

TO: Distribution
FROM: M. S. Hodges
DATE: March 18, 1974
SUBJECT: Multics Change Requests

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

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MULTIPLE CHANGE REQUEST

377

Page 1 of 1

TITLE: Miscellaneous Fixes to Network User Process Server TELNET IOSIM AUTHOR: <u>D. Wells</u> SOURCE: (if external) e.g., "User", "Marketing"	SEARCHED	
	Written	1.21.74
	Approved H	3/5/74
	Rejected	
	Postponed	
	Withdrawn	
	Expired	9/5/74

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

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

REASONS: Now that the Server TELNET IOSIM is installed, the usual type of bugs have surfaced. This MCR proposes to fix the bugs that have shown up, and also to change some internal strategies to improve efficiency. The particular type of bugs are things like: 1) ribbon shifts are not properly suppressed in not-red mode, 2) trailing tabs are not suppressed in the same manner as trailing spaces when outputting, 3) it is possible for a process interrupt to occur in such a manner that output characters are sent in an incorrect order, 4) if the foreign system sends characters without acting in an "interactive manner", the buffering strategy will fail in an annoying manner, 5) etc.

SUMMARY: Several modules in the segment bound-net-iosims- in the Network library will be altered to fix these bugs.

TITLE: Conversion of Network Control Program (NCP) to Version II PL/I
 AUTHOR: D. Wells

STATUS	
Written	1.21
Approved	# 3/5/74
Rejected	
Postponed	
Withdrawn	
Expires	9/5/74

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

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

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

REASONS: The current NCP is still coded in Version I PL/I. This causes several problems: 1) it is a non-standard action to install a V1 pl1 program, causing mixups during installations, 2) the segment pl1_operators must continue to exist in the hardcore system while the NCP is still coded in v1 pl1, 3) a performance improvement may be expected by the use of v2 constructs. Also, a number of bugs both only-annoying and security-violating have been discovered in the NCP which will be fixed in the installation.

SUMMARY:

- 1) NCP will be recompiled using v2 pl1.
- 2) the entry point imp-data-base in the gate net_ will be removed and its function replaced by an additional order call to the NCP.
- 3) the entry point ncp-passoff in net_ (used by the Answering Service to assign a pseudo-TTY to a created process) will be moved from the non-privileged gate net_ to the privileged gate netp_.
- 4) QUITs will be disabled each time that a socket is attached to a process.
- 5) Miscellaneous other bugs will be fixed.

MULTICS CHANGE REQUEST

TITLE: Gate Descriptor Security Hole

STATUS	DATE
Written	2/25/74
Approved A	3/5/74
Rejected	
Postponed	
Withdrawn	
Expires	9/5/74

Bernard S. Greenberg

AUTHOR: _____

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

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

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

REASONS: Hardcore Descriptors for gates currently contain ring brackets. Not only does this serve no purpose, but allows anyone to call any hardcore gate by using the hardcore descriptor for it. These ring brackets should be removed, as no one in a non-hardcore ring ever calls hardcore gates by the hardcore segment numbers.

SUMMARY: Gaping security hole in need of urgent fix.

IMPLICATIONS: n/a

DETAILED PROPOSAL: Change bootstrap1 and make_sdw to put (0,0,0) ring brackets in all hardcore descriptors. Minor change to seg_fault gate sdw creation mechanism needed, as well.

MULTICS CHANGE REQUEST

MCR 380
Page 1 of 2 Pages

TITLE: Improve error_table messages for I/O

STATUS	DATE
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AUTHOR: M. D. MacLaren

Written	2/25/74
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Approved	H 3/5/74
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Rejected	
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SOURCE: (if external) e.g., "User", "Marketing"

Postponed	
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Withdrawn	
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Expires	9/5/74
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CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	Marketing Requirement	Replaced by proposal MCR _____ Implemented in System _____
<input type="checkbox"/> Extension	Conformance to Standard	Objections/Comments:
<input checked="" type="checkbox"/> Restriction	Increased Consistency	
<input type="checkbox"/> Performance Improvement	Simplification	
<input type="checkbox"/> Reliability Improvement	Generalization	
<input type="checkbox"/> User Interface Improvement		
<input checked="" type="checkbox"/> Improvement	Bug Fix	

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

REASONS: Some error_table codes used by the new I/O system have messages that are misleading or use inconsistent terminology.

