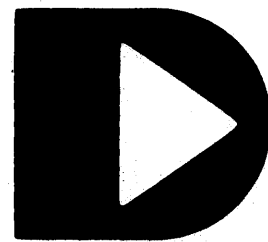


**SYSTEM LIBRARY
MAINTENANCE UTILITY
LIBSYS
User's Guide**

Version 2

August, 1979

Document No. 50273



DATAPPOINT

**SYSTEM LIBRARY MAINTENANCE UTILITY
LIBSYS**

User's Guide

Version 2

August, 1979

Document No. 50273

PREFACE

The LIBSYS Utility is designed to operate under the Datapoint DOS.A through DOS.E, Version 2.3 or above, containing a minimum of 16K memory. The MIN utility is required for installation.

TABLE OF CONTENTS

	page
1. DIFFERENCES FROM VERSION 1	1-1
2. INTRODUCTION	2-1
3. LIBSYS OPERATION	3-1
3.1 Command Syntax	3-1
3.2 File Specifications	3-1
3.3 Options	3-2
3.4 Operation Description	3-3
4. LIBSYS COMMANDS	4-1
4.1 ADD Command	4-2
4.2 REPLACE Command	4-3
4.3 XTRACT Command	4-4
4.4 DELETE Command	4-4
4.5 LIST Command	4-5
4.6 SORT Command	4-5
4.7 NAME Command	4-6
4.8 OUT Command	4-6
4.9 END Command	4-6
4.10 HELP command	4-7
Appendix A. EXAMPLES OF LIBSYS USAGE	A-1
Appendix B. INFORMATIVE MESSAGES	B-1
Appendix C. ERROR MESSAGES	C-1
C.1 Initialization Error Messages	C-1
C.2 Syntax Error Messages	C-3
C.3 List request error messages	C-5
C.4 Other Error Messages	C-6
Appendix D. FORMAT OF LIBRARY FILES	D-1
D.1 Directory	D-1
D.2 Library Type Chart	D-2
D.3 Members	D-2

CHAPTER 1. DIFFERENCES FROM VERSION 1

LIBSYS now handles absolute, relocatable, dataform and databus code libraries. All operations assume default extensions of /ABS, /REL, /DFF and /DBC corresponding to the above mentioned LIBSYS supported library types.

The command line options have changed slightly. L, S, P and Q now specify the output device for a LIST command (L=local printer, S=servo printer, P=print file, Q=queued to the end of a print file). The R option still stands for record ALL output. L, S, P or Q must be specified in conjunction with the R option for any printed results. If either the P or Q options were specified LIBSYS will ask for a print file name before executing. If no print file is specified, LIBPRINT/PRT is defaulted to.

Several new commands have been added since the version 1 user's guide. The OUT command allows the user to exit without executing the queued LIBSYS commands (ADD, REPLACE, DELETE). The HELP command presents a brief summary of all LIBSYS instructions to the interactive user. The NAME command allows a user to change the name of an already existing member. The SORT command allows the user to alphabetically sort the names of the existing members in the library.

CHAPTER 2. INTRODUCTION

LIBSYS is a multifunction librarian for use in maintenance of the new type library files. The distinction between the old directory format libraries and new format libraries must be carefully observed. The distinction applies only to relocatable code libraries, which are the only type library that can exist in both formats. DOS. 2.5 includes DOS FUNCTIONS to load library modules (refer to the DOS. 2.5 User's Guide, MC 50216). These functions recognize only the new directory format libraries. The relocatable assembler, SNAP2, produces a relocatable library with the old directory format. If these libraries are to be loaded by the DOS relocatable loader, they must be processed by LIBSYS to convert them to the new directory format. The relocatable code link program, LINK 2.1, recognizes either type of directory format; older versions of LINK recognize only the old format library directories.

LIBSYS will only produce new directory format libraries. LIBSYS will additionally write protect all libraries it produces. This write protection is altered automatically if LIBSYS updates a library file; however, it always leaves the library file write protected.

The basic functions are:

- Listing the contents of the library
- Copying libraries on disk
- Merging libraries
- Deletion of selected library modules
- Replacement of selected library modules
- Adding of selected library modules
- Creation of library files
- Reorganization of library files
- Upgrading the old style directories to the new style
- Extracting members to a file
- Renaming a library member
- Sorting the member names within a library.

Operating procedures have been kept as simple as possible with only nine basic commands used to perform all LIBSYS functions. Library manipulation may be performed either through the keyboard or using the CHAIN utility.

CHAPTER 3. LIBSYS OPERATION

3.1 Command Syntax

LIBSYS is invoked from the keyboard by entering

```
LIBSYS [<oldlib>][,<newlib>][,<drive>][;<options>]
```

Square brackets enclose optional fields, corner brackets enclose a replacement string and do not actually appear in the command line.

3.2 File Specifications

<oldlib> specifies the primary input file and must be specified for all operations except new library creation. The file specified by <oldlib> must already exist and must be a library. The oldlib file is the source for List, Xtract, Name, Sort or Delete commands. The default extension for oldlib is /LIB.

<newlib> is the output file and will be a library with the new directory format. The default extension for newlib is the extension given or assumed for oldlib; the default name is the same name as given for oldlib. If no entry is made for <newlib> the oldlib will be updated if any update commands are given.

If only oldlib is specified and Add and Delete update commands only are given, the update will take place directly on the oldlib file. Note that this type of update will leave areas of unused space in the library file if deletes are performed. If any Replace commands are given LIBSYS uses a work file called SCRATCH/LIB for the reorganization. Changes are made while creating this work file and it is then copied back to the oldlib file.

