

To: Distribution  
From: David M. Jordan  
Date: January 27, 1975  
Subject: System Maintenance Status, December 28 - January 24

## 1. Significant Events

Processor A has arrived back from Phoenix with (hopefully) all required changes for the cache memory and processor speedups. We expect to try CPU A sometime early this week and we expect CPU B to be returned to Phoenix sometime in the next two or three weeks.

The changes required for the actual reorganization of the online libraries to include the unbundled library have been completed. Several problems were encountered due to changes required in search rules and so forth and in the number of names currently found in >sss, but all in all this reorganization went quite smoothly.

Because of the number of changes required, we set up a schedule of installations to cover everything required for the AIM installation. At this point, all scheduled dates have been met and the only remaining changes are still in Honeywell's hands. All in all it was a rather tight schedule and everyone in the group assisted in making all deadlines.

Bob Daley and I attended the HLSUA Multics Subcommittee meeting in Detroit on January 17. Although the meeting was too short to cover everything in depth, some interesting discussions did take place. Most notably, Honeywell gave some indication that they are actively interested in the marketing and support of Multics.

### A. Online System Installations

During the past month there were a total of 560 changes to the online libraries. The most major changes involved the restructuring of the libraries, involving most of the language processors. In addition to moving things around, we also deleted old versions of p11 and fortran and moved the version 1 p11 compiler to the author maintained library.

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## B. Other Installations

During the past month hardcore systems MSS 24.5, 24.6, 24.6a, 24.6b, and 24.7 were installed. Included among the changes made were the new call/push/return sequences, the new scheduler (with various new tuning possibilities), and numerous minor changes and fixes. In addition, salvager 2.29 was installed and included a fix for a serious problem which accounted for several salvager crashes and the final changes required before the installation of the AIM software.

## C. Crash Analysis

The past month demonstrated outstanding system reliability ... until the last week, when several hardware problems surfaced. The 19 crashes due to hardware during that week were caused primarily by CPU C and Vadic problems, with CPU C alone accounting for about 10 crashes. Needless to say, our vulnerability in this area has everyone quite concerned.

	Dec Jan 28-3	Jan 4-10	Jan 11-17	Jan 18-24	Total
Hardware	0	0	0	18	18
Hardware Suspected	0	0	0	1	1
Software	0	0	0	2	2
Software Suspected	0	2	1	0	3
Not Yet Analyzed	0	0	0	0	0
Not Analyzable	1	0	0	0	1
Other	0	0	0	0	0
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Total	1	2	1	21	25

## 2. Problem Areas

During the past week our system reliability reverted to the old days as we experienced about 19 hardware crashes. Most of these were due to problems with our cache processor, CPU C. Because all indications were that this processor was the most complete and up to date, this problem has everyone quite worried.

With the recent library reorganization the number of hash table entries being used in >sss has increased to 838 or about 86% of the 971 available entries. We are currently hoping to find some way (such as placing links in >am) to temporarily solve the problem until a real solution such as variable size hash tables can be installed.

The status of the library tools currently under development is still up in the air with strong opposition to

their installation into the libraries still coming from some quarters. It is hoped that some sort of solution can be reached before we are forced to install them in the author maintained library on our own.

### 3. Task Status

Grace's new versions of test\_tape and star\_ have been installed. Her changes for user notification of backup errors have been audited and several minor changes were suggested before installation; this work should be completed in the next few weeks. Her work on library\_descriptor is moving slowly at this point due to the tight schedule for hardcore system installations.

Arlene's latest (last?) version of get\_library\_segment has been installed. At this time she is continuing work on library\_fetch, but is still held up due to Gary's work on MACSYMA. Hopefully, Gary will be able to make some progress on the tools so that both Arlene and Peter can continue their tasks in this area.

Peter's work on library\_cleanup has progressed to the point where most of the coding has been completed; unfortunately, work on testing it is waiting for Gary's work. Also, a bug turned up in the last version of update\_seg submitted for installation so Peter has spent a fair amount of time tracking the bug down and fixing it. The corrected version should be installed in the next few weeks.

### 4. Work Planned for the Coming Month

We expect to complete the first installation of the AIM software in the next month. At this point, the only thing holding us up is that the final submission has not yet reached us.

Grace expects to get the changes requested for the backup submission completed and installed during the next month.

It is expected that work will continue on the library tools. With Gary's work on MACSYMA essentially complete, we hope to make significant progress in the next month.







