

SYSMAIN Utility - Overview

The following topics are covered below:

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SYSMAIN Command

The SYSMAIN command is used to perform operations Natural objects such as copy, move, delete or import. In most cases this can be accomplished using drag and drop or cut, copy and paste objects (see Object Operations) within the Natural Studio environment. Also the import of objects can be done with this technique.

But one can still imagine some situations where more detailed preselections are necessary to perform an object operation (e.g copy only objects with a specific date) which cannot be covered using drag and drop or cut, copy and paste.

Additionally this utility can be used as a system command inside a Natural application. See also Invoking SYSMAIN by a Subprogram.

For all object operations, the command SYSMAIN is used to display the starting dialog.

Copy Object

1. Select the "Copy" radio button and choose OK.
The "Copy" dialog box is displayed.
2. From the "Library" list box, select the source library.
3. If the source library is not in the current file, modify the database ID (DBID) and file number (FNR).
4. In the "Name" box, enter a string pattern, including one or more wildcard characters to filter the objects to be displayed for selection. The default is " * ", all objects.
5. In the "Type" group box, select the types of objects to be copied.
If you select Programming, you can further limit the types of programming objects to be copied by pressing the "Object Types" button. The default is all object types.
6. Select "Source" and/or "Cataloged" to copy either the source or the cataloged object module, or both.
7. For an explanation of the options available with "XREF", see Available XREF Options.
8. To display only objects for selection last saved by a particular user, enter the user ID. The default is no user ID.
9. To display only objects for selection saved up to a particular point in time, enter a cut-off date and time. All objects up to and including this time are displayed for selection. The default is date 0000-00-00, time 00:00.
10. From the "Library" list box, select the target library.
11. If the target library is not in the current file, modify the database ID (DBID) and file number (FNR).
12. In the "Name" box, enter a new string pattern, including one or more wildcard characters to rename the objects selected in the filter specified above. The string cannot contain more characters than the source string. The default is "*".
The "Confirm on Replace" toggle button is selected by default. A warning message will appear if you attempt to copy an object to another library where an object exists with the same name. (The object in the destination library is replaced.) You can override the warning by turning the "Confirm on Replace" function off.
If you want to give the copied object a different name, select the "Rename Object(s)" option.
13. Choose OK.
A list box is displayed containing all objects selected in the "Copy" dialog box.
14. Choose "Select All" to select all objects in the list box, or select objects individually with the mouse pointer.
15. Choose "Copy" to copy the objects.
If the "Rename Object" option is active, the "Rename" dialog box is displayed. You can enter a new name for the copied object. If you want to skip the current object and display the name of the next selected object, choose "Skip".

Available XREF Options

NO	Cross-reference data are not processed, except when using the DELETE function. If a cataloged object is deleted, SYSMAIN always deletes any existing XREF data for this object.
YES	All cross-reference data are processed.
FORCE	All cross-reference data are processed and the object must be documented in Predict.
DOC	All cross-reference data are processed and the object must be documented in Predict but XREF data are not copied.

Move Object

1. Select the "Move" radio button and choose OK.
The "Move" dialog box is displayed.
2. From the "Library" list box, select the source library.
3. If the source library is not in the current file, modify the database ID (DBID) and file number (FNR).
4. In the "Name" box, enter a string pattern, including one or more wildcard characters to filter the objects to be displayed for selection. The default is "*", all objects.
5. In the "Type" group box, select the types of objects to be moved.
If you select Programming, you can further limit the types of programming objects moved by pressing the "Object Types" button. The default is all object types.
6. Select "Source" and/or "Cataloged" to move either the source or the cataloged object module, or both.
7. To display only objects for selection last saved by a particular user, enter the User ID of the user who last saved the objects to be moved. The default is no User ID.
8. To display only objects for selection saved up to a particular point in time, enter a cut-off date and time. All objects up to and including this time are displayed for selection. The default is: date 0000-00-00, time 00:00.
9. From the "Library" list box, select the target library.
10. If the target library is not in the current file, modify the database ID (DBID) and file number (FNR).
11. In the "Name" box, enter a new string pattern, including one or more wildcard characters to rename the objects selected in the filter specified above. The string cannot contain more characters than the source string. The default is "*".
The "Confirm on Replace" toggle button is selected by default. A warning message will appear if you attempt to move an object to another library where an object exists with the same name. (The object in the destination library is replaced.) You can override the warning by turning the "Confirm on Replace" function off. If you want to give the moved object a different name, select the "Rename Object(s)" option.
12. Choose OK.
A list box is displayed containing all objects selected in the "Move" dialog box.
13. Choose "Select All" to select all objects in the list box, or select objects individually with the mouse pointer.
14. Choose "Move" to move the objects.
If the "Rename Object" option is active, the "Rename" dialog box is displayed. You can enter a new name for the moved object. If you want to skip the current object and display the name of the next selected object, choose "Skip".