Example: LIBSYS MYLIB

If newlib is specified, but no oldlib, the LIBSYS run will create a new library file. On a creation run only ADD commands will be accepted.

Example: LIBSYS ,NEWLIB

The <drive> specification allows the user to specify the drive on which LIBSYS will place its work file, if needed. Only the drive specification is used from the third parameter; if a file name is given it will be ignored.

Example: LIBSYS MYLIB,,:DR1

3.3 Options

The <options> accepted are R, L, S, P, Q, N, O.

The 'R', 'L', 'S', 'P' and 'Q' options are for printed output. The 'N' option is for no CHOP\$ call on the library file. The 'O' option is for file overwrite while under the chain utility. Each option is discussed in the following paragraphs.

The 'L', 'S', 'P' and 'Q' options determine which device will be selected for output. The 'L' option will select a local printer and the 'S' option will select a servo printer. The 'P' option creates and writes LIBSYS output to an already existing print image file. The 'Q' option appends LIBSYS output to an already existing print image file. If any of these options appear on the command line, all LIST commands will be routed to the selected printer device.

The 'R' option causes all messages to or from libsys to be printed. The 'R' option must be specified in conjunction with either the 'L', 'S', 'P' or 'Q' option for it to have any effect.

The option to overwrite an existing file is 'O'. This option will enable LIBSYS to overwrite an existing or write protected file, if LIBSYS was invoked from CHAIN. The 'O' option has no affect if LIBSYS was not running under CHAIN. In other words LIBSYS will always ask the operator before overwriting a file if not running under CHAIN.

LIBSYS always de-allocates (chops) the output library file to its correct size; however, if the user does not wish the file chopped, an 'N' option may be entered on the command line. This option will inhibit the chop on the output library file.

3.4 Operation Description

When LIBSYS is brought up, it requests commands from the operator. Update commands are accepted, verified, and a table of action is built. When the END command is received, the actions specified by update commands entered by the operator are executed. If an OUT command is received, the LIBSYS run is aborted without executing any of the commands entered into the table. If a LIST command is entered, the requested information is immediately listed. The SORT and NAME commands also have an immediate effect. See the following chapters for information containing the descriptions of the LIBSYS commands. Commands to LIBSYS may be provided by a chain procedure, allowing LIBSYS to be executed from CHAIN.

Three categories of file are used by LIBSYS

Oldlib	This file contains the library that is to be listed, copied, or updated. It is the source file for LIST, XTRACT, DELETE, SORT, and NAME.
Newlib	This file will contain the results of the LIBSYS run if a new library was produced. It will always be a new library type file. It may be the same file as the old library.
Secondary	These files contain library modules or LIBSYS supported file types to be added or to replace modules in the new library file.

If the newlib file already exists, or exists with write protection, a message is displayed asking the operator if the file should be overwritten. If a 'Yes' reply was given LIBSYS will overwrite the file. If a 'No' reply was given the LIBSYS run will abort. If running under control of the chain utility the 'O' option is used to overwrite existing files.

During the update cycle commands are accepted and tables are built. If the ADD or REPLACE command is entered the secondary file specified is checked to insure

- 1) the module exists if the file is a library.
- 2) the module or file is of the same type as the existing library.

Only the SORT and NAME commands are executed during this phase. All other commands are held until the END command is executed

The current supported library types are: relocatable, absolute, databus, and dataform.

CHAPTER 4. LIBSYS COMMANDS

LIBSYS commands are grouped into two categories; immediate and deferred. The LIST and END commands are immediate, while the update type commands are deferred until the END command is given.

Generalized command syntaxes

```
ADD      <filespec>[,<name1>[,<name2>...]]
REPLACE <filespec>[,<name1>[,<name2>...]]
XTRACT  <filespec>[,<name>]
DELETE  <name1>[,<name2>[,<name3>...]]
LIST    [*][<name1>[,<name2>...]]
SORT
NAME    <oldname>,<newname>
END
OUT
HELP
```

When a <filename> appears on a command line (except XTRACT) it specifies a secondary input file. This secondary input file is used as the source file for that command only.

For additional examples on LIBSYS usage refer to Appendix A.

A Library file is a DOS file which is a library file in either the old directory format (produced by SNAP/2 or LIB, etc.) or the new directory format (produced by LIBSYS).

4.1 ADD Command

The ADD command is used to create new library files, to add new members to an existing library, or for the merging of libraries or library modules. The processing of the ADD command is dependent upon the file type of the secondary input file. If the secondary file is an old style library it will be converted to the new library directory format on output to the newlib file. If an extension is not specified for the secondary input file, it defaults to /ABS, /REL, /DFF, /DBC depending on the type of the <newlib> library file (ABSolute, RELocatable, DataForm File, DataBus Code). The following table shows the actions based on the file types of the secondary input file:

Non-library File Type

<u>SYNTAX</u>	<u>ACTION</u>
<u>ADD</u> <filename>	Add the file to the output library and name the member "filename". <u>Example:</u> ADD ZAPP/CMD
<u>ADD</u> <filename>,<name1>	Add the file to the output library and name the member "name1". <u>Example:</u> ADD ZAPP/CMD,MYZAPP

Library File Type

<u>SYNTAX</u>	<u>ACTION</u>
<u>ADD</u> <filename>	Add all members from this secondary library file to the output library. <u>Example:</u> ADD UTILITY/SYS
<u>ADD</u> <filename>,<name1>[,<name2>..]	Add only the specified members, (name1,...) from this secondary library file to the output library. <u>Example:</u> <u>ADD UTILITY/SYS,CAT,FREE</u>

4.2 REPLACE Command

The REPLACE command is used to replace existing members in the primary input file with correspondingly named members from the secondary input file. This command will insert the new members in the same relative position as the old members in the directories. The processing of the REPLACE command is dependent on the file type of the secondary input file, whether it is a LIBSYS supported file or a library file. See the description for the ADD command for the rules on default extensions. The following table shows the commands and program actions based on the type of secondary input file:

Non-library File Type

SYNTAX

REPLACE <filename>

ACTION

Replace the member named "filename" with the file specified by <filename>.

