

Note!

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First Edition (September 1994)

This edition applies to Version 3, Release 1, Modification Level 0, of IBM Application Development ToolSet/400, (Program 5763-PW1) and to all subsequent releases and modifications until otherwise indicated in new editions. Make sure you are using the correct edition for the level of the product.

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About This Book

The programming development manager (PDM), which is part of the Application Development* ToolSet/400, helps you perform useful operations on libraries, objects, and members in a quick and efficient way to enhance your productivity. The programming development manager is referred to as PDM throughout this book. This book contains exercises and reference material to help you learn to use PDM. Only the most commonly used options and function keys are explained in detail.

Note: This book contains examples to help you do common tasks. The contents of the displays illustrated in the examples may differ from the ones you see on your system, because the names of your libraries, objects, files, and members may be different from the ones used in the examples. You should also note that, although the text that you are asked to type in the examples throughout this book is shown in uppercase, you can type it in uppercase, lowercase, or mixed case.

You may need to refer to other IBM publications for more specific information about a topic. The *Publications Reference*, SC41-3003 provides information on all the publications in the AS/400 library.

For a list of related publications, see the "Bibliography" on page 95.

Who Should Use This Book

This book is intended for application programmers or analysts working in an IBM Application System/400* (AS/400*) environment. To use this book effectively, you must know how to use your workstation, understand and use messages, and have a general knowledge of the AS/400 system.

If you are unfamiliar with your workstation, refer to the specific manual for your workstation.

Summary of Changes

The following enhancements were made to PDM:

- PDM now supports the following new object types for generic functions:
 - *CRQD
 - *DIR
 - *NTBD
 - *NWSD
 - *SVRSTG

You can view objects of type *DIR from a list only.

- PDM now supports the Integrated Language Environment* (ILE*) RPG and COBOL compilers. You can start these compilers from option 14 (Compile) and option 15 (Create module) on the PDM member list.
- The Work with Objects Using PDM display has two new options, option 34 (Interactive Source Debugger) and option 54 (Compare file member). You can use option 34 on all objects of type *PGM and type *SRVPGM to debug a program file and then call a program. You can use option 54 on all objects of type *FILE with attributes of PF-SRC or PF-DTA and you can compare two or more file members. Option 54 also enables the Work with Members Using PDM display.
- The Work with Members Using PDM display has two new options, option 54 (Compare file member) and option 55 (Merge file member). You can use option 54 on all member types and you can compare two or more file members. You can use option 55 on all objects of type *FILE with attributes of PF-SRC and you can merge two file members.
- The Change Defaults display has the following two new prompts:
 - *Refresh part list*
 - *Display source parts only*

Chapter 1. Programming Development Manager Overview

With the programming development manager (PDM), you can perform the following functions:

- Work with libraries
- Work with objects
- Work with members
- Search for a character string or a numeric string
- Work with user-defined options
- Change system default values

Each of these functions and the tasks you can perform within it are explained in detail in the chapters that follow. If you have the Application Development Manager/400 orderable feature installed, you also have access to the following functions:

- Work with projects
- Work with groups
- Work with parts
- Search for character and hexadecimal strings in parts

For a complete discussion of these functions, refer to the Application Development Manager/400 library which consists of *ADTS/400: Application Development Manager/400 Introduction and Planning Guide*, GC09-1807, and *ADTS/400: Application Development Manager/400 User's Guide*, SC09-1808.

PDM also gives you access to other objects on the AS/400* system so that you can use the following utilities in the Application Development ToolSet/400 licensed program:

- Source entry utility (SEU)
- Data file utility (DFU)
- Screen design aid (SDA)
- Report layout utility (RLU)
- File compare and merge utility (FCMU)
- Interactive source debugger (ISDB)

Objects, Libraries, Files, and Members in the AS/400 System

- **Objects** are the basic unit with which commands perform operations in the AS/400 system.

An object is a named unit that consists of a set of features that describes the object, and a value. The features of an object include its name, type, size, the date it was created, and a text description. The value of an object is the collection of information stored in the object. The value of a program, for example, is the executable code that makes up the program. The value of a file is the collection of records that make up the file.

There are many types of objects. For example, the object type of a library is *LIB, the object type of a file is *FILE, and the object type of a program is *PGM.

Objects can also have subtypes known as **attributes**, which are the characteristics of the objects. For example, the attribute of an object of type *PGM could be RPG, to indicate that the program is created using RPG source code. The attribute of an object of type *FILE could be DSPF, to indicate that the file is a display file.

- A **library** is a special type of object (object of type *LIB) that is used to group related objects. A library, therefore, is a directory to a group of objects. There are only two types of libraries: *PROD (Production) and *TEST (Test).

Every AS/400 system has a system library named QSYS that is provided in the OS/400* operating system to contain system-oriented objects. QSYS is a large library that points to all the system-oriented objects.

- A **file** is an object of type *FILE that has an attribute that describes the type of the file. For example, a source physical file has an attribute of PF-SRC, a data file has an attribute of PF-DTA, and a printer file has an attribute of PRTF. Physical files and logical files both contain members.
- A **member** is a subset of records in a physical file (PF-SRC or PF-DTA). Each member conforms to the characteristics of the file. You can define the type of a member, or select a type used with PDM commands.

Special Features of PDM

PDM has many special features that make it easy to use. Some of these features are listed below.

List Interface

PDM has displays that list libraries, objects, members, and user-defined options. On these displays, you can perform operations on the items in the list by typing an option in the *Opt* column of the display. You can select different operations, or the same operation, on more than one item in a list at a time.

Selection Lists

You can press F4 in some displays to show a list of items from which you can make your selection. You then select an item and return to the previous display with the prompt filled in with the item of your choice.

User-Defined Options

Using PDM, you can create your own options and use them on list displays in the same way that system options are used. You can create options from commands you use frequently, which saves you from having to type the command each time you want to use it.

Work with Option

Option 12 (Work with) on library and object list displays allows you to work with all the objects in a library or all the members in a file. Simply type 12 next to a library or file on a list display. This option lets you move between different levels of PDM quickly and easily. By pressing F4 (Prompt), you can create a subset of the list of members or objects that you want to work with.

Window Program

There is a user-defined option window program that, when called, creates a window in the upper right corner of the display listing all active PDM user-defined options. The source programs for this tool are in library QUSRTOOL, and all information regarding this program is in member TPSINFO in the file QUSRTOOL/QATTINFO.

Changing Defaults

PDM allows you to change defaults such as the run and compile mode (batch or interactive) and the list display mode (full screen mode or not). You can also change the active user-defined options file name, and specify whether you want to be able to change the type and description of members on the Work with Members Using PDM display. You can change the PDM defaults by pressing F18 (Change defaults) to access the Change Defaults display and making the appropriate changes.

Grouping Displays

Many options in PDM have grouping displays. Grouping displays list all the items for which you selected an option on the previous list display. This allows you to perform the same operation on more than one item at a time. For example, to copy a number of members to a different file or library, you only change the file or library name once on the grouping display. This saves you a considerable amount of typing.

You can choose to perform all the operations on a grouping display interactively, or you can submit them to batch processing by using F19 (Submit to batch).

More Options and More Keys

Some of PDM's list displays have more options and function keys available than can be shown on the display. You can press F23 (More options) and F24 (More keys) to see the next set of available options and function keys.

Remember Previous Values for Commands

In PDM, the values you enter for certain prompts and for the parameters of certain commands are saved in the user profile, even if you exit from PDM and sign off the system. When working with any of the WRKxxxPDM commands, you can specify that you want to use these saved values by using the *PRV (previous) value. This means that if you want to work with the same list you were working with the last time you used PDM, you just type *PRV for all the parameters. You do not have to remember the values you entered.

For example, to work with the same list of objects, type the following on the command line:

```
WRKOBJPDM LIB(*PRV) OBJ(*PRV) OBJTYPE(*PRV) OBJATR(*PRV)
```

Press Enter, and the object list you last worked with appears.

The LIB parameter on all WRKxxxPDM commands defaults to *PRV, as does the FILE parameter on the WRKMBRPDM command. All other parameters on WRKxxxPDM commands default to *ALL.

For more information on accessing PDM using the WRKxxxPDM commands, see Chapter 2, "Starting the Programming Development Manager" on page 7.

You can also use the *PRV value when you are working with the Application Development Manager/400 commands, WRKPRJPDM, WRKGRPPDM, and WRKPARTPDM.

Find String

PDM allows you to search for a character or numeric string in a source or data physical file or member. You can choose to edit, compile or perform any valid option on the members that contain the string. You can also print a list of the members containing the string or print the individual records that contain the string.

Sequence in Which PDM Options Are Processed

If you select more than one PDM option on a list display, the options are processed sequentially, starting with the first option selected.

When you select an option and press Enter, PDM first determines whether it is a grouping option. The Copy option, the Rename option, the Delete option, and the Move option are grouping options. If it is a grouping option, a grouping display is shown, listing all the items for which a particular option was chosen and requesting confirmation (and, possibly, additional input).

You can choose to perform all the operations on grouping displays interactively, or you can submit them to batch. To submit them to batch, press F19 (Submit to batch). When you submit options to batch, each occurrence of the option results in a command that is submitted to batch processing; therefore one batch job is submitted for each item on the grouping screen.

If you want to perform all the operations on the grouping display interactively, press Enter. The operation is performed for the first item on the grouping display but is not necessarily performed on the remaining items on the grouping display right away. Options selected on list displays are processed sequentially, so the option selected for the second item on the list display is now processed.

Entering Commands Using the Command Line

You can type any valid command or parameter on the command line. You can also type commands with parameters on the command line. If you do not type any options in the *Opt* column of a list display, PDM checks whether or not you typed a command on the command line, and if you have, runs it. If you type any options in the *Opt* column of the list, PDM checks to see whether or not the command line contains parameters for the options.

Notes:

1. You cannot type parameters on the AS/400 Programming Development Manager (PDM) menu. You can only type selections or commands on the command line of this menu.
2. The PDM command line does not issue an RCLRSC after receiving an escape message.

Entering Commands on List Displays

To enter commands on list displays:

1. Press F10 (Command entry). The Command Entry display appears.
2. Type commands on the Command Entry display. To view any other commands you typed during the session, press the Page Up key.
3. To return to the display on which you pressed F10 (Command entry), press F3 (Exit) on the Command Entry display.

Retrieving Commands

To retrieve a command on the Command Entry display:

1. Press F9 (Retrieve).
2. Continue to press F9 (Retrieve) until the command you want is displayed on the command line. You can add parameter values to the command or modify parameters values for the command. You can also press F4 (Prompt) to prompt the display for the command.
3. Press Enter to process the command.

Chapter 2. Starting the Programming Development Manager

You can start the programming development manager (PDM) from the AS/400 Main Menu or by typing the STRPDM command on the command line. You can also start PDM by typing any of the following commands on the command line:

- WRKLIBPDM
- WRKOBJPDM
- WRKMBRPDM

If you have the Application Development Manager/400 orderable feature installed, you can also start PDM by typing the following commands on the command line:

- WRKPRJPDM
- WRKGRPPDM
- WRKPARTPDM

Refer to *ADTS/400: Application Development Manager/400 User's Guide* for information on these commands.

Starting PDM from the AS/400 Main Menu

To start PDM from the AS/400 Main Menu:

1. Select option 5 (Programming) from the AS/400 Main Menu, and press Enter. The Programming menu is displayed.
2. Select option 2 (Programming Development Manager (PDM)), and press Enter. The AS/400 Programming Development Manager (PDM) menu appears. You can select one of the options from this menu to work with libraries, objects, members, or user-defined options.

Starting PDM by Using the STRPDM Command

To start PDM by using the STRPDM command, type STRPDM on any command line and press Enter. The AS/400 Programming Development Manager (PDM) menu is displayed.

Starting PDM by Using the WRKLIBPDM Command

To start PDM and work with the list of libraries from your previous PDM session, type WRKLIBPDM on the command line without specifying any parameters, and press Enter. The Work with Libraries Using PDM display appears.

To display a specific list of libraries, specify parameters after the WRKLIBPDM command. For example, to display a list of all libraries starting with BA, type the following command on any command line, and press Enter:

```
WRKLIBPDM LIB(BA*)
```

The Work with Libraries Using PDM display appears.

Starting PDM by Using the WRKOBJPDM Command

To start PDM and work with all the objects in a library from your previous PDM session, type WRKOBJPDM on the command line without specifying any parameters, and press Enter. The Work with Objects Using PDM display appears.

To display a specific object in a library, specify parameters after the WRKOBJPDM command. For example, for a list of all the CLP programs in the ATEST library that start with CHG, type the following command on any command line, and press Enter:

```
WRKOBJPDM LIB(ATEST) OBJ(CHG*) OBJTYPE(*PGM) OBJATR(CLP)
```

The Work with Objects Using PDM display appears.

Starting PDM by Using the WRKMBRPDM Command

To start PDM and work with all the members in the file and library from your previous PDM session, type WRKMBRPDM on the command line without specifying any parameters, and press Enter. The Work with Members Using PDM display appears.

To work with a specific list of members, specify parameters after the WRKMBRPDM command. For example, for a list of all members in the CMDSRC file in the ATEST library with a type of CMD that start with C, type the following command on any command line, and press Enter:

```
WRKMBRPDM FILE(ATEST/CMDSRC) MBR(C*) MBRTYPE(CMD)
```

The Work with Members Using PDM display appears.

Chapter 3. Working with Libraries

You can perform the following tasks when working with libraries:

- View a library list
- View a list of libraries
- Work with an alphabetical list of libraries
- Create a library
- Delete a library
- Rename a library
- Change the type and text description of a library
- Work with objects in a library
- Copy a library
- Copy to an existing library
- Display the description of a library
- Create a subset of a list of libraries
- Add an existing library to a library list
- Move a user library to the user portion of a library list
- Remove a user library from the user portion of a library list

Differences between a Library List and a List of Libraries

A library list is an ordered list of library names. It identifies the libraries that are searched and the order of the search. A list of libraries, however, is an alphabetic list of all the libraries, or a subset list of all the libraries, on the system.

For example, the type of list you work with depends on your entry for the *Library* prompt on the Specify Libraries to Work With display, or for the LIB parameter of the WRKLIBPDM command. Some of the function keys and options available on the Work with Libraries Using PDM display differ depending on the type of list with which you are working.

A library list makes it easier for you to work with objects. If the object you are searching for is in one of the libraries on the library list, you do not have to specify the library name when searching for the object.

Library List Portions

The portions of a library list are:

System Portion

The system portion of the library list contains objects used by the system. The maximum number of libraries here is 15.

Product Libraries

Product libraries may be included in the library list. The product libraries are used to support languages and utilities that are dependent on libraries other than the system library, QSYS, to process their commands.

Current Library

The current library can be, but does not have to be, a duplicate of any library in the user portion of the library list. The current library value, *CURLIB, can be used on most commands as a library name to represent whatever library has been specified as the current library for the job.

User Portion

The user portion of the library list contains those objects referred to by the system's users and applications. The user portion, and the product and current libraries, may be different for each job on the system. The maximum number of libraries in the user portion of the library list is 25.

Viewing a Library List

To view a library list:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.

2. Type one of the following values in the *Library* prompt, and press Enter:

***LIBL**

Displays a list of all libraries in your library list

***USRLIBL**

Displays a list of all libraries in the user portion of your library list

Note: You can also specify these values for the LIB parameter of the WRKLIBPDM command.

3. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

You can add libraries to, or remove them from, the library list. When you remove a library from the library list, you are only taking the library off the library list temporarily. The library is not deleted from the system. You can also change the search order by changing the position of libraries in your library list.

Viewing a List of Libraries

To view a list of libraries:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.

2. Type one of the following values in the *Library* prompt, and press Enter.

***ALL**

Displays a list of all libraries in the system.

***ALLUSR**

Displays a list of all nonsystem libraries, including a list of all user-defined libraries.

***CURLIB**

Displays a list containing only the current library.

Library name

Displays a list containing only the library you specify.

Generic name

Displays a list containing libraries that meet specific criteria. The generic name can be in one of the following formats:

ABC*

Displays a list of all items that begin with the characters ABC for example, ABC, ABCD, or ABCTEST.

***ABC**

Displays a list of all items ending with the characters ABC, for example, ABC, DABC, or TESTABC.

B

Displays a list of all items that have the character B anywhere in the name, for example, B, BALL, or ABCD.

A*C

Displays a list of all items that begin with the character A and end with the character C, for example, AC, ABC, or AZZZC.

“a*”

Displays a list of all items within quotation marks that start with the character a, for example, “a,” “aB,” or “aD.”

****ALL**

Displays a list of all items ending with ALL, for example, ALL, BALL, or TESTALL. The double asterisk is needed in this case because ALL is defined as the value to display a list of all libraries.

Note: You can also specify these values for the LIB parameter of the WRKLIBPDM command.

3. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Displaying an Alphabetical List of Libraries

To display an alphabetical list of libraries, for example, a list of all the libraries that start with an A, do the following:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.

The default value of the *List type* prompt is *ALL, which indicates that you are working with a list of libraries. This prompt defaults to *ALL on the Work with Libraries Using PDM display if you specify *ALL, *CURLIB, a library name, or a generic name for the *Library* prompt on the Specify Libraries to Work With display. When you work with lists of libraries, the *List type* prompt can also have the value *ALLUSR.

You can use the *Position to* prompt on the Work with Libraries Using PDM display to display a specific library name in the list of libraries. You can create a subset of a list of libraries using F17 (Subset function) on the Work with Libraries Using PDM display. You can also create a library when you are working with lists of libraries.

3. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Note: You must have authority in the library with which you are working to use the options on the Work with Libraries Using PDM display.

Creating a Library

You can create a library if you are working with a list of libraries (list type *ALL or *ALLUSR). To create a library called ANEXAMP:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Press F6 (Create) on the Work with Libraries Using PDM display. The Create Library (CRTLIB) display appears.
4. Type ANEXAMP in the *Library* prompt, *PROD or *TEST in the *Library type* prompt, and a description of the library in the *Text 'text description'* prompt, and press Enter. This example creates library ANEXAMP.

A message at the bottom of the display indicates that the library was created. Library ANEXAMP is now in the list. You may have to page down the list of libraries to find it.

Note: If you create a library with a name that does not match the values you specified on the Specify Libraries to Work With display, it is not shown in the list. For this example, library ANEXAMP conforms to the values you selected (it starts with an A), so it is shown in the list after it is created.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Deleting a Library

Using PDM, you can delete libraries you no longer need by selecting the Delete option. You can delete more than one library in a list at a time. PDM has a confirmation display where you verify that you have chosen the correct libraries to delete.

Note: You can only delete libraries from a list of libraries and *not* from a library list.

