pages
TITLE: Bug in copy_seg_		STATUS
		Written 5-30-74 Approved <i>H</i> 6/4/74 Rejected
AUTHOR: Steve Herbst		Postponed
SOURCE: (if external) e.g., "User", "Marketing"		Withdrawn
		Expires 12/4/74

CLASSIFICATION	JUSTIFICATION	REASON
Incompatible Change	Marketing Requirement	Replaced by proposal MCR _____ Implemented in System _____
Extension	Conformance to Standard	Objections/Comments:
Restriction	Increased Consistency	
Performance Improvement	Simplification	
<input checked="" type="checkbox"/> Reliability Improvement	Generalization	
	X 290 Bug Fix 291	

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

REASONS: The code error_table_\$moderr returned by hcs_\$make_seg is used to test if the segment already exists and is a multi-segment file. The code is then changed to something else. Two possible meanings of error_table_\$moderr are ignored:

- 1) target segment has null access: "copy a>foo b>foo"
- 2) target is an existing directory: "copy a>foo b"

In either of these cases, no error message is printed and copy_seg_ tries to reference through a null pointer returned by make_seg.

SUMMARY: Keep code, and if target is a directory, change code to error_table_\$dirseg.

MULTICS CHANGE REQUEST		MCR <u>564</u> Page <u>1</u> of <u>1</u> Pages
TITLE: Extend abbrev ".l" functions (letter "L")		STATUS
AUTHOR: Bob May (Honeywell/Phoenix)		Written <u>5/5/74</u> Approved # <u>6/11/74</u> Rejected
SOURCE: (if external) e.g., "User", "Marketing"		Postponed Withdrawn Expires <u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Fixes bug # - In
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input checked="" type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	

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

REASONS: Many people identify their abbrevs by starting them all with some special character. This negates the usefulness of the abbrev ".la" function. Also it is desirable to list abbrevs by certain categories.

- Detailed Proposal:
1. Extend the current ".la" function to accept a char_string rather than only a single character. The string would be matched against the first characters of the abbrev name as is done now.
 2. Add a new function ".las". It is similar to the extended ".la" but searches for the character_string as a substring anywhere in the abbrev name.

Implications: These extensions will allow users to peruse through large profiles efficiently.

MULTICS CHANGE REQUEST		MCR <u>568</u> Page <u>1 of 1</u> Pages
TITLE: <u>bugs in nd_handler_</u>		STATUS
AUTHOR: <u>Steve Herbst</u>		Written <u>6-3-74</u>
SOURCE: (if external) e.g., "User", "Marketing"		Approved <u>H 6/11/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCF _____
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Implemented in System _____
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	Objections/Comments:
<input checked="" type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input checked="" type="checkbox"/> Bug Fix 281	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS:

- 1) If the segment cannot be deleted, nd_handler_ sometimes returns without printing "Unable to remove old entry." It is testing a dummy code instead of the code returned by delete_\$path.
- 2) nd_handler_ thinks a directory is an MSF and types a query: "Do you want to delete the old multi-segment file...?" whereas it should just print an error message: "Name duplication. Directorynot deleted."

SUMMARY:

- 1) Have it look at the right code.
- 2) Replace call to hcs_\$status with a call to hcs_\$status_long to get a bit count on the directory.

MULTI-CHANGE PROJECT		MCR <u>569</u> Page <u>1</u> of <u>1</u>
TITLE: Two hardcore interfaces for backup		STATUS
AUTHOR: <u>R. Mullen</u>		Written <u>6/4/74</u>
SOURCE: (if external) e.g., "User", "Marketing"		Approved <u>H</u> <u>6/11/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCR _____
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Implemented in System _____
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	Objections/Comments:
<input checked="" type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input checked="" type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS: Backup spends considerable time making calls to ring zero for trivial amounts of information.

SUMMARY: Many of these calls can be eliminated by the addition of two interfaces described in MTB-069

- A) hcs_\$list_inacl_all
- B) hcs_\$status_for_backup

IMPLICATIONS: These procedures will be directly useable by backup without change to backup record types. However, the full amount of information returned by hcs_\$status_for_backup (including entry_point_bound and security attributes) can not be used by backup until new record types are created.