SUMMARY: Change the messages as shown on attached sheet.

IMPLICATIONS: None

REMARK: Changes for the two ring number codes have been checked by E. Stone.

Proposal New Error-Table Messages (only long message is shown-short message stays as is).

long_record:	Record is too long.;
short_record:	Record is too short.;
no_ioch:	No I/O switch.;
not_closed:	I/O switch is not closed.;
not_detached:	I/O switch is not detached.;
not_open:	I/O switch is not open.;
no_key:	No key given for write_record.;
no_record:	Record not located.;
bad_file:	File is not a structured file or is inconsistent.;
bad_arg:	Illegal command or subroutine argument.;
not_attached:	I/O switch (or device) is not attached.;
bad_ring_brackets:	Validation level not in ring bracket.
badringno: :	Input ring number invalid.

MULTICS CHANGE REQUEST

MCR 381
Page 1 of 1 Pages

TITLE: Deleteacl -Brief Option

STATUS	DATE
Written	2/25/74
Approved <i>H</i>	<i>3/5/74</i>
Rejected	

AUTHOR: A. Kobziar

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

Postponed	
Withdrawn	
Expires	<i>9/5/74</i>

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

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

REASONS: If deleteacl is invoked with a star pathname, suppress all responses "user name not on acl" messages whenever -brief option is given.

IMPLICATION: Less output on user's terminal.

MULTICS CHANGE REQUEST		MCR <u>382</u>
TITLE: read_cards calls unique_chars_ incorrectly		STATUS <u>DA</u>
AUTHOR: Gary C. Dixon		Written <u>02/27/74</u>
SOURCE: (If external; e.g., "User", "Marketing") User		Approved <input checked="" type="checkbox"/> <u>3/5/74</u>
		Rejected _____
		Postponed _____
		Withdrawn _____
		Expires <u>9/5/74</u>
CLASSIFICATION	JUSTIFICATION	
<input type="checkbox"/> Incompatible Change	<input type="checkbox"/> Marketing Requirement	Replaced by proposal MCR
<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 checked="" type="checkbox"/> (Unreported)	
	<input type="checkbox"/> Bug Fix	

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

REASONS:

read_cards creates a uniquely-named segment in >ddd>cards into which it reads a card deck. It obtains a unique name by calling unique_bits_ to get a bit(70) unique bit string, then calling unique_chars_ with this bit string to obtain a unique char string. However, some of the names returned by unique_chars_ are not unique because read_cards declared unique_chars_ improperly. This can lead to namedup errors when creating the unique segment.

SUMMARY:

```
Change code in read_cards:
    dcl b70 bit(70) aligned,
        unique_bits_ entry returns (bit(70) aligned),
        unique_chars_ entry (bit(70) aligned)
            returns (char(15) aligned);
    b70 = unique_bits_();
    unique = unique_chars_(b70);
```

to:

```
dcl unique_chars_ entry (bit(*) aligned)
    returns (char(15) aligned);
    unique = unique_chars_("0"b);
```

IMPLICATIONS:

Fix the bug. A fixed (version) of read_cards has been placed in 10.SysDaemon's home directory temporarily until this bug fix can be installed.

MULTICS CHANGE REQUEST

MCR 383
Page 1 of 1 Pages

TITLE: Speed up metering gates.

STATUS	DATE
Written	2/25/74
Approved H	3/5/74
Rejected	
Postponed	
Withdrawn	
Expires	9/5/74

AUTHOR: M.G. Smith

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

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 type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input checked="" type="checkbox"/> performance improvement	

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

REASONS: The metering entry points to the "hcs_" gate (namely, "cpu_time_and_paging_", "virtual_cpu_time_", "total_cpu_time_", "usage_values", and "get_usage_values") do not use the fast gate strategy now available. It is undesirable to have metering primitives consume more of the resources that they meter than is possible.

SUMMARY: Change the five entries to be fast gates.

IMPLICATIONS: Calls on these five entries will cease to be metered themselves. If any metering is desired on them, they will have to be changed back while performing the desired experiment.