To delete library ANEXAMP and library AOLD:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Type 4 (Delete) in the *Opt* prompt next to library ANEXAMP and library AOLD, and press Enter. The Confirm Delete of Libraries display appears and lists each of the libraries you chose to delete.
4. To delete all of the libraries listed, press Enter or press F19 (Submit to batch) to delete the libraries in batch mode. When the libraries are deleted, the Work with Libraries Using PDM display appears.

To change the libraries that you want to delete, press F12 (Cancel) to return to the previous display. Then change your selections.

A message at the bottom of the display indicates that library ANEXAMP is deleted. If you delete more than one library, a + sign at the far right side of the display indicates there is another message waiting for the next library you deleted.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Renaming a Library

To rename library ANEW:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Type 7 (Rename) in the *Opt* prompt next to library ANEW, and press Enter. The Rename Libraries display appears and lists each library you chose to rename on the previous display. The library names in the *New Name* column are initially the same as the ones in the *Library* column, so that you do not have to retype the entire name if you only want to change a few characters.
4. Type the new name of the library under the *New Name* column for each library listed, and press Enter. A message at the bottom of the display indicates that the library is renamed.

5. Check the list for the library you renamed. The library you renamed may have changed position in the list because a list of libraries is sorted alphabetically. If you rename the library to a name that does not match the selection values you entered on the Specify Libraries to Work With display (for example, if you renamed the library BNEW), it does not appear in the list. If you are working with a library list, the library that is renamed does not change position because a library list is not sorted alphabetically.

Note: You cannot rename library QSYS or library QTEMP, and you cannot rename libraries on your library list in batch mode.

6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Changing the Type and Text Description of a Library

To change the type and text description of library AOLD:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Type 2 (Change) next to library AOLD, and press Enter. The Change Library (CHGLIB) display appears.
4. Type *TEST in the *Library type* prompt.
5. Type the following description in the *Text 'description'* prompt, and press Enter:
01d backup copy of Dept. 642 library

The Work with Libraries Using PDM display reappears after the system has processed your request.

A message appears at the bottom of the display indicating that the library is changed. The type and text description of library AOLD are now different.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Working with Objects in a Library

You can work with all the objects in one or more libraries by using option 12 (Work with). To create a subset of the list of objects that you want to work with, press F4 (Prompt) to go to the Specify Objects to Work With display.

To work with all the objects starting with an A in library APROD and library ATEST:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Press F23 (More options). The Work with Libraries Using PDM display reappears, which shows the remaining set of available options.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. Type 12 (Work with) next to all the objects starting with an A in library APROD and library ATEST.
5. Press F4 (Prompt). The Specify Objects to Work With display appears, on which you can create a subset of the list of objects to work with.
6. Press Enter, and the Work with Objects Using PDM display appears. You can select any of the options shown for objects in the list.
7. When you finish working with all the objects that start with an A in library APROD, press Enter. Any options that are typed in the *Opt* column, commands that are typed on the command line, or changes that are made to input prompts are processed before PDM proceeds to the next library. The Specify Objects to Work With display appears for the second library ATEST in the *Library* prompt.
8. Press Enter, and the Work With Objects Using PDM display appears.
9. When you finish working with the objects in the second library, press Enter. The Work with Libraries Using PDM display reappears.
10. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Copying a Library

To copy library AOLD and library APROD:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Type 3 (Copy) next to library AOLD and next to library APROD, and press Enter. The Copy Libraries display appears.

This display lists each library you chose to copy in the previous display. You may have to page down the list to see all the libraries. The library names under *New Name* are initially the same as the ones under *Library*, so that you do not have to retype the entire name if you only want to change a few characters in the name of the target library.

4. Type BOLD under *New Name* to copy AOLD to BOLD and type BPROD under *New Name* to copy APROD to BPROD, and press Enter. The Work with Libraries Using PDM display reappears. Because BOLD and BPROD do not begin with an A, they are not included in the list.

To check that BOLD and BPROD were created, press F12 (Cancel). The Specify Libraries to Work With display reappears. To work with libraries that start with B, type B* in the *Library* prompt, and press Enter. The Work with Libraries Using PDM display reappears, listing the libraries that start with B. Press Page Down until you find library BOLD and library BPROD.

If you are working with a library list, the libraries you copied are not included in the list. If you want to include them on the library list, you must add them. For information on adding libraries to a library list, see “Adding a Library to a Library List” on page 18.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Copying a Library to an Existing Library

If you try to copy a library to a library that already exists, a message at the top of the Confirm Copy of Library display appears, indicating that the library already exists. To copy library APROD to library BPROD:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Type 3 (Copy) beside library APROD, and press Enter.
4. Type BPROD under *New Name*, and press Enter. The Confirm Copy of Library display appears.
5. Type Y (Yes) in the *Delete existing library* prompt, and press Enter. A message at the bottom of the display indicates that library BPROD is deleted.

Displaying the Description of a Library

When using PDM, you can display the following information about a library:

- Library size
- Time and date the library was created
- Time and date the library was changed
- Time and date the library was last saved
- Time and date the library was last restored

To display the description of library APROD:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type A* in the *Library* prompt to work with a list of libraries beginning with the letter A, and press Enter. The Work with Libraries Using PDM display appears.
3. Type 8 (Display description) next to library APROD, and press Enter. The Display Object Description - Full display appears.
4. Press F3 (Exit) to return to the Work with Libraries Using PDM display.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Subset of a List of Libraries

When working with a list of libraries, you can show a subset of a list of libraries by using the following prompts on the Subset Library List display:

- *Library*
- *Library type*
- *Text*

You can use these prompts in any combination or by themselves to create a subset of a list of libraries. The next two sections show examples of creating a subset of a list of libraries using F17 (Subset function).

Creating a Subset List with the Library Name and Type Prompts

You can create a subset of a list of libraries using the *Library* prompt and the *Library type* prompt on the Subset Library List display. To create a subset of a list of all the libraries of type *PROD that start with an A:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type *ALL in the *Library* prompt, and press Enter. The Work with Libraries Using PDM display appears.
3. Press F24 (More keys).

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. On the Work with Libraries Using PDM display, press F17 (Subset) to create a subset of the list. The Subset Library List display appears.
5. In the *Library* prompt, type in the generic name to show a subset of the list. You can use any one of the formats for the generic name listed on page 11. For this example, type A* in the *Library* prompt, *PROD in the *Library type* prompt, and leave the *Text* prompt at *ALL for a list of all the libraries that start with an A and that are of type *PROD, and press Enter. The Work with Libraries Using PDM display appears, which shows a subset of the list of libraries. Only libraries whose names start with an A and are of type *PROD are shown in the subset of the list.

The *List type* prompt is still *ALL. The *List type* prompt indicates the type of list that is displayed, a library list, or a list of libraries.

6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Creating a Subset List with the Text Prompt

To create a subset of a list of libraries for Department 642 using only the *Text* prompt:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type *ALL in the *Library* prompt, and press Enter. The Work with Libraries Using PDM display appears.

3. Press F24 (More keys) twice. The Work with Libraries Using PDM display reappears, showing the third set of available function keys.
Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.
4. On the Work with Libraries Using PDM display, press F17 (Subset) to create a subset of the list. The Subset Library List display appears.
5. Type 642 in the *Text* prompt to indicate that you want to display a subset of the list that includes all items with 642 in their text field, and press Enter. Leave the *Library* and *Library type* prompts at *ALL. The Work with Libraries Using PDM display appears, which shows a subset of the list of libraries that lists all Department 642 libraries.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Changing a Library List

You can make changes to library type *LIBL and library type *USRLIBL only. All changes you make to a library list are temporary. When you sign off and sign back onto PDM, the library list does not display the changes you made in your previous session. For information on making permanent changes to the library list, refer to the *CL Reference* book.

To change the library list temporarily, do one of the following tasks:

- Add a library to a library list
- Move a user library to the user portion of a library list
- Remove a user library from the user portion of a library list

Adding a Library to a Library List

When working with libraries in PDM, you can add a library to a library list. To add library APROD to the library list:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type *LIBL in the *Library* prompt, and press Enter. The Work with Libraries Using PDM display appears.
3. Press F6 (Add to list) on the Work with Libraries Using PDM display. The Add Library List Entry (ADDLIBL) display appears.

4. Type `APROD` in the *Library* prompt, and press Enter. If you are not sure of what to type for the prompt, press F1 (Help). The Work with Libraries Using PDM display reappears.

Library `APROD` is now included in the library list. You may have to page down the list to find the library you added if you chose to add the library to the end of the list using `*LAST` as the positional parameter. In this example, library `APROD` is added to the top of the user portion of the library list, fourth in the list. `QSYS`, `QGPL`, and `QPDA` are before `APROD`, because `APROD` is a user library, and user libraries are listed after any system library, the current library, and product libraries.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Moving a User Library to the User Portion of a Library List

If you are working with a library list, you can move user libraries anywhere in the user portion of the library list. If you do not specify the library name when you are searching for an object in a library, the position of a library in the library list determines the order in which that library is searched. For example, if you have a library that contains test code, you can place it at the top of the library list so that test code is searched first. To move library `APROD` to the user portion of the library list:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type `*LIBL` in the *Library* prompt, and press Enter. The Work with Libraries Using PDM display appears.
3. On the Work with Libraries Using PDM display, press F23 (More options).

The Work with Libraries Using PDM display reappears, showing the remaining set of available options for a library list.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. Select option 20 (Move within list) next to library `APROD`. Type either option 21 (Move before) or option 22 (Move after) in the position to which you want to move the library. For this example, type 22 (Move after) beside library `PAYLIB` to move library `APROD` to a position after library `PAYLIB`.
5. Press Enter, and the Work with Libraries Using PDM display appears again with the library `APROD` in its new position.

A message at the bottom of the display indicates that the library list is changed.

6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Removing a User Library from the User Portion of a Library List

When working with libraries in PDM, you can remove a library from your library list. This does not delete the library from the system: it just removes it from your library list.

To remove library APROD from the user portion of the library list:

1. Select option 1 (Work with libraries) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Libraries to Work With display appears.
2. Type *LIBL in the *Library* prompt, and press Enter. The Work with Libraries Using PDM display appears.
3. On the Work with Libraries Using PDM display, press F23 (More options).

The Work with Libraries Using PDM display reappears, showing the remaining options available.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. Select option 23 (Remove from list) next to library APROD, and press Enter. The Work with Libraries Using PDM display reappears.

The list no longer contains library APROD. The message at the bottom of the display indicates that the library list is changed.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Chapter 4. Working with Objects

You can perform the following tasks when working with objects:

- Create objects
- Delete objects
- Rename objects
- Move objects to another library
- Copy to an existing object
- Display the description of objects
- Display a detailed description of objects
- Change objects using the data file utility (DFU)
- Create a program
- Create a service program
- Debug programs
- Compare file members
- Run objects
- Work with members in a physical file
- Create a subset of a list of objects
- Refresh the subset of a list of objects

Using PDM, you can work with all objects in a library, or with specific objects in a library. This chapter shows you how to perform operations on objects using the available options and function keys. Some of the options can only be used with certain object types. Refer to Appendix A, "Command Reference" on page 71 for information on the commands that can be performed on specific object types.

Library ATEST and library APROD are used for the examples that follow in this chapter.

Creating Objects

To create object PRODDATA of type *DTAARA:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work with display appears.
2. Press Enter to bypass this display. The Work with Objects Using PDM display appears.
3. Press F6 (Create) to create an object. The Create Commands menu appears that lists all the create commands.
4. Type 59 on the command line to create an object of type *DTAARRA, and press Enter. The Create Data Area (CRTDTAARA) display appears.
5. Type PRODDATA in the *Data area* prompt, and ATEST in the *Library* prompt. If you are unsure of what to enter for any of the prompts on this display, press F1 (Help) to display the online help information for that prompt.

6. Press Enter, and the Create Commands display reappears. A message at the bottom of the display indicates that object PRODDATA is created.
7. Press F3 (Exit). The Work with Objects Using PDM display reappears. Object PRODDATA of type *DTAARA in library ATEST now appears in the list. You may have to page through the list to find it if there are a lot of objects in the list.
8. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Deleting Objects

You can delete objects you no longer need by selecting the Delete option. You can delete more than one object in a list at a time. PDM has a confirmation display so that you can verify that the objects you chose are the ones you want to delete.

To delete object BACKTEST in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work with display appears.
2. Press Enter to bypass this display. The Work with Objects Using PDM display appears.
3. Type 4 (Delete) next to the object BACKTEST, and press Enter. The Confirm Delete of Objects display appears.

This display lists each of the objects you chose to delete on the previous display, in this example, the object BACKTEST. If you chose a large number of objects, you may have to page down the list to see them all.

4. Press Enter to delete all of the objects listed, or press F19 (Submit to batch) to delete the objects in batch mode. If you do not want to delete all of the objects, press F12 (Cancel) to return to the previous display and change your selections.

Note: If you choose a large number of objects to delete, there may be more than can be listed on one page. When you press Enter or F19 (Submit to batch), the objects on every page of the Confirm Delete of Objects display are deleted, not just the ones on the page that is currently displayed.

After the system processes your requests, the Work with Objects Using PDM display reappears. The object BACKTEST is no longer in the list. A message at the bottom of the display indicates that the object is deleted.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Renaming Objects

You can rename objects using the Rename option on the Work with Objects Using PDM display. You can choose to rename more than one object in the list at a time.

To rename object ADMBACK and object BACKUP in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work with display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Type 7 (Rename) next to object ADMBACK and object BACKUP, and press Enter. The Rename Objects display appears.

This display lists each of the objects you selected to rename on the previous display. The object names under *New Name* are initially the same as the names under *Object*. This saves retyping if you only want to change one or two characters in the name of the object. If you choose a large number of objects to rename, you may have to page down the list to see them all.

4. Type ABACK next to object ADMBACK and BBACK next to object BACKUP under *New Name*, and press Enter. The Work with Objects Using PDM display reappears.

A message at the bottom of the display indicates that the first object you selected has been renamed. The + at the far right of the message indicates that another message is waiting. To view this message, place the cursor on the message line and press the Page Down key. The next message displayed indicates that the second object you chose is renamed.

5. Check the list for the renamed objects. The objects now have the new name you assigned them.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Moving Objects to Another Library

Using PDM, you can move objects from one library to another. You can move objects in groups, if you are moving them to the same library. You can also move individual objects to different libraries.

To move object ABACK and object BBACK from library ATEST to library APROD:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Type 11 (Move) next to object ABACK and object BBACK, and press Enter. The Move Objects display appears.

This display lists each object you selected to move on the previous display. If you choose many objects, you may have to page through the list to see them all. The *From library* prompt already has the name of the library that contains the objects you want to move. For this example, the *From library* prompt is ATEST.

4. Type the name of the library to which you want to move the objects in the *To library* prompt.
5. Make sure the objects selected are the ones you want to move, and press Enter. The Work with Objects Using PDM display appears. The objects you chose to move are no longer in library ATEST.

A message at the bottom of the display indicates that object ABACK was moved to library APROD. The + at the far right of the display indicates that another message is waiting. To view the message, place the cursor on the message line and press the Page Down key. Another message indicates that object BBACK was moved to library APROD.

6. To display the objects you moved to the library APROD, type APROD in the *Library* prompt, and press Enter.

The Work with Objects Using PDM display reappears. The list now contains objects in library APROD, including object ABACK and object BBACK. You can page through the list to find the objects.

7. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Copying Objects

To copy object ABACK and object BBACK to library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type APROD in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Type 3 (Copy) next to object ABACK and object BBACK, and press Enter. The Copy Objects display appears.

This display lists each object you chose to copy on the previous display. You may have to page through the list to see all the objects you chose to copy. The *To library* prompt initially contains the same library name as the *From library* prompt, and the Object names under *New Name* are initially the same as the ones under *Object*. This is to save retyping if you only want to change a few characters in the name of the library or object you are copying to.

4. Type ATEST in the *To library* prompt.
5. Type ABACK2 next to object ABACK and BBACK2 next to object BBACK, and press Enter. The Work with Objects Using PDM display reappears.

Note: If you are copying objects to a different library, you do not have to change the object names, unless the object already exists in another library.

6. To display library ATEST to see the objects you copied to it, type ATEST in the *Library* prompt, and press Enter. The Work with Objects Using PDM display reappears, listing all the objects in library ATEST. Object ABACK2 and object BBACK2 are included in the list.
7. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Copying an Object to an Existing Object

If you try to copy an object to an object that already exists, a message at the top of the Confirm Copy of Object display appears, indicating that the object already exists. To copy object ABACK2 to object BBACK2:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type APR0D in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Type 3 (Copy) beside object ABACK2, and press Enter.
4. Type BBACK2 under *New Name*, and press Enter. The Confirm Copy of Objects display appears.
5. Type Y (Yes) in the *Delete existing object* prompt, and press Enter. A message at the bottom of the display indicates that object BBACK2 is deleted.

Displaying the Description of Objects

When working with PDM, you can display the following information about an object:

- Object size
- Time and date the object was created
- Time and date the object was changed
- Time and date the object was last saved
- Time and date the object was last restored

To display the description of object ABACK2 in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Type 8 (Display description) next to object ABACK2, and press Enter. The Display Object Description - Full display appears, which shows information about object ABACK2, including the time the object was last changed.
4. To return to the Work with Objects Using PDM display, press Enter.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Displaying a Detailed Description of Objects

You can display detailed information about objects by using the Display option on the Work with Objects Using PDM display. The type of information that appears depends on the object type you are displaying.

Note: If you choose the Display option for certain objects (for example, objects of type *LIB), the contents of the object are displayed. If you choose to display a display file (*FILE DSPF), the Test display option in SDA is called.

To display the detailed description of object ABACK2 in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Type 5 (Display) next to object ABACK2, and press Enter.

The display that appears depends on the type of object you choose to display. For this example, because you chose to display an object of type *PGM, the prompt display for the DSPPGM command appears showing information such as the program creation date and time. For a list of the commands called for the different object types, refer to “Command Reference for Objects” on page 71.

You may have to page through the information on the display to find what you are looking for.

4. When you finish looking through the information for the chosen object, press F3 (Exit) to return to the Work with Objects Using PDM display.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Changing Objects Using DFU

In PDM, you can change objects in a library by using the data file utility (DFU). You can change files of type PF-DTA, LF, and DDMF, and DFU programs (*PGM DFU). For more information on using DFU, refer to the *ADTS/400: Data File Utility* book.

To change object DDATA in library ATEST using DFU:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Page down the list until you reach the object that you want to change using DFU. For this example, page down the list until you reach object DDATA.

4. Type 18 (Change using DFU) next to object DDATA, and press Enter. A DFU display appears on which you can change the object. If you are not sure how to change an object in DFU, press Help for more information on the DFU display.
5. After making your changes, exit from DFU. The Work with Objects Using PDM display reappears.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Creating a Program

You can bind one or more *MODULE, *SRVPGM, and *BNDDIR objects to create one program object (*PGM). You can create the program object in batch or interactively, depending on the value you enter in the *Run in batch* prompt on the Change Defaults display. For more information on this prompt and on job modes, see “Changing the Compile and Run Modes” on page 66.

