MULTICS
SOFTWARE RELEASE BULLETIN
AND
INSTALLATION INSTRUCTIONS
RELEASE MR12.5

PREPARED BY:
MULTICS SUPPORT

November 18, 1992

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SECTION 1

INTRODUCTION

Multics Release 12.5 (MR12.5) is a supplemental release and assumes the prior installation of either MR12.3 or MR12.4. That is, the library tapes of MR12.3, a free standing release, must be installed prior to installation of MR12.5. This release (MR12.5) may also be installed if MR12.4 has already been installed. The MR12.4 release was a supplemental system release dependent upon the prior installation of MR12.3.

This release installs all system changes included in the MR12.4 release. Descriptions of the MR12.4 release package and its corresponding installation instructions are not included in this document. The installer should refer to the MR12.4 SRB/SIB for descriptions of the system changes made in that release. The installation of MR12.5 does not require the installation instructions for any previous release.

This document includes descriptions of features included in Multics Release 12.5. Both the SRB and the SIB are combined into this document and instructions for installing MR12.5 are included in Section 5.

Additional documentation, including a list of bugs fixed in MR12.5, is provided with the release tapes as printable segments on the release tapes in the directory >doc>MR12.5.

Software Releases prior to MR12.1 are no longer supported. All sites running pre-MR12.3 software are strongly encouraged to upgrade to MR12.3 as soon as possible, then move to MR12.5. Corrections to critical problems against releases prior to MR12.3 will be considered on a case by case basis.

SITE SUPPORT

System Representatives who support Multics should apply for registration on the SiteSA project maintained in Calgary on the ACTC Multics system.
The SiteSA project was created to allow sites to communicate with Support personnel on matters of site support. Only System Representatives who support a Multics site are authorized to use the project. They are authorized to use it only for site support activities which require communication of information to support personnel.

SiteSAs should maintain their site's info segments in >udd>SiteSA>site_info (>udd>ssa>si). Information on maintaining these segments is in the info segment, >udd>ssa>si>site_info.info.

In addition to normal telephone and Multics mail communications with support personnel, SiteSAs are encouraged to use the unusual_crash_log forum meeting to report any unusual problems encountered at their site. SiteSAs not familiar with forum can type "help forum" for usage information. Forum is a subsystem somewhat like the mail system in which an electronic meeting can be held. To invoke forum, type:

    forum >udd>ssa>sa_meeting>uclog

Type ? to print a list of requests allowed by forum. Other forum meetings of interest to SiteSAs are the following:

<table>
<thead>
<tr>
<th>PATHNAME</th>
<th>SHORT_NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;udd&gt;ssa&gt;sa_meeting&gt;install_instructions</td>
<td>ii</td>
</tr>
<tr>
<td>&gt;udd&gt;ssa&gt;sa_meeting&gt;hardware_problems</td>
<td>hwp</td>
</tr>
<tr>
<td>&gt;udd&gt;ssa&gt;sa_meeting&gt;critical_fixes</td>
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We would appreciate that sites, as they complete installation of MR12.5, enter a transaction in the install_instructions (ii) forum meeting. This will allow other sites to see the amount of exposure the release is receiving and to communicate any problems encountered in the installation procedure.

Support also suggests, very strongly, that SiteSAs DO NOT attempt to reproduce site problems on ACTC which are known to crash the system at their site, cause processors to loop in ring 0, etc. Such problems should be reported via the Trouble Report system, and will be verified by support personnel using appropriate resources, so that ACTC service is not interrupted unnecessarily.
Problems encountered while installing this release, or problems of a critical nature to a customer site (for a definition of critical, type: help tr.priorities) should be reported to those listed below:

<table>
<thead>
<tr>
<th>NAME</th>
<th>AREA</th>
<th>USER ID</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Schroth</td>
<td>Site Support</td>
<td>Schroth</td>
<td>403/295-5900</td>
</tr>
<tr>
<td>Ward Anderson</td>
<td>Release Prep</td>
<td>WAAnderson</td>
<td>403/295-5900</td>
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**DOCUMENT CONTENTS**

Following is a summary of the remaining of sections in this document.

- **Section 2** describes significant software changes
- **Section 3** describes trs fixed in MR12.5
- **Section 4** describes significant FCO and firmware status
- **Section 5** describes installation instructions
- **Appendix A** describes the associated documentation
- **Appendix B** lists modules changed
SECTION 2

CONTENTS OF MR12.5

ANSWERING SERVICE

A- 1. Updated pnt_fs_util_pl1 to return the error code error_table_$bad_file_name instead of error_table_$badstar when the name supplied does not end in the "pnt" suffix.

A- 2. The entry point vacate_pdir_volume had a bad argument list when it called sys_log_to say "Specified argument is not supported.". The missing control code has been added to the call to sys_log_.

A- 3. Updated act_ctl_ so that the operator shift command correctly displays the next shift change time.

A- 4. Corrected up_cdt_ to not take pointer faults when installing a new CDT that uses a new multiplexor type for the first time or that changes the line type of a login channel.

COMMANDES

Non - Privileged Commands

B- 1. The header for the list_absentee_request now has the correct total for absentee queue 1 if the user does not have s access to queue 0.

B- 2. The dial_out "wait" request now supports the "-inhibit_error" and "-no_inhibit_error" control arguments.

B- 3. The active function call [mvp l -tt] has been fixed so it no longer fails due to insufficient stack space on very large volume pools.
B- 4. The delete command now works on the forum extended object type (i.e. dl foo.forum) as documented. In the previous release, entering "dl foo.forum" would produce a message stating that the operation was not allowed for a directory. Entering "dd foo.forum" informed the user that "foo.forum" was a forum meeting and that the "dl" command should have been used instead of "dd".

Privileged Commands

C- 1. The list_extra_personids command will no longer abort when it is run more than once within the same process. In prior releases, when run a second time within the same process, list_extra_personids would print the following error message: "conflict with file attribute...".

C- 2. The set_special_password command will now query the user twice for the password by default or when the -prompt control argument is given.

C- 3. Corrected the spelling of the AS log entry generated for "Denied send_admin_command for USER in ring X" from "sc_admin_comamnd_" to "sc_admin_command_".

C- 4. The send_daemon_command expects the channel then the User.Project after the "login" keyword (i.e. send_daemon_command login channel User.Project). If the user reverses the order of the arguments after the "login" keyword, it will now print:
   send_daemon_command: Specified control argument is not accepted.
   Usage: send_daemon_command login channel User.Project

C- 5. The as_who command will now correctly indicate a "->" for those users whose grace time has expired and are therefore subject to preemption.

C- 6. Corrected MR12.4 library segments corrupted during transfer from the ACTC system to System-M for integration. This corrects a problem with using the "send_admin_command" command with the -ntmail option.

C- 7. reconstruct_registry will now properly traverse backwards through the journal chains when rcrpm journals have been deleted by some means other than resetting.

C- 8. edit_proj will now allow the deletion of the project alias from the SAT.

C- 9. as_who now reports lack of access to read out of tc_data with every invocation.

Contents of MR12.5 2-2 SRB12.5
C-10. Changed generate_mst to detach the output tape I/O switch unless the "-hold" control argument is given.

**Volume Backup and Recovery**

D- 1. Corrected retrieve_from_volume to correctly truncate retrieved objects with embedded nulled pages by using the current segment length (vtoce.csl) and not the number of pages (vtoce.records) actually stored.