These procedures will not be documented in the MPM or SWG.

DETAILED PROPOSAL: see Appendices to MTB-069

MULTICS CHANGE REQUEST		MCR <u>570</u> Page <u>1</u> of <u>1</u> Pages	
TITLE: <u>Fix deficiencies in linkage fault tracing</u>		STATUS	DATE
		Written	<u>6/4/74</u>
AUTHOR: <u>Steve Webber</u>		Approved <u>H</u>	<u>6/11/74</u>
		Rejected	
SOURCE: (if external) e.g., "User", "Marketing"		Postponed	
		Withdrawn	
		Expires	<u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCF _____
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Implemented in System _____
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	<input checked="" type="checkbox"/> Increased Consistency	
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	

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

REASONS: The current linker traces linkage faults by placing the segment number of the calling (faulting) procedure into the trace for both the linkage_fault_begin and linkage_fault_end types. It is convenient to have traced the segment which was faulted upon as well.

SUMMARY: change the linkage_fault_end entry to contain a (packed) pointer of the snapped link.

IMPLICATIONS: None

MULTI-CHANGE REQUEST		MCR <u>571</u> Page <u>1</u> of <u>1</u> Pages
TITLE: Zeroing Branch Pad Field by Salvager, APPEND.		STATUS: <u>Written</u> DATE: <u>6-4-</u>
AUTHOR: <u>A. Kobziar</u>		Approved <u>A</u> <u>6/11/74</u>
SOURCE: (if external) e.g., "User", "Marketing"		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	
Incompatible Change	<input checked="" type="checkbox"/> Marketing Requirement	Replaced by proposal MCR _____
Extension	<input type="checkbox"/> Conformance to Standard	Implemented in System _____
Restriction	<input type="checkbox"/> Increased Consistency	Objections/Comments: reloader must behave properly with backing tapes having no security attributes or -1 security attributes.
Performance Improvement	<input type="checkbox"/> Simplification	
Reliability Improvement	<input type="checkbox"/> Generalization	
	<input type="checkbox"/> Bug Fix	

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

REASONS: The last three words in a branch are set to all 7's by Append. Since two words will be used to store security information where the low value is 0, the value backed up by the pending backup changes should be 0. This will prevent accessing inconsistencies when retrieving information that was dumped before security installation into a security system.

IMPLICATIONS: Directory dump readers will have to adjust to two words of 0's rather than 7's. The third word will remain all 7's. The salvager change should be installed at all sites before backup, but Append can be installed either before or in conjunction with backup.

DETAILED PROPOSAL: Change salvager to zero the two words if the contents < 0. (all 7's = -1). Although this bound check will be retained in the security salvager, it achieves the one time zeroing necessary before backup installation. Change Append to copy the values in the parent directory whenever creating a branch.

MULTICS CHANGE REQUEST		MCR <u>573</u> Page <u>1</u> of <u>1</u> Pages
TITLE: Bug fixes to 355 software for MDS2400		STATUS
AUTHOR: <u>M. J. Grady</u>		DATE
SOURCE: (if external) e.g., "User", "Marketing"		Written <u>6/5/74</u>
		Approved <u>H</u> <u>6/11/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Implemented in System _____
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input checked="" type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> unreported	
<input type="checkbox"/>	<input checked="" type="checkbox"/> Bug Fix	

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

REASONS: 2 bugs exist in the 355 software which cause the 6180 ttydim to become confused when running the MDS2400.

- SUMMARY:
- A) Fix the timing bug in gicm.map355 by making a locking subroutine run inhibited.
 - B) Fix ghsa.map355 to lock the tib while processing a dcwlist to prevent a 6180 cur_status from returning incorrect info.