Example: REPLACE ZAPP/ABS

REPLACE <filename>,<name>

Replace the member named "name" with the file specified by <filename>.

Example: REPLACE ZAPP/ABS,MYZAPP

Library Type File

SYNTAX

REPLACE <filename>

ACTION

Replace all members in the primary input file with correspondingly named members from the secondary input file.

Example:

REPLACE NEWLIB/LIB

REPLACE <filename>,<name1>[,<name2> ..] Replace the specified members (<name1>,<name2>,...) in the primary input file with correspondingly named members from the secondary input file.

Example:

REPLACE NEWLIB/LIB,ZAPP,FREE

4.3 XTRACT Command

The XTRACT will extract a single member from a library and write it to a separate disk file. It will be written in the standard format for the type of file it is (/DBC, /ABS, /REL, /DFP... if no extension is specified it will assume the appropriate of these), no directory is written

SYNTAX

XTRACT <filename>

XTRACT <filename>,<name1>

ACTION

Extract the member named "filename" and write it to the file <filename>.
Example: XTRACT CAT/ABS

Extract the member named "name1" and write it to the file <filename>
Example: XTRACT CAT/ABS,NEWCAT

4.4 DELETE Command

The DELETE command is used to delete specified members from the primary input file. If the update is being performed in place (no REPLACE commands) this will remove the members from the oldlib file, leaving unused space. If the update is being performed to a scratch file or to a newlib file, the DELETE just suppresses copying the members from the oldlib file to the output file.

SYNTAX

DELETE <name1>[,<name2>[...]]

ACTION

Delete the specified members.
Example: DELETE OLDCAT,OLDFIX

4.5 LIST Command

The LIST command will display the names of the members in the primary input file or will display information on individual relocatable modules. Pressing the DISPLAY key makes the listing pause. Pressing the keyboard key terminates the listing in progress.

SYNTAX

LIST *

LIST [<name1>[,<name2>...]]

ACTION

List all directory entries in the primary input library, along with the starting LRN of each member.

NOTE: The LRN is octal.

Example: LIST *

List the program name, program address blocks, external definitions, external references, and the transfer address for the specified library members (<name1>,<name2>,...). Works only if the primary input file is a relocatable library. If no member names are specified, all library members will be listed.

Example: LIST LOCAL,SERVO

4.6 SORT Command

The SORT command will immediately sort all member names not deleted in the directory sectors. It is done before any ADDs, REPLACES or DELETES for this run have been processed. Much care should be taken in using this command. If the library is a command file, the order of the members is very important and the members within the library should not be SORTed. It is a good idea not to use this command on any /CMD file unless the user has considered the consequences .

SYNTAX

SORT

ACTION

Sort all directory names in alphabetical order and return to get the next LIBSYS command. Example:
SORT

4.7 NAME Command

The NAME command will immediately rename the member <OLDNAME> to the specified name <NEWNAME>. This action will be taken before any of the queued commands are executed. Care should be taken not to change the name of a member you have used for another operation (for example, REPLACE, DELETE).

SYNTAX

NAME <oldname>,<newname>

ACTION

Rename the member <oldname> to <newname>. Example: NAME CAT,OLDCAT

4.8 OUT Command

The OUT command will cause the LIBSYS run to abort without executing the update type commands held for execution. The processor is then returned to DOS.

SYNTAX

OUT

ACTION

Abort LIBSYS execution and return to DOS. Example: OUT

4.9 END Command

The END will cause the library creation or updating to begin. If no update type commands were given LIBSYS returns to DOS. If both oldlib and newlib were given and no update directives given, the oldlib file will be copied to the newlib.

SYNTAX

END

ACTION

If no update commands have been given, return to DOS, otherwise begin update activities. Example: END

4.10 HELP command

The help command aids the user by presenting a summary of the correct command syntax at run time. All the user needs to do is type in HELP at during LIBSYS operation and the summary information will be displayed.

APPENDIX A. EXAMPLES OF LIBSYS USAGE

The following pages are examples for the use of LIBSYS.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

SAMPLE OF THE LIST DIRECTORY COMMAND.

COMMAND STATEMENT WAS: LIBSYS UTILITY/SYS:DR1;R

THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP

LIBSYS DIRECTIVE WAS: LIST *

UTILITY /SYS IS A NEW STYLE ABSOLUTE LIBRARY
DIRECTORY ENTRIES:

000001	ABTONOFF
000004	APP
000011	AUTO
000015	BACKUP
000065	BLOCKED17
000104	BUILD
000110	CAT
000120	CHANGE
000123	COPY
000140	DECODE
000144	DUSGEN
000167	DUMP
000214	DUMP9380
000241	EDIT
000276	ENCODE
000302	FILES
000326	FIX
000333	FREE
000340	KILL
000346	LIST
000370	MANUAL
000373	MIN
000421	MOUT
000465	NAME
000473	PUTIPL
000503	PUTVOLID
000512	REFORMAT
000534	REWIND
000537	SAPP
000543	SUR
000555	UBOOT

