TO: Distribution

FROM: David M. Jordan

DATE: May 20, 1974

SUBJECT: System Maintenance Status, April 20 - May 17

1. Significant Events

The combined EIS/iox_ versions of the three standard compilers (PL/1, Fortran and Basic) were all installed in the past month. In spite of a variety of problems, these installations went very smoothly due in large part to careful and complete work by Arlene.

CISL has received final approval for the installation of their own development system at 575 Tech Square. It's not yet clear what impact this will have on our testing and installation procedures, but it now appears that, at least for a while, there will be no development system available in Cambridge.

While system assurance hasn't gotten to the point where it can be forgotten, our most recent reporting week (May 11 - 17) showed a total of 52 minutes of lost time out of 152 hours of scheduled time. That's 99.4% up time. (It's good enough for Ivory, but is it good enough for us?)

A. Online System Installations

During the period from April 22 to May 17 there were a total of 612 (thats right, 153/week) changes to the online libraries. The major project during this period was the successful installation of the EIS/iox_ versions of the PL/1, Fortran, and Basic compilers. Although several system limitations were encountered in the process of installation, the whole thing went more smoothly than might have been expected.

B. Other Installations

During this reporting period only hardcore systems MSS 23.9 and 23.9a were installed. These systems included several ttydim changes, a fix for problems that resulted in 13 wasted memory pages, fixes for several iox_ problems, and various other bug fixes. We have begun work on MSS 23.10, which will include Steve Webber's new version of page/traffic control, but so far problems have delayed its

installation.

C. Crash Analysis

System reliability has remained at a fairly reasonable level with an average of about 9 crashes per week over this reporting period. Several problems, including a bug in memory reconfiguration and some IO Daemon problems have been located over the past several weeks, but a number of software problems remain. The hardware, on the other hand, has looked very impressive. It should be noted that since the installation of the second million words of new-style bulk store about a month ago we have had no bulk store problems.

	Apr 20-26	Apr May 27-3	May 4-10	May 11-17	Total
Hardware	1	6	2	0	9
Hardware Suspected	1	0	2	0	3
Software	3	6	7	4	20
Software Suspected	0	0	0	1	1
Not Yet Analyzed	0	0	0	0	0
Not Available	2	0	0	0	2
Other	0	0	1	1	2
Total	7	12	12	6	37

2. Problem Areas

With the final approval of a CISL development machine it appears that for some period of time from a couple of weeks to a couple of months we will be without a development system for system testing. This will probably slow down the whole installation process for changes to hardcore, salvager, or BOS; and may result in significant problems for the development groups as well.

Our installations of the EIS PL/1, Fortran and Basic compilers and runtime encountered several limitations due to the limited size of directory hash tables. The original justification for the New Directory Control system included an indication that this problem would (eventually) be handled, so now we must put some pressure on CISL to see that this happens.

3. Task Status

Gary's work on the tape package has continued to impair work on the final pieces of the installation tools and related projects. However, he was able to spend about half his time on the tools so some progress is being made.

Our work on the installation systems PLM is getting into full swing, but is currently held up some by the related tasks of updating and installing the various uninstalled tools that are an integral part of system maintenance. During the next several weeks we hope to determine the scope of the manual and generate task lists for both the updating of tools and the documentation effort.

Grace Lewis has begun a project which will allow us to notify users when the backup systems are unable to access their segments. In addition to providing this much needed ability, this project is allowing Grace to learn many of the ins and outs of the system.

4. Work Planned for the Coming Month

During the next several weeks we expect to continue our work on the installation systems PLM. We hope to produce a more or less final outline of the PLM and task lists detailing the writing to be done. In addition, we expect to begin the work of cleaning up and installing those tools which are used but not yet installed.

As usual, we hope to catch up on the installations which have been submitted to us. In addition, we hope to get a chance to get the listing books and micro copies to the point where we at least know the status of all listings.