When you create a program object from several object types, you must include at least one object of type *MODULE.

To create a program by binding several object types:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Press F23 (More options) twice. The third set of options available for the Work with Objects Using PDM display appears.
Note: You do not have to display the additional function keys and options when you use them. Step 2 is not required, but you should use it until you are familiar with PDM.
4. Page down the list until you see the objects that you want to bind on the Work with Objects Using PDM display.
5. Type 26 (Create program) next to object CMOD, object CMOD1, and object CMOD2, and press Enter. The objects you selected are bound into a single program object.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Creating a Service Program

To create a service program (*SRVPGM) from several objects, specify 27 (Create service program) for the objects you want to bind. This option does not create an executable object.

To create a program, bind the service program and other *MODULE, *SRVPGM, or *BNDDIR objects. The steps for creating a service program are the same as those for creating a program.

You must specify at least one *MODULE object when creating a service program.

Debugging a Program

You debug a program by using option 34 (Interactive Source Debugger). You can use this option on all objects of type *PGM and type *SRVPGM.

To debug a program:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type a library name in the *Library* prompt, *ALL in the *Object name* prompt, *PGM or *SRVPGM in the *Object type* prompt, *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Press F23 (More options) twice to show the additional options available for this display.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. Type 34 (Interactive Source Debugger) beside the program that you want to debug, and press Enter. The Start ISDB/400 (STRISDB) display appears.

Refer to *ADTS/400: Interactive Source Debugger*, SC09-1897, for more information on debugging programs.

Comparing File Members

You can compare file members by using option 54 (Compare file member). You can use this option only on objects of type *FILE with attribute PF-SRC or attribute PF-DTA.

To compare file members:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type a library name in the *Library* prompt, *ALL in the *Object name* prompt, *FILE in the *Object type* prompt, PF-DTA or PF-SRC in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.

3. Press F23 (More options) twice to show the additional options available for this display.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. Type 54 (Compare file member) beside the object you want to compare, and press Enter. The Compare Physical File Member (CMPPFM) display appears.

Refer to *ADTS/400: File Compare and Merge Utility*, SC09-1772, for more information on comparing file members.

Running Objects

PDM allows you to run objects in either batch mode or interactively, depending on the value you enter in the *Run in batch* prompt on the Change Defaults display. For more information on this prompt and on job modes, see “Changing the Compile and Run Modes” on page 66.

To run object DISAJOB in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Press F23 (More options). The second set of options available for the Work with Objects Using PDM display appears.

Note: You do not have to display the additional function keys and options when you use them. Step 2 is not required, but you should use it until you are familiar with PDM.

4. Page down the list until you reach the object you want to run on the Work with Objects Using PDM display.
5. Type 16 (Run) next to object DISAJOB, and press Enter. If you type parameters on the command line for use with option 16 (Run), they are changed to uppercase.

If you run the object in batch mode, a message indicates that a batch job has been submitted. The message waiting light, if not already on, comes on when the object is finished running. You can type DSPMSG on the command line to see any system messages and then press Enter to return to the Work with Objects Using PDM display.

6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Note: Parameters entered on the command line for use with option 16 (Run) are changed to uppercase.

Working with Members in a Physical File

You can work with members in a physical file using either option 12 (Work with) or option 25 (Find string) on the Work with Objects Using PDM display. For further information on the Find string option, see Chapter 6, “Searching for a Character String or a Numeric String” on page 45.

When you select an object to work with, if the object type is *FILE and the attribute is PF-SRC or PF-DTA, the Work with Members Using PDM display appears allowing you to perform operations on members. If the object type is *LIB, the Work with Objects Using PDM display appears allowing you to perform operations on objects in the library. In general, PDM displays items within an object for you to work with, and only if operations cannot be performed on the constituent parts of the object does it display the object itself for you to work with.

If the Work with option is used on an object with a type other than *FILE and *LIB, a display that does not originate from PDM may appear. For a list of the objects that are valid for the Work with option, refer to “Commands Called for the Work With Option” on page 79.

PDM also allows you to press F4 and prompt the Work with option. The Specify Members to Work With display appears. You can choose the members with which you want to work. The system does not process commands entered on the command line when you select the Work with option.

To work with all members that start with an A in the CMDSRC physical file in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, CMDSRC in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Press F23 (More options) to show the additional options available for the display.
Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.
4. Type 12 (Work with) next to file CMDSRC, and press Enter.
5. Press F4 (Prompt) to choose the members you want to work with, or press Enter to work with all the members in the specified file. For this example, press F4 (Prompt). The Specify Members to Work With display appears.
6. Type A* in the *Name* prompt, and press Enter. The Work with Members Using PDM display appears showing all the members in the file you chose to work with.

You can select any of the options available for this display for the members listed. For more information on working with members in a file, refer to Chapter 5, “Working with Members” on page 33.

7. Press Enter or F12 (Cancel) to return to the Work with Objects Using PDM display.
8. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Creating a Subset of a List of Objects

To create a subset of a list of all CLP programs with the characters BACK anywhere in their names in library ATEST:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type ATEST in the *Library* prompt, *ALL in the *Object name* prompt, *ALL in the *Object type* prompt, and *ALL in the *Object attribute* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Press F24 (More keys) twice. The Work with Objects Using PDM display reappears, which shows the second set of function keys for the display.
Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.
4. Press F17 (Subset) to create a subset of the list on the Work with Objects Using PDM display. The Subset Object List display appears.
5. Type *BACK* in the *Object* prompt, *PGM in the *Object type* prompt, and CLP in the *Object attribute* prompt, and press Enter.

The generic name can be in one of the formats listed on page 11.

You can also specify a range of object sizes in the *From* and *To* prompts to list objects within the range. For this example, use the default values. The Work with Objects Using PDM display appears with a list of all the objects that include the characters BACK anywhere in their name, that have a type of *PGM, and that have the attribute CLP.

- Note:** When working with a subset of a list, if you change the *Library* prompt on the Work with Objects Using PDM display to view the objects in a different library, the new list that appears is also a subset list.

Refreshing the Subset of a List of Objects

After creating a subset of a list of objects, you can redisplay the list in its original format using F5 (Refresh) on the subset display.

To refresh a subset of a list:

1. Press F17 (Subset) on the Work with Objects Using PDM display. The Subset Object List display appears.
2. Press F5 (Refresh). The prompts are refreshed to *ALL.
3. Press Enter. The Work with Objects Using PDM display appears, which displays all libraries on the system, or all objects in the current library, or all members in the current object.

Chapter 5. Working with Members

You can perform the following tasks with members in data physical files (*FILE PF-DTA) and source physical files (*FILE PF-SRC):

- Copy members
- Change the type and text description of members
- Edit members
- Compile members
- Create Integrated Language Environment modules
- Run source member procedures
- Delete members
- Display the description of members
- Change members using the screen design aid
- Change members using the report layout utility
- Change members using the data file utility
- Sort and position a list of members by date
- Show a subset of a list of members
- Compare file members
- Merge file members

Copying Members

You can copy members in groups or individually. If you copy a group, all members in the group are copied to the same file and library. To copy member ADDLIB and member ADMPRT to other members in the same file:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type CMDSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, and *ALL in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Type 3 (Copy) beside member ADDLIB and member ADMPRT, and press Enter. The Copy Members display appears.

This display lists each of the members you chose to copy on the previous display. You may have to page through the list to see all the members you chose. The *To file* prompt and the *To library* prompt initially have the same values as the *From file* and *From library* prompts, and the member names under *New Name* are initially the same as those under *Member*. This is to save retyping if you only want to change a few characters.

4. To view a list of the source or data physical files in the specified library that you can copy to, position your cursor on the *To file* prompt, and press F4 (Prompt). The Select File Using PDM display appears. To view a subset of a list, type a generic name in the prompt before pressing F4 (Prompt). For a list of valid generic names, see page 11.

This display provides you with a list of all the valid source physical files for which you have authority to copy members. While you are copying from a source physical file, only source physical files are shown on the list. To copy a member, type 1 (Select) next to the file of your choice, and press Enter. The Copy Members display reappears, and the *To file* prompt is filled in with your choice.

5. If you are making a copy of a member within the same file and library, do not change the *To file* prompt and the *To library* prompt. For this example, type CMDTYP in the *To file* prompt and ATEST in the *To library* prompt.
6. Type ADDL under *New Name* beside member ADDLIB, ADMP under *New Name* beside member ADMPRT, and press Enter, or press F19 (Submit to batch) to copy the members in batch mode.

When you are copying the members to a different file, you do not have to use a new name unless the new file already contains a member of that name. If the member already exists, the Confirm Copy of Member display appears. For this example, the members do not already exist. For an interactive job, a brief message flashes on your display as each member is copied. When all the members are copied, the Work with Members Using PDM display reappears.

A message appears at the bottom of the display indicating that the first member you chose to copy is added to the CMDTYP file. The + at the far right of the message indicates another message is waiting. Place the cursor on the message line and press the Page down key. The next message displayed indicates that the second member you chose to copy is added to the CMDTYP file.

7. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Changing the Type and Text Description of a Member

You must have authority to change the type and text description of a member on the Work with Members Using PDM display. To change the type and text description of a member:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type the file name in the *File* prompt, the library name in the *Library* prompt, the member name in the *Member name* prompt, and the member type in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Type 13 (Change text) next to the member you want to change, and press Enter. The Change Physical File Member (CHGPFM) display appears.
4. Type the new type in the *Source type* prompt. If you change the type of a member, it must contain the correct source for the type; for example, a member of type CMD must contain CMD source code.
5. Type the new text description in the *Text 'description'* prompt, and press Enter. The Work with Members Using PDM display reappears.

Editing Members

You can edit a member only in a file that is a source physical file. PDM calls the source entry utility (SEU), which you can use to edit the member. For more information on editing members in a file, refer to the *ADTS/400: Source Entry Utility* book.

To edit a member:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type 2 (Edit) next to the member you want to edit.
3. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Compiling Members

You can compile a member only if the member is in a source physical file. The member type must match the source code contained in the member. When you compile a member, the appropriate create command is called for the member type. For more information on the compile commands called for different member types, see “Command Reference for Members” on page 82.

You can compile a member in batch mode or interactively. The *Compile in batch* prompt on the Change Defaults display allows you to choose your preferred method of compiling. For more information on changing the compilation mode, see “Changing the Compile and Run Modes” on page 66.

For example, when you submit RPG38 and RPG to batch, you are submitting with different versions of the Submit Job command. The resulting jobs, therefore, have different job run characteristics. This may result in compilations that are not successful in batch but are successful when they are run interactively.

To compile these types of jobs in batch, change the initial library list and output queue parameter values for the job description value specified on the Change Defaults display to reflect the values of your interactive session.

To compile member ADDL in file CMDSRC in library ATEST:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type CMDSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, CMD in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Press F23 (More options) to see the additional options available for the Work with Members Using PDM display.
4. Select option 14 (Compile) next to member ADDL, and press Enter. The appropriate create command is called to compile the member. For this example, the CRTCMD command is called.

5. If the member is compiled in batch mode, the message waiting light comes on when the compilation is completed. Type DSPMSG on the command line to check your messages to see if the compilation is successful.

The object created as a result of compiling is put in the library specified in the *Object library* prompt on the Change Defaults display. If an object with the same name as the object to be created as a result of the compilation already exists in the library, you can specify that the existing object should be deleted before compiling, in one of the following ways:

- On the Change Defaults display, type Y (Yes) for the *Replace object* prompt to specify that if an object with the same name as the object to be created as a result of the compile already exists, the existing object is to be replaced. If the command called for the compilation has a REPLACE parameter, its value defaults to the value that is in the *Replace object* prompt on the Change Defaults display. For additional information on the *Replace object* prompt, refer to “Storing Compiled Members in a Library for Compiled Programs” on page 66.
- If the object already exists, and you did not type Y (Yes) for the *Replace object* prompt on the Change Defaults display, the Confirm Compile of Member display appears after PDM determines that the object already exists.

Creating an Integrated Language Environment Module

You can create a module for an Integrated Language Environment (ILE) source type by using option 15 (Create module). The Create module option works the same as option 14 (Compile) and uses the same options, but creates a *MODULE object type.

When you create a module, the appropriate create command for the ILE member type is called. The resulting modules can be bound into a program object using the Work with Objects Using PDM display and option 26 (Create program). For more information on creating a program from one or more modules, see “Creating a Program” on page 27. For more information on the commands called for ILE member types, see “Command Reference for Members” on page 82.

You can create a module in batch mode or interactively. Use the *Compile in batch* prompt on the Change Defaults display to select the method. For more information on changing the compilation mode, see “Changing the Compile and Run Modes” on page 66.

To create an Integrated Language Environment module:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type the file name in the *File* prompt, the library name in the *Library* prompt, the member name in the *Member name* prompt, the member type in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Press F23 (More options) to see the additional options available for the Work with Members Using PDM display.
4. Select option 15 (Create module) next to the member for which you want to create an Integrated Language Environment module, and press Enter.

Running Source Member Procedures

You can run a source member procedure by using option 16 (Run procedure) for members of type REXX, OCL36, BASP, and BASP38. You can do this interactively or in batch, depending on what you specify on the Change Defaults display.

Note: The member must be of type REXX, OCL36, BASP, or BASP38. Members with type OCL36 can only be run in the source file QS36PRC.

To run a source member procedure:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type the file name in the *File* prompt, the library name in the *Library* prompt, the member name in the *Member name* prompt, the member type in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Press F23 (More options) to see the additional options available for the Work with Members Using PDM display.
4. Select option 16 (Run procedure) next to the member on which you want to run a source member procedure, and press Enter.

Deleting Members

Using PDM, you can delete members you no longer need, either in groups or individually. PDM has a confirmation display on which you can verify that you have chosen the correct members to delete.

To delete member ADMP in file CMDSRC in library ATEST:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type CMDSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, CMD in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.

3. Select option 4 (Delete) next to member ADMP, and press Enter. The Confirm Delete of Members display appears.

This display lists each member you chose to delete on the previous display. You may have to page through the list to see all the members you chose.

Note: Make sure you want to delete all the members listed on the Confirm Delete of Members display. If you decide not to delete all of the members listed, press F12 (Cancel) to return to the previous display and select new members.

4. Press Enter to delete the members listed or press F19 (Submit to batch) to delete the members in batch mode.

If you choose a large number of members to delete, there may be more than one page of members listed on the Confirm Delete of Members display. When you press Enter or F19 (Submit to batch), all the members on all pages of the Confirm Delete of Members display are deleted, not just those on the page currently displayed. The Work with Members Using PDM display appears after the members are deleted.

The member you chose to delete, in this example ADMP, is no longer included in the list. A message at the bottom of the display indicates that the member has been removed.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Displaying the Description of a Member

When working with PDM, you can display the following information for a member:

- Time and date the member was created
- Time and date the member was last changed
- Time and date the member was last saved
- Time and date the member was last restored
- Number of records in a member
- Number of records deleted from a member

For a source physical file member, the Change date is the date of the most recent change to the contents of the member. For a data physical file member, the Change date refers to the last date that any part of the member was changed, even if it was only a rename or a text change. To see an explanation for each prompt, press F1 (Help).

To display the description of member CHGSYSL in library ATEST:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type CMDSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, *ALL in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Select option 8 (Display description) next to member CHGSYSL, and press Enter. The Display Member Description display appears. This display contains information about the member, such as the time and date the member was created, last changed, last saved, and restored.

4. Press F12 (Cancel) to return to the Work with Members Using PDM display when you finish viewing the description for the member. You can also press Enter to continue processing options if you chose more than one option on the Work with Members Using PDM display.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Changing Members Using Screen Design Aid

You can use SDA to change members if you are working with members in a source physical file by using option 17 (Change using SDA) on the Work with Members Using PDM display.

Note: If you want to create a member using SDA, you can do so using either the CS (create a display using SDA), or the CM (create a menu using SDA) sample user-defined options shipped with PDM. For further information on the sample user-defined options, see “Sample User-Defined Options” on page 55.

The Change using SDA option allows you to work with members in your file that are the source code for displays (members of type DSPF, DSPF36, or DSPF38) and menus (members of type MNUDDS, MNUCMD, MNU36, or MNU). If the file type ends in 36, SDA is called in the System/36 environment. If the file type ends in 38, SDA is called in the System/38 environment.

If you use this option with a member of type MNU, SDA converts it to a member of type MNUDDS or MNUCMD.

To change member ACCSCR in library ATEST using SDA:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type DDSSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, DSPF in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Select option 17 (Change using SDA) next to member ACCSCR, and press Enter. PDM calls the STRSDA command to start the SDA utility, and an SDA display appears allowing you to change the member. For more information on this and the other functions available in SDA, refer to *ADTS/400: Screen Design Aid*, SC09-1768.

Changing Members Using Report Layout Utility

You can use RLU to change members if you are working with members in a source physical file by using option 19 (Change using RLU) on the Work with Members Using PDM display. The Change using RLU option allows you to work with members in your file (of type PRTF) that are the source code for report images. You can either create a new report member or change an existing one.

To change member SMPREP in library ATEST using the report layout utility:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type CMDSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, *ALL in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Type 19 (Change using RLU) next to member SMPREP, and press Enter. Make sure the member contains the source code for a report image. PDM calls the STRRLU command to start RLU, and an RLU display appears allowing you to change the member. For more information on this and the other functions available in RLU, refer to *ADTS/400: Report Layout Utility*, SC09-1767.
4. When you finish changing the member, exit from RLU. The Work with Members Using PDM display reappears.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Changing Members Using Data File Utility

You can use DFU to change members by specifying option 18 (Change using DFU) on the Work with Members Using PDM display if you are working with members in a data physical file only.

Note: You can create members using DFU by using the CD sample user-defined option shipped with PDM. For further information on the sample user-defined options, see “Sample User-Defined Options” on page 55.

To change member ACCDTA using the data file utility:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type DTAFILE in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, *ALL in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.

3. Type 18 (Change using DFU) next to member ACCDTA, and press Enter. PDM calls DFU, which then creates and runs a temporary program allowing you to change the member. For more information on these and the other functions available in DFU, refer to *ADTS/400: Data File Utility*, SC09-1773.
4. When you finish changing the member, exit from DFU. The Work with Members Using PDM display reappears.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Sorting and Positioning a List of Members by Date

You can sort the members on a list by date instead of by name and then position the list to a member that you updated previously. When working with members in source physical files, you can also display the date on which the contents of the members were last updated instead of the member type for the members on the display.

For a source physical file, the last date changed is the date that the content last changed. For a data physical file, the last date changed is the date that the member was last edited, such as, for a rename or change in description.