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP

LIBSYS DIRECTIVE WAS: END

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

SAMPLE LIST OF A RELOCATABLE LIBRARY.
COMMAND STATEMENT WAS: LIBSYS LIBPRUGS/REL;R

THE OLD LIB FILE IS AN OLD STYLE RELOCATABLE LIBRARY.
NOTE: THE NEW LIB FILE WILL BE THE NEW FORMAT.
THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP
LIBSYS DIRECTIVE WAS: LIST OPENTEMP

LIBPRUGS/REL IS AN OLD STYLE RELOCATABLE LIBRARY

PROGRAM NAME:	OPENTEMP		
PROGRAM BLOCKS:	010000	/ABSOLUTE/	SIZE = 000000 (ABS)
	000000	/CODE /	SIZE = 000154 (REL)
	000000	/MESSAGE /	SIZE = 000164 (REL)
EXTERNAL DEFINITIONS:	000000	/CODE /	OPENTEMP
EXTERNAL REFERENCES:			DOSFNC
			FATAL
			MLRS
			FILEPDN
			FILEPFN
			BIN2OCT
			OPENS
			NLIBPDN
			NLIBPFN
			CONVDRN

NO TRANSFER ADDRESS

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP
LIBSYS DIRECTIVE WAS: END

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

BUILDING A NEW LIBRARY FILE.

COMMAND STATEMENT WAS: LIBSYS ,NEWLIB/NEW:DR1;R

THIS IS A NEW LIBRARY CREATION RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP

LIBSYS DIRECTIVE WAS: ADD LIBSYS/ABS

LIBSYS DIRECTIVE WAS: ADD LIBINIT/ABS

LIBSYS DIRECTIVE WAS: ADD LIBCRACK/ABS

LIBSYS DIRECTIVE WAS: ADD LIBEXEC/ABS

LIBSYS DIRECTIVE WAS: ADD LIBLIST/ABS

LIBSYS DIRECTIVE WAS: END

OUTPUT LIBRARY IS NEWLIB /NEW:DR1

ADDING LIBSYS FROM FILE LIBSYS /ABS:DR0

ADDING LIBINIT FROM FILE LIBINIT /ABS:DR0

ADDING LIBCRACK FROM FILE LIBCRACK/ABS:DR0

ADDING LIBEXEC FROM FILE LIBEXEC /ABS:DR0

ADDING LIBLIST FROM FILE LIBLIST /ABS:DR0

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

ADDING PROGRAMS TO UTILITY/SYS

COMMAND STATEMENT WAS: LIBSYS UTILITY/SYS:DR1;R

THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP

LIBSYS DIRECTIVE WAS: ADD NEWLIB/NEW

LIBSYS DIRECTIVE WAS: END

CHECKING THE LIBRARY FORMAT

** WARNING ** DO NOT RESTART DURING THIS PHASE!

ADDING LIBSYS FROM FILE NEWLIB /NEW:DR1

ADDING LIBINIT FROM FILE NEWLIB /NEW:DR1

ADDING LIBCRACK FROM FILE NEWLIB /NEW:DR1

ADDING LIBEXEC FROM FILE NEWLIB /NEW:DR1

ADDING LIBLIST FROM FILE NEWLIB /NEW:DR1

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

UPDATE AN EXISTING LIBRARY FILE.

COMMAND STATEMENT WAS: LIBSYS UTILITY/SYS:DR1;R

THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP

LIBSYS DIRECTIVE WAS: REPLACE NEWLIB/NEW

LIBSYS DIRECTIVE WAS: END

USING LIBSYS WORK FILE SCRATCH /LIB:DR0

ADDING ARTONOFF FROM FILE UTILITY /SYS:DR1
ADDING APP FROM FILE UTILITY /SYS:DR1
ADDING AUTO FROM FILE UTILITY /SYS:DR1
ADDING BACKUP FROM FILE UTILITY /SYS:DR1
ADDING BLOKEDIT FROM FILE UTILITY /SYS:DR1
ADDING BUILD FROM FILE UTILITY /SYS:DR1
ADDING CAT FROM FILE UTILITY /SYS:DR1
ADDING CHANGE FROM FILE UTILITY /SYS:DR1
ADDING COPY FROM FILE UTILITY /SYS:DR1
ADDING DECODE FROM FILE UTILITY /SYS:DR1
ADDING DOSGEN FROM FILE UTILITY /SYS:DR1
ADDING DUMP FROM FILE UTILITY /SYS:DR1
ADDING DUMP9380 FROM FILE UTILITY /SYS:DR1
ADDING EDIT FROM FILE UTILITY /SYS:DR1
ADDING ENCODE FROM FILE UTILITY /SYS:DR1
ADDING FILES FROM FILE UTILITY /SYS:DR1
ADDING FIX FROM FILE UTILITY /SYS:DR1
ADDING FREE FROM FILE UTILITY /SYS:DR1
ADDING KILL FROM FILE UTILITY /SYS:DR1
ADDING LIST FROM FILE UTILITY /SYS:DR1
ADDING MANUAL FROM FILE UTILITY /SYS:DR1
ADDING MIN FROM FILE UTILITY /SYS:DR1
ADDING MOUT FROM FILE UTILITY /SYS:DR1
ADDING NAME FROM FILE UTILITY /SYS:DR1
ADDING PUTIPL FROM FILE UTILITY /SYS:DR1
ADDING PUTVOLIO FROM FILE UTILITY /SYS:DR1
ADDING REFORMAT FROM FILE UTILITY /SYS:DR1
ADDING REWIND FROM FILE UTILITY /SYS:DR1
ADDING SAPP FROM FILE UTILITY /SYS:DR1
ADDING SUR FROM FILE UTILITY /SYS:DR1
ADDING UBOOT FROM FILE UTILITY /SYS:DR1
REPLACING LIBSYS FROM FILE NEWLIB /NEW:DR1
REPLACING LIBINIT FROM FILE NEWLIB /NEW:DR1
REPLACING LIBCRACK FROM FILE NEWLIB /NEW:DR1
REPLACING LIBEXEC FROM FILE NEWLIB /NEW:DR1
REPLACING LIBLIST FROM FILE NEWLIB /NEW:DR1