D- 2. Corrected a problem in reload_volume that caused the reload to fail with a fatal error if a tape read error occurred while reading an object with embedded nulled pages.

D- 3. Corrected the reload_volume command to display the correct PVIDs and PV names in the error message generated when a PVID mismatch is detected.

D- 4. Fixed reload_volume to properly reload FIPS disk devices when the -disk_model control argument is specified. Previous releases did not compute the number of usable/unusable sectors correctly because the wrong value was being used for sectors per record.

**ONLINE TEST AND DIAGNOSTICS**

E- 1. Corrected an MR12.3 software integration error in deckfile_manager that caused the program to fail.

E- 2. The following changes were made to io_error_summary: Added the -channel (-chn) control argument to breakdown status counts by device and channel. Corrected the reporting of FIPS disk device statuses. Added the sector number to the diagnostic information provided by the -cylinders (-cyl) argument. Corrected data bit error counts for tape devices.

**FORUM**

F- 1. The header on mailed, unprocessed forum transactions has been updated to reflect the date the transaction was written and the fact that it was unprocessed.

F- 2. Forum will no longer fail after issuing "ls -reverse" for large meetings. The module forum_trans_util_pl1 has an area condition handler to avoid the possibility of forum raising an "area condition".
F- 3. Forum will no longer return as the current entry a transaction that was subsequently deleted. Instead, it will return the highest numbered undeleted transaction marked as seen.

F- 4. Forum will no longer go into an infinite loop with the use of the control arguments -after_time, -before_time and -between_time with a date_time string that is between transaction blocks.

HARDCORE

G- 1. force_write will now compute the values sst$fw_none and sst$force_pwrites correctly. An uninitialized variable was being used to compute these values.

SYSTEM SUPPORT SOFTWARE

H- 1. segment_mover will now include disk subvolume names in its messages to the syserr log.

H- 2. The code in mseg_segment_pl1, responsible for message segment compaction, has been changed to allow the caller to hold the lock during compaction. Prior releases truncated the entire segment, overwriting the lock word with 0.

H- 3. The copy_disk_volume command will not fail with an invalid IOC8 error when attempting to copy a 451 disk volume which has no alt partition. Also, the device names for the source and the target are added to the call that prints the error summary.

LANGUAGES

FORTRAN

I- 1. The Fortran compiler has been fixed to generate correct code for VLA references if the dimension of a VLA is equal to or greater than the maximum number that fits in a 18 bit halfword (262143).

I- 2. The Fortran compiler has been fixed to be able to consistently diagnose errors when the VLA size is greater than the maximum value. The maximum value is 16.7 million (2**24 - 1) words.

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PL/I

J-1. Corrected a problem with the resolution of constant scoping in the PL/I compiler. The PL/I compiler will now resolve references to options (constant) values (used as label subscripts or array extents) using proper scoping rules.

J-2. The PL/I listing generator will no longer generate an out_of_bounds fault when the source portion of a listing goes MSF.

MAIL

K-1. The read_mail command has been changed so that it checks for the arrival of new mail after every request line.

K-2. x_mail will now honor changes to the reply-to field when replying to a message.

SYSTEM SUBROUTINES

L-1. The format_document subroutine will properly handle input strings that are longer than its internal buffer length of 256 characters.

ONLINE DOCUMENTATION

M-1. window_editor_utils now has an infoseg.
SECTION 3

TRS RESOLVED IN MR12.5

This section lists those TRs that have been resolved in MR12.5. These TRs are considered closed with this release. Site requests to re-evaluate any of the TRs listed will be considered on a case by case basis.

The textual content of the area and summary fields of the TRs listed have not been changed from that contained in the TR database. Any apparent change will be as a result of the process of composing this document.

Number: phx06801 State: submitted
Date Entered: 1980-07-11 Area: read_mail
Site: System_M
Summary:
Read_mail confused over which is the last message.

Number: phx08877 State: submitted
Date Entered: 1981-01-09 Area: read_mail (rp)
Site: System_M
Summary:
Inability of the rp response within read_mail to find a message.

Number: phx10009 State: submitted
Date Entered: 1981-05-29 Area: EXL read_mail
Site: System_M
Summary:
Apply request does not take newly-arrived messages into account.

Number: phx14510 State: not_error
Date Entered: 1983-01-12 Area: pl1
Site: System_M
Summary:
Pl1 plays funny games with the mix of fixed and asterisk bounds on parameter arrays.
Number: phx15485  State: submitted
Date Entered: 1983-06-28  Area: EXL read_mail apply request
Site: System_M
Summary:
Does not honor new mail when "apply 1" is given.

Number: phx15695  State: submitted
Date Entered: 1983-08-02  Area: PLI compiler
Site: Bell_Toronto
Summary:
Specification of "-ot" will cause compiler to catch/generate warnings of variables that have been referenced but never set.

Number: phx15706  State: answered
Date Entered: 1983-08-03  Area: pl1 conditions
Site: Bell_Toronto
Summary:
It appears that MR10 is treating conditions differently than MR8 used to. Is it possible that there could be extra overhead in MR10, which would degrade an applications performance?

Number: phx15706  State: submitted
Date Entered: 1983-08-03  Area: pl1 conditions
Site: Bell_Toronto
Summary:
It appears that MR10 is treating conditions differently than MR8 used to. Is it possible that there could be extra overhead in MR10, which would degrade an applications performance?

Number: phx16416  State: submitted
Date Entered: 1983-11-21  Area: as_who documentation
Site: GM
Summary:
If the user doesn't have access to tc_data the error message is printed only on the first invocation per process.

Number: phx16417  State: submitted
Date Entered: 1983-11-21  Area: as_who documentation (headers)
Site: GM
Summary:
If the user specifies long output and a name to be searched for, the column headers are not printed.

Number: phx16625  State: not_error
Date Entered: 1983-12-23  Area: documentation
Site: AFDSC
Summary:
None of the r(1 2 3 4)_io_gate entries are documented.

Number: phx16637  State: answered
Date Entered: 1983-12-31  Area: pl1, assign_
Site: System_M
Summary:
Pl1 and assign_ seem to be at odds to the reference manual for alignment.

Number: phx17399  State: submitted
Date Entered: 1984-04-27  Area: video
Site: System_M
Summary:
window_editor_utils_ needs an info seg.

TRs Resolved in MR12.5  3-2  SRB12.5
Number: phx17468  State: deferred
Date Entered: 1984-05-10  Area: mail_system/reply
Site: MIT_ext
Summary:
The mail system reply request can not reply to mail with a from
field of "ORCUTT@EDUCOM".

Number: phx17497  State: deferred
Date Entered: 1984-05-15  Area: read_mail reply
Site: MIT
Summary:
reply should be able to figure out a reply path by following the
path the mail took in arriving .

Number: phx18127  State: submitted
Date Entered: 1984-08-29  Area: dial_out
Site: System_M
Summary:
The dial_out command can not be used recursively with the
-profile control argument.

Number: phx18457  State: deferred
Date Entered: 1984-10-31  Area: compose device-writer
documentation
Site: System_M
Summary:
The documentation in AZ98-02, specically pages 5-58 .. 5-61,
which describe the code fragments and variables, are
insufficiently complete to design/write/implement a
device-writer.

Number: phx18497  State: submitted
Date Entered: 1984-11-09  Area: help command
Site: System_M
Summary:
The help command produces garbage output when encountering a link
to a non-existent info segment.