MULTICS CHANGE REQUEST		MCR <u>384</u> Page <u>1</u> of <u>1</u> Pages
TITLE: Correct IPS masking bug in IOX.		STATUS
		DATE
AUTHOR: <u>M.G. Smith</u>		Written <u>2/26/74</u>
		Approved <u># 3/5/74</u>
SOURCE: (if external) e.g., "User", "Marketing"		Rejected
		Postponed
		Withdrawn
		Expires <u>9/5/74</u>

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

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

REASONS: The condition handler in some IOX modules (intended to catch faults which occur while IPS interrupts are masked) has a bug which occasionally causes unnecessary process terminations. The handler uses an incorrect method to determine if IOX has masked interrupts. If an interrupt occurs, and if IOX believes (erroneously) that it has masked interrupts, then the process is terminated.

SUMMARY: The handler will be fixed so that it correctly determines whether IOX has masked interrupts. This handler occurs in the modules "discard_attach.pl1", "find_iocb.pl1", "ios.pl1", "ntape_attach.pl1", "syn_attach.pl1", and "tty_attach.pl1".

IMPLICATIONS: Installation of this change requires the changes to IPS described in MCR-385.

MULTICS CHANGE REQUEST		MCR 385 Page 1 of 1 Pages
TITLE: Tighten IPS masking interface.		STATUS
AUTHOR: M.G. Smith		DATE
SOURCE: (if external) e.g., "User", "Marketing"		Written 2/26/74
		Approved # 3/5/74
		Rejected
		Postponed
		Withdrawn
		Expires 9/5/74

CLASSIFICATION	JUSTIFICATION	
	Incompatible Change	Marketing Requirement
x	Extension	Conformance to Standard
	Restriction	x Increased Consistency
x	Performance Improvement	x Simplification
	Reliability Improvement	Generalization
		Bug Fix

Replaced by proposal MCR _____
Implemented in System _____

Objections/Comments:

Check system programs that do ips masking to see that they don't depend upon the indeterminate bit.

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

REASONS: The present hardcore gate entries to manipulate interprocess signal (IPS) masks are deficient in that (1) they allow the user to manipulate bit 36 of the masks (the control bit reserved for use of the signaller); (2) they provide no way for the user to determine rigorously whether or not he has masked IPS interrupts, and hence no way to rigorously protect critical sections of code which must not allow interruption; and (3) they are slower than they need to be, which discourages users from applying proper masking strategies.

SUMMARY: Change hardcore procedure "ips_" so that: (1) bit 36 of user-supplied masks is always ignored--the hardcore masks will always have a zero in this position; (2) each entry to "ips_" will return a specified bit, either zero or one, in bit 36 of the returned former mask, a bit which then can be rigorously guaranteed to tell whether or not the requested mask modification has been performed; and (3) the mask manipulations will be done in assemble language with no stack frame push and accessed via a fast gate.

IMPLICATIONS: Since the present value returned in bit 36 of all masks is an undefined variable, no existing program can be depending upon it for its correct operation. Hence, tightening the specification of this bit should not affect any existing software.

A new entry point, "reset_ips_mask", must be added to "ips_" to be complementary to "sets_ips_mask", the two entries to be used to bracket sections of critical code.

DETAILED PROPOSAL: See SPS Documentation.

MULTICS CHANGE REQUEST		MCR 386 Page 1 of 1 Pages
TITLE: Fix "discard_" "seek_key" error code.		STATUS
		DATE
AUTHOR: <u>M.G. Smith</u>		Written 2/27/74
		Approved # 3/5/74
SOURCE: (if external) e.g., "User", "Marketing"		Rejected
		Postponed
		Withdrawn
		Expires 9/5/74

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	
x Reliability Improvement	Generalization	
	x unreported Bug Fix	

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

REASONS: The "seek_key" I/O operation of the "discard_" DIM returns the wrong error code (0 instead of "error_table_\$no_record").

SUMMARY: Fix it to return "error_table_\$no_record".

IMPLICATIONS: None

MULTICS CHANGE REQUEST

MCR 387
Page 1 of 1 Pages

TITLE: Retain entry point "iox_\$control".

STATUS	DATE
Written	2/27/74
Approved <i>H</i>	<i>3/5/74</i>
Rejected	
Postponed	
Withdrawn	
Expires	<i>9/5/74</i>

AUTHOR: M.G. Smith

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

CLASSIFICATION	JUSTIFICATION	
	Incompatible Change	Marketing Requirement
x	Extension	Conformance to Standard
	Restriction	Increased Consistency
	Performance Improvement	Simplification
	Reliability Improvement	Generalization
		x Bug Fix #266

Replaced by proposal MCR _____
Implemented in System _____
Objections/Comments:

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

REASONS: By mistake the entry point "iox_\$control" was not retained as an external entry to module "iox_".

