

Published: 04/21/67  
(Supersedes: BL.10.01, 1/23/67)

## Identification

File System Initialization (Introduction)  
R. C. Daley

## Purpose

This section provides the specification of the procedures which perform the initialization of the Multics file system. These procedures run under the control of the Multics initialization control program at various points during system initialization. The basic goal of file system initialization is to establish the file system hierarchy and the dynamic paging and segmentation mechanism. This section assumes a thorough knowledge of the basic file system, as well as the Multics initialization control program and its principal data base, the segment loading table (SLT).

## Introduction

File system initialization is separated into three parts each of which is run during a different phase of Multics initialization. The first part of file system initialization is concerned primarily with the preparation of the various secondary storage devices for subsequent use by the file system. For example, if the contents of secondary storage have been lost or must be reloaded, free storage maps must be rewritten on each device. During this part of file system initialization, the size of the core map and the system segment tables is also determined.

The second part of file system initialization is concerned with the initialization of the dynamic paging and storage allocation mechanisms of the file system. This is done so that the remainder of the system can be loaded into the "virtual memory" provided by the file system. At this time an interim fault handler is initialized to handle missing-segment faults since the normal segment fault handling procedures of segment control and directory control are not yet loaded.

The third and final part of file system initialization is concerned with the initialization of the directory hierarchy and the normal missing-segment fault handling mechanism. Upon completion of this part of file system initialization, procedures of the Multics initialization control program appear to the file system as a normal Multics process.