Number: phx18509  State: deferred
Date Entered: 1984-11-13  Area: Mail system
Site: System_M
Summary:
-log is always added as a bcc field.

Number: phx18528  State: needs_info
Date Entered: 1984-11-17  Area: mail table/PNT
Site: MIT_ext
Summary:
The mail table software does not recognize when two entries are
actually the same.

TRs Resolved in MR12.5  3-3  SRB12.5
reconstruct_registry only works if the rcprm journals begin after the last update to the registry being reconstructed. It should be able to ignore journal entries older than the registry to be reconstructed.

The entrypoint decode_definition$_full is missing from the info, even though it is referred to in the text

Read_mail unable to reply to valid message header.

mail system could not reply to FROM field.

Why can't (or shouldn't) 'reply' construct a reply address from the 'Route:' field or from 'Delivery-xx:' if 'Route:' is not present?
io_error_summary gets the channel and MPC wrong.

The dial_out command does not use the 'force' mode when it attempts to set '8bit' mode.

In MR11.0, given a tape_vol with potential access class of system_low:system_high, users logged on at an authorization above system_low cannot acquire it with the command: "aqr tape_vol -nb 1"

The format_document subroutine mishandles input strings which contain lines that are longer than the internal buffer length (256 characters).

Minor improvement to io_error_summary

Confusing error message.

Many absentees entered with -resource can cause Initializer to be so busy checking on resources that little else gets done.
Number: phx19821  State: submitted
Date Entered: 1985-10-06  Area: io_error_summary.pl1
Site: Site N
Summary:
The io_error_summary program bungles the reporting of the tracks where data bit errors occurred.

Number: phx19867  State: submitted
Date Entered: 1985-10-24  Area: install
Site: System M
Summary:
up cdt fails with null pointer fault when a new multiplexer is added to the cdt

Number: phx19913  State: not_error
Date Entered: 1985-11-14  Area: forum
Site: System M
Summary:
allowed set of chairman to Person.*, then refused to cooperate later

Number: phx20018  State: deferred
Date Entered: 1986-01-02  Area: rcp_tape_survey_
Site: System M
Summary:
Creates IO to tape handler which will cause Initiilizer to go blocked if tape controller has been suspended.

Number: phx20023  State: deferred
Date Entered: 1986-01-03  Area: video
Site: UC
Summary:
Can leave ips signals masked.

Number: phx20047  State: submitted
Date Entered: 1986-01-15  Area: sc_admin_command_
Site: System M
Summary:
The AS log entry generated for "Denied send admin_command for USER in ring X" misidentifies itself as "sc_admin_command_".

Number: phx20277  State: submitted
Date Entered: 1986-04-11  Area: CMF Access Checking Default
Site: UC
Summary:
Default for Check_acs is not "priv_attach,dial_out" as stated on in CC75.

Number: phx20350  State: submitted
Date Entered: 1986-05-19  Area: answering service - general
Site: RAE
Summary:
as_who incorrectly interprets preemption.

TRs Resolved in MR12.5  3-6  SRB12.5
Number: phx20444  State: submitted
Date Entered: 1986-07-13  Area: ftp_dialup_
                (answering service)
Site: Site_N
Summary:
Bug in ftp_dialup_ will cause "ftp_dialup_: Program error: null
atpe with per-process tra_vec value" messages when mail is tried
and no ARPANET_mail dial qualifier is valid.

Number: phx20445  State: submitted
Date Entered: 1986-07-13  Area: ftp_dialup_
                (answering service)
Site: Site_N
Summary:
Bug in ftp_dialup_ can cause null pointer faults.

Number: phx20452  State: deferred
Date Entered: 1986-07-16  Area: megacalc
Site: DODCSC
Summary:
The megacalc documentation intermixes upper and lower case for
its commands, giving one the feeling that it's case insensitive.

Number: phx20517  State: submitted
Date Entered: 1986-08-29  Area: list_abs_request
Site: System_M
Summary:
Header has a garbage total if the user has s access to absentee
queue 1 but no s access to queue 0.

Number: phx20569  State: submitted
Date Entered: 1986-09-18  Area: AK51-02
Site: System_M
Summary:
Doesn't describe some PMF parameters very well.

Number: phx20578  State: submitted
Date Entered: 1986-09-26  Area: forum apply request
Site: Site_N
Summary:
When beginning a transaction with the "apply emacs" request,
forum fumbles the the meeting name in the "Transaction [0XXX]
entered in ... meeting." message.

Number: phx20579  State: submitted
Date Entered: 1986-09-26  Area: forum "apply -nfi" request
Site: Site_N
Summary:
When using "apply -nfi emacs" to begin a transaction, forum does
not prompt for a subject, reads the current transaction into
emacs, and just doesn't work.

TRs Resolved in MR12.5  3-7  SRB12.5
Number: phx20626  State: submitted  
Date Entered: 1986-10-21  Site: System_M  
Area: PNT extended object type  
Summary:  
If a name which does not end in the ".pnt" suffix is supplied as an argument, the error code error_table$badstar is returned rather than a more informative code.

Number: phx20665  State: submitted  
Date Entered: 1986-11-12  Site: System_M  
Area: documentation  
Summary:  
In AM83, the pl1 reference guide, page 15-9, "string value" should be "stringvalue" (no space) in FILE DESCRIPTIONS diagram.

Number: phx20681  State: deferred  
Date Entered: 1986-11-20  Site: System_M  
Area: Emacs manual  
Summary:  
The index is missing many important entries.

Number: phx20713  State: submitted  
Date Entered: 1986-12-08  Site: DND-H  
Area: system administration tools  
Summary:  
set_special_password does not query the user twice for the password either by default or when the control argument -prompt is given.

Number: phx20785  State: submitted  
Date Entered: 1987-02-20  Site: System_M  
Area: dcdsm  
Summary:  
No help info segment for dcdsm.

Number: phx20787  State: submitted  
Date Entered: 1987-02-24  Site: RADC  
Area: Answering Service  
Summary:  
During a shift change or a "maxu auto" the system will log messages to the effect that the MGT is damaged when it is really not.

Number: phx20788  State: deferred  
Date Entered: 1987-02-24  Site: System_M  
Area: .  
Summary:  
The Multics Communications Administration manual CC75-02 MR11.0 dated February 1985.

TRs Resolved in MR12.5  3-8  SRB12.5
list active request does not honor -inhibit_error

"psl.info" refers to "-single" control argument, which is not implemented.

When a run -ec xx terminates due to a fortran end statement, due to the mode of signalling the end_run the user environment can be disrupted or destroyed.

IN THE VERSION CURRENTLY ON BCO (BILLERICA), the default info promised in the help segment does not appear.

forum.info does not document -auto_write.

The description of the "reply" request doesn't give a complete explanation of replying in another meeting (i.e. with the use of the "-meeting" control argument).

When this command is run more then once within the same logon, list_extra_personids aborts with the message: conflict with file attribute....
Number: phx20898 State: submitted
Date Entered: 1987-06-20 Area: forum
Site: System_M
Summary: I got the error message "The specified transaction index does not exist. Transaction not entered." when (I feel) no user error had been made.

Number: phx20899 State: submitted
Date Entered: 1987-06-20 Area: forum
Site: System_M
Summary: All the transactions that I entered into meeting ONE from meeting TWO (i.e. with the forum request "reply <trans> -mtg ONE", while I was attending meeting TWO) got chained together - even though the transactions to which I was replying (in meeting TWO) were not in the same chain.