COPYING THE WORK FILE TO THE LIBRARY FILE UTILITY /SYS:DR1

** WARNING ** DO NOT RESTART DURING THIS PHASE!

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

SAMPLE OF EXTRACT, DELETE AND HELP
COMMAND STATEMENT WAS: LIBSYS UTILITY/SYS:DR1;R

THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP
LIBSYS DIRECTIVE WAS: HELP

THE COMMANDS FOR THIS VERSION OF LIBSYS ARE:
ADD ADD FILE<,NAME1><,NAME2> . . .
DELETE DELETE NAME1<,NAME2> . . .
REPLACE REPLACE FILE<,NAME1><,NAME2> . . .
EXTRACT EXTRACT FILE<,NAME>
LIST LIST <*> OR <NAME1><,NAME2> . .
END END

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP
LIBSYS DIRECTIVE WAS: XTRACT CAT/XXX:SCRATCH
LIBSYS DIRECTIVE WAS: XTRACT FREE/ABS:DR1
LIBSYS DIRECTIVE WAS: XTRACT GREX/XXX,ABTONOFF
LIBSYS DIRECTIVE WAS: DELETE CAT,ABTONUFF
LIBSYS DIRECTIVE WAS: DELETE FREE
LIBSYS DIRECTIVE WAS: END

CHECKING THE LIBRARY FORMAT

** WARNING ** DO NOT RESTART DURING THIS PHASE!
DELETING CAT FROM FILE UTILITY /SYS:DR1
DELETING ABTONOFF FROM FILE UTILITY /SYS:DR1
DELETING FREE FROM FILE UTILITY /SYS:DR1
EXTRACT CAT TO FILE CAT /XXX:DR1
EXTRACT FREE TO FILE FREE /ABS:DR1
EXTRACT ABTONOFF TO FILE GREX /XXX:DR0

NOTE: THE LIBRARY FILE CONTAINS UNUSED AREAS.

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

SAMPLE OF ADDS AND REPLACES TO AN EXISTING FILE
COMMAND STATEMENT WAS: LIBSYS UTILITY/SYS:DR1,,:DR1;R

THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP

LIBSYS DIRECTIVE WAS: ADD CAT/XXX:DR1
LIBSYS DIRECTIVE WAS: ADD FREE/ABS:DR1
LIBSYS DIRECTIVE WAS: ADD GREX/XXX,ABTONOFF
LIBSYS DIRECTIVE WAS: REPLACE UTILITY/SYS:DR0,LIST,FILES,NAME,UBOOT
LIBSYS DIRECTIVE WAS: REPLACE NEWLIB/NEW
LIBSYS DIRECTIVE WAS: END

USING LIBSYS WORK FILE SCRATCH /LIB:DR1

ADDING APP FROM FILE UTILITY /SYS:DR1
ADDING AUTO FROM FILE UTILITY /SYS:DR1
ADDING BACKUP FROM FILE UTILITY /SYS:DR1
ADDING BLOKEDIT FROM FILE UTILITY /SYS:DR1
ADDING BUILD FROM FILE UTILITY /SYS:DR1
ADDING CHANGE FROM FILE UTILITY /SYS:DR1
ADDING COPY FROM FILE UTILITY /SYS:DR1
ADDING DECODE FROM FILE UTILITY /SYS:DR1
ADDING DOSGEN FROM FILE UTILITY /SYS:DR1
ADDING DUMP FROM FILE UTILITY /SYS:DR1
ADDING DUMP9380 FROM FILE UTILITY /SYS:DR1
ADDING EDIT FROM FILE UTILITY /SYS:DR1
ADDING ENCODE FROM FILE UTILITY /SYS:DR1
REPLACING FILES FROM FILE UTILITY /SYS:DR0
ADDING FIX FROM FILE UTILITY /SYS:DR1
ADDING KILL FROM FILE UTILITY /SYS:DR1
REPLACING LIST FROM FILE UTILITY /SYS:DR0
ADDING MANUAL FROM FILE UTILITY /SYS:DR1
ADDING MIN FROM FILE UTILITY /SYS:DR1
ADDING MOUT FROM FILE UTILITY /SYS:DR1
REPLACING NAME FROM FILE UTILITY /SYS:DR0
ADDING PUTIPL FROM FILE UTILITY /SYS:DR1
ADDING PUTVOLID FROM FILE UTILITY /SYS:DR1
ADDING REFORMAT FROM FILE UTILITY /SYS:DR1
ADDING REWIND FROM FILE UTILITY /SYS:DR1
ADDING SAPP FROM FILE UTILITY /SYS:DR1
ADDING SUR FROM FILE UTILITY /SYS:DR1
REPLACING UBOOT FROM FILE UTILITY /SYS:DR0
REPLACING LIBSYS FROM FILE NEWLIB /NEW:DR1
REPLACING LIBINIT FROM FILE NEWLIB /NEW:DR1
REPLACING LIBCRACK FROM FILE NEWLIB /NEW:DR1
REPLACING LIBEXEC FROM FILE NEWLIB /NEW:DR1
REPLACING LIBLIST FROM FILE NEWLIB /NEW:DR1
ADDING CAT FROM FILE CAT /XXX:DR1
ADDING FREE FROM FILE FREE /ABS:DR1
ADDING ABTONOFF FROM FILE GREX /XXX:DR0

COPYING THE WORK FILE TO THE LIBRARY FILE UTILITY /SYS:DR1
** WARNING ** DO NOT RESTART DURING THIS PHASE!

