

TO: ADMINISTRATIVE DISTRIBUTION  
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DATE: JANUARY 21, 1970  
SUBJECT: DS-10 REMOVAL

CRITERIA FOR REMOVAL OF DS-10's

1. If Multics needs one DS-10 then we must have two of them to insure the availability of one.
2. If compilers need one DS-10 for maintenance, then one DS-10 is sufficient. If there is a "spare" Multics DS-10 then it can be used to satisfy this need.
3. Otherwise zero DS-10's are needed.

CURRENT DS-10 NEEDS

1. DS-10's are used for Multics storage to make up for missing DS-270's. Current usage is 1/2 of 1 DS-10. After the installation of the next 3 270's Multics can cease to use DS-10's. However, if Multics becomes very popular, storage demands could require space beyond the DS-270 capacity either prior to the installation of the last 5 DS-170's currently scheduled for April or prior to the installation and integration of the 2314.
2. EPLBSA maintenance requires occasional use of GECOS to do FORTRAN or GMAP assemblies. Nate Adleman's current project is to make EPLBSA maintainable under Multics. His estimate is for completion in March if all goes well and in June if many problems occur.
3. FORTRAN and FL maintenance require occasional use of GECOS for FL assemblies. Studies by Mosely Meer indicate several months effort to allow this work to be done in Multics. Since this activity has not commenced, the earliest date of completion is in April. A more reasonable guess would be for completion in July.
4. Basic compiler maintenance requires a special GECOS-III assembly which requires a DS-10 unless done at RADG (thus far all Basic assemblies have been done at RADG).

GECOS USE OF DS-270

There is an unscheduled and uncommitted but planned effort to make a version of GECOS which will run a 645 with 270's. After this is completed, all of the above GECOS work could be done with this version of GECOS provided that there were sufficient 270 capacity to support GECOS.

PROPOSED SCHEDULE FOR REMOVAL

DATE	EVENT	ACTION
Now	Only 2 DS-10's are needed now	Remove 1st DS-10
March 1	Next 3 DS-170's are installed	Remove 2nd DS-10
July 1	f1 and EPLBSA become maintainable on Multics	Remove 3rd DS-10

POSSIBLE REASONS FOR SLIPPAGE OF SCHEDULE

There are two principal reasons for which this schedule might have to be slipped. The first is that Multics storage capacity may grow beyond that which is available devices other than the DS-10's prior to the installation and integration of their replacements. This situation is unfortunately difficult to predict since there is little in the way of projected Multics usage and consequent storage requirements. If we take the step of removing the DS-10's early we are giving up a rather expensive insurance policy (\$ + FE time). This insurance requires the keeping of 2 DS-10's probably until the 2314's have been installed and integrated, a state which has no schedule.

The second slippage reason is that either of the compiler maintenance projects may slip beyond conservative completion estimates. This would require the keeping of one DS-10.

STORAGE USAGE AND CAPACITY

DATE	DS-270's	CAPACITY IN MEGAWORDS	USED
Now	6	15	14
March 1	10	25	--
April 15	15	37.5	--

Allowing for some overflow of drum onto DS-170, say 2 million words (25 additional processes at 80K /perprocess) there would be 21 million words available. This would permit some weighted combination of 200 additional heavy users (100 records) to 4000 student users (5 records) on the storage that we will have by mid April.

The immediate recommendation is to remove the first DS-10.