Number: phx20943 State: submitted
Date Entered: 1987-08-06 Area: Documentation: processor manual
Site: System_M
Summary: Typos in the Multics processor manual.

Number: phx20946 State: submitted
Date Entered: 1987-08-08 Area: forum
Site: System_M
Summary: Bad header on mailed, unprocessed transactions.

Number: phx20978 State: submitted
Date Entered: 1987-09-08 Area: deckfile_manager
Site: System_M
Summary: Attempting to merge tandd_deck_files after deleting firmware modules results in errors attempting to find the deleted firmware.

Number: phx21021 State: submitted
Date Entered: 1987-11-27 Area: process creation, nothing/tty_
Site: SJU
Summary: Creating a file in the home directory called "nothing" prevents further login's because tty_ uses the "nothing" command as a subroutine.

TRs Resolved in MR12.5 3-10 SRB12.5
Number: phx21031  State: submitted  
Date Entered: 1987-12-04  Area: documentation AMOC password locking  
Site: SJU  
Summary: Turning pnte flag "lock" on causes immediate bumping of user; this is change made sometime after MR10.2, and is not documented in GB64.

Number: phx21039  State: submitted  
Date Entered: 1987-12-15  Area: video  
Site: RAE  
Summary: wdc guch/ wdc gech are inconsistent with each other.

Number: phx21045  State: submitted  
Date Entered: 1987-12-21  Area: run units  
Site: RAE  
Summary: 1. run units execute inconsistently if they contain a fortran program. 2. the documentation covering run units with Fortran programs is inadequate.

Number: phx21050  State: submitted  
Date Entered: 1988-01-05  Area: documentation of user command  
Site: SJU  
Summary: The "cutoff_date" argument to the "user" command is not documented in the info file or in C&AF.

Number: phx21172  State: submitted  
Date Entered: 1988-06-09  Area: date_time_.info  
Site: System M  
Summary: Documentation for date_time$_from_clock_interval refers to the nonexistent include file time_offsets.incl.pll.

Number: phx21202  State: submitted  
Date Entered: 1988-08-28  Area: add_name  
Site: System M  
Summary: Says "This operation not allowed for a segment" when adding a name to a forum meeting which is the only remaining name of another forum in the same directory (i.e., when the other forum should be deleted).

Number: phx21246  State: submitted  
Date Entered: 1989-01-10  Area: force_write  
Site: Site N  
Summary: forced_page_writes is not adding correctly.

TRs Resolved in MR12.5  3-11  SRB12.5
Probe ignores subscript referencing for arrays which are enumerated types.

The template for the test mdcicdoo test command is wrong in MR12.1, was ok in mrr1. The new module thinks it is a test mdciccooo format.

Inconsistent rightshift. Unsigned types of char, short, and int use logical rightshift, which makes sense, while unsigned long uses arithmetic, which does not.

rldr_label_ output erroneous value in error message

When in forum in a meeting with "lots" of transactions, doing a ls with the -reverse control argument will cause a blow up.

errata.cj52.info contains compose controls.

The generate_mst command does not detach and unload tapes.

The generate_mst command does not detach and unload tapes.

out_of_bounds on listing

TRs Resolved in MR12.5 3-12 SRB12.5
Number: phx21291  
Date Entered: 1989-05-10  
Site: IN  
Summary:  
Several bugs in dfm.

Number: phx21295  
Date Entered: 1989-05-18  
Site: System_M  
Summary:  
Description of status command control arguments -author and -bit_count_author essentially duplicate each other.

Number: phx21296  
Date Entered: 1989-05-23  
Site: DAC  
Summary:  
Selection expressions do not always select the correct data.

Number: phx21301  
Date Entered: 1989-06-15  
Site: System_M  
Summary:  
Conversion of a character string to floating point binary fails when the character string represents a negative binary floating point value such as "-1.1e+0b".

Number: phx21303  
Date Entered: 1989-06-16  
Site: Ford  
Summary:  
segment_mover should specify subvolumes (when applicable) in its syserr messages.

Number: phx21304  
Date Entered: 1989-06-21  
Site: Ford  
Summary:  
Project aliases cannot be removed once added.

Number: phx21306  
Date Entered: 1989-07-19  
Site: System_M  
Summary:  
The "atan" builtin doesn't work when passed a complex value as an argument.

Number: phx21308  
Date Entered: 1989-08-03  
Site: System_M  
Summary:  
Comparison of constant label array elements doesn't work.

TRs Resolved in MR12.5  3-13  SRB12.5
There are lots of problems with complex fixed, decimal and picture data types.

'Translation failed' message while compiling

azm does not default to pds on am, but does on hregs, creating confusion. defaults on all commands should be consistent.

azm display does not work properly for hardcore not in dump/ not online.

hregs command reuses au data invalidly in threading process and does not give all the available cu and ou data.

manage_volume_pool mvp can run out of stack space when used as an active function to get the total of a large pool. string [mvp l ttl]

Bad code causes faulty attach description in dfm_ (get_files) line 1425. Causes reel_name and -write to be concatenated for copy attach.

TRs Resolved in MR12.5 3-14  SRB12.5
Asynchronous messages, e.g., from the printer daemon, seem to confuse DSA so that it ignores my terminal input. It appears that DSA is waiting for something from Multics before it will (logically) turn my line around.

copy command gets bogus quota fault copying a MSF which contains nulled pages.

The C compiler spits out bogus program name when displaying warnings.

The -TTP control arg is BROKEN

implementation of SCP6385 does not set the reply-to field on a reply.

The variable att_desc is not large enough.

The PL/1 compiler flags a syntax error when it encounters a reference to what should be a valid internal options(constant) value.
Number: phx21342  State: deferred
Date Entered: 1990-03-29  Area: communications
Site: System_M
Summary:
Messages from as_error_table_, i. e., This is your second login
do not comply with the FTP protocol in TCP/IP.

Number: phx21344  State: submitted
Date Entered: 1990-05-28  Area: answering service
Site: System_M
Summary:
The shift operator command doesn't always display the correct
next shift change time.

Number: phx21361  State: deferred
Date Entered: 1990-10-23  Area: Communications and telnet
Site: System_M
Summary:
logging in via telnet and attempting to change password via -cpw
generated some unfavorable interactions with attempts by Multics
to turn off password printing so that login attempts all failed.

Number: phx21362  State: deferred
Date Entered: 1990-10-24  Area: cobol
Site: RAE
Summary:
Compiler gets an OOB on user stack due to the use of a null
pointer as a string length parameter.

Number: phx21363  State: deferred
Date Entered: 1990-11-07  Area: COBOL
Site: UC
Summary:
Compilation errors using MR12.3 version 5.4 COBOL

Number: phx21364  State: submitted
Date Entered: 1990-11-19  Area: Documentation
Site: System_M
Summary:
Incorrect documentation for ask_subroutine.

Number: phx21365  State: submitted
Date Entered: 1990-11-19  Area: Documentation
Site: System_M
Summary:
Incorrect documentation for date_time_subroutine.

Number: phx21366  State: submitted
Date Entered: 1990-11-19  Area: Documentation
Site: System_M
Summary:
Missing info segment for get_equal_name_subroutine.

TRs Resolved in MR12.5  3-16  SRB12.5
Number: phx21367  State: not_error
Date Entered: 1990-11-28  Area: Documentation
Site: System_M
Summary:
Inconsistent documentation for obsolete hcs_entrypoints.