LIBSYS EXECUTION COMPLETE.

LIBSYS UTILITY 05/09/77 AT 1300HRS VERSION 1.1

CONVERT OLD LIBRARY FORMAT TO NEW LIBRARY FORMAT
COMMAND STATEMENT WAS: LIBSYS LIBPROGS/REL,LIBPROGS/NEW:SCRATCH;R

THE OLD LIB FILE IS AN OLD STYLE RELOCATABLE LIBRARY.
NOTE: THE NEW LIB FILE WILL BE THE NEW FORMAT.
THIS IS A LIBRARY UPDATE RUN

PLEASE ENTER THE LIBSYS DIRECTIVES OR HELP
LIBSYS DIRECTIVE WAS: END

OUTPUT LIBRARY IS LIBPROGS/NEW:DR1
ADDING BIN2OCT FROM FILE LIBPROGS/REL:DR0
ADDING CHKDUPS FROM FILE LIBPROGS/REL:DR0
ADDING CHKFILE FROM FILE LIBPROGS/REL:DR0
ADDING CHKTONE FROM FILE LIBPROGS/REL:DR0
ADDING CHKTYPES FROM FILE LIBPROGS/REL:DR0
ADDING COMPARE FROM FILE LIBPROGS/REL:DR0
ADDING COPYBACK FROM FILE LIBPROGS/REL:DR0
ADDING COPYIT FROM FILE LIBPROGS/REL:DR0
ADDING COPYXTR FROM FILE LIBPROGS/REL:DR0
ADDING ERR FROM FILE LIBPROGS/REL:DR0
ADDING FETCHTBL FROM FILE LIBPROGS/REL:DR0
ADDING GET1DIR FROM FILE LIBPROGS/REL:DR0
ADDING INITDIR FROM FILE LIBPROGS/REL:DR0
ADDING ISITNEW FROM FILE LIBPROGS/REL:DR0
ADDING OPENTEMP FROM FILE LIBPROGS/REL:DR0
ADDING PURGEREQ FROM FILE LIBPROGS/REL:DR0
ADDING PUTINDIR FROM FILE LIBPROGS/REL:DR0
ADDING SETDONE FROM FILE LIBPROGS/REL:DR0
ADDING SHOWWHAT FROM FILE LIBPROGS/REL:DR0
ADDING STORETBL FROM FILE LIBPROGS/REL:DR0
ADDING XLAST FROM FILE LIBPROGS/REL:DR0

LIBSYS EXECUTION COMPLETE.

APPENDIX B. INFORMATIVE MESSAGES

- I LIBSYS UTILITY date AT time VERSION v.r.
Signon Message.
- I THIS IS A LIBRARY UPDATE RUN.
If update type directives are given the old library will be the base for updates.
- I THIS IS A NEW LIBRARY CREATION RUN.
No old library file was given, LIBSYS is building the output library for the first time.
- I INPUT FILE IS AN OLD STYLE RELOCATABLE LIBRARY.
NOTE: THE OUTPUT LIBRARY WILL BE THE NEW FORMAT. The LIBSYS utility will only create or update libraries to the new directory format. It will not change an new type directory into the old style.
- I HEADING:
The L or R option was used and LIBSYS is waiting for the printer heading, maximum 50 characters.
- I OUTPUT LIBRARY IS file spec.
This is the file to receive the results of the LIBSYS run.
- I LIBSYS EXECUTION COMPLETE.
Signoff Message
- I USING LIBSYS WORK FILE SCRATCH/LIB:DRn.
LIBSYS was forced to use a scratch file that will be copied back to the library file. Using a replace request while only specifying the oldlib file, as example, will force LIBSYS to use this file. It is killed at normal completion.

Footnote: I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

- I COPYING THE WORK FILE TO THE LIBRARY FILE file spec.
LIBSYS has completed the update process and is now copying the work file back to the library file. During this phase LIBSYS will click after each library module is copied.
- I (action name) FROM (TO) FILE (file spec).
Action can be adding, replacing, deleting, or extract. This message is displayed as LIBSYS process the user entered directives. This shows the user what is going on. If the "R" option was given these messages are also printed. The display screen is rolled up when a new directive is being processed.
- I ** WARNING ** DO NOT RESTART DURING THIS PHASE!
LIBSYS is updating the output library now, and a restart will cause a loss of information and control bytes from the output library. This loss of data can make the file unusable.
- I NOTE: THE LIBRARY FILE CONTAINS UNUSED AREAS.
Please see Chapter 2 LIBSYS OPERATION.
- I CHECKING THE LIBSYS FORMAT
LIBSYS will perform a fast check, on the oldlib file, to see if the directory pointers correspond with the contents of the library. A click is done as each pointer is checked. This is only done on an update in place.
- I THE NEW LIBRARY FILE IS ALREADY ALLOCATED. OVERWRITE IT? YES
OR NO
The library already exists. Do you wish to write over it?
- I THE NEW LIBRARY FILE IS WRITE PROTECTED. OVERWRITE IT? YES
OR NO
The library file already exists and is write protected. Do you wish to overwrite the file.