SUMMARY: Retain it.

IMPLICATIONS: None.

MULTICS CHANGE REQUEST		MCR <u>388</u>
		Page <u>1</u> of <u>1</u> Pages
TITLE: <u>Fix up bound_acceptance_test_ for iox_</u>		STATUS
AUTHOR: <u>Roger A. Roach</u>		DATE
SOURCE: (if external) e.g., "User", "Marketing"		Written <u>02/28/74</u>
		Approved <u>H 3/5/74</u>
		Rejected
		Postponed
		Withdrawn
		Expires <u>9/5/74</u>

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	
<input checked="" type="checkbox"/> Reliability Improvement	Generalization	
	<input checked="" type="checkbox"/> Bug Fix	

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

REASONS: When iox_ was installed the entry ios_\$get_ate was removed causing the acceptance test to bomb.

SUMMARY: Replace the call with current methods.

(Work has already been done by Max Smith and tested on a real acceptance test.)

IMPLICATIONS: NONE

MULTICS CHANGE REQUEST		MCR <u>389</u> Page <u>1</u> of <u>1</u> Pages	
TITLE: Fix problems resulting from list command upgrade.		STATUS	DATE
		Written	2/28/74
AUTHOR: <u>John Gintell</u>		Approved <u>H</u>	<u>3/5/74</u>
		Rejected	
SOURCE: (if external) e.g., "User", "Marketing"		Postponed	
		Withdrawn	
		Expires	<u>9/5/74</u>

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	
Reliability Improvement	Generalization unreported	
	x Bug Fix	

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

REASONS: When the list command was upgraded for 256k segments and for support of MSF's the output format and content changed unfavorably for several cases; many users have sent in MPRF's.

SUMMARY: Change list command to:

- . line up names correctly
- . not print out the line "Multisegment files=0" for the case where no control arguments are given and there are no MSF's.

MULTICS CHANGE REQUEST		MCR 390
		Page ___ of ___ Pages
TITLE: Provide Protection for MTS500 subsystem shared by two systems		STATUS
		DATE
AUTHOR: <u>N. I. Morris</u>		Written <u>2/27</u>
		Approved <u># 3/5/74</u>
		Rejected
SOURCE: (if external) e.g., "User", "Marketing"		Postponed
Internal		Withdrawn
		Expires <u>9/5/74</u>

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

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

REASONS:
Any tape handler in an MTS500 subsystem that is shared by two systems can be accessed by either system. A mechanism is available, however, in the tape controller firmware which allows either system to reserve a tape handler for its own use. Use of this feature will prevent development machine users from interfering with service tape usage when MTS500's are installed on Multics.

Summary:
A BOS command is being written which will read the PRPH and TAPE configuration cards and determine which handlers are to be reserved. It will attempt to reserve these handlers, printing an error message if unsuccessful.

Implications:
The MTS500 firmware for reserving and releasing devices was poorly designed and contains several major defects. Until these are repaired, it will be impossible to properly reserve tape handlers.

MULTICS CHANGE REQUEST		MCR <u>391</u> Page <u> </u> of <u> </u> Pages
TITLE: Modify Operator's Console Software for . Operation of the System Control Console and Entry Model Console AUTHOR: <u>N. I. Morris</u>	STATUS	DATE
	Written	<u>2/27/77</u>
	Approved H	<u>3/5/77</u>
SOURCE: (if external) e.g., "User", "Marketing" Internal	Rejected	
	Postponed	
	Withdrawn	
		Expires <u>9/5/77</u>

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 checked="" 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 type="checkbox"/>	<input type="checkbox"/> Bug Fix	
<input type="checkbox"/>	<input type="checkbox"/>	

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

REASONS:

The Console Channel Adapter for the IOM is not compatible with the Common Peripheral Adapter, which is currently used to drive the Multics Operator's console. The SCC and EMC connect only to a Console Channel Adapter. To drive them from Multics, a change is needed.

Summary:

Both Multics and BOS must be changed to drive the Operator's Console from an IOM DCW list which is compatible for both the Console Channel Adapter and the Common Peripheral Channel.