To display the date instead of the member type for members in the source physical file DDCCRC, sort the list by date, and then position the list to a date:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) display, and press Enter. The Specify Members to Work With display appears.
2. Type DDSSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, DSPF in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Press F14 (Display date) to display the date on which the contents of the members in the list were last updated instead of the member type. The format of the date is *MM/DD/YY*.

The dates the members were last updated are now shown in the list area where member types were displayed. Notice also that F14 (Display date) is changed to F14 (Display type).

4. Press F15 (Sort date) to sort the list by the date on which the members were last updated instead of in alphabetical order of member name.

The list is now sorted by the date on which the members were last updated. Notice also that F15 (Sort date) has changed to F15 (Sort name).

5. To position the list to a member you updated previously, type the date to which you want to position the list in the *Position to date* prompt. The date you specify must be in the same format as the date in the *Date* list area. For this example, type PAYHLP in the *Position to* prompt to position the list to the PAYHLP member that was last updated on 03/15/94, and press Enter. The Work with Members Using PDM display reappears. The list is now positioned to the PAYHLP member, which was last updated on 03/15/94.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Showing a Subset of a List of Members

You can create a list of members within a range of members you specify by using F17 (Subset).

When working with a subset of a list, if you change the *Library* prompt on the Work with Members Using PDM display to show the members in a different library, the new list you see is also a subset of a list.

To create a subset of a list of members that includes only the display files in the CMDSRC file in library ATEST:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type CMDSRC in the *File* prompt, ATEST in the *Library* prompt, *ALL in the *Member name* prompt, *ALL in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Press F17 (Subset) to create a subset of the list. The Subset Member List display appears, on which you can specify the selection values for the subset list.
4. Type the generic name to show a subset of the list in the *Member* or *Member type* prompt. The generic name can be in one of the formats listed on page 11.

Leave the default settings for the *Member* prompt, the *From date* prompt, *To date* prompt, and the *Text* prompt to include all members in the subset list whose type begins with the letters DSPF.

5. Press Enter. The Work with Members Using PDM display appears with a list of all the members with types beginning with DSPF in the CMDSRC file in the library ATEST.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Comparing File Members

You can compare file members by using option 54 (Compare file member). This option is valid for all member types.

To compare file members:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type the file name that you want to compare in the *File* prompt, the library name in the *Library* prompt, the member name in the *Member name* prompt, and the member type in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.

3. Press F23 (More options) to show the additional options available for this display.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.

4. Type 54 (Compare file member) beside the member you want to compare, and press Enter. The Compare Physical File Member (CMPPFM) display appears.

Refer to *ADTS/400: File Compare and Merge Utility* for more information on comparing file members.

Merging File Members

You can merge file members by using option 55 (Merge file member). You can only use this option on members of type *FILE with attributes of PF-SRC.

To merge file members:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type the file name that you want to merge in the *File* prompt, the library name in the *Library* prompt, the name of the target member in the *Member name* prompt, *FILE in the *Member type* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Press F23 (More options) to show the additional options available for this display.

Note: You do not have to display the additional function keys and options when you use them. Step 3 is not required, but you should use it until you are familiar with PDM.
4. Type 55 (Merge file member) beside the member you want to be the target member, and press Enter. The Merge Source (MRGSRC) display appears.

Refer to *ADTS/400: File Compare and Merge Utility* for more information on merging file members.

Chapter 6. Searching for a Character String or a Numeric String

With the Find String function, you can search for a character or numeric string in a source or data physical file, and perform any valid option or user-defined option on members that contain a match for the string.

You can perform the following tasks:

- Search for a string within a file
- Search for a string in more than one file
- Search for a character string enclosed in double quotation marks
- Print a list of members and records that contain the Find String match
- Search for a string using the FNDSTRPDM command
- Change a string of characters globally
- Scan members for hexadecimal numbers
- Search for a string using the report layout utility
- Search for a string using the screen design aid
- Search for a string using the source entry utility

You can perform Find String searches from the following displays:

- Work with Members Using PDM
- Work with Object Using PDM
- Find String Using PDM (FNDSTRPDM)

If you have the Application Development Manager/400 orderable feature installed, you can use the Find string part function in one of the following ways:

- Using the Work with Parts Using PDM display
- Using the Work with Groups Using PDM display
- Using the Find String Part (FNDSTRPART) command

For a complete discussion of this function, refer to *ADTS/400: Application Development Manager/400 User's Guide*.

Searching for a String within a File

You can search members in a list, or a subset of a list, for a character string by using option 25 (Find string) on the Work with Members Using PDM display. You can also specify an option for each member that contains a match for the character string. The Find string option is available on the PDM member list for both source and data physical files.

To search for a string from the Work with Members Using PDM display:

1. Select option 3 (Work with members) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Members to Work With display appears.
2. Type the file name in which you want to find the string in the *File* prompt, the library name in the *Library* prompt, and press Enter. The Work with Members Using PDM display appears.
3. Select option 25 (Find string) beside the member you want to search for a particular string, and press Enter. The Find String display appears that allows you to specify search values.

If you choose more than one member to search on the previous display, all the members selected are searched, but the Find String display is only shown once.

4. Type the string of characters you want to search for in the *Find* prompt, and press Enter.

Each member for which you selected the Find string option is searched for a match of the string. When a match for the Find string is found in a record, the record is printed. When all the records in the selected members are searched, the option in the *Option* prompt on the *Find String* display is performed for the member. The next member is then searched.

Notes:

- a. PDM searches all the members for which you selected the Find string option if the option selected in the *Option* prompt is a grouping option (that is, Rename, Delete, or Copy), and if you type N (No) for the *Prompt* field. The option you selected in the *Option* prompt is performed for all the members containing a match for the Find string.
- b. You must type Y (Yes) for the *Prompt* field if you select a grouping option, and you want PDM to stop each time it finds a member that contains a match for the Find string.
- c. If you enter Y (Yes) for the *Print list* prompt, or the *Print records* prompt, and if you cancel the Find string option, only the members processed before you cancel the option are printed.

The Work with Members Using PDM display appears again.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Resetting Prompts to Their Original Values

The values you enter for prompts on the Find String display are saved in the user profile. These values become the defaults. To reset the prompts to their original default values for the next time you select the Find string option, press F5 (Refresh).

Searching for a String in More Than One File

You can use the Find string option from the Work with Objects Using PDM display to search for a character string in members in more than one file.

To search for a string from the Work with Objects Using PDM display:

1. Select option 2 (Work with objects) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Objects to Work With display appears.
2. Type the library name in the *Library* prompt, the file name you want to search in the *File* prompt, and press Enter. The Work with Objects Using PDM display appears.
3. Press F23 (More options) to view the list of other available options.
4. Type 25 (Find string) beside each file whose members you want to search, and press Enter. You can select the Find string option for files of type PF-SRC or type PF-DTA only. The Find String display appears.

Note: PDM allows you to select the Find string option for both source and data files at one time. If you select an option in the *Option* prompt on the Find String display that is not valid for members in both source and data physical files, you may receive an error message.

For example, if you choose the Find string option for a source file and a data file, and if you select option 2 (Edit) for the *Option* prompt on the Find String display, an error occurs if a match for the Find string is found for a member in the data file. This is because option 2 (Edit) is not allowed for data files, only for source files.

5. Type the character string for which you are searching in the *Find* prompt, and press Enter.

All the members in the first file for which you selected the Find string option are searched. If you selected an option in the *Option* prompt on the Find String display, it is processed for each member in the file that contains a match for the Find string.

The members in the second file for which you selected the Find string option are then searched. After all the files for which you selected the Find string option are searched, the Work with Objects Using PDM display appears again.

Searching for a Character String Enclosed in Quotation Marks

Surrounding quotation marks are not used unless the string is preceded by a space. The space then becomes part of the string for which PDM is searching.

To search members for a character string that is enclosed in quotation marks, add an additional set of quotation marks at the start and end of the character string.

Printing Records or a List of Members That Contain the Find String Match

To print all the records that contain the string, type Y (Yes) for the *Print records* prompt on the Find String display.

To print a list of all members in the file containing a match for the Find string, type Y (Yes) for the *Print list* prompt on the Find String display.

Searching for a String by Using the FNDSTRPDM Command

By using the FNDSTRPDM command, you can bypass the Work with Members Using PDM display and the Work with Objects Using PDM display and proceed directly with the search.

To search for the character string Invoice in library ATEST in file DDSSRC from the Find String Using PDM (FNDSTRPDM) display:

1. Type FNDSTRPDM on any command line.
2. Press F4 (Prompt). The Find String Using PDM display appears.
3. Type the string of characters, surrounded by quotation marks, that you want PDM to search for in the *Find 'string'* prompt. For this example, type 'Invoice' in the *Find 'string'* prompt.
4. Type the library, file, and member to be searched. To search for additional members, type + on the line beneath the member line, and spaces for additional members appear. For this example, search for *ALL members in the file DDSSRC in library ATEST.
5. Type the option of the function that you want to perform on the members containing the string in the *Option* prompt. To display the description, type *DSPD in this prompt.
6. Type *PROMPT in the *Prompt* field to show an entry display for the command chosen in the *Option* prompt every time a match is found for the Find string.
7. Press F10 (Additional parameters) to see the remaining Find string prompts.
8. Type 1 in the *From column* prompt, *RCDLEN in the *To column* prompt, and *IGNORE in the *Kind of match* prompt.

Press Page Down (Roll Up) to enter all the remaining values, and press Enter.

When a match is found, the appropriate display for the option chosen appears. For this example, when the string Invoice is found, the Display Member Description display appears.

Find String Options Available in Batch Mode

With the *Find string in batch* prompt, you can submit a Find string operation to batch processing, rather than using the Find String Using PDM (FNDSTRPDM) display.

If you submit a Find string operation to batch processing, you can specify the following options for the *Option* prompt on the Find String display.

- User-defined options
- Compile option
- Print option
- Run option

Processing Other Options in Batch Mode

To process other options in batch mode from the Find String display:

1. Create a user-defined option that calls the appropriate command to perform the option.
2. Select this user-defined option for the *Option* prompt on the Find String display and submit the user-defined option to batch processing.

Find String Compile Option in Batch Mode

If you choose to submit a Find string operation to batch processing, and if you also select the Compile option for the *Option* prompt, note the following considerations:

- *Replace object* prompt.

Normally in PDM, if you type N (No) for the *Replace object* prompt on the Change Defaults display, and an object with the same name as the object to be created as a result of compiling already exists, the compile operation is stopped. Before this happens, however, a warning display appears allowing you to choose whether or not you want to proceed with the compile operation.

When you select the Compile option on the Find String display and then submit the Find string operation to batch processing, a warning display does **not** appear if the object resulting from the compile already exists. Instead, PDM stops the compile operation for that member and continues with the Find string operation.

To replace existing objects before a compile, type Y for the *Replace object* prompt on the Change Defaults display. Alternatively, you can type REPLACE (*YES) in the *Parameters* prompt on the Find String display if you are compiling members in batch. Then if the object to be compiled already exists, it is replaced, and the compile is processed.

Note: The REPLACE parameter is not used on compile commands for which it is not valid. If you use REPLACE on the command line for a command for which it is not valid, you receive an error message.

- *Compile in batch* prompt.

The *Compile in batch* prompt on the Change Defaults display allows you to choose whether you want to compile members in batch mode or interactively.

If you submit a Find string operation to batch processing, and if you select the Compile option for the *Option* prompt on the Find String display, members are **always** compiled in **batch** mode, regardless of your entry in the *Compile in batch* prompt on the Change Defaults display.

If, however, your entry for the *Compile in batch* prompt is Y (Yes), two batch jobs are submitted, one for the Find string operation and one for the compile operation. You receive a message indicating a batch job has been submitted. If your entry for the *Compile in batch* prompt is N (No), the compile and Find string operations are submitted to one batch job. You receive a message indicating whether or not the compile operation was successful.

If you process the Find string operation interactively, the compile is processed according to your entry in the *Compile in batch* prompt on the Change Defaults display.

Changing a String of Characters Globally

You can use the Find string option to change a string of characters in a number of members to a different string of characters. To change a string of characters globally:

1. Type the string of characters you want to change in the *Find* prompt and type 2 (Edit) in the *Option* prompt on the Find String display.
2. Type the appropriate information for the remaining prompts on the Find String display, and press Enter. All the members for which you selected the Find string option are searched, and when a member is found that contains the Find string, an SEU display appears allowing you to edit that member.
3. On the SEU display, press F14 (Find/change options).
4. Type the new character string that is to replace the search string in the *Change* prompt.

Note: If you do not want to change all occurrences of the Find string in the member, you can specify which occurrences to change in the *Occurrences to process* prompt. You can choose to change only the next occurrence of the string, only the previous occurrence of the string, or all occurrences of the string in the member.

5. Press F17 (Change) to process the change. The Find string is changed to the characters you specified in the *Change* prompt.
6. Exit from SEU and continue processing the Find string operation. See “Searching for a String Using the Source Entry Utility” on page 52 for further details.

When another member is found that contains the Find string, the SEU edit screen again appears, allowing you to edit the member.

7. To change the Find string search to the same characters you specified for the previous member, press F17 (Change). You do not have to enter values for the *Change* or *Occurrences* prompts again. The values you enter for these prompts when you edit the first member become the defaults for the duration of this Find string operation. After the Find string operation is finished, the defaults are refreshed.

Continue changing each member in turn. When you have changed all members containing the Find string, the display on which you originally selected the Find string option reappears.

Scanning Members for Hexadecimal Numbers

You can search members for hexadecimal numbers in source physical files and data physical files. You cannot search members in source files for hexadecimal numbers. If you select the Find string option for a member in a source file and if you type X'nn' in the *Find* prompt (where nn are the hexadecimal numbers for which you want to search), members in source physical files are searched for this exact string.

To search members for hexadecimal numbers in source and data physical files:

1. On the Find String display, type the string of hexadecimal numbers you want to search for in the *Find* prompt using the following format:

X'nn'

where nn are the numbers for which you want to search.

Make sure you begin typing the Find string search in column 1 of the *Find* prompt because PDM searches for the character string exactly as you enter it. Thus, if there is a space before the string, only members containing the actual characters X'nn' preceded by a space are considered to contain the string.

2. Type the appropriate information for the remaining prompts, and press Enter. To display help for the prompts on the Find String display, position the cursor in the prompt, and press F1. All the members for which you selected the Find string option are searched. When a member is found that contains the hexadecimal number you specified, the option you selected in the *Option* prompt, if any, is performed for the member. The next member for which you selected the Find string option is then searched.

Data files default to hexadecimal over/under style format. After printing records of a sequential file, you can use the data file utility to change the records by referring to the RCDNBR field in the spooled file. After printing records of a keyed file, the records are still referred to by record number.

To use DFU, create a sequential logical file over the keyed physical file, and use the logical file with DFU to access the required records by the record number that is referred to in the spooled file. The DDS for the logical file does not have any key fields specified, so DFU accesses the record by the record number instead of the key. This means that you can change the records using DFU.

When all the members you specified for the Find string option are searched, you return to the display on which you originally selected the Find string option.

Searching for a String Using the Report Layout Utility

To search for a string using the report layout utility:

1. Type 19 in the *Option* prompt on the Find String display. An RLU display is shown when a match is found for the Find string search that allows you to change the code for an existing report image.
2. When you finish changing the report, press F3 (Exit). The Exit RLU display appears.
3. Type your choices on the Exit RLU display, and press Enter.

Note: If you want to cancel the Find string operation from RLU, type CANCEL on the Design Report display command line. This brings you back to the Work with Members Using PDM or Work with Objects Using PDM display and cancels the Find string operation.

If you are using the FNDSTRPDM command, type *RLU for the *Option* parameter to use RLU when a match is found. When you type CANCEL on the Design Report display command line, the display where you started the FNDSTRPDM command appears again.

Searching for a String Using the Screen Design Aid

To search for a string using the screen design aid:

1. Type 17 in the *Option* prompt on the Find String display. An SDA display is shown when a member is found that contains a match for the Find string search through which you can change the member.
2. When you finish changing the member, the Design Screen or Exit Menus display appears again, depending on whether the member contains source code for menus or displays. On the Design Screen or the Exit Menus display, you have a number of choices:
 - Press F3 (Exit) or F12 (Cancel) if you do not want to save the changes you have made to the member and if you want to cancel the Find string option. The display on which you selected the Find string option reappears.

If you chose to print a list of members containing the Find string, only the members processed before you cancel the option are printed.
 - Select option 6 (Save DDS source) if you want to save the changes you have made to the member. The Save DDS-Create Display File display appears. Press Enter on this display to continue processing the Find string operation.

Searching for a String Using the Source Entry Utility

To search for a string using the source entry utility:

1. Type 2 in the *Option* prompt on the Find String display. An SEU display that allows you to edit the member is shown when a member is found that contains a match for the Find string search.
2. When you finish editing the member, press F3 (Exit) to display the SEU exit display.

3. On the SEU exit display, you have a number of choices:

- Press F3 (Exit) if you do not want to save the changes you have made to the member and if you want to cancel the Find string option. The display on which you selected the Find string option appears again.

If you chose to print a list of members containing the Find string, only the members processed before you cancel the option are printed.

- Type Y (Yes) for the *Change/create member* prompt if you want to save the changes you made to the member. Type N (No) if you do not want to save the editing changes.
- Type Y (Yes) for the *Cancel PDM Find String* prompt if you want to exit from the Find string option. Type N (No) if you do not want to cancel the Find string option.

Canceling the String Search

To cancel the string search, press F3 (Exit) or F12 (Cancel) before all the members for which you selected the option have been processed.

Restrictions on Canceling the String Search

You cannot cancel the Find String option in the following instances:

- When you enter N (No) for the *Prompt* prompt and do either of the following:
 - Select option 6 (Print) for the *Option* prompt.
 - Select the Compile option for the *Option* prompt. You cannot cancel the Find string option unless the Confirm Compile of Member display appears because the object already exists. You can press F12 (Cancel) on the Confirm Compile of Member display to cancel the Find string option.
- When you select a grouping option for the *Option* prompt. You cannot cancel the Find string option until all the members for which you selected the Find string option are searched. When all the members have been searched, the members containing the Find string are listed on the appropriate grouping display for the option.

You can press F12 (Cancel) on the grouping display to cancel the Find string option. Or you can press Enter to process the option for all members containing the Find string. After you press Enter, the Find string option cannot be canceled. (If you select the Copy option, however, you can cancel the Find string option if the Confirm Copy of Member display appears because the member to copy to already exists.)

- When you select a user-defined option that calls a user program for the *Option* prompt.
- When you submit the Find string operation to batch processing.

After you cancel the Find string option, the display on which you originally selected the Find string option appears again. Any pending options are not processed but are still shown in the list.