Footnote: I = Informative message
 F = Fatal error
 S1= Error which will set ABTIF in DOSFLAG.

- I EXECUTION WAS ABORTED VIA THE "O" COMMAND.
An O command was keyed in at the console to terminate LIBSYS.
None of the queued commands will be processed (Adds, Replaces,
Deletes).
- I PLEASE ENTER THE DIRECTIVES or HELP
This is a prompt from LIBSYS for the next LIBSYS command to be
keyed in. If HELP is keyed in, a command summary is displayed
to the user.
- I SORT PHASE 1: BUILDING SORT LINKED LIST
Phase one of the sort module is being executed, building the
tables needed to do a recursive, in-core sort of the member
names in the library.
- I SORT PHASE 2: PREPARING DIRECTORY SECTORS
The directory sectors in the current library are being erased.
It would destroy the library to abort during this phase,
however, the sort is nearing completion.
- I SORT PHASE 3: WRITING MEMBER NAMES BACK TO DISK
The sort is completed and the sorted member names are being
written back into the directory sectors in alphabetical order.

Footnote: I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

APPENDIX C. ERROR MESSAGES

C.1 Initialization Error Messages

- F *** OVERLAY MISSING ERROR ***
One of the LIBSYS modules could not be found.
- F NO FILE SPECIFICATIONS GIVEN!
LIBSYS was called with out any file specifications for the old-lib-file or the new-lib-file.
- F INVALID DRIVE SPECIFIED!
Drive specification for the old or new library file is not in the correct format.
- F OLD LIBRARY CAN NOT BE FOUND!
The old-lib-file does not exist or could not be found on the specified drive.
- F THE OLD LIBRARY FILE IS NOT IN THE CORRECT FORMAT!
The old-lib-file specified does not have the correct format.
- F UTILITY/REL FILE NOT FOUND!
The R or L option was given and the UTILITY/REL file could not be found.
- F NO PRINTER ON LINE FOR THE L OR R OPTION!
LIBSYS could not detect a local or servo printer on line.
- F UTILITY/REL DOES NOT CONTAIN THE CORRECT MODULES!
The UTILITY/REL file is missing the printer driver.
- F LIBSYS 1.1 REQUIRES DOS 2.3!
LIBSYS uses several DOS FUNCTIONS not present in earlier versions of DOS. For this reason version 2.3 is required.

Footnote I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

A PRINTER DEVICE MUST BE SPECIFIED WITH THE R OPTION!
The record option is valid only in conjunction with one of the
following printer devices: L, S, P, or Q.

Footnote I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

C.2 Syntax Error Messages

- S1 INVALID LIBSYS REQUEST. PLEASE RETRY.
The request line must start with a valid LIBSYS directive ADD, DELETE, XTRACT, LIST, or END. Re-enter the correct directive.
- S1 UNEXPECTED ITEM ON DIRECTIVE LINE.
LIBSYS found something after the logical end of the directive syntax. It is ignored.
- S1 "name" COULD NOT BE FOUND IN THE LIBRARY FILE filename.
The library does not contain the requested member "name". The entire directive is ignored.
- S1 ONLY ADD DIRECTIVES ARE LEGAL FOR CREATION RUN.
When creating a new library file (oldlib file not given) the only valid directives are ADD and END.
- F NO VALID DIRECTIVES TO PROCESS!
LIBSYS is creating a new library file, however no valid ADDs were found before the END.
- F THE SECONDARY FILE IS OF AN UNKNOWN FILE FORMAT!
The secondary file is not in absolute or relocatable file format.
- F LIBSYS WILL NOT MIX FILE TYPES IN LIBRARIES!
The LIBSYS utility will not mix file types. As example absolute and relocatable file types in a single library.
- F RELOCATABLE LIBRARIES CAN NOT BE EXTRACTED FROM!

The LIBSYS utility will not extract members from relocatable libraries.

Footnote I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

- S1 THE FILE COULD NOT BE FOUND
The requested secondary input file does not exist or could not be found on the specified drive. The entire request is ignored.
- S1 THE FILE IS IN AN UNKNOWN FORMAT
The secondary file is in a file format unknown to LIBSYS. The entire directive is ignored.
- S1 FILE SPECIFICATION NOT GIVEN.
The LIBSYS directive line did not contain a valid file specification. The entire directive is ignored.
- S1 DRIVE SPECIFICATION INVALID.
The LIBSYS directive line contained an invalid drive specification. The entire directive is ignored.
- S1 DUPLICATE MEMBER NAME FOUND "name".
LIBSYS has already processed a directive with the same member name. The entire directive is ignored.
- S1 IMPROPER NAME COMMAND FORMAT
Either the new or old member name was not specified on the NAME command line.
- S1 NAME NOT FOUND!
The member specified as the old member name in the NAME command line could not be found in the library.
- S1 DUPLICATE DEFINITIONS FOR THIS MEMBER!
The member specified as the new member name in the NAME command line already existed in the library.
- F TOO MANY TABLES BUILT FOR AVAILABLE MEMORY!
LIBSYS has used all assigned core for table generation. The run must be broken down into smaller sections.
- F SECONDARY INPUT FILE AND OUTPUT FILE CAN NOT BE THE SAME!
The new-lib-file and this secondary input file are the same.

