

Roach

Multics Task Report

MTR - 014

TO: Distribution  
FROM: David M. Jordan  
DATE: October 29, 1973  
SUBJECT: System Maintenance Status, September 29 - October 26

1. Significant Events

MSS 21.0 was installed. This system contained both the next phase of the new directory control (including 256K segments) and various page control changes to allow for 18 bit file map addresses. While there were a few bugs that should have been caught before installation, this change went in as smoothly as could be expected. The decision to carefully audit the code changes appears to have had a significant impact on the system's reliability.

A number of changes are in the works for the system change procedures. Most notable are plans to have all changes audited before approval and to have IPC approve all changes. Hopefully the combination of these will result in a more stable system with fewer surprises for users.

Recent distribution of the November consulting schedule was met by widespread joy as the Subsystem Development Group joined the list of those eligible to consult. Hard as it may be to believe, there are 7 people who have to consult only once in November.

During this period our old CPU B (serial number 1) was replaced by a relatively new processor. This should help to reduce the instability that used to result from processor changes as the new processor has many fewer ways to be accidentally modified.

A. Online System Installations

During the past four weeks there have been only 38 changes to the online libraries. A number of factors were involved in limiting the number of changes. In particular, the recent requirement that all changes be accompanied by an MCR and a minor change in the approval sequence combined to backlog installations somewhere other than with PDO. We don't expect this situation to continue, however, and recent indications are that the number of changes being made is returning to normal.

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B. Other Installations

During this reporting period several significant changes were made to the hardcore system. Several bugs (reused address, tty dim) were fixed, 256K segments were installed, provision was made for more disk space, and the first part of the new star convention was installed. In addition, MSS 21.0, which installed 256K segments and made changes required for more disk space, required the construction and running of a special salvager to allow the reconstruction of the hierarchy without a complete reload. In addition to MSS 21.0 we installed hardcore systems MSS 20.12, 20.12a, 20.12b, 21.1, and 21.1a. In addition, BOS systems 1.27 and 1.28 and Salvager system 2.25 were installed. At this point there remain several changes which have been submitted but not installed. Most notable among these are the first phase of the new tape management changes and a further change to allow more online disk space.

C. Crash Analysis

During the past four weeks we had an almost reasonable 68 system failures. The most recent week, October 20-26 may have set a new record with a total of only 8 crashes. If we can maintain this level of reliability in the future we will be in excellent shape.

	Sep Oct 29-5	Oct 6-12	Oct 13-19	Oct 20-26	Total
Hardware	6	9	7	0	22
Hardware Suspected	0	0	2	3	5
Software	13	0	3	0	16
Software Suspected	0	2	0	1	3
Not Yet Analyzed	0	0	0	2	2
Not Analyzable	0	2	4	2	8
Other	7	4	1	0	12
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Total	26	17	17	8	68

2. Problem Areas

At this point there don't appear to be any grave problems with the system, even micro-reproductions has gotten caught up to only three weeks behind (of course, we are only sending them about half as much as we used to.)

One possible area of concern is the continuing uncertainty about what is required for system changes. Some work has been done in the area of requiring audits of code before installation, but these procedures have not, as yet, been formalized. Hopefully the next few weeks will see some more definite plans for increasing the reliability of

software changes.

### 3. Task Status

With the limited number of installations over the past four weeks, a number of tasks have made progress. In particular, a number of changes are nearing completion in the installation tools area. We are attempting to get our tools caught up with the various changes which have been made in the system and in the system change procedures. Hopefully, these changes will be completed sometime during the next month.

### 4. Work Planned for the Coming Month

During the next few weeks we expect to continue working on the various installation tools, the revised system change procedures, and we hope to get back to work on system performance tuning.







DATE October 29 1973

PROJECT Multiplex System Maintenance and Assurance

TASK AREA Library Maintenance Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Maintain and improve library submission tests.	Scherer	continuing	task	
Upgrade hardware maintenance tools to v2, fix bugs, etc.	Rakip	2/15/73	3/19/73	Being worked on as time allows
convert cross references to v2,	Scherer	2/15/73		
		4/15/73		Shelved for lack of time
Upgrade all online installation tool exec coms for the 6180 and install in the libraries and document them.	Scherer	3/26/73		Modifications made for large installations and for more graceful handling of apparent errors.
Modify generate_MST and check_MST to recover gracefully when unable to mount a tape	Rakip			
Modify the hardware updater to cease using CACL's and to maintain a seg-system data base	Jordan	10/25/73	11/12/73	Includes conversion to VZ and general cleanup. Also eliminates MSL.
Upgrade update_include and cleanup to eliminate MSL, etc., and to bring them up to standards	Scherer	10/22/73	11/2/73	