At a later time, Multics can be modified to recognize when the Console Channel Adapter is in use and send output through the channel in ASCII. The currently-used Operator's console accepts only GE BCD output.

Detailed Proposal:

The Console Channel Adapter ignores the continue bit in a PCW or IDCW which causes a non-data transfer operation to be performed. Therefore, the instruction must be moved from the first IDCW to the PCW. Also, the operations of turning on the operator alert and then writing a message must be done as separate connects.

MULTICS CHANGE REQUEST		MCR 392 Page 1 of 1 Pages
TITLE: Bug tracing via salvager AUTHOR: A. Kobziar	STATUS	DATE
	Written	3/1/74
	Approved #	3/12/74
	Rejected	
SOURCE: (if external) e.g., "User", "Marketing"	Postponed	
	Withdrawn	
	Expires	9/12/74

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	
Reliability Improvement	Generalization	
	tracing	
	Bug fix	

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

REASONS: Salvager often deletes objects (especially acls) from directory because names contain non-ascii values or forward/backward threads are bad. It is unclear at present whether salvager, system, or hardware is at fault.

SUMMARY: Have salvager print out bad names in octal and print out the values found in a bad thread. Optionally if switch no. 3 on the processor is up, the directory will be dumped (once).

IMPLICATIONS: More salvager output in error cases, thus a somewhat longer running time in these cases.

MULTICS CHANGE REQUEST		MCR <u>393</u> Page <u>1</u> of <u>1</u> Pages	
TITLE: Debug_check changes affecting salvager		STATUS	DATE
AUTHOR: <u>A. Kobziar</u>		Written	3/1/74
SOURCE: (if external) e.g., "User", "Marketing"		Approved <i>#</i>	<i>3/12/74</i>
		Rejected	
		Postponed	
		Withdrawn	
		Expires	

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	
Reliability Improvement	Generalization unreported	
	X Bug Fix	

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

REASONS: Salvager does not have the segment "tty_buf\$" in its environment. Change to debug_check in system 23-4 added references to "tty_buf\$" which, in the salvager's case, causes a fatal linkage error.

SUMMARY: Change debug_check not to reference "tty_buf\$" in salvager case.

IMPLICATIONS: No new salvagers can be generated until this fix is installed.

MULTICS CHANGE REQUEST		MCR 394 Page <u>1</u> of <u>1</u> Pages
TITLE: Changes to the ARPA Network File Transfer Server (bound_ftp_server_)	STATUS	DATE
	Written	2/27/74
AUTHOR: <u>Kenneth T. Pogran</u>	Approved H	3/12/74
	Rejected	
SOURCE: (if external) e.g., "User", "Marketing"	Postponed	
	Withdrawn	
	Expires	9/12/74

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

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

REASONS: Since the initial installation of the File Transfer Server in March of 1973 a number of bugs, deficiencies, etc. have been uncovered. These problems have been corrected in a "private" version of the FTP Server, and the time has come to collect these changes together and upgrade the installed FTP Server.

- SUMMARY:**
- 1) ftp_server_overseer_ is modified to:
 - "Turn off" erase/kill processing on an FTP Server process' Telnet control connection (the user_i/o stream)
 - Establish an on-unit for the any_other condition, replacing a call to default_handler_\$set.
 - 2) file_transfer_ is modified to:
 - Add an entry point, mail_transfer_ for transfer of files in response to the File Transfer Protocol MLFL command
 - Improve error messages
 - 3) ftp_mail_ is modified to:
 - Add an entry point, anonymous_mail, for receipt of mail from a mail server process (results in a different header in the recipient's mailbox)
 - Check for the existence of mailboxes before transferring mail.
 - Allow for receipt of mail by person-name only for users "registered" on a special list (links in a special directory).
 - Respond with correct File Transfer Protocol reply codes.
 - 4) ftp_initialization_ is modified to fix a bug which prevented file transfer from Network hosts which do not have a symbolic host name listed in the Multics host_table .

IMPLICATIONS:

As mentioned above, all of these changes have been operational for some time in a "private" copy of bound_ftp_server_, and are bug-free. These changes are upwards compatible, and affect only users logged in explicitly for ARPA Network File Transfer use. Users who do not make use of the File Transfer Server are not affected by this change.