Rename Object

1. Select the "Rename" radio button and choose OK.
The "Rename" dialog box is displayed.
2. From the "Library" list box, select the source library.
3. If the source library is not in the current file, modify the database ID (DBID) and file number (FNR).
4. In the "Name" box, enter a string pattern, including one or more wildcard characters to filter the objects to be displayed for selection. The default is "*", all objects.
5. In the "Type" group box, select the types of objects to be renamed.
If you select Programming, you can further limit the types of programming objects renamed by pressing the "Object Types" button. The default is all object types.
6. To display only objects for selection last saved by a particular user, filter the objects to be displayed for selection, enter the User ID of the user who last saved the objects to be renamed. The default is no User ID.
7. To filter the objects to be displayed for selection, enter a cut-off date and time. All objects up to and including this time are displayed for selection. The default is: date 0000-00-00, time 00:00.
8. In the "Name" box, enter a new string pattern, including one or more wildcard characters to rename the objects selected in the filter specified above. The string cannot contain more characters than the source string. The default is "*".
9. Select "Source" and/or "Cataloged" to rename either the source or the cataloged object module, or both.
The "Confirm on Replace" toggle button is selected by default. A warning message will appear if you attempt to use the name of an existing object in the same library. You can override the warning by turning the "Confirm on Replace" function off.
10. Choose OK.
A list box is displayed containing all objects selected in the "Rename" dialog box.
11. Choose "Select All" to select all objects in the list box, or select objects individually with the mouse pointer.
12. Choose "Rename" to rename the objects. For each object selected, a rename window is displayed.
13. In the successive rename windows, enter the new names for the objects.

Delete Object

1. Select the "Delete" radio button and choose OK.
The "Delete" dialog box is displayed.
2. From the "Library" list box, select the source library.
3. If the source library is not in the current file, modify the database ID (DBID) and file number (FNR).
4. In the "Name" box, enter a string pattern, including one or more wildcard characters to filter the objects to be displayed for selection. The default is "*", all objects.
5. In the "Type" group box, select the types of objects to be deleted.
If you select Programming, you can further limit the types of programming objects deleted by pressing the "Object Types" button. The default is all object types.
6. To display only objects for selection last saved by a particular user enter the User ID of the user who last saved the objects to be deleted. The default is no User ID.
7. To display only objects for selection saved up to a particular point in time, enter a cut-off date and time. All objects up to and including this time are displayed for selection. The default is date 0000-00-00, time 00:00.
8. Select "Source" and/or "Cataloged" to delete either the source or the cataloged object module, or both. The "Confirm on Delete" function is selected by default.
9. Choose Object List.
A list box is displayed containing all objects selected in the "Delete" dialog box.
10. Choose "Select All" to select all objects in the list box, or select objects individually with the mouse pointer.
11. Choose "Delete" to delete the objects.

List an Object

1. Select the "List" radio button and choose OK.
The "Object Maintenance - List" dialog box is displayed.
2. From the "Library" list box, select the library.
3. If the library is not in the current file, modify the database ID (DBID) and file number (FNR).
4. In the "Name" box, enter a string pattern, including one or more wildcard characters to filter the objects to be displayed for selection. The default is "*", all objects.
5. In the "Type" group box, select the types of objects to be listed.
If you select Programming, you can further limit the types of programming objects copied by pressing the "Object Types" button. The default is all object types.
6. Select "Source" and/or "Cataloged" to list either the source or the cataloged object module, or both.
7. To display only objects for selection last saved by a particular user, enter the User ID. The default is no User ID.
8. To display only objects for selection saved up to a particular point in time, enter a cut-off date and time. All objects up to and including this time are displayed for selection. The default is date 0000-00-00, time 00:00.
9. Choose Object List.
A list box is displayed containing all objects selected in the "Object Maintenance - List" dialog box.
10. Choose "Select All" to select all objects in the list box, or select objects individually with the mouse pointer.
11. 11. Choose OK