Number: phx21368  State: deferred
Date Entered: 1990-12-02  Area: telnet
Site: System_M
Summary:
Cannot change passwords when using a telnet connection.

Number: phx21369  State: not_error
Date Entered: 1990-12-02  Area: external SMTP mail to multics
Site: System_M
Summary:
Mail from external SMTP agent to multics user(s) appears " at system-m" to the person_id. This is very annoying (especially if large copy list of multics users). Why can't it just simply be 'person_id'?

Number: phx21370  State: deferred
Date Entered: 1990-12-17  Area: send_mail header requests
Site: System_M
Summary:
Send_mail should not allow the user to add the same address to the To or CC field multiple times.

Number: phx21371  State: deferred
Date Entered: 1990-12-17  Area: ftp
Site: System_M
Summary:
The "ls" request when the target system is a Multics system gives the user an error message; The requested action was not performed. Error listing working directory.

Number: phx21372  State: submitted
Date Entered: 1991-01-18  Area: pdir_volume_manager
Site: RAE
Summary:
Bad arg list for call to sys_log_ causes asdumps etc.

Number: phx21373  State: deferred
Date Entered: 1991-01-21  Area: read_mail
Site: ACTC
Summary:
When parsing messages in the mailbox, the mail system will use the Message-ID of the original message for any redistributions rather than the appropriate Redistributed-Message-ID field.
Number: phx21374  State: needs_info
Date Entered: 1991-01-22  Area: bound_exec_com_
Site: Cardiff
Summary:
ec clobbers its stack during expansion of large active functions etc.

Number: phx21375  State: submitted
Date Entered: 1991-01-23  Area: Forum
Site: System_M
Summary:
When first entering forum, "current" does not always be set correctly.

Number: phx21376  State: submitted
Date Entered: 1991-01-24  Area: Forum
Site: System_M
Summary:
The forum delete request's handling of setting of the current transaction is inconsistent with that of the rdm delete request.

Number: phx21377  State: submitted
Date Entered: 1991-01-24  Area: Forum
Site: System_M
Summary:
The trans returned by the "c" request should always be the same as that which is returned when "c" is used as an argument to a request.

Number: phx21378  State: limitation
Date Entered: 1991-05-14  Area: MTU8200 tape drives
Site: Ford
Summary:
If the request to unload a tape is sent while the tape is rewinding, the request is lost. A subsequent mount request will try to read the same tape and request authentication from the operators.

Number: phx21379  State: submitted
Date Entered: 1991-05-22  Area: FORTRAN
Site: UC
Summary:
Bad code generated for VLA (Very Large Array) reference.

Number: phx21380  State: submitted
Date Entered: 1991-06-25  Area: new_user command documentation
Site: System_M
Summary:
The revalidate operation of the new_user command found in GB64-00B is misformatted. This leads the reader to believe that it is a flag not an operation.

TRs Resolved in MR12.5  3-18  SRB12.5
Number: phx21381  State: submitted
Date Entered: 1991-07-19  Area: dial_out
Site: System_M
Summary:
dial_out doesn't completely initialize its variables and doesn't
limit the processing of buffers to the valid portion.

Number: phx21382  State: submitted
Date Entered: 1991-07-29  Area: Fortran Compiler
Site: System_M
Summary:
If the total size of a Fortran VLA is greater than 2**24, ER136
should be displayed consistently during compile time.

Number: phx21383  State: submitted
Date Entered: 1991-08-15  Area: Documentation
Site: System_M
Summary:
The info segment for cv_integer_string &
cv_integer_string_check incorrectly declare the return argument
as fixed bin(71). The actual precision of the return value is
fixed bin(35).

Number: phx21384  State: submitted
Date Entered: 1991-08-20  Area: dial_out
Site: System_M
Summary:
dial_out doesn't properly reset its timers when aborted.

Number: phx21385  State: submitted
Date Entered: 1991-08-20  Area: dial_out wait request
Site: System_M
Summary:
The dial_out 'wait' request should support the '-inhibit_error'
control argument to facilitate its use as an active function when
a timeout interval was specified.

Number: phx21386  State: submitted
Date Entered: 1991-09-06  Area: Forum
Site: System_M
Summary:
Bad long summary on unprocessed transactions.

Number: phx21387  State: submitted
Date Entered: 1991-09-24  Area: MR12.4 release libraries
Site: System_M
Summary:
Segment corruption in various parts of the MR12.4 release can
cause the Initializer to enter an error asdump loop that requires
an execute fault crash to recover the system. In particular, sac
-nmail xxx will hang the Initializer.

TRs Resolved in MR12.5  3-19  SRB12.5
Number: phx21388  State: submitted
Date Entered: 1991-09-30  Area: volume retrievals
Site: GM
Summary:
There appears to be a problem with volume retrievals of one of our customers msf vfiles. Upon retrieval the vfile msf header is always left damaged.

Number: phx21389  State: submitted
Date Entered: 1991-11-13  Area: Volume Reloader
Site: System_M
Summary:
If reload_volume encounters a error in reloading an object from tape, a fatal error may occur when it attempts to deposit unused pages previously withdrawn for the object.

Number: phx21390  State: submitted
Date Entered: 1992-05-11  Area: copy_disk_volume.pl1
Site: RAE
Summary:
There is a bug in the ioa_args at line 282-284 where the error summary is printed.

Number: phx21391  State: submitted
Date Entered: 1992-05-13  Area: message_segment_
Site: DODCSC
Summary:
During message segment compaction, the message segment gets truncated to a length of 0. This action overwrites the lockword held by the calling process.

Number: phx21392  State: submitted
Date Entered: 1992-05-20  Area: extended objects
Site: System_M
Summary:
delete no longer functions for the "forum" extended object type.

Number: phx21393  State: submitted
Date Entered: 1992-06-09  Area: format_document_
Site: DODCSC
Summary:
Loss of character when input file has line greater than 512 characters.

Number: phx21394  State: submitted
Date Entered: 1992-07-02  Area: copy_disk_volume
Site: DODCSC
Summary:
When attempting to copy a 451 which has no alt partition, copy_disk_volume fails to open the source io switch correctly.

TRs Resolved in MR12.5 3-20 SRB12.5
Number: phx21395  State: submitted
Date Entered: 1992-07-09  Site: DODCSC
Area: Commands
Summary:
format_document generates a new line when the input line has
spaces at position 257, 258 and 259.

Number: phx21396  State: submitted
Date Entered: 1992-07-28  Site: DODCSC
Area: forum_trans_mgr_
Summary:
Any date_time string which is between forum transaction blocks
will cause forum_trans_mgr_ to go into an infinite loop.

Number: phx21397  State: submitted
Date Entered: 1992-08-12  Site: System_M
Area: Forum
Summary:
The value of current is not set when first attending a forum, and
not all possible commands from that point execute the code to set
it.

Number: phx21398  State: submitted
Date Entered: 1992-08-12  Site: ACTC
Area: Answering Service CDT installation
Summary:
Attempting to install a CDT which changes the line_type of a
channel that is not assigned to a user process causes an asdump
due to a null pointer being passed by up_cdt_.

Number: phx21399  State: submitted
Date Entered: 1992-09-04  Site: System_M
Area: io_error_summary
Summary:
io_error_summary displays an incorrect message for the
usage/error stat overflow status for FIPS devices.