IMPLICATIONS: None

MULTICS CHANGE REQUEST		MCR <u>574</u>
TITLE: Conversion of tools to call ring_zero_peek_		STATUS DATE
AUTHOR: Roger A. Roach		Written 06/04/74
SOURCE: (If external; e.g., "User", "Marketing") MIT (PDO)		Approved # 6/11/74
		Rejected
		Postponed
		Withdrawn
		Expires 12/11/74
CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible	<input type="checkbox"/> Marketing	Replaced by proposal MCR
<input type="checkbox"/> Change	<input type="checkbox"/> Requirement	Implemented in System
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance	Objections/Comments:
<input type="checkbox"/> Restriction	<input type="checkbox"/> to Standard	
<input type="checkbox"/> Performance	<input type="checkbox"/> Increased	
<input type="checkbox"/> Improvement	<input type="checkbox"/> Consistency	
<input type="checkbox"/> Reliability	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

Use these headings: REASONS, SUMMARY, IMPLICATIONS, and optionally DETAILED PROPOSAL

REASONS: To remove the necessity of access to phcs_ to meter certain portions of the system.

SUMMARY: Calls to phcs_\$ring_0_peek were changed to ring_zero_peek_ in copy_out, create_lines_file, disk_left_, lpatch, meter_gate, meter_util_, print_apf_entry, print_astp_ptp and ring_zero_dump. In addition, calls to phcs_\$initiate_count in meter_gate and spg_ring_0_info were changed to use ring0_get_\$segptr thus eliminating the need to have "r" access to a gate to read its meters (currently hphcs_ is "r *.*.*"). Both copy_out and ring_zero_dump will also attempt to use this method to get a pointer to the segment if it is in ring zero, but will continue to call phcs_\$initiate if the segment is not in ring zero.

IMPLICATIONS: With the exception of device_meters, disk_queue, tape_meters and tty_meters, this completes the conversion of the metering tools to call ring_zero_peek_. This means that more programmers can access these meters and access to phcs_ can be greatly reduced.

MULTICS CHANGE REQUEST		MCR <u>575</u>
TITLE: Bug in Indent		STATUS DATE
AUTHOR: VanVleck		Written <u>06/05/74</u> Approved <u># 6/11/74</u> Rejected
SOURCE: (if external; e.g., "User", "Marketing")		Postponed Withdrawn Expires <u>12/11/74</u>
CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible	<input type="checkbox"/> Marketing	<input type="checkbox"/> Replaced by proposal MCR
<input type="checkbox"/> Change	<input type="checkbox"/> Requirement	<input type="checkbox"/> Implemented in System
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance	Objections/Comments:
<input type="checkbox"/> Restriction	<input type="checkbox"/> to Standard	
<input type="checkbox"/> Performance	<input type="checkbox"/> Increased	
<input type="checkbox"/> Improvement	<input type="checkbox"/> Consistency	
<input checked="" type="checkbox"/> Reliability	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Improvement	<input type="checkbox"/> Generalization	
	<input checked="" type="checkbox"/> (Unreported)	
	<input type="checkbox"/> Bug Fix	

Use these headings: REASONS, SUMMARY, IMPLICATIONS, and optionally DETAILED PROPOSAL

REASONS:

The indent command does not recognize "on" statements correctly and so does not notice a "begin" which is the subject of an "on." This fouls up indentation from then on, since the program finds an extra "end" statement.

SUMMARY:

Length of on keyword was accidentally assumed to be 1 char. Make it 2.

IMPLICATIONS:

Prevents incorrect formatting and avoids incorrect error message.

MULTICS CHANGE REQUEST		MCR <u>576</u> Page <u>1</u> of <u>2</u> Pages
TITLE: Addition of bindfile information to bound segments		STATUS DATE
AUTHOR: <u>M. Weaver</u>		Written <u>6/6/74</u>
SOURCE: (if external) e.g., "User", "Marketing"		Approved <u># 6/11/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCR _____
<input checked="" type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Implemented in System _____
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	Objections/Comments: Suggest widening char (16) to char (24).
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input checked="" type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS: The bindmap in a bound segment is sometimes used (especially by library maintainers) to indicate when various components were compiled, yet it contains no information about the bindfile, which also affects the structure of the bound segment.