Find Object

1. Select the "Find" radio button and choose OK.
The "Find Object" dialog box is displayed.
2. From the "Library Name" list box, select the library to be searched. Enter "*" to search through all libraries.
3. If the search library is not in the current file, modify the database ID (DBID) and file number (FNR).
4. In the "Name" text box, enter the search string to be used. The default is "*", all objects.
5. In the "Type" group box, select the types of objects to be found.
If you select Programming, you can further limit the types of programming objects found by pressing the "Object Types" button. The default is all object types.
6. To search for objects last saved by a particular user, enter the User ID. The default is no User ID.
7. To display only objects saved up to a particular point in time, enter a cut-off date and time. All objects up to and including this time are displayed. The default is: date 0000-00-00, time 00:00.
8. Choose "Object List".
If more than one library is specified in the "Library Name" list box, a dialog box is displayed containing a list of all libraries which meet the search criteria. Otherwise, go to Step 10.
9. From the list box, select one or more libraries to be searched for the object and choose OK.
The system searches all libraries for objects that meet the search criteria, and for each library searched, places a list of objects found in the list box. From this dialog, you can list the objects found.
10. Choose "Select All" to select all objects in the list box, or select objects individually with the mouse pointer.
11. Choose "List" to list the objects.

Importing Objects to a Library

Use the import function whenever you need to copy objects from an external source to a Natural library. When you import objects, the target library's file directory FILEDIR.SAG is automatically updated to contain information on the newly imported objects. Be aware that if you use other copy utilities (such as the Windows File Manager) to copy objects to a Natural library, the file directory will not be updated and you can not access the objects from that library.

Notes:

Within Natural it is possible to define object names with a "#" or a "+" character. Those objects cannot be imported with the SYSMAIN utility, because the names, starting with "#" or "+" are encrypted in the FILEDIR.SAG and SYSMAIN does not look into FILEDIR.SAG when importing objects. Use the Natural Object Handler LOAD/UNLOAD command, because the Natural Object Handler is able to handle objects with such a specific name. If an object is imported and the object name is unknown to Natural and exists in the library, a container name will be generated with the object name identical plus a running index.

To import an object:

1. Select the "Import" radio button and choose OK.
The "Import Object" dialog box is displayed.
2. In the "Path" combo box of the "Source" group frame, either enter the path for the source library directly in the text box or choose the path from the list box. A likely path might look like the following:
C:\NATAPPS\FNAT\SYSTEM\gp
3. In the "Name" text box, enter the string to be used to preselect objects from the source library. The default is the asterisk "*", which includes all objects. Note that this is not the final selection method.
4. In the "Code" group frame, check "Source" and/or "Cataloged" to specify which types of code for of each object are to be imported. The default is both source code and cataloged code. One type must be selected.
5. In the "Target" group frame, in the "Library" drop-down combo box, choose the name of the library to which the objects are to be imported, or if you want to create a new library, in the text box, enter the new library name.
6. In the "Target" group frame, enter a database ID (DBID) and file number (FNR) for the target library.
7. In the "Target" group frame, in the "User ID" field, enter a User ID if necessary.

8. In the "Mode" group frame, select the option button "Report or Structure" to specify whether the imported objects are to be used in report or structured mode.
9. In the "Confirm on Replace" toggle button, specify whether you want to be prompted when an object in the target library has the same name as an object in the source library.
10. Choose Object List or press ENTER.
11. A second "Import Object" dialog box is displayed with a list of objects fulfilling the criteria specified in the "Source" group frame of the previous dialog.
12. Select the individual objects to be imported or choose "Select All" to select all of the objects in the window.
13. Choose "Import" to import the selected objects to the target library. The objects are imported and the dialog boxes are closed automatically.