Number: phx21400  State: submitted
Date Entered: 1992-09-14  Site: Ford
Area: backup systems (volume reloader)
Summary:
When reloading a volume on a FIPS device, the number of usable
sectors is not calculated correctly if -disk model is specified.
This miscalculation causes the volume to be loaded incorrectly.

TRs Resolved in MR12.5  3-21  SRB12.5
Number: phx21401  State: submitted
Date Entered: 1992-09-21  Area: deckfile_manager TandD
Site: ACTC
Summary:
The MR12.3 and MR12.4 versions of deckfile_manager fail during initialization due to a software integration error. As a result, deckfile_manager is unusable as released.

Number: phx21402  State: submitted
Date Entered: 1992-09-29  Area: forum
Site: System_M
Summary:
The installation of forum 2.15 on 92-September-28 lists forum meetings without new transactions when the forum_check_meetings -ls command is issued.

Firmware Status 3-22  SRB12.5
SECTION 4

FCO AND FIRMWARE STATUS

FIRMWARE

The firmware identification for MR12.5 is "IFAD D.6". There are no changes to the firmware relative to MR12.4. The IFAD tape was shipped with the MR12.4 release and will not be shipped with MR12.5.

T&D (Test and Diagnostic) tapes are distributed to all sites with valid Field Engineering Hardware Maintenance contracts. The T&D tape is distributed as FCO PHAFGA888, rev. B.2.

This version of IFAD, firmware and T&D modules have been tested and exposed on System M in Phoenix. The modules are supplied as part of the MR12.5 release and can be found in >lld<firmware as part of the LDD_STANDARD tape set. When subsequent IFAD tapes become available, it is recommended that the site use the deckfile_manager, dfm, command to load the released IFAD tape into >system_library_tandd. The firmware modules should then be moved to >lld<firmware and a new MST tape should be generated using generate_mst.

Required Firmware Revision Levels

The MR12.5 release requires the following firmware revision levels.

Disc:  DSC191 -- V1  
      DSC500 -- V1  
      MSP800 -- L1

Tape:  MTC0500 -- V1  
        MTP0601 -- T1  
        MTP0610 -- C2

Firmware Status  4-1  SRB12.5
FIELD CHANGE ORDER LIST

The following list of FCOs should be thought of as a continuation of the similar list for MR12.3. This list is unchanged from MR12.4. Sites that are upgrading from MR12.3 will need to verify that FCOs for that release have been installed. Sites upgrading from MR12.4 should have already installed the FCOs listed. However, such sites should verify that these changes have been installed.

As FCOs are completed in Phoenix, they are sent out to the field sites. Some of the FCOs affect only site documentation while others may change the hardware to improve system reliability or maintainability. An example might be a change to improve the supply of cooling air to some boards so that the boards run cooler and are therefore less likely to fail. These types of FCOs are important to the long-term success of system operation. However, because these FCOs are not required to correct the results of any computer program, they are not listed in this SRB.

The purpose of this section is to identify those FCOs that are of utmost importance in the short term. This list includes only those FCOs needed to correct a program malfunction.

For those FCOs already sent to the field, the "FCO Kit Ship Date" column contains the approximate date when shipment of the FCO kits began.

One of the column headings in the tables on the following pages is "Round Robin". The implications of a "Yes" in this column for a particular FCO are as follows:

1. The FCO kit includes at least one board. The new board(s) is to replace the board(s) now in the equipment.

2. Enough FCO kits are put together for about 20% of the sites that are to take part in the Round Robin. Some FCOs result in a Round Robin for all sites. Other FCOs involve a Round Robin for some sites but not for other sites. For example, two of the factors that determine whether or not a particular site takes part in a Round Robin FCO are:
   a. The date codes of certain integrated circuit chips on a board.
   b. The board construction method -- wirewrap vs. multilayer.
3. The set of FCO kits are sent to the first set of sites. (For the remainder of this discussion, we will follow one kit as it makes its Round Robin journey.)

4. The site installs the FCO. When the site is satisfied that the FCO is satisfactory, the site returns the old board(s) to Phoenix.

5. If there is still equipment at other sites that have not had the FCO installed, the returned board(s) is reworked, tested, and another FCO kit is assembled in Phoenix and sent to the next site.

6. Since the length of time it takes a site to install an FCO (and become satisfied that it is working correctly) cannot be known in advance, there is no way to predict with accuracy how long it will be until the FCO has been installed at all sites.

The FCOs have been classified into the following categories:

**CATEGORY 1** - The new software for this release will not run properly unless these FCOs are installed.

**CATEGORY 2** - The new software for this release may or may not run properly if these FCOs are not installed. It is strongly recommended to have these FCOs installed to improve reliability of the system.

**CATEGORY 3** - FCOs whose effects are program-visible, but do not fall into categories 1 or 2. Category 3 FCOs correct problems that are not uniquely related to this release.
**CATEGORY 1 FIELD CHANGE ORDERS**

FIELD CHANGE ORDERS VITAL TO THIS SOFTWARE RELEASE

<table>
<thead>
<tr>
<th>FCO Number</th>
<th>Board</th>
<th>FCO Kit</th>
<th>Ship Date</th>
<th>Round Robin</th>
<th>Est. Hours</th>
<th>FCO Kit</th>
<th>Round Robin</th>
<th>Instl</th>
<th>Release</th>
</tr>
</thead>
</table>

No category 1 changes are required for MR12.5.

Firmware Status

4-4

SRB12.5
**CATEGORY 2 FIELD CHANGE ORDERS**

FIELD CHANGE ORDERS POSSIBLY NEEDED FOR THIS RELEASE

<table>
<thead>
<tr>
<th>FCO Number</th>
<th>Board</th>
<th>FCO Kit</th>
<th>Ship Date</th>
<th>Round Robin</th>
<th>Hours To Instl</th>
<th>FCO Estimates for Multics Release</th>
</tr>
</thead>
</table>

No category 2 changes are required for MR12.5.

Firmware Status 4-5

SRB12.5
### CATEGORY 3 FIELD CHANGE ORDERS

FIELD CHANGE ORDERS INDEPENDENT OF A PARTICULAR RELEASE

<table>
<thead>
<tr>
<th>FCO Number</th>
<th>Board</th>
<th>FCO Kit</th>
<th>Ship Date</th>
<th>Round Robin</th>
<th>Est. FCO Hours To Instl</th>
<th>FCO for Multics Release</th>
</tr>
</thead>
</table>

-----DPSM CENTRAL PROCESSOR (Models 52M & 62M)------------------

| PHAFPS388 | ETDK | 90 Jun | No | .5 | MR12.4 |

-----DPSM CENTRAL PROCESSOR (Model 70M)---------------------

| PHAFPE517 | ETCAK | 90 Jun | No | .5 | MR12.4 |

-----INTEGRATED MULTIPLEXER UNIT (IMU)----------------------

| PHAFXS868 | WXGSC | 90 Apr | No | .5 | MR12.4 |
| PHAFXS873 | WXGJD | 90 Nov | No | .1 | MR12.4 |

-----FIPS DISK MSU 3380/3382, MSP 3880/1/4/5-----------------

| PHAFFP565 | 01A-B3/4 | 90 Mar | No | .5 | MR12.4 |

-----T&D RELEASE REV. B.2-------------------------------------

| PHAFGA888 | Tape | 87 Mar | No | 2.0 | MR12.1 |

-----MHAT MR12.0----------------------------------------------

| PHAFPD998 | Tape | 87 May | No | 2.0 | MR12.0 |

Firmware Status  
4-6  
SRB12.5
SECTION 5

INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS

The installation of MR12.5 has been made as automatic as possible through the use of the master installation exec_coms called 12.5.install_part1.ec and 12.5.install_part2.ec. These exec_coms assume privileged access and the availability of sufficient quota. It is the installer's responsibility to ensure that access and quota are available. See "Installation Exec_coms" later in this section for a list of the exec_coms used in the installation process.