Footnote: I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

C.3 List request error messages

- S1 THE LIBRARY IS ABSOLUTE AND INDIVIDUAL MODULES CAN NOT BE LISTED.
Only the LIST * request can be used on non-relocatable libraries.
- S1 ERROR IN FORMAT OF THIS RELOCATABLE MODULE.
The LIST section has discovered a format error in this module of relocatable code. Listing of the requested modules will continue.
- S1 "name" COULD NOT BE FOUND IN THE LIBRARY FILE filename.
The named module could not be found in this library and can not be listed.

Footnote: I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

C.4 Other Error Messages

- F FATAL INTERNAL ERROR
This message is issued if the tables build have become scrambled.
- F FATAL POSITIONING ERROR.
This message is issued when positioning a file past it's allocated area. Usually occurs when trying to read a library directory which has invalid pointers.
- F *** FATAL ERROR *** THE LIBSYS RUN WAS ABORTED!
The LIBSYS run was aborted due to the reason displayed above this message.
- S1 THE ENTIRE DIRECTIVE WILL BE IGNORED.
An error was found in the last directive entered.
- S1 *** action name *** NOT PROCESSED!
During the execution of the directives this request was not processed. Could be caused for example by replacing a non-existent module.
- S1 YOU CAN NOT SORT AN OLD STYLE LIBRARY
A library created by LIB or SNAP/2 must first be converted by LIBSYS into a new style library before the SORT command may be used.
- S1 NO MEMBER NAMES TO SORT!
The library had no member names to sort. A null directory sector is already sorted.
- F LRN nnnnn IS IN ERROR!
This library file can not be updated in place! During the quick format check of old-lib-file, LIBSYS has found a library format error. Updating can not be done in place; however, members may be able to be added one at a time to a new-library file, or extracted to separate files.
- F USER DOES NOT WISH TO OVERWRITE FILE!
The user has chosen not to overwrite the existing file.

Footnote: I = Informative message
F = Fatal error
S1= Error which will set ABTIF in DOSFLAG.

APPENDIX D. FORMAT OF LIBRARY FILES

The Library is constructed from two types of entries, Directory Entries and members.

D.1 Directory

The first entry of the library file must be the first Directory Entry. Additional directory entries are formatted as required and linked into the directory chain. Each directory has two major parts:

- 1) The directory header which is 7 bytes. The format is as follows:

| 0377 |	
-----	Directory Unique Code
| 0200 |	2 Bytes long
| OXXX |	Type of library (see library type chart)
| LSB |	Pointer to next directory entry LRN
| MSB - |	0377,0377 if last one.
| LSB |	Pointer to end of file sector, (LRN)
| MSB - |	(only valid in first directory).

- 2) Member name entries, each one is 10 bytes long.

| |	Member name 8 bytes long
| |	in ASCII code
| LSB |	
| MSB |	Starting LRN
| |	of this member

One directory entry can contain a maximum of 24 member names. All unused member name entries will be set to 0377's. A deleted member will be set to 0377's.

An entire directory entry:

Directory Header	Member	LRN	Member	LRN	.....	Member	LRN	0377
	Name 1		Name 2			Name n		

D.2 Library Type Chart

The following is the bit chart for library types

1.	...	...	Reserved
.1	...	...	Absolute
..	1..	...	Relocatable
..	.1.	...	Dataform
..	..1	...	Databus
.	...	111	Reserved

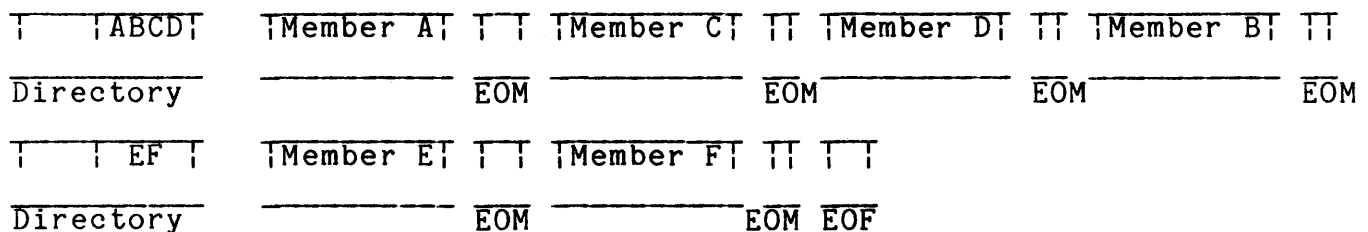
D.3 Members

The members are the second type entry of the library. Each member is pointed to by the member name pointer in one of the directory entries. Each member is terminated by an end of member (EOM) code. The EOM is indicated by a sector which contains six bytes of 000 followed by 010.

NOTE: EOM indicates only the end of this member not the end of the library.

If the library contained more than 24 members another directory entry would be placed into the chain of directories.

A simple library file format



Manual Name _____

Manual Number _____

READER'S COMMENTS

Did you find errors in this manual? If so, specify by page.

Did you find this manual understandable, usable, and well-organized? Please make suggestions for improvement.

Name _____ Date _____

Organization _____

Street _____

City _____ State _____ Zip Code _____

All comments and suggestions become the property of Datapoint.

Fold Here

Fold Here and Staple



FIRST CLASS
Permit
5774
San Antonio
Texas

BUSINESS REPLY MAIL
No Postage Necessary if mailed in the United States

Postage will be paid by:

DATAPOINT CORPORATION
DIRECTOR OF SOFTWARE SUPPORT
8550 Datapoint Drive, Mail Station# N60
San Antonio, Texas 78284