Invoking SYSMAIN by a Subprogram

MAINUSER is a subprogram which allows you to perform the various SYSMAIN functions directly from any user-written object (subroutine, program or subprogram) without going through the normal steps of invoking SYSMAIN. Upon completion of processing of the SYSMAIN functions, the utility is terminated and control is returned to the object from which the request was issued. MAINUSER can be used in either online or batch mode.

MAINUSER is invoked as follows:

CALLNAT 'MAINUSER' *command error message library*

The parameters are:

<i>command</i> (A250)	The direct command string to be executed by SYSMAIN.
<i>error</i> (N4)	The return code issued by SYSMAIN at the end of processing to indicate a normal end of processing or an error.
<i>message</i> (A72)	The message corresponding to the error given online.
<i>library</i> (A8)	The name of the library containing the utility SYSMAIN; by default, this is the library SYSMAIN. (Under UNIX, OpenVMS and Windows this parameter does not apply and is provided for compatibility reasons only.)

An example of a callable routine is program MAINCALL in library SYSMAIN.

Direct Commands

SYSMAIN functions can be executed using direct commands issued as a parameter of the MAINUSER subprogram.

Direct commands consist of keywords and parameters. The sequence of the direct command syntax is not completely fixed. The rules which apply are:

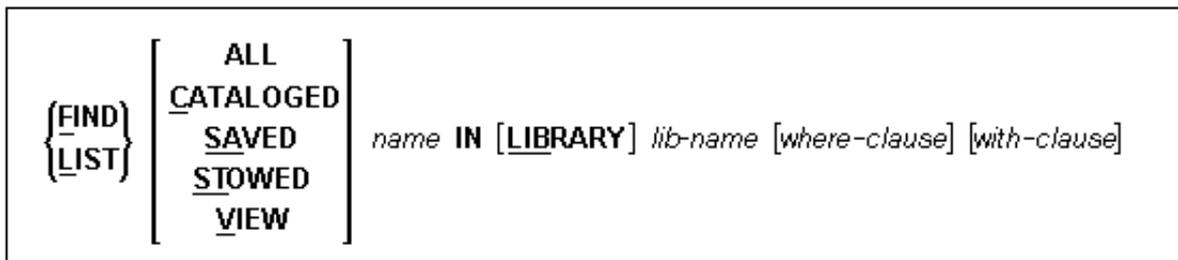
- Function, object type and object name must be the first three parameters of the command string.
- The library or path name must be specified immediately after the FROM, IN and TO keywords. (If the optional keyword LIBRARY or PATH is used, it must be entered between the FROM, IN or TO keyword and the library or path name).
- The WHERE clause must always follow the FROM, IN or TO keyword and the library name; the sequence of the keywords and values within the clause can be specified in any order.
- The keywords and values of the WITH clause can be specified in any order, but the WITH clause must always be placed at the end of the command string.

Note:

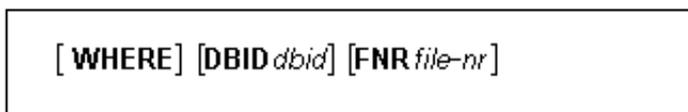
In the syntax diagrams below, FM is shown instead of FROM to make the diagrams easier to read; however, FROM can always be used as a synonym for FM and vice versa.

FIND and LIST Direct Command Syntax

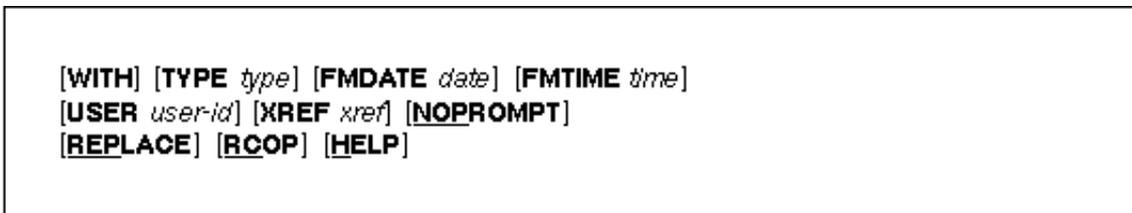
The direct command syntax of the FIND and LIST functions is:



The *where-clause* is optional. The syntax is:



The *with-clause* is optional. The syntax is:

**Examples:**

```
COPY PROG1 FM TESTORD TO ORDERS DBID 1 FNR 6 REP
C PGM* WITH REP TYPE PNS FM PRODLIB TO TESTLIB
```

```
M PROG1 TO NEWLIB
```

```
MOVE STOWED * TO NEWLIB WHERE DBID 100 FNR 160 FMDATE 87-11-01 FM OLDLIB
WITH XREF Y
```

Since the WHERE clause and WITH clause syntax are identical for each function, they are only shown once with the FIND and LIST command syntax above.

Examples:

```
FIND PROG1 IN DBID 1 FNR 6
FIND STOWED MAINMENU IN SYS* WHERE DBID 1 FNR 5
FIND ALL PROG2 IN PROD* FNR 27 DBID 1
```

```
LIST VIEW * IN lib-name
L SAVED TEST* IN lib-name TYPE PNS FNR 6
L SA TEST* TYPE PM IN lib-name FNR 6 DBID 2
```

COPY and MOVE Direct Command Syntax

The direct command syntax of the COPY and MOVE functions is:

{ COPY MOVE}	[ALL CATALOGED SAVED STOWED VIEW]	<i>name</i> FM [LIBRARY] <i>lib-name</i> [<i>where-clause</i>]
		TO [LIBRARY] <i>lib-name</i> [<i>where-clause</i>] [<i>with-clause</i>]

Examples:

```

COPY PROG1 FM TESTORD TO ORDERS DBID 1 FNR 6 REP
C PGM* WITH REP TYPE PNS FM TESTLIB TO PRODLIB
COPY VIEW PERS FM OLDLIB FNR 10 TO NEWLIB FNR 16 REPLACE

M VIEW PERSONNEL FM OLDLIB FNR 20 TO NEWLIB FNR 24
M PROG1 TO NEWLIB
MOVE STOWED * FM OLDLIB WITH XREF Y TO NEWLIB WHERE DBID 100 FNR 160
    
```

DELETE Direct Command Syntax

The direct command syntax of the DELETE function is:

DELETE	[ALL CATALOGED SAVED STOWED VIEW]	<i>name</i> [IN [LIBRARY] <i>lib-name</i> [<i>where-clause</i>]] [<i>with-clause</i>]

Examples:

```

D SA * IN LIBTEST TYPE GLA
DEL * TYPE PM IN TESTORD
DEL VIEW FINANCE IN TESTLIB DBID 12 FNR 27
    
```

RENAME Direct Command Syntax

The direct command syntax of the RENAME function is:

RENAME	[ALL CATALOGED SAVED STOWED VIEW]	<i>name</i> AS <i>new-name</i>
		FM [LIBRARY] <i>lib-name</i> [<i>where-clause</i>]
		TO [LIBRARY] <i>lib-name</i> [<i>where-clause</i>] [<i>with-clause</i>]

Examples:**RENAME** *PGMI AS PROGI***REN** *PGMI AS PROGI FM TESTLIB DBID 1 FNR 5 TO PRODLIB DBID 2 FNR 6*

Additional Keywords for Direct Commands

In addition to the keywords shown with the parameters above, the following keywords can also be used with direct commands to specify selection criteria:

Keywords	Explanation
ALL	All saved and/or cataloged programming objects are selected for processing.
CAT	All cataloged programming objects are selected for processing. (Any corresponding saved programming object is not processed.)
HELP	Activates online help.
IN/FM	Refers to a source environment.
<u>N</u> OPROMPT	Suppresses all prompts.
<u>R</u> COP	Used with direct commands to specify that a copy of the object being renamed is to be made.
<u>S</u> AVED	All saved programming objects are selected for processing. (Any corresponding cataloged object is not processed.)
STOWED	All programming objects which are both saved and cataloged are selected for processing.
TO	Refers to a target environment.
WITH	Optional keyword to indicate the start of a <i>with-clause</i> .
WHERE	Optional keyword to indicate the start of a <i>where-clause</i> .
.	End of command. If this character is detected anywhere within a command string, all subsequent data are ignored.