SUMMARY: Append relevant bindfile information to the bindmap and modify form_bind_map_ and library maintenance procedures that process components' dates. component_info_ will not be modified since there is no graceful way to return the information without a new version of the structure, which does not seem worthwhile at present.

DETAILED PROPOSAL: 1) Change the binder to append the following structure section to the bindmap:

```
2 name_offset bit (18) unaligned,
2 name_length bit (18) unaligned,
2 date_updated_in_arc char (16),
2 date_branch_modified char (16);
```

all of which refer to the bindfile. Change bindmap version number to 2. If there is no bindfile, name_length will = "0"b and the date fields will be blank.

DETAILED PROPOSAL:

(Continued)

2) Change `form_bind_map` to format the bindfile information (name, date updated in archive, date modified), if it exists, for the long mode using a separate header. This would work both when individually specified and when the entire bindmap is requested.

3) Change `upd_doc_task_` to compare the new `date_updated_in_arc` with the installed bindfile `date_updated_in_arc` if it exists; if they are different, print a message.

IMPLICATIONS: Persons creating bound segments for which the bindfile information is of interest must take care to move bindfiles as little as possible, since each move affects the dates. If and when the binder can use free-standing segments as components, and the bindfile used happens not to be archived, the `date_updated_in_arc` will be blank.

MULTICS CHANGE REQUEST		MCR 577 Page 1 of 1 Page
TITLE: bug in full_find_command_		STATUS
AUTHOR: Steve Herbst		DATE
SOURCE: (if external) e.g., "User", "Marketing"		Written 6-6-74
		Approved # 6/11/74
		Rejected
		Postponed
		Withdrawn
		Expires 12/11/74

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Implemented in System _____
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	<input type="checkbox"/> Increased Consistency	
<input checked="" type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input checked="" type="checkbox"/> Bug Fix 295	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS: Consider segments X>X and Y>Y, each having the command names A and B.
 The user types: X>A args
 Y>B args
 Y>A args

At the third line, no command is executed, instead he gets the following message:

"command_processor: Segment already known to process. Y>A"

full_find_command_ (invoked because there is a pathname given) tries to initiate A and gets a name duplication. It terminates A (as a name on X) and tries again to initiate. This time it gets a segknown error because the segment Y is known. It gives up when it gets this second error.

SUMMARY: Have full_find_command_ ignore error_table_\$\$segknown after the second call to hcs_\$\$initiate as well as after the first.

IMPLICATIONS: One line change.

MULTICS CHANGE REQUEST

MCR 578
Page 1 of 1 Pages

TITLE: getquota with extended star convention

STATUS	DATE
Written	6-5-74
Approved <i>H</i>	6/11/74
Rejected	
Postponed	
Withdrawn	
Expires	12/11/74

AUTHOR: Steve Herbst

SOURCE: (if external) e.g., "User", "Marketing"

CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	Marketing Requirement	Replaced by proposal MCF _____
<input type="checkbox"/> Extension	Conformance to Standard	Implemented in System _____
<input type="checkbox"/> Restriction	Increased Consistency	Objections/Comments:
<input type="checkbox"/> Performance Improvement	Simplification	
<input checked="" type="checkbox"/> Reliability Improvement	<input checked="" type="checkbox"/> Generalization	
<input type="checkbox"/>	<input checked="" type="checkbox"/> Bug Fix 294	
<input type="checkbox"/>		

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

REASONS: getquota tests whether it has to apply the star convention to a pathname by computing index(pathname, "*"). Not all starnames contain "*".

SUMMARY: call check_star_name_\$path instead.