Chapter 7. Working with User-Defined Options

With user-defined options, you can call your own commands from any PDM list display. These options make it easier for you to do frequent operations, because you can type an option on a list display instead of retyping an entire command.

You can perform the following tasks:

- Create user-defined options
- Change user-defined options
- Copy user-defined options
- Copy a user-defined options file
- Display user-defined options
- Install the user-defined window program
- Call the user-defined window program
- Delete user-defined options

User-defined options are stored in a data physical file. You can store different sets of user-defined options in different members in this file. You can then specify active user-defined options by typing the file name, the library name, and the member name in the *Option file*, *Library*, and *Member* prompts on the Change Defaults display. If you want to use user-defined options in a different member, file, or library, you must change the appropriate prompts on the Change Defaults display. For more information on changing these prompts, see “Changing the Active Default User-Defined Options File” on page 69.

Note: The defaults for the *Option file*, *Library*, and *Member* prompts on the Change Defaults display are QAUOOPT, *LIBL, and QAUOOPT. If you change these prompts, the new member, file, and library you specify become the new defaults each time you sign on to the system.

If you want your user-defined options in a file other than the default file provided, you can either copy the default file or create another one. For more information, see “Copying the User-Defined Options File for Storage in Other Files” on page 61.

Note: Special characters defined for user-defined options cannot be used across systems with different languages.

Sample User-Defined Options

The following sample user-defined options are shipped with PDM:

Option Name	Command Called	Explanation
C	CALL &O/&N	Allows you to run a program on the Work with Members Using PDM display.
CC	CHGCURLIB CURLIB(&L)	Changes the library on the Work with Objects Using PDM display or the Work with Members Using PDM display to the current library in the library list.
CD	STRDFU OPTION(2)	Allows you to create a DFU program.
CL	CHGCURLIB CURLIB(&N)	Changes selected library on the Work with Libraries Using PDM display to the current library in the library list.

Option Name	Command Called	Explanation
CM	STRSDA OPTION(2) SRCFILE(&L/&F) ??SRCMBR()	Allows you to create a member (menu) using SDA.
CS	STRSDA OPTION(1) SRCFILE(&L/&F) ??SRCMBR()	Allows you to create a member (display) using SDA.
DM	DSPMSG	Allows you to display messages.
EA	EDTOBJAUT OBJ(&L/&N) OBJTYPE(&T)	Allows you to edit the authority to an object on the Work with Objects Using PDM display.
GO	GO &L/&N	Allows you to display the menu for a menu object.
JL	DSPJOBLOG	Allows you to display the job log.
SL	SBMJOB ??CMD(SAVLIB LIB(&N))	Saves library in batch on the Work With Libraries Using PDM display.
SM	SBMJOB ??CMD(SAVOBJ OBJ(&F) LIB(&L) OBJTYPE(*FILE) FILEMBR((&F(&N))))	Save member in batch on the Work With Members Using PDM display.
SO	SBMJOB ??CMD(SAVOBJ OBJ(&N) LIB(&L))	Save object in batch on the Work With Objects Using PDM display. This option is an example using conditional prompting. This means that the prompt for the SBMJOB command comes up automatically when the user-defined option is used. This is specified by the ?? at the beginning of the CMD parameter.
SP	WRKSPLF	Allows you to work with spooled files.
WS	WRKSBMJOB	Allows you to work with jobs submitted to batch.
Note: The following options have been added for the Application Development Manager orderable feature:		
AP	ADDPRJLIBL	Allows you to add project libraries from the AS/400 library list when you are testing a part.
IM	?IMPART OBJ(&L/&F) OBJTYPE(&FILE) MBR(&N) PART(&N) LANG(&S) TEXT(&X)	Allows you to import a member into the project hierarchy from the Work with Members display.
IO	?IMPART OBJ(&L/&N) OBJTYPE(&T) TYPE(&S) PART(&N) TEXT(&X)	Allows you to import an object into the project hierarchy from the Work with Objects display.
PL	WRKPARTPDM PRJ(&ZP) GRP(&ZG) TYPE(*ALL) PART(*ALL) LANG(*ALL) LIST(&N)	Allows you to display a list of part-list parts.
RP	RMVPRJLIBL	Allows you to remove project libraries from the AS/400 library list when you are testing a part.

You can choose to use the sample user-defined options or you can delete, change, or display them using options on the Work with User-Defined Options display.

Accessing the Work with User-Defined Options Display

To access the Work with User-Defined Options display using the AS/400 Programming Development Manager (PDM) menu:

1. Select option 9 (Work with user-defined options) from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears. The prompts for this display always default to the active user-defined options file.
2. Type the name of the file containing the user-defined options with which you want to work in the *File* prompt. The file you choose to work with does not have to be the active user-defined options file, and choosing an option file to work with does not make it the active user-defined options file.

The active user-defined options file is the file specified in the *Option file* prompt on the Change Defaults display. For more information on changing the active user-defined options file, refer to “Changing the Active Default User-Defined Options File” on page 69. For this example, leave the prompts at their defaults.

3. Press Enter, and the Work with User-Defined Options display appears.

In this example, the CS sample user-defined option exists in the file QAUOOPT.

4. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Note: You can also access the Work with User-Defined Options display by pressing F16 (User options).

Choosing a Command to Correspond to a User-Defined Option

You can choose any AS/400 system or user command to correspond to a user-defined option. The command can contain parameter variables so that it can be performed on an item in a list.

For example, you may need to save a file with a particular file name daily. You can create a user-defined option to correspond to the command to do this, which saves you from having to type the command each day.

Note: You can use substitution variables when working with parts, groups, or projects. Refer to the online help information for more information about the valid Application Development Manager/400 substitution variables and the values returned for each list type.

Creating User-Defined Options

To create a user-defined option:

1. Select option 9 from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears.
2. Press Enter. The Work with User-Defined Options display appears.
3. Press F6 (Create) on the Work with User-Defined Options display. The Create User-Defined Option display appears.

4. Type the characters you want to use to represent the command in the *Option* prompt. The first character of the option name must be a letter, but the second character can be any alphanumeric.

For this example, type CF in the *Option* prompt.

5. Type the command you want called when you select the CF option in the *Command* prompt, and press Enter. The Work with User-Defined Options display reappears. If you cannot remember the correct format of the command or its parameters, press F4 (Prompt) for assistance. Either type in the command and press F4 (Prompt) to see the prompt display for the command, or just press F4 (Prompt) to display a menu where you can choose to display all system commands or specific types of commands.

You see a message at the bottom of the display indicating that the CF option was created. If you have a large number of user-defined options in this member, you may have to page down the list to find the user-defined option you created. The entire command for the option may not fit on the display.

6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu. The new option is now saved in the file QAUOOPT.

Creating a User-Defined Option for Backup Purposes

To create a user-defined option to copy all the members in a file for backup purposes, type the following command in the *Command* prompt:

```
CPYF FROMFILE(&L/&N) TOFILE(BACKLIB/BACKFILE) FROMMBR(*ALL)
  TOMBR(*FROMMBR) MBROPT(*REPLACE)
```

In this command, BACKLIB is the library name and BACKFILE is the file name where you want the backups to be stored. To use this option, file BACKFILE must exist in library BACKLIB, and the contents of BACKFILE are replaced with the new members.

Note: The substitution variables &L and &N can be used on any library and file. PDM replaces these values with the library name and file name of the selected members on the list display. A complete list of all valid substitution variables is also available in the online help information. To view the list from this display, press F1 (Help) and then press F2 (Extended help).

Valid Substitution Variables for User-Defined Options

The following figure describes the valid parameter variables you can use for user-defined options and the values returned for each list type:

Parm	Meaning	Description
&A	Object attribute	If you are working with objects, &A is replaced by the object attribute from the list. If you are working with libraries or members, &A is replaced by *NULL.
&B	List type	If you are working with a library list (*LIBL, *USRLIBL), &B is replaced by X. If you are working with a list of libraries (*ALL, *ALLUSR), &B is replaced by L. If you are working with a list of objects, &B is replaced by O. If you are working with a list of members, &B is replaced by M.
&C	Option	&C is replaced by the user-defined option code.

Parm	Meaning	Description
&D	Member change date	If you are working with members, &D is replaced by the date the member was last changed. The value returned is the system format with separator characters. Otherwise, &D is replaced by *NULL. You must use this variable in single quotation marks (that is, '&D') because the date may contain a slash (/), which is used as an operator.
&E	Run in batch	&E is replaced by *YES if Y is specified in the <i>Run in batch</i> prompt on the Change Defaults display and *NO if N is specified.
&F	File name	If you are working with members, &F is replaced by the name of the file that contains these members. For all other conditions, &F is replaced by *NULL.
&G	Job description library	&G is replaced by the job description library value from the Change Defaults display.
&H	Job description name	&H is replaced by the job description value from the Change Defaults display.
&J	Job description	&J is replaced by the job description value from the Change Defaults display in the format library/job description.
&L	Library name	If you are working with libraries, &L is replaced by QSYS. If you are working with objects or members, &L is replaced by the name of the library that contains the objects or members.
&N	Item name	&N is replaced by the name of the item in the list beside which the option was typed.
&O	Object library	If you are working with libraries, objects, or members, &O is replaced by the object library from the Change Defaults display.
&P	Compile in batch	&P is replaced by *YES if Y is specified in the <i>Compile in batch</i> prompt on the Change Defaults display and *NO if N is specified.
&R	Replace object	&R is replaced by *YES if Y is specified in the <i>Replace object</i> prompt on the Change Defaults display and *NO if N is specified.
&S	Item type without '*'	If you are working with libraries, &S is replaced by LIB. If you are working with objects, &S is replaced by the object type without the asterisk '*'. If you are working with members, &S is replaced by the member type as is.
&T	Item type with '*'	If you are working with libraries, &T is replaced by *LIB. If you are working with objects or members, &T is replaced by the object or member type as is.
&U	User-Defined Option File	&U is replaced by the user-defined option file name from the Change Defaults display.
&V	User-Defined Option Library	&V is replaced by the user-defined option library name from the Change Defaults display.
&W	User-Defined Option File Member	&W is replaced by the user-defined option file member name from the Change Defaults display.
&X	Item text	&X is replaced by the text (in single quotation marks) of the item beside which the option was typed.

Changing User-Defined Options

You can change user-defined options by using option 2 (Change) on the Work with User-Defined Options display. When you use this option, you cannot type anything on the command line.

To change the CF user-defined option:

1. Select option 9 from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears.
2. Press Enter. The Work with User-Defined Options display appears.
3. Type option 2 (Change) beside the CF user-defined option, and press Enter. The Change User-Defined Option display appears.
4. Type over the existing values in the *Option* and *Command* prompts, and press Enter. If you want to change the *Command* prompt, you can press F4 (Prompt) for assistance in entering the new command. For this example, type C1 in the *Option* prompt, and without changing the *Command* prompt, press Enter. The Work with User-Defined Options display reappears with your changes.

A message at the bottom of the display indicates that the CF user-defined option is changed. The new option name you assigned the user-defined option is shown in the list.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu. The changes to the user-defined option are now saved in file QAUOOPT.

Copying User-Defined Options

You can copy any user-defined option from the current member to the same user-defined option member, or to another user-defined option member in the same library or file or in a different library and file, by using Option 3 (Copy) on the Work with User-Defined Options display.

Note: If you are copying to a different member, file or library, the *To file* prompt is updated as soon as all the options on the list have been completed. The Copy option is not a grouping option when selected on the Work with User-Defined Options display. Even if you press F15 (Exit without saving changes), the copy is made. If you are copying to the same member, file, or library, the file is updated when you exit from the Work with User-Defined Options display by pressing the F3 key, the F12 key, or Enter. Pressing F15 (Exit without saving changes) cancels any changes to existing members.

To copy the DM user-defined option:

1. Select option 9 from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears.
2. Press Enter. The Work with User-Defined Options display appears.
3. Type 3 (Copy) beside the DM user-defined option, and press Enter. The Copy User-Defined Option display appears.

4. Type over the existing values in the *To file*, *To library*, and *To member* prompts. If you are copying to the same member, file, and library, you must specify a new name for the option. If the option name already exists, the Confirm Copy of User-Defined Option display appears.
5. In this example, the option already exists, so type Y (Yes) in the *Replace existing option* prompt, and press Enter. The Work with User-Defined Options display reappears.

A message at the bottom of the display indicates that the DM user-defined option is copied.
6. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Copying the User-Defined Options File for Storage in Other Files

You may want to store some of your user-defined options in a file other than QAUOOPT. You can either create another user-defined options file or copy the PDM supplied user-defined options file.

The user-defined options file must be a physical file with a record length of 252 characters. The record format is as follows:

Position	Contents
1-2	The user-defined option, right justified
3-252	The command called for the option

To copy the system user-defined options file to a file named UDO in library ATEST:

1. Select option 9 from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears.
2. Press Enter. The Work with User-Defined Options display appears.
3. Type 3 (Copy) beside member QAUOOPT, and press Enter. The Copy Objects display appears.
4. Type ATEST in the *To library* prompt, UDO in the *New name* list area next to the QAUOOPT object, and press Enter. The Work with Objects Using PDM display reappears.

You now have another user-defined options file in which to store your user-defined options.

5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Displaying User-Defined Options

Some of the commands you use in a user-defined option may be too long to be displayed in full on the Work with User-Defined Options display. You can use option 5 (Display) to view the entire command. When using the display option, you cannot type anything on the command line.

To display the full command for the C1 user-defined option:

1. Select option 9 from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears.
2. Press Enter. The Work with User-Defined Options display appears.
3. Type 5 (Display) beside the C1 user-defined option, and press Enter. The Display User-Defined Option display appears, which shows the entire command for the user-defined option you chose to view.
4. Press Enter. If you chose more than one user-defined option to display, the next user-defined option selected is displayed. Otherwise, you return to the Work with User-Defined Options display.
5. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Installing the User-Defined Window Program Tool

The user-defined option window program creates a window in the upper right corner of the display listing the PDM user-defined options. To view the windows, you must compile the program code using a BASIC compiler and call the programs needed for this tool.

All the source programs reside in library QUSRTOOL and all the information about the tool is found in member TPSINFO in QUSRTOOL/QATTINFO. To install the tool for the user-defined window program:

1. Type 14 (Compile) next to the member TPSINST in QUSRTOOL/QATTCL on the Work with Members Using PDM display.

The compile is done interactively or in batch mode, depending on what you have specified in the Change Defaults display. The compile creates an object TPSINST.
2. Type 16 (Run) next to the object TPSINST, and press F4 (Prompt) on the Work with Objects Using PDM display.
3. Specify QUSRTOOL in the *Parameters* prompt, and press Enter.

This program compiles all the members needed to run the window program.

Calling the User-Defined Option Window Program

To call the program, type the following command to create your own user-defined option:

```
CALL PGM(QUSRT00L/TPSCLUD0) PARM(&U &V &W '&A' &B
&C '&D' '&E' '&F' &G &H '&J' &L &N &O &P &R '&S' '&T'
&U &V &W &X)
```

You must use a BASIC compiler to compile this code. You can now use your user-defined option to see a window with the active user-defined options.

Note: The source code for this tool is provided without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranty of merchantability and fitness for a particular purpose.

Deleting User-Defined Options

Using PDM, you can delete user-defined options you no longer need. You can delete a group of user-defined options or an individual user-defined option in the list.

To delete the C1 user-defined option:

1. Select option 9 from the AS/400 Programming Development Manager (PDM) menu, and press Enter. The Specify Option File to Work With display appears.
2. Press Enter. The Work with User-Defined Options display appears.
3. Type 4 (Delete) beside the C1 user-defined option, and press Enter. The Confirm Delete of User-Defined Options display appears, which lists all the user-defined options that you chose to delete. If you chose many options, you may have to page down the list to see them all.
4. Make sure the user-defined options listed are the ones you want to delete. If you decide you do not want to delete all the user-defined options listed, press F12 (Cancel) to return to the previous display and change your selections. If you do want to delete the user-defined options listed, press Enter.

Note: When you press Enter, the user-defined options on every page of the Confirm Delete of User-Defined Options display are deleted, not just the ones on the page currently displayed.

The Work with User-Defined Options display reappears after the system deletes the user-defined options you chose to delete.

The C1 user-defined option is no longer in the list.

Retrieving Deleted User-Defined Options

If you now decide that you should not have deleted the user-defined option, in this example, option C1, follow the steps below to exit from the Work with User-Defined Options display without saving the changes you made to the QAUOOPT member.

To retrieve the C1 user-defined option you deleted, press F15 (Exit without saving changes). You return to the AS/400 Programming Development Manager (PDM) menu without deleting the C1 user-defined option.

Chapter 8. Selecting Default Values

You can select the default values for certain operations in PDM by using the Change Defaults display. You can access the Change Defaults display by pressing F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu or when using any of the following displays:

- Specify Libraries to Work With
- Specify Objects to Work With
- Specify Members to Work With

You can perform the following tasks by changing the prompts on the Change Defaults display:

- Store compiled members in a different library
- Replace existing compiled members
- Change the compile and run modes
- Save session defaults
- Save and restore objects
- Change the job description
- Restrict the ability to change member type and description
- Change the default user-defined options file
- Change list displays to full screen mode
- Log option commands
- Change the default value of the Enter key

If you have the Application Development Manager/400 orderable feature installed, you can also access the Change Defaults display when using any of the following displays:

- Specify Projects to Work With
- Specify Groups to Work With
- Specify Parts to Work With

Accessing the Change Defaults Display

To access the Change Defaults display:

1. Type STRPDM on any command line, and press Enter. The AS/400 Programming Development Manager (PDM) menu appears.
2. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.

The prompts on the Change Defaults display are filled with their original default values, unless you changed them previously.

Overriding Default Values on the Change Defaults Display

To override defaults on this display for the *Object library* prompt, the *Replace object* prompt, the *Compile in batch* prompt, and the *Job description* prompt, type a keyword parameter and its value on the command line.

Storing Compiled Members in a Library for Compiled Programs

You can change the *Object library* prompt to specify that objects created by compile operations are stored in a special library set up for compiled programs. When you compile a member, an object is created. The library in which this object is stored is determined by the *Object library* prompt on the Change Defaults display. The default of this prompt is *SRCLIB, which indicates that objects created as a result of compiling are stored in the source library.

To store compiled members in a different library, type a new library name in the *Object library* prompt on the Change Defaults display. For example, type COMPLIB in the *Object library* to indicate that you want all objects created as a result of compiling to be put in the library COMPLIB. When you compile a member using PDM, the object is stored in library COMPLIB.

Replacing Existing Compiled Members

If an object to be created as the result of compiling already exists, you can specify that the existing object is replaced with the new object by changing the *Replace object* prompt on the Change Defaults display. The new object created as a result of the compile is then placed in the library specified in the *Object library* prompt.