TASK AREA Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Look into compare <u>source</u> <u>statement</u> as replacement for <u>cna</u>		/	/	Compare p11 source statements ignoring differences in <del>comments and formatting</del>
Design and implement an online system for registering modules being worked on, etc.		/	/	Proposal submitted to Gintell. Hope he has man-power
Look into the possibility of maintaining a module change history log.		/	/	May be part of sign out log project
Look into the possibility of making the source libraries generally accessible to users		/	/	
Create a system for processing backup error files to allow notification to users of errors encountered	Ackerman-Lewis	5/1/74 5/1/74	6/15/74 2/15/75	Returned from auditing for minor changes - will be resubmitted
Fix test-tape to work with MTS 500's, ioi, etc.	Ackerman-Lewis	9/15/74 9/15/74	11/30/74 12/31/74	Installed
Fix bug in star_ (bug # 208)	Ackerman-Lewis	11/15/74 11/15/74	12/31/74 12/31/74	Installed
		/	/	
		/	/	
		/	/	
		/	/	





PROJECT \_\_\_\_\_ Library Maintenance Tools Project \_\_\_\_\_ AREA \_\_\_\_\_ Library descriptor tools \_\_\_\_\_

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
reduction_compiler (rdc): make relative syntax functions PL/I	Dixon	01/27/75	01/29/75	.1	MCR approved
quick_blocks					
library_descriptor_compiler (ldc): simplify/increase flexibility of root naming strategy to meet requirements of Multics library descriptor	Dixon	01/29/75	01/31/75	.1	Change has been designed
library_descriptor_compiler (ldc): document the compiler	Dixon	12/09/74	02/05/75	.6	1/4 complete
multics_libraries_id: recode according to documentation using upgraded log	Dixon	02/03/75	02/05/75	.2	Changes documented in MTB-133
multics_library_search: implement search technique for library_fetch, library_cleanup, library_info	Dixon	01/27/75	02/07/75	.6	library_fetch comes first
lib_output_node: implement info entry point for use by library_info; this entry formats output for terminal	Dixon	02/05/75	02/07/75	.1	Use hooks which are now present in code
library_info (li): code, document command which replaces msl_info	Dixon	10/05/73	02/12/75	1.2	Add options, convert to lox_, document command
li/lm: get and output ACLs, initial ACLs, extra status	Dixon	12/15/73	12/30/73	1.0	
li/lm/pr: add sorting options to commands	Dixon	01/01/74	01/15/74	.2	
document the above procedures and subroutines	Dixon	03/01/74	02/30/75	5	MTB being written

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PROJECT \_\_\_\_\_ Library Maintenance Tools Project \_\_\_\_\_ AREA \_\_\_\_\_ Installation tool enhancements \_\_\_\_\_

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-H	CHANGES-STATUS
MIS: Write Honeywell PLM - Library Maintenance Manual	Kelley				continuing
update_seg: modify documentation task to document unnumbered library (MCR 732)	Kelley	11/29/74	11/28/74		Installed
update_seg: modify to set the default max length of segments to their current length; add option to set length if different from current length. (MCR 807)	Kelley				submitted
update_seg: fix bug in documentation program (MCR 819)	Kelley	10/21/74	10/25/74		submitted
cleanup: modify to use the library descriptor	Kelley	11/04/74	11/18/74		coding 1/2 done

PROJECT Library Maintenance Tools Project AREA Library descriptor tools

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
lm/lpr: gather and output statistics on Library segments				1.5	
library_descriptor (lds): code, document command which lists directories searched by ll/lm/lpr for a given library	Ackerman-- Lewis	11/04/74 11/04/74	12/20/74 02/30/75	1 4	Coding Underway
library_fetch (lf): rewrite gls to use library descriptor	Scherer	10/21/74 10/21/74	12/30/74 02/15/75	2 2.5	Work delayed by Dixon's MACSYMA study
library_cleanup (lcn): clean up the code; use library descriptor	Kelley	11/04/74 11/04/74	12/30/74 02/15/75	1.5 2	Work delayed by Dixon's MACSYMA study
library_object_cref (loc): rewrite cross_reference to use library descriptor				2.5	
library_include_cref (lic): rewrite lcref to use library descriptor & source maps in standard obj segs				2	
library_check (lck): write program to check on consistency of libraries	Ackerman-- Lewis			3	