Part 1 of the installation installs the changes to the hardcore and online executable libraries for MR12.5. Part 1 must be run from an existing MR12.3 or MR12.4 system and should be performed just prior to shutdown after all users and IO daemons have been logged out. At the completion of Part 1 the system should be shutdown and rebooted with the supplied MR12.5 System Tape (or a new site specific system tape).

Part 2 of the installation is designed to be executed while running normal service. It installs the LDD source and object libraries and the executable, source and object changes to PSP (unbundled) software. Part 2 should not be run while the system is heavily loaded because of the additional load that will be placed in the system.

To ensure proper access, it is recommended that the installation be done by a SysDaemon or SysMaint process. These projects, by default, have access to the appropriate gates and directories to complete these installations. Sites that have changed default accesses must ensure these exec_coms are run from a process with sufficient access.

These instructions assume that the installer is familiar with the procedures used with the reload command and that the installer has a fundamental understanding of the system library structure and Multics library installation procedures. For more information on these topics, please refer to "Operator's Guide to
Multics" (GB61) and "Multics Administration, Maintenance, and Operations Commands" (GB64).

The total size of the MR12.5 release directories is up to 18000 records, depending upon PSP software purchased by a site. Not all PSPs are changed for MR12.5. In order to install all changed standard and changed PSP products into the online libraries (step 4), a total of 36000 free records could be needed under >l. This additional storage is temporary and may be deleted when the site is satisfied that reversion to the prior release is not necessary. Each exec_com can be run in parts to reduce overall storage requirements.

Based on testing at ACTC, the time required to install MR12.5 is approximately two hours.

The individual parts of this release are contained in separate directories subordinate to >l>MR12.5:

- 12.5.C_COMPILER
- 12.5.COBOL
- 12.5.EXECUTABLE
- 12.5.EXECUTIVE_MAIL
- 12.5.EXTENDED_MAIL
- 12.5.FORTRAN
- 12.5.HARDCORE
- 12.5.LDD
- 12.5.LINUS
- 12.5.LISTER
- 12.5.MOWSE
- 12.5.PASCAL
- 12.5.RJE

Several of these directories contain changes to PSP products. Such PSP directories will not exist if the site has not ordered the corresponding PSP product. Only those directories found to exist are installed. The directories 12.5.EXECUTABLE and 12.5.HARDCORE will be installed in Part 1. The remaining directories will be installed in Part 2.

INSTALLATION SUPPORT

The installation instructions have been tested and verified at ACTC in Calgary. If problems occur with these installation procedures contact:

Dave Schroth (403) 295-5900 or
Ward Anderson (403) 295-5900

Electronic mail and the "ii" forum meeting on the ACTC Multics system may also be used to obtain assistance and convey comments on the release.
INSTALLATION STEPS

Step 1: Tape Reload

While running under the current (MR12.3 or MR12.4) system in normal service, login a Retriever.SysDaemon daemon process from the console (using source virtual console rt):

```plaintext
login Retriever.SysDaemon rt
```

and begin reloading the release by issuing the command:

```plaintext
r rt reload -nosetlvid -noquota
```

When the reload program prompts "Input tape label: ", reply with the names of the MR12.5 release tapes as supplied (in the order listed):

- 12.5.exec
- 12.5.1dd_standard_1
- 12.5.1dd_standard_2 (possibly)
- 12.5.unbundled
- 12.5.misc

The 12.5.misc tape must be the last tape loaded. This will cause the MR12.5 tapes to loaded into the directories:

```plaintext
>library_dir_dir>MR12.5
>library_dir_dir>system_library_1>info
>library_dir_dir>crossref
>documentation>MR12.5
```

The 1dd_standard tape set may contain either one tape labelled 1dd_standard_1 or two tapes labelled 1dd_standard_1 and 1dd_standard_2. The number of tapes received will depend upon the exact length of the 1dd_standard_1 tape reel.

Step 2: Hardcore and Executable

This step starts Part 1 of the installation.

The Part 1 exec_com installs the changed MR12.5 hardcore and online executable software.

Enter Special Session, ensuring all users and SysDaemons are logged out. Login as Repair.SysDaemon and type:
dsr working_dir
cwd >ldd>MR12.5
ec 12.5.install_part1

Respond to queries as appropriate. The exec_com is interactive allowing Part 1 to be installed all at once or partially. There are no dependencies within sections in Part 1, but it is recommended that it be run in one pass.

If any site local modifications or additions to the Multics System Tape (MST) have been made, a new MST should be generated to include the MR12.5 hardcore changes.

**Step 3: Reboot**

This step will complete Part 1 of the MR12.5 installation.

Shut down the system and reboot using the supplied MR12.5 System Tape (or the new MST created at the end of the preceding step).

Although MR12.5 source and object changes and unbundled software changes have not yet been installed, normal service can be resumed at this time.

In the event it becomes necessary to revert the hardcore installation, reboot the system with the previous system tape.

**Step 4: LDD and Unbundled**

This step starts Part 2 of the installation and installs changes to the online source and object libraries and the unbundled libraries.

Login as Repair.SysDaemon and type:

```
dsr working_dir
cwd >ldd>MR12.5
ec 12.5.install_part2
```

This release is packaged in such a way that no part installed in this step is dependent on any other. If quota is a problem, repeated partial installations of this portion of the release may be performed. The 12.5.install_part2.ec may be repeated as many times as needed.

For example, it is not necessary to install 12.5.LDD in order to run MR12.5. If quota is a problem, 12.5.LDD may be installed after all other parts have been installed and library cleanup (Step 6) completed.
Answer "yes" to install any part of the release that would not cause quota problems. Answer "no" to postpone the installation.

This step completes installation of all software changes for MR12.5.

**Step 5: Reverting Software**

In the event it becomes necessary to revert back to the previous release, or part of the previous release, the instructions below are recommended.

Note that these instructions are not valid if Step 6 below has been processed.

**SOFTWARE INSTALLED IN PART 1.**
Enter Special Session, ensure all users and SysDaemons are logged out. Login as Repair.SysDaemon and type:

```
cwd >ldd>MR12.5>12.5.EXECUTABLE
us de_install install_executable
cwd >ldd>MR12.5>12.5.HARDCORE
us de_install install_hard
```

Shutdown system and reboot with the system tape for the previous release.

**SOFTWARE INSTALLED IN PART 2.**

Software installed in this part may be de-installed in whole or in part at the site's option. Without shutting the system down, login as Repair.SysDaemon. For that portion of MR12.5 to be backed out, type:

```
cwd >ldd>MR12.5><dir_name>
us de_install <io_name>
```

where `<dir_name>` is one of the directories:

- 12.5.C_COMPILED
- 12.5.COBOL
- 12.5.EXECUTIVE_MAIL
- 12.5.EXTENDED_MAIL
- 12.5.FORTRAN
- 12.5.FORUM
- 12.5.LDD
- 12.5.LINUS
- 12.5.LISTER
- 12.5.MOWSE
- 12.5.PASCAL
- 12.5.RJE
and <io_name> specifies the io segment of the installation to be removed:

- install_ccompiler
- install_cobol
- install_executive_mail
- install_extended_mail
- install_fortran
- install_forum
- install_ldd
- install_linus
- install_liste
- install_mowse
- install_pascal
- install_rje

Repeat this command for each portion of MR12.5 to be reverted.