Note: You can also use the REPLACE parameter on the create command that is called for compiling the member type.

To replace existing compiled members, type Y (Yes) in the *Replace object* prompt to indicate that you want PDM to delete the existing object, and replace it with the new object, before the create command for the member is called. If the object to be created as a result of compiling already exists, it is replaced before the create command is called.

Changing the Compile and Run Modes

You can change the mode in which a member is compiled or an object is run to batch or interactive by using the *Compile in batch* and *Run in batch* prompts on the Change Defaults display. The default value for the *Compile in batch* prompt is Y (Yes); the default for the *Run in batch* prompt is N (No).

To change the default values of these prompts so that members are compiled interactively and objects are run in batch mode:

1. Press F18 (Change defaults), on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. Type N in the *Compile in batch* prompt, and type Y in the *Run in batch* prompt, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

Until you change the *Compile in batch* and *Run in batch* prompts again, when you compile a member it is compiled interactively, and when you run a program it is run in batch.

Note: When you compile a member in batch, the library list used differs according to whether the member is a System/38 or an AS/400 member. When System/38 members are compiled in batch, the System/38 SBMJOB command is called to submit the job to batch processing. When AS/400 members are compiled in batch, the AS/400 SBMJOB command is called to submit the job to batch processing.

The default values of the INLLIBL parameter on the System/38 and AS/400 SBMJOB commands differ. As a result, the library list specified as part of the job description is used when you compile a System/38 member in batch, and the current library list for the job is used when you compile an AS/400 member in batch.

If you want to change the default library list used when compiling System/38 or AS/400 members in batch, create a user-defined option to compile members, and specify the default library list you want to use in the SBMJOB INLLIBL parameter. Then, when you want to compile a member, specify the option code for the option you created, instead of using option 14 (Compile) on the Work with Members Using PDM display. For information on creating user-defined options, see “Choosing a Command to Correspond to a User-Defined Option” on page 57.

Saving Session Defaults

To save the default values from your current session, use the *Change session defaults* prompt as follows:

1. Press F18 (Change defaults), on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. Type Y on the *Save session defaults* prompt to save changes to the default values in your user profile, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

If you leave this prompt set at the default N (No), any changes to the default values are effective for your current session only.

Note: If you want batch jobs to use the same default values as your current session, you must type Y in the *Save session defaults* prompt before the job is submitted to batch. You must run these batch jobs with the same user profile you used to submit the job.

Saving and Restoring Objects

You can save or restore selected objects and members individually, or save and restore all selected objects and members at the same time, by using the *Save/restore option* prompt.

1. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. Type 1 in the *Save/Restore option* prompt to save or restore selected objects or members all at the same time with one command, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

Changing the Job Description

You can change your job description by changing the *Job description* prompt on the Change Defaults display. You can choose from a list of all valid job descriptions in the specified library to which you have authority by pressing F4 when your cursor is on the *Job description* prompt.

You can create a subset of the list by typing a generic name on the *Job description* prompt before pressing F4. This selection list is similar to the Select File Using PDM display when you are copying members or specifying the members to work with.

1. Press F18 (Change defaults), on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. To display a list of all job descriptions starting with J, type J* in the *Job description* prompt before pressing F4 to display the list.
3. Position the cursor on the *Job description* prompt and press F4.
4. Type 1 in the *Opt* prompt next to the job description that you want to work with, and press Enter. The Change Defaults display reappears with the *Job description* prompt filled in with your choice.
5. Press Enter, and the AS/400 Programming Development Manager (PDM) menu reappears.

Restricting Changes to the Member Type and Text Description

When you work with members on the Work with Members Using PDM display, you can change the type and text of a member specified in the *Type* and *Text* column.

The type of member determines the command that is called when you select an option. The member type must match the source code in the member for the option to be performed successfully. Allowing inexperienced users to change the member type could, therefore, lead to problems.

To restrict changes to the type and text description of members:

1. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. On the Change Defaults display, type N in the *Change type and text* prompt, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

You cannot change the type or text description of a member on the Work with Members Using PDM display until you change the *Change type and text* prompt again.

Changing the Active Default User-Defined Options File

You can change the active user-defined options file, library, and member by changing the *Option file* prompt, the *Library* prompt, and the *Member* prompt on the Change Defaults display.

To change the active user-defined options file, library, and member from their default values to the file, library, and member you created in “Copying the User-Defined Options File for Storage in Other Files” on page 61:

1. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. Type UD0 in the *Option file* prompt, ATEST in the *Library* prompt, leave the *Member* prompt as QAUOOPT, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

Until you change these prompts again, the only user-defined options you can use are those in the UD0 file in the library ATEST.

Changing List Displays to Full Screen Mode

All PDM list displays initially show list items and the options and function keys available for the display. You can change the mode of list displays so that more list items are displayed without the options and function keys by using the *Full screen mode* prompt on the Change Defaults display.

To change list displays to full screen mode:

1. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. Type Y in the *Full screen mode* prompt on the Change Defaults display, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears. Until you change this prompt again, all PDM list displays are shown in full screen mode.
3. Press F3 (Exit) to return to the AS/400 Programming Development Manager (PDM) menu.

Logging Option Commands

You can specify whether or not commands resulting from PDM options or user-defined options are logged. When the *Log option commands* prompt is set to Y (Yes), commands are logged, and can be retrieved on the PDM command line or PDM command entry panel with F9 (Retrieve). The default value for this prompt is N (No).

To log option commands:

1. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. On the Change Defaults display, page down to display the second display.
3. Type Y in the *Log option commands* prompt, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

All PDM options and user-defined options will be logged.

Changing the Default Value of the Enter Key

You can change the default value of the Enter key by changing the *Exit lists on ENTER* prompt. The default value of the Enter key is Y (Yes), which allows you to exit list panels by pressing the Enter key.

To change the default value of the Enter key:

1. Press F18 (Change defaults) on the AS/400 Programming Development Manager (PDM) menu. The Change Defaults display appears.
2. On the Change Defaults display, page down to display the second display.
3. Type N in the *Exit lists on ENTER* prompt, and press Enter. The AS/400 Programming Development Manager (PDM) menu reappears.

When you change the default value of the Enter key, you cannot use the Enter key to exit from list displays. You can still use F3 (Exit) and F12 (Cancel) to exit from list displays.

Appendix A. Command Reference

This appendix lists the following commands:

- Command reference for objects, which consists of commands for the following options:
 - Change
 - Copy
 - Delete
 - Display
 - Rename
 - Display description
 - Save
 - Restore
 - Move
 - Work with
 - Change text
 - Copy file
 - Run
 - Change using DFU
 - Find String
- Command reference for libraries
- Command reference for members
- Compile commands called for members

Command Reference for Objects

The following figures show you the AS/400 system commands that are called for particular object types for each option available on the Work with Objects Using PDM display.

These figures list only the object types on which PDM can perform operations.

Commands Called for the Change Option

The commands used to call a specific object type for the Change option, and the object attribute, if applicable, are:

Type	Attribute	Command
*AUTL		EDTAUTL
*CFGL		CHGCFGL
*CMD		CHGCMDB
*COSD		CHGCOSD
*CRQD		CHGCMDB
*DTAARA		CHGDTAARA
*FCT		CHGFCT
*FILE	DDMF	CHGDDMF
*FILE	DKTF	CHGDKTF

Type	Attribute	Command
*FILE	DSPF	CHGDSPF
*FILE	ICFF	CHGICFF
*FILE	LF	CHGLF
*FILE	PF-DTA	CHGPF
*FILE	PF-SRC	CHGSRCPF
*FILE	PRTF	CHGPRTF
*FILE	SAVF	CHGSAVF
*FILE	TAPF	CHGTAPF
*JOB		CHGJOB
*JRN		CHGJRN
*LIB		CHGLIB
*MENU		CHGMNU
*MODD		CHGMODD
*MSGQ		CHGMSGQ
*OUTQ		CHGOUTQ
*PGM	ALL	CHGPGM
*SBSD		CHGSBSD
*SSND		CHGSSND
*USRPRF		CHGUSRPRF

Commands Called for the Copy Option

Except for object type *LIB, which calls the CPYLIB command, the CRTDUPOBJ command is called for the Copy option and is valid for the following object types:

*ALRTBL	*DTAARA	*MSGF	*QMFORM
*AUTL	*FCT	*MSGQ	*QMQR
*CHTFMT	*FILE	*OUTQ	*QRYDFN
*CLD	*FNTRSC	*OVL	*SBSD
*CLS	*FORMDF	*PAGSEG	*SCHIDX
*CRQD	*GSS	*PDG	*SSND
*CMD	*JOB	*PGM	*TBL
*CSPMAP	*JOBQ	*PNLGRP	*USRIDX
*CSPTBL	*MENU	*PRDDFN	*USRSPC

Commands Called for the Delete Option

The commands used to call a specific object type for the Delete option, and the object attribute, if applicable, are:

Type	Attribute	Command
*ALRTBL		DLTALRTBL
*AUTL		DLTAUTL

Type	Attribute	Command
*CFGL		DLTCFGL
*CHTFMT		DLTCHTFMT
*CLD		DLTCLD
*CLS		DLTCLS
*CMD		DLTCMD
*CNL		DLTCNNL
*COSD		DLTCOSD
*CRQD		DLTCRQD
*CSI		DLTCSI
*CSPMAP		DLTCSPMAP
*CSPTBL		DLTCSPTBL
*CTLD		DLTCTLD
*DEV		DLTDEV
*DTAARA		DLTDTAARA
*DTADCT		DLTDTADCT
*DTAQ		DLTDTAQ
*EDTD		DLTEDTD
*FCT		DLTFCT
*FILE	ALL	DLTF
*FNTRSC		DLTFNTRSC
*FORMDF		DLTFORMDF
*GSS		DLTGSS
*IGCDCT		DLTIGCDCT
*IGCTBL		DLTIGCTBL
*JOB		DLTJOB
*JOBQ		DLTJOBQ
*JRN		DLTJRN
*JRNRCV		DLTJRNRCV
*LIB		DLTLIB
*LIND		DLTLIND
*MENU		DLTMNU
*MODD		DLTMODD
*MSGF		DLTMSGF
*MSGQ		DLTMSGQ
*NWID		DLTNWID
*OUTQ		DLTOUTQ
*OVL		DLTOVL
*PAGDFN		DLTPAGDFN
*PAGSEG		DLTPAGSEG
*PDG		DLTPDG

Type	Attribute	Command
*PGM	DFU	DLTDFUPGM
*PGM	other	DLTPGM
*PNLGRP		DLTPNLGRP
*QMFORM		DLTQMFORM
*QMQRV		DLTQMQRV
*QRYDFN		DLTQRY
*SBSD		DLTSBSD
*SCHIDX		DLTSCHIDX
*SPADCT		DLTSPADCT
*SSND		DLTSSND
*TBL		DLTTBL
*USRIDX		DLTUSRIDX
*USRPRF		DLTUSRPRF
*USRQ		DLTUSRQ
*USRSPC		DLTUSRSPC

Commands Called for the Display Option

The commands used to call a specific object type for the Display option, and the object attribute, if applicable, are:

Type	Attribute	Command
*AUTL		DSPAUTL
*CFGL		DSPCFGL
*CHTFMT		DSPCHT
*CLS		DSPCLS
*CMD		DSPCMD
*CNL		DSPCNL
*COSD		DSPCOSD
*CRQD		DSPOBJD
*CSI		DSPCSI
*CSPMAP		DSPCSPOBJ
*CSPTBL		DSPCSPOBJ
*CTLD		DSPCTLD
*DEV		DSPDEV
*DTAARA		DSPDTAARA
*DTADCT		DSPDTADCT
*EDTD		DSPEDTD
*EXITRG		DSPOBJD
*FILE	DDMF	DSPDDMF
*FILE	DKTF	DSPFD

Type	Attribute	Command
*FILE	DSPF	STRSDA OPTION (3)
*FILE	ICFF	DSPFD
*FILE	LF	DSPFD
*FILE	PF-DTA	DSPFD
*FILE	PF-SRC	DSPFD
*FILE	PRTF	DSPFD
*FILE	SAVF	DSPSAVF
*FILE	TAPF	DSPFD
*IGCDCT		DSPIGCDCT
*JOB		DSPJOB
*JRN		DSPJRN
*JRNRCV		DSPJRNRCVA
*LIB		DSPLIB
*LIND		DSPLIND
*MENU		DSPMNUA
*MODD		DSPMODD
*MSGF		DSPMSGD
*MSGQ		DSPMSG
*NWID		DSPNWID
*PGM	ALL	DSPPGM
*SBSD		DSPSBSD
*USRPRF		DSPUSRPRF

Command Called for the Rename Option

The RNMOBJ command is called for the Rename option and is valid for the following object types:

*ALRTBL	*DTAARA	*MENU	*QMFORM
*AUTL	*DTAQ	*MSGF	*QMQR
*CFGL	*EDTD	*MSGQ	*QRYDFN
*CHTFMT	*FCT	*NTBD	*RCT
*CLD	*FILE	*NWID	*SBSD
*CLS	*FNTRSC	*OUTQ	*SCHIDX
*CMD	*FORMDF	*OVL	*SPADCT
*CNL	*GSS	*PAGSEG	*SSND
*CRQD	*JOB	*PDG	*TBL
*CSPMAP	*JOBQ	*PGM	*USRIDX
*CSPTBL	*LIB	*PNLGRP	*USRQ
*CTLD	*LIND	*PRDDFN	*USRSPC
*DEV			

Command Called for the Display Description Option

The DSPOBJD command is called for the Display Description option and is valid for the following object types:

*ALRTBL	*DTADCT	*LIND	*PRDLOD
*AUTL	*DTAQ	*MENU	*QMFORM
*CFGL	*EDTD	*MODD	*QMQRV
*CHTFMT	*FCT	*MSGF	*QRYDFN
*CLD	*FILE	*MSGQ	*RCT
*CLS	*FNTRSC	*NTBD	*SBSD
*CMD	*FORMDF	*NWID	*SCHIDX
*CNL	*GSS	*OUTQ	*SPADCT
*COSD	*IGCDCT	*OVL	*SSND
*CRQD	*IGCSRT	*PAGDFN	*S36
*CSI	*IGCTBL	*PAGSEG	*SVRSTG
*CSPMAP	*JOB	*PDG	*TBL
*CSPTBL	*JOBQ	*PGM	*USRIDX
*CTLD	*JRN	*PNLGRP	*USRPRF
*DEVD	*JRNRCV	*PRDAVL	*USRQ
*DTAARA	*LIB	*PRDDFN	*USRSPC

Commands Called for the Save Option

The commands used to call a specific object type for the Save option, and the object attribute, if applicable, are:

Type	Attribute	Command
*ALRTBL		SAVOBJ
*CFGL		SAVOBJ
*CHTFMT		SAVOBJ
*CLD		SAVOBJ
*CLS		SAVOBJ
*CMD		SAVOBJ
*CRQD		SAVOBJ
*CSI		SAVOBJ
*CSPMAP		SAVOBJ
*CSPTBL		SAVOBJ
*DTAARA		SAVOBJ
*DTAQ		SAVOBJ
*EDTD		SAVOBJ
*EXITRG		SAVOBJ
*FCT		SAVOBJ
*FILE	DDMF	SAVOBJ

Type	Attribute	Command
*FILE	DKTF	SAVOBJ
*FILE	DSPF	SAVOBJ
*FILE	ICFF	SAVOBJ
*FILE	LF	SAVOBJ
*FILE	PF-DTA	SAVOBJ
*FILE	PF-SRC	SAVOBJ
*FILE	PRTF	SAVOBJ
*FILE	SAVF	SAVSAVFDTA
*FILE	TAPF	SAVOBJ
*FNTRSC		SAVOBJ
*FORMDF		SAVOBJ
*GSS		SAVOBJ
*IGCSRT		SAVOBJ
*IGCTBL		CPYIGCTBL
*JOB		SAVOBJ
*JOBQ		SAVOBJ
*JRN		SAVOBJ
*JRNRCV		SAVOBJ
*LIB		SAVLIB
*MENU		SAVOBJ
*MSGF		SAVOBJ
*MSGQ		SAVOBJ
*OUTQ		SAVOBJ
*OVL		SAVOBJ
*PAGDFN		SAVOBJ
*PAGSEG		SAVOBJ
*PDG		SAVOBJ
*PGM		SAVOBJ
*PNLGRP		SAVOBJ
*PRDAVL		SAVOBJ
*QMFORM		SAVOBJ
*QMQR		SAVOBJ
*QRYDFN		SAVOBJ
*RCT		SAVOBJ
*SBSD		SAVOBJ
*SCHIDX		SAVOBJ
*SPADCT		SAVOBJ
*SSND		SAVOBJ
*S36		SAVOBJ
*SVRSTG		SAVOBJ

Type	Attribute	Command
*TBL		SAVOBJ
*USRIDX		SAVOBJ
*USRQ		SAVOBJ
*USRSPC		SAVOBJ

Commands Called for the Restore Option

Except for object type *IGCTBL, which calls the CPYIGCTBL command, the RSTOBJ command is called for the Restore option and is valid for the following object types:

*ALRTBL	*FCT	*OUTQ	*QRYDFN
*CFGL	*FILE	*OVL	*RCT
*CHTFMT	*FNTRSC	*PAGDFN	*SBSD
*CLD	*FORMDF	*PAGSEG	*SCHIDX
*CLS	*GSS	*PDG	*SPADCT
*CMD	*IGCSRT	*PGM	*SSND
*CRQD	*JOBQ	*PNLGRP	*S36
*CSI	*JOBQ	*PRDAVL	*SVRSTG
*CSPMAP	*LIB	*PRDDFN	*TBL
*CSPTBL	*MENU	*PRDLOD	*USRIDX
*DTAARA	*MSGF	*QMFORM	*USRQ
*EDTD	*MSGQ	*QMQRV	*USRSPC

Command Called for the Move Option

The MOVOBJ command is called for the Move option and is valid for the following object types:

*ALRTBL	*FILE	*MSGQ	*QRYDFN
*CHTFMT	*FNTRSC	*OUTQ	*RCT
*CLD	*FORMDF	*OVL	*SBSD
*CLS	*GSS	*PAGSEG	*SCHIDX
*CMD	*JOBQ	*PDG	*SPADCT
*CRQD	*JOBQ	*PGM	*SSND
*CSPMAP	*JRN	*PNLGRP	*TBL
*CSPTBL	*JRNRCV	*PRDDFN	*USRIDX
*DTAARA	*MENU	*QMFORM	*USRQ
*DTAQ	*MSGF	*QMQRV	*USRSPC
*FCT			

Commands Called for the Work With Option

The commands used to call a specific object type for the Work With option, and the object attribute, if applicable, are:

Type	Attribute	Command
*ALRTBL		WRKALRTBL
*AUTL		WRKAUTL
*CFGL		WRKCFGL
*CHTFMT		WRKCHTFMT
*CLS		WRKCLS
*CNNL		WRKCNNL
*COSD		WRKCOSD
*CSI		WRKCSI
*CSPMAP		WRKOBJCSP
*CSPTBL		WRKOBJCSP
*CTLD		WRKCTLD
*DEVD		WRKDEVD
*DTAARA		WRKDTAARA
*DTADCT		WRKDTADCT
*DTAQ		WRKDTAQ
*EDTD		WRKEDTD
*FILE	PF-DTA	WRKMBRPDM
*FILE	PF-SRC	WRKMBRPDM
*FILE	Other	WRKF
*FNTRSC		WRKFNTRSC
*FORMDF		WRKFORMDF
*GSS		WRKGSS
*JOB		WRKJOB
*JOBQ		WRKJOBQ
*JRN		WRKJRNA
*JRNRCV		WRKJRNRCV
*LIB		WRKOBJPDM
*LIND		WRKLIND
*MENU		WRKMNU
*MODD		WRKMODD
*MSGF		WRKMSGF
*MSGQ		WRKMSGQ
*NWID		WRKNWID
*OUTQ		WRKOUTQ
*OVL		WRKOVL
*PAGDFN		WRKPAGDFN

Type	Attribute	Command
*PAGSEG		WRKPAGSEG
*PGM		WRKPGM
*PGM	*CSPA	WRKOBJCSP
*PNLGRP		WRKPNLGRP
*QMFORM		WRKQMFORM
*QMQR		WRKQMQR
*SBSD		WRKSBSD
*SCHIDX		WRKSCHIDX
*SPADCT		WRKSPADCT
*TBL		WRKTBL
*USRPRF		WRKUSRPRF

Command Called for the Change Text Option

The CHGOBJD command is called for the Change Text option and is valid for the following object types:

*ALRTBL	*EDTD	*MENU	*PRDLOD
*AUTL	*EXITRG	*MODD	*QMFORM
*CFGL	*FCT	*MSGF	*QMQR
*CHTFMT	*FILE	*MSGQ	*QRYDFN
*CLD	*FNTRC	*NTBD	*RCT
*CLS	*FORMDF	*NWID	*SBSD
*CMD	*GSS	*NWSD	*SCHIDX
*CNL	*IGDCT	*OUTQ	*SPADCT
*COSD	*IGSRT	*OVL	*SSND
*CSI	*IGCTBL	*PAGDFN	*S36
*CSPMAP	*JOB	*PAGSEG	*SVRSTG
*CSPTBL	*JOBQ	*PDG	*TBL
*CTLD	*JRN	*PGM	*USRIDX
*DEVD	*JRNRCV	*PNLGRP	*USRPRF
*DTAARA	*LIB	*PRDAVL	*USRQ
*DTADCT	*LIND	*PRDDFN	*USRSPC
*DTAQ			

Commands Called for the Copy File Option

The commands used to call a specific object type for the Copy File option, and the object attribute, if applicable, are:

Type	Attribute	Command
*FILE	DKTF	CPYF
*FILE	LF	CPYF

Type	Attribute	Command
*FILE	PF-DTA	CPYF
*FILE	PF-SRC	CPYSRCF

Commands Called for the Run Option

The commands used to call a specific object type for the Run option, and the object attribute, if applicable, are:

Type	Attribute	Command
*CMD		Command is called
*PGM	DFU	CHGDTA
*PGM	other	CALL
*QRYDFN		RUNQRY

Commands Called for the Change Using DFU Option

The commands used to call a specific object type for the Change Using DFU option, and the object attribute, if applicable, are:

Type	Attribute	Command
*FILE	PF-DTA	UPDDTA
*FILE	LF	UPDDTA
*PGM	DFU	STRDFU OPTION (3)

Commands Called for the Find String Option

The commands used to call a specific object type for the Find String option, and the object attribute, if applicable, are:

Type	Attribute	Command
*FILE	PF-DTA	Find character string in member (interactive mode) FNDSTRPDM (batch mode)
*FILE	PF-SRC	Find character string in member

Command Reference for Libraries

The AS/400 system commands that are called for each option that can be performed on a library are:

Option	Command
Change	CHGLIB
Change text	CHGOBJD
Copy	CPYLIB
Delete	DLTLIB
Display	DSPLIB

Option	Command
Display description	DSPOBJD
Rename	RNMOBJ
Restore	RSTLIB
Save	SAVLIB
Work with	WRKOBJPDM

Command Reference for Members

The AS/400 system commands that are called for each option that can be performed on a member are:

Option	Command Source Member	Command Data File Member
Change text	CHGPFM	CHGPFM
Change using DFU		UPDDTA
Change using RLU	STRRLU OPTION(2)	
Change using SDA		STRSDA
Compile		
Copy	CPYSRCF	CPYF
Delete	RMVM	RMVM
Display	STRSEU OPTION(5)	DSPPFM
Display description	Display member description	Display member description
Edit	STRSEU OPTION(2)	Not available
Find string	Search member for character string	FNDSTRPDM
Print	STRSEU OPTION(6)	Not available
Rename	RNMM	RNMM
Run procedure	REXX	STRREXPRC
	OCL36	STRS36PRC
	BASP	STRBASPRC
	BASP38	QSYS38/EXCBASPRC
Save	SAVOBJ	SAVOBJ

Compile Commands for Members

If you select the compile option for a member with a type that is not listed in this figure, an error message is issued. The compile commands that are called for each of the member types are:

Type	Compile Command
BAS	CRTBASPGM
BAS36	CRTBASPGM
BAS38	CRTBASPGM
C	CRTC MOD CRTBND C
CBL	CRTCBLPGM
CBLLE	CRTCBLMOD CRTBND CBL
CBL36	CRTS36CBL
CBL38	CRTCBLPGM
CLD	CRTCLD
CLLE	CRTCLMOD CRTBND CL
CLP	CRTCLPGM
CLP38	CRTCLPGM
CMD	CRTCMD
CMD38	CRTCMD
DSPF	CRTDSPF
DSPF36	CRTS36DSPF
DSPF38	CRTDSPF
FTN	CRTFTNPGM
ICFF	CRTICFF
LF	CRTL F
LF38	CRTL F
PAS	CRTPASPGM
PF	CRTPF
PF38	CRTPF
PLI	CRTPLIPGM
PLI38	CRTPLIPGM
PNLGRP	CRTPNLGRP
PRTF	CRTPRTF
PRTF38	CRTPRTF
QRY38	CRTQRYAPP
RMC	CRTRMCPGM
RPG	CRTRPGPGM

Type	Compile Command
RPGLE	CRTRPGMOD CRTBNDRPG
RPG36	CRTS36RPG
RPG38	CRTRPGPGM
RPT	CRTRPTPGM
RPT36	CRTS36RPT
RPT38	CRTRPTPGM
SPADCT	CRTSPADCT
SQLC	CRTSQLC
SQLCBL	CRTSQLCBL
SQLCBLLE	CRTSQLCBLI
SQLCLE	CRTSQLCI
SQLFTN	CRTSQLFTN
SQLPLI	CRTSQLPLI
SQLRPG	CRTSQLRPG
SQLRPGLE	CRTSQLRPGI
TBL	CRTTBL

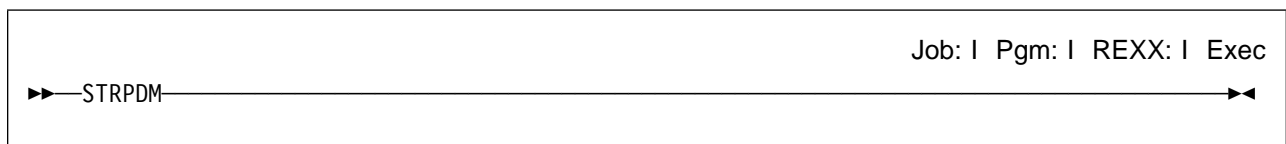
Appendix B. Control Language Commands

This appendix lists the Control Language commands that are specific to the programming development manager. Each of the command parameters is followed by a description of its use.

Start Programming Development Manager (STRPDM) Command

Calls the programming development manager (PDM) utility. A menu is shown on which you can choose from a set of options so that you can work with libraries, objects, members, and user-defined options.

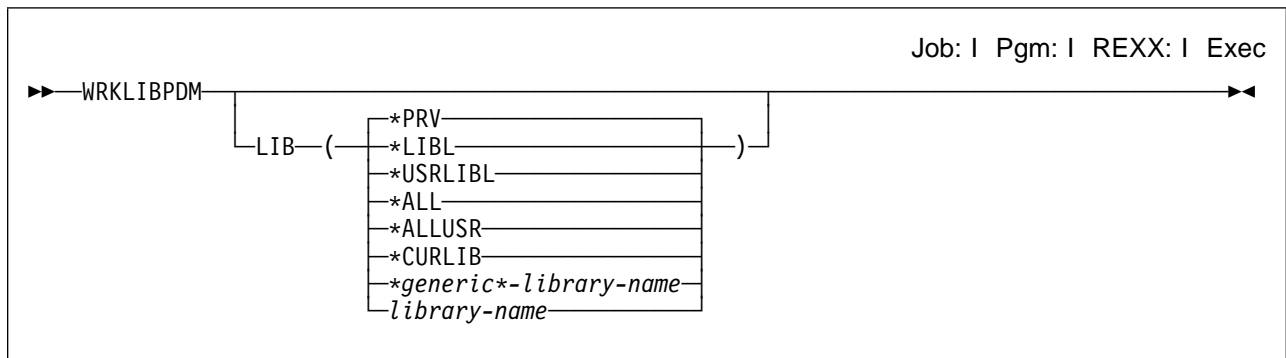
Command Syntax



Work with Libraries Using PDM (WRKLIBPDM) Command

Bypasses the programming development manager (PDM) menu and the Specify Libraries to Work With display so that you can work with lists of libraries.

Command Syntax



LIB: Specifies the libraries with which to work. This parameter can be used to create a subset of a list of libraries by a library name or a generic library name.

***PRV:** The library list type that was used during the previous session is used.

***LIBL:** All the libraries in the user *and* system portions of the job's library list are used.

***USRLIBL:** Only the libraries listed in the user portion of the job's library list are used.

***ALL:** All the libraries in the system, including QSYS and QTEMP, are used.

***ALLUSR:** All the nonsystem libraries, including a list of all user-defined libraries, are used. The list is displayed alphabetically by library.

***CURLIB:**

The current library in the library list is used. If a current library is not specified, the QGPL library is used.

***generic*-library-name:**

Specify a partial library name qualified by an asterisk (*) to show a list of libraries whose names begin with the prefix that precedes the asterisk. For a list of generic library names, see "Viewing a List of Libraries" on page 10.

For more information on the use of generic functions, refer to the *CL Reference*.

library-name:

Specify a library name for a display with only that library name in the list.

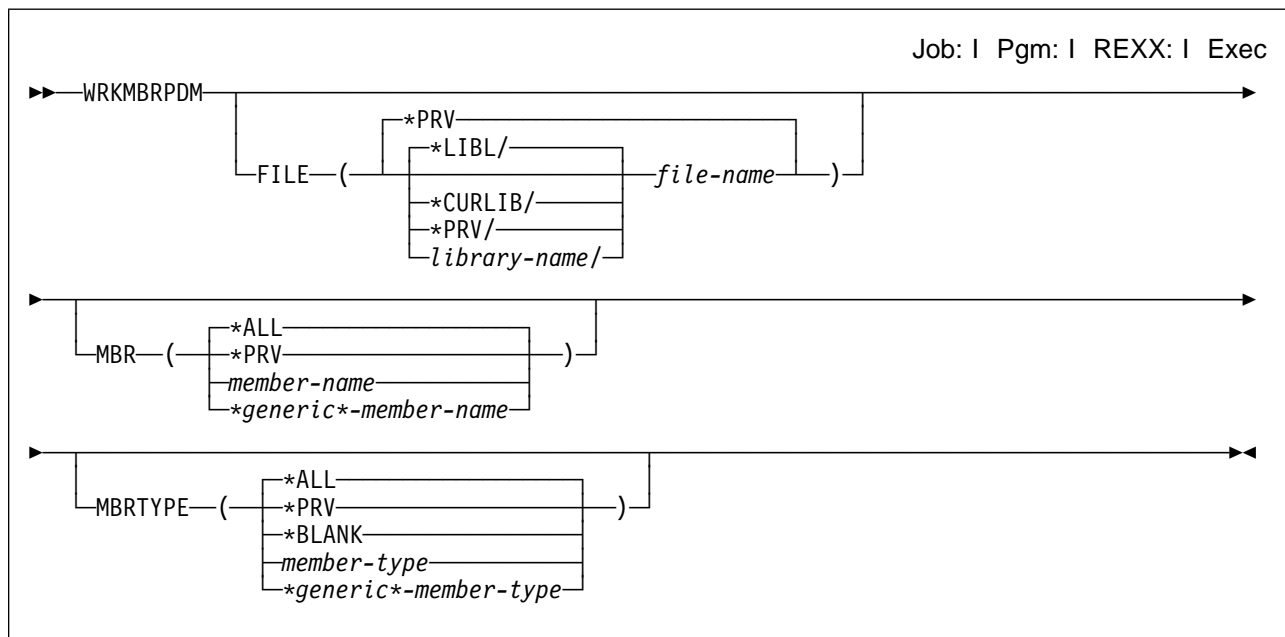
Example: This command shows the Work with Libraries using PDM Display and shows all libraries starting with ABC:

```
WRKLIBPDM LIB(ABC*)
```

Work with Members Using PDM (WRKMBRPDM) Command

Bypasses the Programming Development Manager (PDM) menu and the Specify Members to Work With display so that you can work with lists of members.

Command Syntax



FILE: Specifies the qualified name of the file (in the form LIB/FILE) that contains the members with which to work. The first time this command is used, you must specify a file name; no default is supplied. The file can be a source physical file or a data physical file.

***PRV:**

Specifies that PDM uses the file name and library name used in the previous PDM session.

The possible library values are:

***LIBL:**

The library list is used to locate the file.

***CURLIB:**

The current library for the job is used to locate the file. If no current library entry exists in the library list, the QGPL library is used.

***PRV:**

Specifies that PDM uses the library name used in the previous PDM session.

library-name:

Specify the library name containing the file.

MBR: Specifies the member name. This parameter can be used to work with all the members or a subset of members in the specified file.

***ALL:** Displays a list of all the members in the specified file.

***PRV:** Specifies the member name that was used in the previous PDM session.

member-name: Specify a member name for a display with only that member name in the list.

**generic*-member-name:* Specify a partial member name qualified by an asterisk (*) to display a list of members that meet the specific criteria. For a list of generic names, see "Viewing a List of Libraries" on page 10. For more information on the use of generic functions, refer to the *CL Reference* book.

MBRTYPE: Specifies the member type. This parameter can be used to work with all member types in a specified file or a subset of members.

***ALL:** Displays a list of all members with any member type.

***PRV:** Specifies the member type that was used in the previous PDM session.

member-type: Specify any member type to display a list of all members of that particular type.

You can use a member type that you have created, or use one of the following standard member types used by PDM commands:

BAS	Basic
BAS36	Basic System/36
BAS38	Basic System/38
BASP	Basic Native Procedure
BASP38	Basic System/38 Native Procedure
C	C Language
CBL	COBOL
CBLLE	Integrated Language Environment COBOL/400*
CBL36	COBOL System/36

CBL38	COBOL System/38
CICSCBL	CICS* COBOL
CICSMAP	CICS Map
CLD	C Locale Description
CLE	Integrated Language Environment C/400*
CLLE	Control Language Integrated Language Environment
CLP	Control Language
CLP38	System/38 Control Language
CMD	Command
CMD38	Command System/38
DSPF	Display File
DSPF36	Display File System/36
DSPF38	Display File System/38
FTN	FORTRAN/400*
ICFF	Inter-System Communications Function File
LF	Logical File
LF38	Logical File System/38
MENU	UIM Menu
MNU	Menu
MNUCMD	Menu Command
MNUDDS	Menu Data Description Specifications
MNU36	Menu System/36
MSGF36	Message File For System/36
OCL36	System/36 Operator Control Language
PAS	Pascal
PF	Physical File
PF38	Physical File System/38
PLI	PL/I
PLI38	PL/I System/38
PNLGRP	Panel Group
PRTF	Printer File
PRTF38	Printer File System/38
QRY38	System/38 QUERY
REXX	Restructured Extended Executor Language
RMC	RM/COBOL-85**
RPG	RPG
RPGLE	Integrated Language Environment RPG/400*
RPG36	RPG System/36
RPG38	RPG System/38
RPT	Report
RPT36	Report System/36
RPT38	Report System/38
SAVF	Save File
SPADCT	Spelling Aid Dictionary
SQLC	DB2/400 Query Manager C
SQLCBL	DB2/400 Query Manager COBOL

SQLCBLLE	DB2/400 Query Manager Integrated Language Environment COBOL/400
SQLCLE	DB2/400 Query Manager Integrated Language Environment C/400
SQLFTN	DB2/400 Query Manager FORTRAN
SQLPLI	DB2/400 Query Manager PL/I
SQLRPG	DB2/400 Query Manager RPG
SQLRPGLE	DB2/400 Query Manager Integrated Language Environment RPG/400
TBL	Table
TXT	Text
UIM	User Interface Manager

- *I* displays a list of all members that have the character I anywhere in the member type. For example, ICFF, PLI, PLI38, or SQLPLI.
- R*36 displays a list of all members whose member type begins with the character R and ends with the characters 36. For example, RPG36 or RPT36.
- "a*7" displays a list of all members that are in quotation marks and start with a. For example, "a", "aB", or "aD".
- **ALL displays a list of all members whose member type ends with ALL. For example, ALL, BALL, or TESTALL. The double asterisk is needed in this case because *ALL is defined as a special value.

**generic*-member-type*: Specify a partial name of a member type qualified by an asterisk (*) to display a specific subset of members in the file that meets the specific criteria.

For more information on the use of generic functions, refer to the *CL Reference*.

The generic member type can be in one of the following typical formats:

- RPG* displays a list of all members whose member type begins with the characters RPG. For example, RPG, RPG36, or RPG38.
- *C displays a list of all members whose member type ends with the character C. For example, C or SQLC.