MULTICS CHANGE REQUEST		MCR <u>395</u> Page <u>1</u> of <u>1</u> Pages
TITLE: <u>Modifications to network_exec_</u>	STATUS	DATE
	Written	2/28/74
AUTHOR: <u>Kenneth T. Pogran</u>	Approved <i>H</i>	3/12/74
	Rejected	
SOURCE: (if external) e.g., "User", "Marketing"	Postponed	
	Withdrawn	
	Expires	9/12/74

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

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

- REASONS:
1. Establishment of on-units for the "any_other" condition has replaced calls to default_handler_\$set as the standard means to establish a default condition handler.
 2. The Network Daemon currently does not detect an NCP crash occurring during the "host activation" phase of Network initialization. This is a bug.
 3. It is not always obvious when operator intervention in the operation of the Network Daemon is required.

- SUMMARY:
1. Replace calls to default_handler_\$set and default_handler_\$revert with calls to condition_ and reversion_ for the "any_other" condition.
 2. Modify subroutine change_host_state to check for the error code error_table_\$net_not_up returned from netp_\$ncp_host_comm and transfer to re-initialization code.
 3. call phcs_\$ring_0_message ("OPERATOR ACTION REQUIRED") to inform the operator of the infrequent occasions when manual intervention is necessary.

MULTICS CHANGE REQUEST		MCR <u>396</u>
TITLE: Fix bugs in include cross referencer.		STATUS DATE
AUTHOR: Paul A. Green		Written 02/28/74
SOURCE: (if external; e.g., "User", "Marketing")		Approved 3/12/74
		Rejected
		Postponed
		Withdrawn
		Expires 9/12/74
CLASSIFICATION	JUSTIFICATION	
Incompatible	Marketing	Replaced by proposal MCR
Change	Requirement	Implemented in System
Extension	Conformance	Objections/Comments:
Restriction	to Standard	
Performance	Increased	
Improvement	Consistency	
Reliability	Simplification	
Improvement	Generalization	
	(Unreported)	
	Bug Fix	

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

REASONS:

For some reason, the program include_cross_reference (icref) would only accept archives whose names followed the Multics source library naming conventions. Thus, the program did not work as documented, and was practically useless.

SUMMARY:

The program was changed to allow any archive.

IMPLICATIONS:

The change is upwards compatible, and makes the program usable.

DETAILED PROPOSAL:

Coded, tested, and ready for submission.

Form 2
730919

MULTICS CHANCE REQUEST

MCR 397

TITLE: Upgrade submission testing programs

STATUS DATE

AUTHOR: Arlene J. Scherer

Written 02/25/74
Approved # 3/12/74
Rejected
Postponed
Withdrawn
Expires 9/12/74

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

CLASSIFICATION	JUSTIFICATION
Incompatible Change	Marketing Requirement
Extension	Conformance to Standard
Restriction	Increased Consistency
Performance Improvement	Simplification
Reliability Improvement	Generalization
	Bug Fix

Replaced by proposal MCR

Implemented in System

Objections/Comments:

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

REASON:

To set up testing procedures for the network library; to change call to default_handler \$\$set to condition; to establish the "any-other condition; to change object_test_ to call get_library_segment for the library bindfile; other minor cleanups.

SUMMARY: object_test_ still loops through the libraries twice to look for archive names foo.archive and then foo.1.archive. Several pages of code are eliminated by setting up a call to get_library_segment instead. This requires another handler for the command_error condition in the call to get_library_segment.

MULTICS CHANGE REQUEST		MCR <u>398</u> Page <u>1</u> of <u>1</u> Pages	
TITLE: Correct bug in get_user_id_ that reference a table with a null pointer		STATUS	DATE
		Written	3/5/74
AUTHOR: <u>Susan Barr</u>		Approved <input checked="" type="checkbox"/>	3/12/74
		Rejected	
SOURCE: (if external) e.g., "User", "Marketing"		Postponed	
		Withdrawn	
		Expires	9/12/74

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	
Reliability Improvement	Generalization	
	<input checked="" type="checkbox"/> Bug Fix	

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

REASONS: get_user_id_ initiates three tables. If one or more of the tables could not be initiated because the user did not have enough access, the program attempts to read the table anyway using the null pointer.

SUMMARY: get_user_id_ was fixed to check the pointer to each table before trying to search the table.