

To: MAB Distribution
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Subject: Procedures for Normal Installations

INTRODUCTION

This bulletin outlines the procedures for submitting software for installation into the Multics System Libraries.

This MAB replaces MABs 004, 012, 013, 014, and 015. Refer to MAB-057 for a description of Procedures for Emergency Installation.

MAKING THE CHANGES

1. DESIGN: for large changes or controversial changes, write an MTB describing the problem being solved and your proposed change. Gather comments on the proposal in a Forum meeting or at a Design Review, etc (see MAB-002 and MAB-006).
2. MCR: submit an MCR describing the change (see MAB-048).
3. CODING: once the change has been approved by the MCR Board, code the changes, modify or create info segments and other documentation, etc.

PREPARING FOR THE INSTALLATION

Several steps are involved in preparing an installation for submission.

4. SUBMISSION DIRECTORIES: Place all segments being changed (source, object, bind files, info segments, etc) in one or more installation directories. If several directories are used, all source should be placed in one directory, object in another, info segments in a third directory, include segment in a fourth. Fewer directories can be used by placing several types of segments (eg include and info) in a single directory. In a given directory, segments may be archived or unarchived. Refer to MAB-034 for further details.

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- 5. MSCR: Prepare a Multics System Change Request (MSCR) as described in MAB-034. If this change includes software previously installed as an emergency fix, include the Multics Emergency Change Request (MECR) fix number on the MSCR form, in the Effect of Change field on the first page. Refer to MAB-057 for a discussion of emergency fixes.
- 6. DOCUMENTATION: Attach to the MSCR a copy of: all relevant, approved MCRs; dprints of new or changed info segments; and manual writeup's (if available). If the submission is an incompatible change, prepare a segment containing a notice to be placed in message_of_the_day.info or in pending_changes.info. Attach a dprint copy of the message text to the MSCR.

At this point, preparations for submission are complete.

GETTING APPROVAL FOR THE INSTALLATION

The submission process involves several steps to get approval for the installation.

- 7. AUDITOR APPROVAL: Select an auditor (preferably someone knowledgable in the area of the system being changed, but NOT a co-implementor having overly intimate knowledge of the code). Provide the auditor with the MSCR, MCRs, documentation and other installation materials for review. When both the auditor and submitter are satisfied that the installation is correct, the auditor should sign the MSCR form and return the submission materials to the submitter.
- 8. DOCUMENTATION APPROVAL: Take the MSCR (with auditor's signature) to the documentation coordinator for approval of any documentation changes. Current coordinators are:

MDC-CAMBRIDGE	MDC-PHOENIX
Lee Baldwin	Bob Kress

- 9. PROJECT APPROVAL: Have one of the MDC manager's (preferably your own manager) sign the MSCR to indicate Project Approval to install the changes.

SUBMITTING THE INSTALLATION

- 10. SUBMISSION: Send the MSCR (with the above approval signatures) and its associated MCRs to the installation coordinator associated with your location. Current coordinators are:

MDC-CAMBRIDGE		MDC-PHOENIX
Online Library	Offline Library	All Libraries
Dick Moore	Frank Smith	Rich Holmstedt

PROCESSING THE INSTALLATION

The submission is installed at both the local (submission) site and the remote site.

11. **INSTALLATION AT LOCAL SITE:** the System Integration staff at the local site installs the change indicated on the MSCR form. If the change includes formal installation of an earlier emergency bug fix (as indicated by a Multics Emergency Change Request (MECR) number on the MSCR), then the emergency fix is removed from the emergency installation tracking database.
12. **INSTALLATION AT REMOTE SITE:** once the change is installed at the local site, the System Integration staff then sends the change (via IMFT) to the remote site along with Xerox copies of the MSCR with accompanying documentation. The System Integration staff at the remote site then installs the change. If the change includes an emergency fix (as indicated by an MECR number), then that fix is removed from the emergency installation tracking database.

POST-SUBMISSION BUG FIXES

Errors introduced in a program by a recent change can be corrected without getting a new MCR. Such corrections are called post-submission bug fixes (PBFs). The following conditions must be met to submit a PBF change:

- the PBF cannot introduce new or changed functionality. It can only correct an error which was introduced by the change in the original MSCR.
- a new MSCR describing the PBF must be submitted to the local installation coordinator within two (2) weeks after the date of installation of the original MSCR which introduced the error. The new MSCR must have auditor and project approvals.

If the above conditions are met, then you can install the PBF by performing selected steps from those given above, according to the following table:

STEP	OPERATION FOR PBF
3	Coding
4	Submission Directory
5	MSCR
7	Auditor Approval
9	Project Approval
10	Submission
11	Installation at Local Site
12	Installation at Remote Site