***BLANK**: Displays a list of all members with no type.

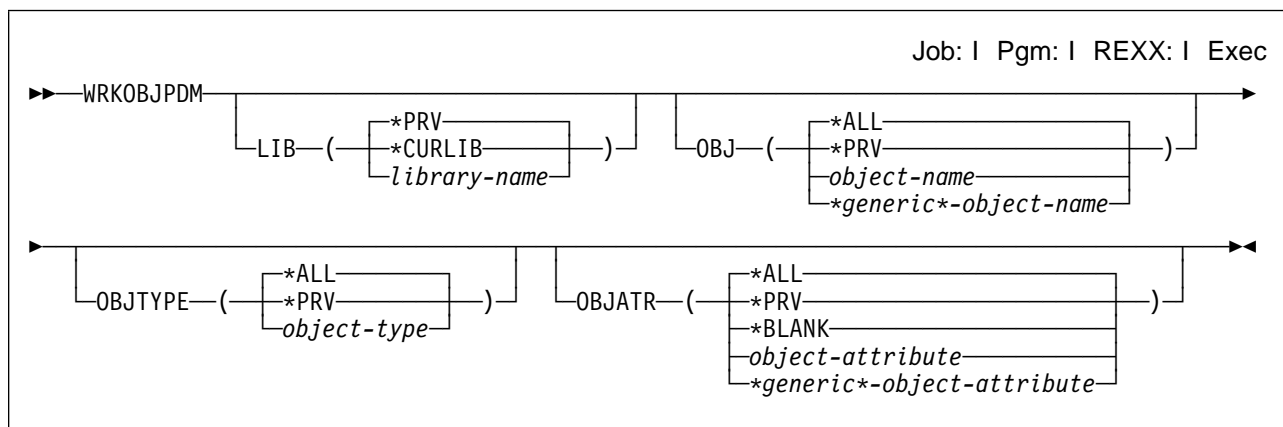
Example: This command allows you to work with the Work with Members Using PDM display and lists all members in file QDDSSRC in library MYLIB that are of type DSPF:

```
WRKMBRPDM FILE(MYLIB/QDDSSRC) MBR(*ALL)
MBRTYPE(DSPF)
```

Work with Objects Using PDM (WRKOBJPDM) Command

Bypasses the Programming Development Manager (PDM) menu and the Specify Objects to Work With display so that you can work with lists of objects.

Command Syntax



LIB: Specifies the library that contains the objects you want to work with.

The possible library values are:

***PRV:**

Specifies that PDM uses the library name used in your previous session.

library-name:

Specify the library containing the objects.

***CURLIB:**

The current library for the job is used to locate the objects. If no current library entry exists in the library list, the QGPL library is used.

OBJ: Specifies the object name. You can use this parameter to work with all the objects or a subset of objects in the specified library.

***ALL:** Displays a list of all the objects in the specified library.

***PRV:** Specifies the object name that was used in your previous PDM session.

object-name: Specify an object name for a list of all the objects with that name.

**generic*-object-name:* Specify a partial object name qualified by an asterisk (*) to display a list of objects that meet the specific criteria. For a list of generic names, see “Viewing a List of Libraries” on page 10. For more information on the use of generic functions, refer to the *CL Reference* book.

OBJTYPE: Specifies the object type. You can use this parameter to work with all object types or a subset of objects. See Appendix A, “Command Reference” on page 71 for a list valid OS/400 object types.

***ALL:** Displays a list of all objects regardless of the object type.

***PRV:** Specifies the object type that was used in your previous PDM session.

object-type: Specify any valid system object type to display a list of all objects of that particular type.

OBJATR: Specifies the object attribute. You can use this parameter to work with all object attributes or only specific object attributes.

***ALL:** Displays a list of all objects regardless of the object attribute.

***PRV:** Specifies the object attribute that was used in your previous PDM session.

object-attribute: Specify any object attribute to display a list of all objects with that particular attribute. If you specify the object attribute, you do not have to specify the object type.

The following are valid attributes:

BAS	Basic
BAS36	Basic System/36
BAS38	Basic System/38
BSCF38	Binary Synchronous Communication File System/38
C	C Language
CBL	COBOL
CBLLE	Integrated Language Environment COBOL/400
CBL36	COBOL System/36
CBL38	COBOL System/38
CLE	Integrated Language Environment C/400
CLLE	Control Language Integrated Language Environment
CLP	Control Language
CLP38	Control Language System/38
CMD	Command
CMD38	Command System/38
CMNF38	Communications File
CSPAЕ	Cross-System Product Application Execution
DDMF	Distributed Data Management
DFU	Data File Utility
DFUEXEC	Data File Utility Executable File
DFUNOTEXC	Data File Utility Non-Executable File
DKTF	Diskette File
DSPF	Display File
DSPF36	Display File System/36
DSPF38	Display File System/38
FTN	FORTTRAN/400
ICFF	Inter-System Communications Function File
LF	Logical File
LF38	Logical File System/38
MXDF38	Mixed File System/38
PAS	Pascal

PF-DTA	Physical File - Data
PF-SRC	Physical File - Source
PF38	Physical File System/38
PLI	PL/I
PLI38	PL/I System/38
PRTF	Printer File
PRTF38	Printer File System/38
QRY38	System/38 QUERY
RMC	RM/COBOL-85**
RPG	RPG
RPGLE	Integrated Language Environment RPG/400
RPG36	RPG System/36
RPG38	RPG System/38
RPT	RPG Auto Report
RPT36	RPG Auto Report System/36
RPT38	RPG Auto Report System/38
SAVF	Save File
SPADCT	Spelling Aid Dictionary
SQLC	DB2/400 Query Manager C
SQLCBL	DB2/400 Query Manager COBOL
SQLCBLLE	DB2/400 Query Manager Integrated Language Environment COBOL/400
SQLCLE	DB2/400 Query Manager Integrated Language Environment C/400
SQLFTN	DB2/400 Query Manager FORTRAN
SQLPLI	DB2/400 Query Manager PL/I
SQLRPG	DB2/400 Query Manager RPG
SQLRPGLE	DB2/400 Query Manager Integrated Language Environment RPG/400
TAPF	Tape File
TBL	Table

**generic*-object-attribute*: Specify a partial attribute type qualified by an asterisk (*) to display a specific subset of objects in the file that meets the criteria.

The partial attribute type can be in one of the following formats:

- **RPG*** displays a list of all objects whose attribute type begins with the characters RPG. For example, RPG, RPG36, or RPG38.
- ***C** displays a list of all objects whose attribute type ends with the characters C. For example, C or SQLC.
- ***I*** displays a list of all objects that have the character I anywhere in the attribute type. For example, ICFF, PLI, PLI38, or SQLPLI.
- **P*38** displays a list of all objects whose attribute type begins with the character P and ends with the characters 38. For example, PLI38 or PRTF38.
- **"a*"** displays a list of all objects that have quoted attribute types that start with a. For example, "a", "aB", or "aD".
- ****ALL** displays a list of all objects whose attribute type ends with ALL. For example, ALL, BALL, or TESTALL. ****ALL** is a value needed for only these situations because ***ALL** is already used as a special value.

For more information on the use of generic functions, refer to the *CL Reference* book.

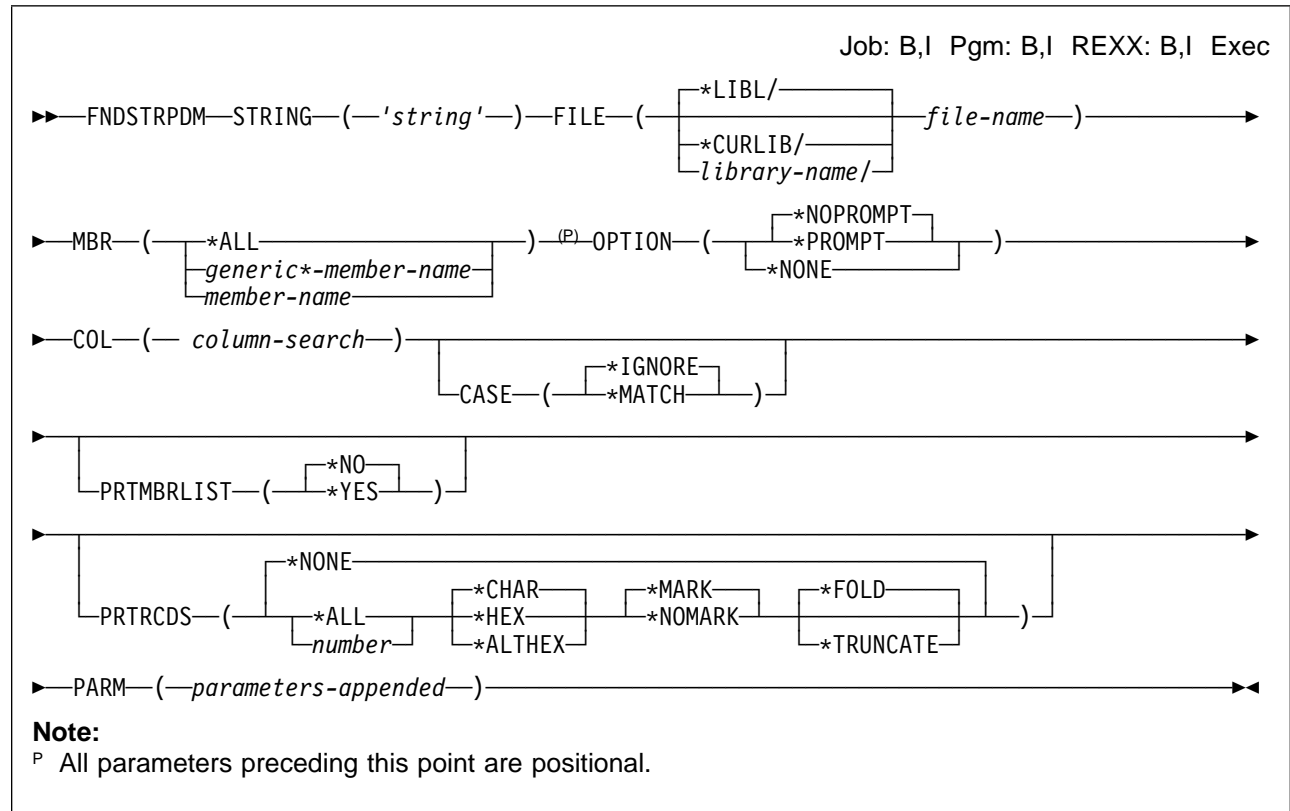
***BLANK**: Displays a list of all objects with no attribute.

Example: This command allows you to work with all physical files in library TESTLIB with TEST anywhere in the name:

```
WRKOBJPDM LIB(TESTLIB) OBJ(*TEST*)
OBJTYPE(*FILE) OBJATR(PF*)
```

Find String Using PDM (FNDSTRPDM) Command

Searches for character or hexadecimal strings in source or data physical file members. You can use any valid PDM option or a user-defined option on the member that contains a match for the string.



STRING: Specifies the string, enclosed in quotation marks, for which a search operation is performed. If a single word is specified in lowercase letters without being enclosed in quotation marks, it is folded to uppercase letters for the search. A character or a hexadecimal string can be specified.

FILE: Specifies the qualified name of the file that contains the members to be searched. The file searched can be a source physical file or a data physical file.

The library prompt specifies the name of the library with the file and members to be searched. If this prompt is left blank, it defaults to *LIBL. The possible library values are:

*LIBL:

The current library list is used to locate the file to be searched. PDM will search the library list for the file specified.

*CURLIB:

The current library for the job is used to locate the file to be searched. If no library is specified as the current library for the job, the QGPL library is used.

library-name:

Specify the name of the library that contains the file and members to be searched.

file-name: Specify the name of the file that contains the members to be searched.

MBR: Specifies the name of the member to be searched. This parameter can be used to search all the members or a subset of members in the specified file.

***ALL:** All the members in the file are searched.

generic-member-name*: Specify a partial member name qualified by an asterisk (*) to search a list of members that meet the specific criteria. For a list of generic names, see “Viewing a List of Libraries” on page 10. For more information on the use of generic functions, refer to the *CL Reference*.

member-name: Specify the name of the member to be searched. Type + to enter a list of member names to search.

OPTION: Specifies the options to be performed on each member for which a match for the FIND string is found. The parameter is comprised of two parts; one part for choosing an option and one part for prompting.

The option can be any PDM option that is valid for this type of file, or any user-defined option in your active option file. The valid options differ for source physical files and data physical files.

***NOPROMPT**: The user is not prompted.

***PROMPT**: The user is prompted.

***NONE**: Specifies that no options are performed. This implies that the PRTMBRLIST or PRTRCDS parameters must be selected for printing.

Source Physical File Member List

Choose:

***EDIT** to edit one or more members using the SEU (Source Entry Utility) editor.

***COPY** to copy one or more members to one or more new members. You can also copy members to another file, another library, or both.

***DLT** to delete one or more members from the file.

***DSP** to display one or more members using SEU.

***PRT** to print one or more members using SEU.

***RNM** to change the name of one or more members.

***DSPD** to display information about one or more members.

***SAVE** to save a member on diskette or tape.

***CHGT** to change some of the attributes of one or more members.

***CMPL** to compile one or more members. The system creates an object based on the member being compiled. The member is compiled interactively or in batch mode, depending on what you have specified on the change defaults display.

The following member types can be compiled: BAS, BAS36, BAS38, C, CBL, CBLLE, CBL36, CBL38, CICSCBL, CICSSQLCBL, CLD, CLE, CLLE, CLP, CLP38, CMD, CMD38, DSPF, DSPF36, DSPF38, FTN, ICF, LF, LF38, MENU, PAS, PF, PF38, PLI, PLI38, PNLGRP, PRTF, PRINT38, QRY38, RMC, RPG, RPGLE, RPG36, RPG38, RPT, RPT36, RPT38, SPADCT, SQLC, SQLCBL, SQLCBLLE, SQLCLE, SQLFTN, SQLPLI, SQLRPG, SQLRPGLE, and TBL.

When PDM compiles a program using the necessary create commands, the object name to create is always specified as the source member name. The object name parameter can be changed to another object name by prompting the option or typing the correct parameter on the command line. PDM checks whether the object name already exists. If it does, the Confirm Compile of Member display appears. This display can be used to delete the existing object.

Note: This display does not appear if Y (Yes) is specified on the *Replace object* prompt on the Change Defaults display.

If the object name parameter has been changed to a special value, PDM does not check whether the object exists. For example, if an RPG program has been compiled and the *Program* prompt has been changed to *CTLSPEC, PDM does not check whether the object exists.

***RUNP** to run a source member with a member type of REXX, OCL36, BASP, or BASP38. If you try to run a member with a type that cannot be run, an error message is sent. To run an OCL36 procedure, the file name must be QS36PRC. The member can be run in batch mode or interactively, depending on what is specified in the *Run in batch* prompt on the Change Defaults display.

***SDA** to use SDA (Screen Design Aid) to work with the members containing the string.

- If the member type is DSPF, DSPF36, or DSPF38, SDA is called to work with a display.
- If the member type is MNU, MNUDDS, MNUCMD or MNU36, SDA is called to work with a menu.
- If the former type of member MNU is specified, SDA converts this to MNUDDS.
- Note that menu members for PDM have type MNUDDS for the image member and type MNUCMD for the command source member. The two are linked together to constitute a group, so that specifying one of the types means that you are also operating on the linked member at the same time.

***RLU** to use RLU (Report Layout Utility) to work with the members containing the string.

User-defined options to use an option defined in the active option file.

Data Physical File Member List

Choose:

***COPY** to copy one or more members to one or more new members. Members can also be copied to another file, another library, or both.

***DLT** to delete one or more members from the file.

***DSP** to display one or more members.

***RNM** to change the name of one or more members.

***DSPD** to display information about one or more members.

***SAVE** to save a member on diskette or tape.

***CHGT** to change some of the attributes of one or more members in a physical file.

***DFU** to invoke DFU (Data File Utility) to change the member containing the string.

User-defined options to use an option defined in your active option file.

The prompt portion of the OPTION parameter specifies whether you are prompted each time the command for the option is carried out.

COL: Specifies the column numbers where the search begins and ends the search for each record. The format for the parameter is COL (starting_column ending_column) where the start and end values range from 1 through the end of the record (*RCDLEN). The default starts at the beginning of the record (column 1) and searches to the end of the record (*RCDLEN).

CASE: Specifies whether the match is case sensitive.

***IGNORE:** The member is searched for the string without case sensitivity.

***MATCH:** The member is searched for an exact match to the string.

PRTMBRLIST: Specifies whether a list of those members for which a match is found is printed.

***NO:** The list of members that contain a match to the string are not printed.

***YES:** The list of members containing the string are printed.

PRTRCDS: Specifies whether each record that contains the string is printed. The rest of the member is not printed. The format for the parameter is PRTRCDS (number format mark overflow).

Specify the number of records with the Find string to be found during the search and printed. The possible values are:

***NONE:** None of the records that contain the Find string are printed.

***ALL:** All records that contain the Find string are printed.

number: Only a certain number of records that match the Find string are printed. Valid values range from 1 through 99999.

Records can be printed in character or hexadecimal format. Choose from the following print formats:

***CHAR** Records are printed in character format.

***HEX** Records are printed in hexadecimal over/under style format. This means that the character value is printed with the hexadecimal below it.

***ALTHEX** Records are printed in hexadecimal side-by-side format.

The string on the printed record can be marked. The string itself is used as a marker for character searches for quick recognition. For hexadecimal searches, the string is marked with asterisks (*).

***MARK:** The occurrence of the string in the record is marked.

***NOMARK:** The occurrence of the string in the record is not marked.

If the record is greater than the length of the print line, it can be folded or truncated.

***FOLD:** The entire record is printed over multiple print lines.

***TRUNCATE:** Only that part of the record that fits on the print line is shown. When *ALTHEX is used, only columns 1 through 32 are printed. When *CHAR or *HEX are used, columns 1 through 100 are printed.

PARM: Specifies the parameters to be appended to the command carried out as a result of the option specified on the OPTION parameter.

Example: This command allows you to search from columns 2 through 4 in all members in file QDDSSRC in library MYLIB for the string h. After the string is found, you are prompted on the EDIT command and then able to edit the member containing the h. A list of the names of all the members containing the string is printed. Also, the first two records containing the string is printed in character format. The string is not marked and if the record is longer than the length of the print line, it is truncated.

```
FNDSTRPDM STRING('h') FILE(MYLIB/QDDSSRC)
MBR(*ALL) OPTION(*EDIT *PROMPT) COL(2 4)
PRTMBRLIST(*YES)
PRTRCDS(2 *CHAR *NOMARK *TRUNCATE)
```

Bibliography

The following publications are listed with their full titles and base order numbers. When these publications are referred to in the text, a shortened version of the title is used.

The related IBM Application Development ToolSet/400 publications are:

- *ADTS/400: Advanced Printer Function*, SC09-1766
- *ADTS/400: Character Generator Utility*, SC09-1769
- *ADTS/400: Data File Utility*, SC09-1773
- *ADTS/400: File Compare and Merge Utility*, SC09-1772
- *ADTS/400: Interactive Source Debugger*, SC09-1897
- *ADTS/400: Report Layout Utility*, SC09-1767
- *ADTS/400: Screen Design Aid*, SC09-1768
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