

92069A IMAGE/1000 Configuration Guide



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PRINTING HISTORY

New editions are complete revisions of the manual. Update packages contain replacement pages or write-in instructions to be merged into the manual by the customer. Manuals will be reprinted as necessary to incorporate all prior updates. A reprinted manual is identical in content (but not in appearance) to the previous edition with all updates incorporated. No information is incorporated into a reprinting unless it appears as a prior update. The edition does not change.

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This guide contains that information necessary to allow the user to install the IMAGE/1000 software. Guidelines for generation and on-line loading are also included.

FORMING IMAGE LIBRARIES

Due to packaging constraints, the IMAGE package consists of a set of files which must be selected and combined to form the IMAGE libraries. Table 1 is a description of each of the modules that contains IMAGE subroutines.

Table 1. IMAGE Library Modules

PART NUMBER	NAME	DESCRIPTION
92069-12002	%DBMS	Contains modules that offer access to local data bases (a local data base is a data base which resides at the node with the accessing program).
92069-12006	%LOCAL	Contains modules which, when combined with %DBMS, allow ONLY local data base access.
92069-12003	%RDBA	Contains modules that give offer access to remote data bases (a remote data base is a data base which resides at a different node than the program accessing it).
91750-12020	%DSDB	Same as above (92069-12003, %RDBA)
92069-12004	%REMOT	Contains modules which, when combined with %RDBA, allow ONLY remote data base access.
92069-12005	%NO/DS	Contains modules which satisfy externals contained in the Distributed Systems (DS/1000) software (i.e., DEXEC, #NODE, etc.). This library is generated into systems which do not contain DS/1000 software.

A user must decide what data base capabilities are needed to determine what library or libraries are needed. The libraries may be combined using the RTE-IVB utility MERGE. Table 2 defines the three different capabilities and the library modules needed to form the desired libraries.

Table 2. IMAGE Library

LOCAL-ONLY	LOCAL & REMOTE	REMOTE-ONLY	DS STUB
<u>%DBMS1</u>	<u>%DBMS2</u>	<u>%DBMS3</u>	<u>%DBMS4</u>
%DBMS	%DBMS	%RDBA	%NO/DS
%LOCAL	%RDBA	%REMOT	
	\$DSDB	\$DSDB	

For example, if a user needs local-only data base capabilities in a system, the input to MERGE would be as follows:

```

RU,MERGE
ENTER DESTINATION NAMR %DBMS1
ENTER COMMAND NAMR .1
ENTER NAMR %DBMS
ENTER NAMR %LOCAL
ENTER NAMR

MERGE STOP
    
```

GENERATION CONSIDERATIONS

There are four different libraries included in the IMAGE package. These are %DBMS1, %DBMS2, %DBMS3 and %DBMS4. Which library is to be generated into the system depends on whether or not Remote Data Base Access will be used. In addition to a DBMS library, if the node is to contain a remotely accessed data base, the module %RD.TB must be relocated in SSGA. This is achieved by specifying RD.TB as type 30 in the parameter input phase of the generation. The various possibilities and the modules to be located are shown in Table 3.

Table 3. IMAGE Libraries to be Used in Generation

Local Access Only (no DS/1000 in system)	%DBMS1 %DBMS4
Local Access Only (DS/1000 in system)	%DBMS1
Remote Access Only	%DBMS3
Local and Remote Access	%DBMS2

The purpose of the DS stub library, %DBMS4, is to satisfy those externals also found in DS/1000 with non-remote subroutines. In a system with local access only and no DS/1000 in the system, %DBMS4 can be included in the generation. If local data base access is desired, but DS/1000 is included in the generation, %DBMS4 should not be included to avoid entry point conflicts. The generation will indicate an undefined external of RD.TB but this can be ignored. However, in such a system, when loading programs on-line, %DBMS4 should be included. More information on how to do this is included in the section on On-Line Loading Considerations.

NOTE: If DATACAP/1000 will be used in the system the local-only library, %DBMS1, should be generated in. Remote data base access will still be possible on such a system by searching %DBMS2 at load time.

In addition to an IMAGE library, the Decimal String Arithmetic routines, %DECAR, should be included. An RP'ed version of .CMW is also necessary.

IMAGE uses resource numbers to coordinate data base access, so one resource number should be allocated for each data base in the system. At least one class number should also be available for IMAGE use.

Table 4 gives the number of ID segments required for each IMAGE program.

Table 4. ID Segment Requirements

<u>Program</u>	<u>Long ID's</u>	<u>Short ID's</u>
DBCOP	1	0
DBDS	1	12
DBBLD	1	4
QUERY	1	26
DBLOD	1	3
DBULD	1	3
DBSTR	1	0
DBRST	1	0
DBSPA	1	0
RECOV	1	0
RDBAM	1	0
RDBAP	1	4
	---	---
TOTAL	12	52

DBCOP should either be generated in, preferably as memory resident, or loaded on-line as a permanent program.

ON-LINE LOADING CONSIDERATIONS

If %DBMS2 has been generated into the system to allow both local and remote access, it is recommended that for programs doing local access only, %DBMS1 be searched when loading these programs. This prevents defaulting to the generated library. There is a great deal of overhead involved in the remote data base access routines which it is not necessary to add to a program if it is doing local access only.

All IMAGE utilities use local data base access only, so %DBMS1 should be used when loading these programs. More specific information about the loading of the utility programs is given below. Note that in all loading examples, the specification of libraries is only necessary if the libraries listed differ from the libraries generated into the system. Another point to note is that all IMAGE programs can be loaded as large background programs using the LB loader option.