**Step 6: Library Cleanup**

The following instructions should be executed when you are satisfied that the installed software is stable. Old release software replaced by the execution of the above instructions has been renamed according the convention used by the update_seg command. The segments have not yet been deleted from the storage system.

If any part of the installation of MR12.5 was performed in the current system bootload with active user or daemon processes, this step should be deferred until the next system bootload. This will avoid possible segment fault errors in user processes as a result of old library executable segments being deleted during this step.

Login as Repair.SysDaemon and type:

```
cwd > ldd > MR12.5
ec 12.5.cleanup_library
cwd > ldd
dd MR12.5
```

to delete the old library segments and the installation libraries. At this time you will have recovered all quota used by the installation of MR12.5.

**INSTALLATION_EXEC_COMS**

As mentioned above, the installation of MR12.5 is driven by a set of exec_coms. Following the completion of Step 1 above, these exec_coms may be examined as needed.

There are four top level exec_coms used to install this release. These are:

- Installation Instructions 5-6
- SRB12.5
In addition to the above, there will be an installing exec_com in each directory reloaded under >ldd>MR12.5. For a list of these directories, refer to the "Installation Overview" portion of this section of the SRB. These ecs are responsible for the installation of the contents of the containing directory. As a minimum, the following installing ecs will exist:

>ldd>MR12.5>12.5.HARDCORE>install_hard.ec
>ldd>MR12.5>12.5.EXECUTABLE>install_executable.ec
>ldd>MR12.5>12.5.LDD>install_ldd.ec

In addition, for each PSP package product that a site has ordered, there will be a corresponding directory and an installing ec. The installing ec will be named install_<pspname>.ec.
APPENDIX A

DOCUMENTATION CHANGES

CURRENT MULTICS DOCUMENTATION STATUS

A complete list of manuals is provided in
>doc>info>manuals.gi.info. This segment is included as part of
the release package.

12.5 Documentation

There are no new or updated publications to support MR12.5.
Updates to manuals are provided by errata info files found in
>doc>info. Shown below are the errata, with add names, which
have been created for MR12.5.

ag92.errata.info
  errata.ag92.info
  Commands_Active_Functions.info
ag93.errata.info
  errata.ag93.info
  Subroutines_I/O_Modules.info
ak51.errata.info
  errata.ak51.info
  Project_Admin.info
ai39.errata.info
  errata.ai39.info
  Processor_Manual.info
cc75.errata.info
  errata.cc75.info
  Communications_Admin.info
cy74.errata.info
  errata.cy74.info
  Forum_Manual.info
gb58.errata.info
  Common_Commands.info
  errata.gb58.info
gb64.errata.info
  errata.gb64.info
  Admin_Maint_Oper_Commands.info
For the convenience of sites, a complete list of Multics manuals, is provided below.

AG90 Introduction to Programming on Multics
AG91 Multics Programmer's Reference Manual
AG92 Multics Commands and Active Functions
AG93 Multics Subroutines and Input/Output Modules
AG94 Multics PL/I Language Specification
AK50 Multics System Administration Procedures
AK51 Multics Project Administrator's Guide
AK95 Multics APL User's Guide
AL39 Multics Processor Manual
AM81 Multics System Maintenance Procedures
AM82 Multics BASIC
AM83 Multics PL/I Reference Manual
AN05 Multics GCOS Environment Simulator
AN50 Guide to Multics Manuals
AS40 Multics Graphics System
AS43 Multics COBOL User's Guide
AS44 Multics COBOL Reference Manual
AT58 Multics FORTRAN Manual
AT59 Multics FAST Subsystem User's Guide
AU25 Multics FAST Subsystem Reference Guide
AU77 Multics Online Test and Diagnostics Reference Manual
AW17 Multics Commands and Active Functions Quick Reference Guide
AW32 Multics SORT/MERGE
AW53 Multics Relational Data Store Reference Manual
AZ24 Multics Logical Inquiry and Update System Reference Manual
AZ98 Multics WORDPRO Reference Manual
CC69 Multics Report Program Generator Reference Manual
CC70 Multics FORTRAN User's Guide
CC75 Multics Communications Administration
CG40 Multics qedx Text Editor User's Guide
CH23 New User's Introduction to Multics--Part I
CH25 New User's Introduction to Multics--Part II
CH27 Emacs Text Editor User's Guide
CJ52 Multics Emacs Extension Writer's Guide
CP31 Level 68 Introduction to Emacs Text Editor
CP50 Multics Text Editor (Ted) Reference Manual
CP51 Multics Menu Creation Facilities
CX20 Fundamentals of Multics Executive Mail
CX72 Executive Mail Editing Operations (Reference Card)
CY73 Inter-Multics File Transfer Facility Reference Guide
CY74 Multics Forum Interactive Meeting System User's Guide
DJ18 Guide to Multics WORDPRO for New Users
DU06 Fundamentals of Multics Forum Interactive Meeting System
DW19 Multics MegaCalc User's Guide
DX71 Fundamentals of Multics Executive Forum
GB58  Multics Common Commands
GB60  Multics HASP Service and Utility Manual
GB61  Operator's Guide to Multics
GB62  Multics Pascal User's Guide
GB64  Multics Administration, Maintenance, and Operations Cmds
GB65  Multics/Personal Computer File Transmission Facilities
GB66  Multics On-Line Work Station End User's Guide
GL71  Multics Simplified Computing and Filing Facility
GN08  Multics Emacs Reference Card
HH07  Multics C Compiler User's Guide
APPENDIX B

MODULE CHANGES FOR MR12.S

This appendix provides information about changes to the Multics operating system on a segment basis. The following information applies to changes made to the system for the MR12.5 release only.

This appendix is provided to help sites identify, to a segment level, changes they may have applied for emergency bug fixes or site dependent modifications to current system software.

Information is categorized as follows:

- new or modified info segments
- new segments
- new or modified include files
- deleted segments
- modified segments
NEW OR MODIFIED INFO SEGMENTS FOR MR12.5

All additions and updates are made to >doc>info unless otherwise noted.

as_who.info
ask_.info
cv_integer_string_.info
cv_integer_string_check_.info
date_time_.info
dial_out.info
forum.info
get_equal_name_.info (added to >doc>info)
io_error_summary.info (>doc>privileged)
manuals.gi.info
new_user.info (>doc>privileged)
probe.info
psl.info (>doc>privileged)
reset.info (>doc>ss>forum)
status.info
trans_specs.info (>doc>ss>forum)
user.Info
wait.info (>doc>ss>dial_out)
window_editor_utils_.info (added to >doc>info)

The following errata are modified or created with this release.

ag92.errata.info
ag93.errata.info
ak51.errata.info
al39.errata.info
cc75.errata.info
cy74.errata.info
gb58.errata.info
gb64.errata.info
NEW SEGMENTS FOR MR12.5

fdisk_status_table_.alm
NEW OR MODIFIED INCLUDE FILES FOR MR12.5

forum_trans_list.incl.pl1
parse.incl.pl1
DELETED SEGMENTS FOR MR12.5

There are no deleted modules for MR12.5.