MULTICS CHANGE REQUEST		MCR <u>579</u> Page <u>1 of 2</u>
TITLE: <u>Allow user to change names for debug I/O</u>	STATUS	DATE
AUTHOR: <u>S. Barr</u>	Written	<u>6-4-</u>
	Approved	<u># 6-11-74</u>
SOURCE: (if external) e.g., "User", "Marketing"	Rejected	
	Postponed	
	Withdrawn	
	Expires	<u>12-11-74</u>

CLASSIFICATION	JUSTIFICATION	Replaced by proposal MCR _____
<input type="checkbox"/> Incompatible Change	Marketing Requirement	Implemented in System _____
<input checked="" type="checkbox"/> Extension	Conformance to Standard	Objections/Comments:
<input type="checkbox"/> Restriction	Increased Consistency	
<input type="checkbox"/> Performance Improvement	Simplification	
<input type="checkbox"/> Reliability Improvement	Generalization	
<input type="checkbox"/>	Bug Fix	

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

REASONS: The current version of debug reads from "user_input" and prints on "user_output". This prevents a user from debugging a program that is run with file output because it generates a lot of output or a program that is run from within an exec_com after "&attach" because it requires a lot of input.

PROPOSAL: Debug would be changed to do I/O using switch names that would be stored as program variables.

Two new requests would be added to debug.

```

.si switch_name      (switch input to switch_name)
.so switch_name      (switch output to switch_name)

switch_name          is an optional argument. If it is
                     present it is the switch_name to use
                     for input (or output). It must be
                     attached by the user before the
                     request is made.
```

1. Default case: Debug reads from "user_input" and writes on "user_output".

2. ".si" or ".so"

User makes a switch request but does not give a switch name. Debug creates a switch name "debug_input" or "debug_output" and attaches it to "user_I/O". This would be the usual request for debugging programs that require "user_input" or "user_output" to be attached to a file instead of "user_I/O". Debug detaches "debug_input" and "debug_output" when the user quits debug.

3. ".si input_switch" or ".so output_switch"

User makes a switch request and gives the switch name. The user must attach the switch_name before making the request. This could be used when the user wants to read debug requests from a file.

EXAMPLES:

1. The user has directed the output switch "user_output" to a segment, but wants debug diagnostics to be printed on the terminal.

```
debug
.so
```

Since a switch name was not given with the request, debug sets up a new I/O switch "debug_output" as a synonym for "user_I/O" which is the console in this case. When the user quits debug, the switch name "debug_output" is detached.

2. The user wants to debug a procedure that uses "user_input" and has a set of debug requests in another segment "debug_macro". An input switch "macro" has been attached to the segment of debug requests.

```
debug
.si macro
```

Debug will take requests from the switch "macro" and will not detach the switch when the user exits debug. An attempt by debug to read beyond the end of the input stream "macro", results in an exit from debug.

MULTICS CHANGE REQUEST		MCR <u>580</u>
TITLE: Change archive's use of the safety switch		STATUS
AUTHOR: Roger A. Roach		DATE
SOURCE: (if external; e.g., "User", "Marketing") MIT (PDO)		Written <u>06/06/74</u>
		Approved <u>6/11/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>12/11/74</u>
CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCR
<input type="checkbox"/> Extension	<input type="checkbox"/> Conformance to Standard	Implemented in System
<input type="checkbox"/> Restriction	<input checked="" type="checkbox"/> Increased Consistency	Objections/Comments:
<input type="checkbox"/> Performance Improvement	<input type="checkbox"/> Simplification	
<input checked="" type="checkbox"/> Reliability Improvement	<input type="checkbox"/> Generalization	
<input type="checkbox"/>	<input type="checkbox"/> Bug Fix	

Use these headings: REASONS, SUMMARY, IMPLICATIONS, and optionally DETAILED PROPOSAL

REASONS: When archive was changed to recognize the safety switch, it was changed to regard an archive as "protected" for updating when the switch was on. It was my understanding that the safety switch was to be used for protecting against deletions only, not over writing segments. Unless this change is reverted, in order to be consistent, the various editors and compilers (among other things) should probably also be changed to check the safety switch before over-writing a segment. I think that the absence of "w" mode is the best method of doing this, not the safety switch.

SUMMARY: In the updating portion of archive, change the check for the safety switch to check for "w" mode.

IMPLICATIONS: This change was put in recently and not documented as acting this way. Therefore, I do not believe that any users are depending upon this "feature" and would not be harmed by its change. This would have the additional feature that a user could protect his archive against accidental deletions, but not have to answer a question every time he updated it.