LOADING OF QUERY

Before QUERY can be loaded, the two QUERY files, %QURYX (92069-16060) and %QRYX2 (92069-16061), must be combined to form one file, to be called %QUERY. %QURYX must precede %QRYX2.

QUERY can access only a data base local to its node. Therefore, it should always be loaded using %DBMS1 or %DBMS2. %DBMS1 is recommended, since the overhead in %DBMS2 is unnecessary. However, QUERY also has the capability to prompt a user who is at a remote node. If this feature is not desired, %DBMS4 should be included in the loading process. If this feature is desired, %DBMS4 should not be searched since this will prevent the inclusion of the proper DS/1000 routines. If DS/1000 modules are needed, the use of SSGA must be specified in the loader input since the remote routines use this feature. The SZ parameter must also be specified to allow for additional space from the end of the program to the end of the partition to allow for IMAGE's tables.

Below are two loader command files. The left file specifies local-only QUERY, and the right file specifies remote capabilities in addition to local capabilities.

OP,LB	OP,LB
SZ,26	SZ,27
LI,%DBMS1	OP,SS
LI,%DBMS4	LI,%DBMS1
RE,%QUERY	RE,%QUERY
END	END

After QUERY is loaded, the QUERY help file called QSHELP (92069-16122) must be loaded onto a system disc as a type 1 file, which contains binary data. The following command stores QSHELP from a mini-cartridge (LU4) to a system disc file. Be sure the mini-cartridge is positioned at the correct file.

ST,4,QSHELP::2:1:-1,BN

LOADING OF RECOV

The utility RECOV shares with QUERY the requirement to access a local data base only plus the capability to prompt a user at a remote node. Therefore, it also needs either %DBMS1 or %DBMS2 as a library and %DBMS4 only if remote prompting is not desired. Again, %DBMS1 is recommended over %DBMS2 because of the extra overhead of the %DBMS2 routines. If %DBMS4 is not used, SSGA needs to be specified. For RECOV, the SZ parameter is not necessary. Below are examples of two loader command files. The left file specifies local-only RECOV and the right file specifies remote prompting capabilities in addition to local data base access.

LI,%DBMS1	OP,SS
LI,%DBMS4	LI,%DBMS1
RE,%RECOV	RE,%RECOV
EN	EN

LOADING OF OTHER UTILITIES

All other utility programs have local access capabilities only. Therefore, %DBMS1 (or %DBMS2) and %DBMS4 should be used to load these programs. In addition, the SZ parameter is necessary to obtain additional space for tables at the end of the partition. The utilities that fall into this category are DBDS, DBLOD, DBULD, DBSTR, DBRST and DBSPA.

LOADING OF DBUP

DBUP, the upgrade utility, has different loading requirements since it must be loaded with the 92063A IMAGE library and SSGA must be included in its load. For more information about including DBUP into a system, see Appendix C of the IMAGE/1000 Data Base Management System Reference Manual.

LOADING LOCAL ACCESS PROGRAMS IN A DS SYSTEM

It may be the case that a system is generated with %DBMS1 as the IMAGE library but with DS/1000 software included. This would be the case if the user wanted DS/1000 capabilities but would be doing only local data base access. As stated in the section on generation, %DBMS4 should not be included in the generation. However, when IMAGE programs are loaded, %DBMS4 should be specified as a library so that the routines from it rather than DS/1000 will be included. If %DBMS4 is not specified in the loader input, SSGA will be required, because of the requirement of the DS/1000 routines. Inclusion of the DS/1000 routines rather than those from %DBMS4 will not interfere with proper execution of a program but will cause additional unnecessary overhead to be included.

ON-LINE LOADING OF REMOTE MONITOR AND ACCESS PROGRAM

There are two IMAGE monitor programs which must be available if remote data base access is used. One is RDBAP (Remote Data Base Access Program) and the second is RDBAM (request router). Both may be loaded on-line although how they are treated differs. RDBAM should be loaded as a background disc-resident program with only one copy. It cannot be renamed. RDBAP should be loaded using the library %DBMS1 specifying SSGA. If RDBAP is permanently loaded, duplicate ID segments must be made. If it is loaded temporarily, a type 6 file should be made available for automatic renaming.

PROGRAM SIZES

Table 5 contains the approximate sizes of IMAGE programs. In addition to the program itself, those programs marked with a * require additional space for a Run Table. See the section on SPACE ALLOCATION FOR RUN TABLE in the IMAGE/1000 Reference Manual (92069-90001) to determine how much additional space is needed.

Table 5. IMAGE Program Sizes

<u>PROGRAM</u>	<u>SIZE IN BYTES</u>
*DBDS	20K
*QUERY	32K
*DBBLD	26K
DBSTR	32K
DBRST	28K
*DBULD	32K
*DBLOD	30K
*DBSPA	22K
RECOV	12K
DBCOP	6K
RDBAM	12K
*RDBAP	22K

QUERY and RECOV need an additional 2K bytes if they are to be executed at a remote DS/1000 node.

READER COMMENT SHEET

**92069A IMAGE/1000
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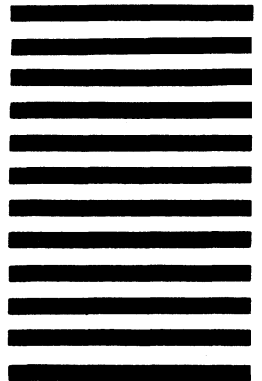


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