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TASK AREA Maintenance (Online Libraries)

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Online installations	Scherer (Kelley)	continuing	task	
Maintain source lists	Roach	continuing	task	
Maintain cross reference lists	Scherer (Kelley)	continuing	task	new lists generated on 5/8/74
Maintain listings	Dratel (Kelley)	continuing	task	

TASK AREA Maintenance (Hardcore and Hardware)

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Crash Analysis	Jordan (Kelley)	continuing	task	
Hardcore Installations	Kelley (Jordan)	continuing	task	
Operator Interface	Jordan (Roach)	continuing	task	
Maintain Hardcore Cross References	Jordan	continuing	task	

TASK AREA User Interface

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Consulting	All	continuing	task	
MPRF Handling	All	continuing	task	
MMTU Handling	Spall	continuing	task	

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TASK AREA Library Maintenance Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Maintain and improve library submission tests.	Scherer	continuing	task	
Modify submission testing software for the "network" library and to use get-library-segment	Scherer	11/15/74 1/15/74	3/1/74	Awaiting change to gls.
convert cross references to v2,	Scherer	4/15/73		Version of include cross ref which works on any archives installed
Upgrade all online installation tool exec_coms for the 6180 and install in the libraries and document them.	Scherer	3/26/73		Work beginning with study of current ec's.
Make changes to installation and testing systems to support the "network" library	All	1/15/74 1/15/74	3/15/74	Delayed by large number of installations

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TASK AREA Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Update development reload.ec and system test exec_coms	Jordan	continuing	task	
Look into compare_source_statement as replacement for cpa.				Compare pll source statements ignoring differences in comments and formatting --
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 accessable to users.				
Create a system for processing backup error files to allow notification to users of errors encountered	Lewis	5/1/74 5/1/74	6/15/74	Error file parsing completed, work progressing on control and notification portions

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PROJECT_____Library Maintenance Tools Project_____ AREA_____library descriptor tools_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
lex_string_: code a lexical analyzer to parse a character string into tokens which are processed by the compilers below	Dixon	12/15/73 12/15/73	01/10/74 02/11/74	.5 .8	Done
reduction_compiler (rdc): code the reduction compiler (used to code the library descriptor compiler)	Dixon	01/01/74 01/01/74	01/08/74 02/11/74	.5 2.0	Done
library_descriptor_compiler (ldc): code the library descriptor data base compiler	Dixon	12/15/73 12/15/73	01/10/74 05/30/75	2.0 3.0	code 90% complete
multics_libraries_.ld: code the library descriptor for Multics System Libraries	Dixon	02/28/74 03/05/74	03/01/74 03/18/74	.2	Done
library_search_: recode to use multics_libraries_.ld generated by library descriptor compiler	Dixon	01/10/74 03/01/74	01/15/74 06/08/74	.5	
library_info (li): code, document command which replaces msl_info (HIGH)	Dixon	10/05/73 10/05/73	10/30/73 07/15/74	1.5	Add options to command
library_map (lm): code, document command which replaces msl global format (HIGH)	Dixon	05/25/73 06/30/73	06/25/73 07/15/74	3	Add options to command
library_print (lpr): code, document command which prints groups of library segments (HIGH)	Dixon	05/10/73 10/02/73	04/01/73 07/15/74	1 2	prints segments now; make it print archive components, pt segs, chase links, print MSFs, etc
library_brief_map (lbm): code, document replacement for Roach's segment list (MEDIUM)	Dixon	12/07/73	12/30/73 07/15/74	.5	
li/lm: get and output ACLs, initial ACLs, extra status (MEDIUM)	Dixon	12/15/73	12/30/73 07/30/74	1.5	
li/lm/lpr: add sorting options to commands (LOW)	Dixon	01/01/74	01/15/74 07/30/74	.5	

PROJECT_____Library Maintenance Tools Project_____ AREA_____library descriptor tools_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
document the above procedures and subroutines	Dixon	03/01/74	05/30/74	3	documentation on reduction_compiler, lex_string_, lex_error_, compact_area_ done; MTB submitted
		03/01/74	08/30/74	5	
lm/lpr: gather and output statistics on Library segments (LOW)	Dixon			1.5	
library_search_rules (lsr): code, document command which lists directories searched by ll/lm/lpr for a given library (LOW)	Dixon			1.5	
library_get (lgt): rewrite gls to use library descriptor				2	
library_cleanup (lcln): clean up the code: use library descriptor				1.5	
library_object_cref (loc): rewrite cross_reference to use library descriptor				2.5	
library_include_cref (lic): rewrite icref to use library descriptor & source maps in standard obj segs				2	

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PROJECT_____Library Maintenance Tools Project_____ AREA_____Installation tool enhancements_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
update_seg: incorporate safety-switch	Kelley				Installed
MTB describing documentation format for MIS	Kelley				scrapped: started writing PLM instead
cv_dir_acl_: fix bug MPRF 7050	Kelley	04/16/74	04/17/74		Installed
MIS: write Honeywell PLM - Library Maintenance Manual	Kelley				continuing
update_seg: increase size of online installations (MCR 188)	Kelley				deferred