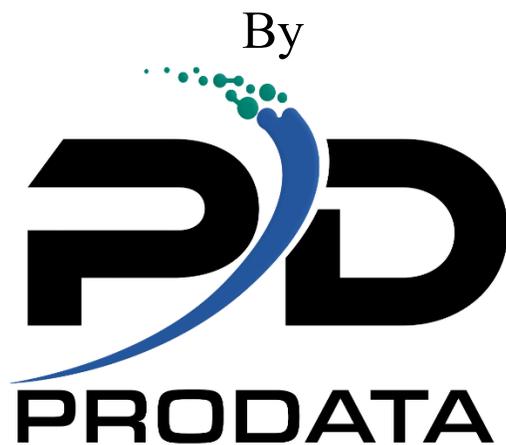


DBUnifier



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Before You Start

DBUnifier was developed to assist programmers and power users with the ability to create interactive applications from DB2/400 database information. You are able to create Selection Lists (F4-Lists Processes), Work with Subfile Processes, Inquiry Applications and File Maintenance Applications with Field level validations.

Versions & Releases

DBUnifier is available on the iSeries for operation system V4R2 and above. Be sure you have the correct versions for your machine before you start.

DBUnifier Applications

You use DBUnifier to view and maintain information from database files. The file that DBUnifier uses to process that information and how the information is to be displayed and validated is stored in a DBUnifier Application. A DBUnifier Application is an object (with type *USRSPC) and it contains all the details that DBUnifier needs to process the file in the way you specify. To create a DBUnifier Application, you follow a sequence of displays that guide you through the process of defining and saving an application. Once you have defined your application, you can execute it to produce the desired results.

Installing, Saving, and Deleting DBUnifier

Installing DBUnifier

Use the Load Run (LODRUN) command to perform an initial install of DBUnifier. Follow the two-step installation process.

1. Sign on the iSeries/400 system as security officer (QSECOFR)
2. Install the DBUnifier library with the Load Run command. Type LODRUN and press the F4 to prompt the following options: *(Note: Replace OPT01 with the name of the device containing the distribution media for DBUnifier)*

(Load and Run Command display)

```
Load and Run (LODRUN)

Type choices, press Enter.

Device . . . . . OPT01      Name, *TAP, *DKT, *OPT

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display  Bottom
F24=More keys
```

Saving DBUnifier

Use the Save Library (SAVLIB) command to save DBUnifier. Follow the three-step save process.

1. Sign on the iSeries/AS/400 system as security officer (QSECOFR)
2. Use the Initialize Tape (INZTAP) command to initialize a tape to hold saved version of DBUnifier.
3. Save the DBUnifier with the SAVLIB Command. Type SAVLIB and press F4 to prompt the following options: *(Note: Replace TAP01 with the name of the device containing the initialized tape)*

(Save Library Command display)

Save Library (SAVLIB)

Type choices, press Enter.

Library	<u>DBUNIFIER</u>	Name, generic*, *NONSYS...
	+ for more values	
Device	<u>TAP01</u>	Name, *SAVF, *MEDDFN
	+ for more values	

Bottom

F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

Deleting DBUnifier

Use the Delete Library (DLTLIB) command to delete DBUnifier. Follow the Two-step process.

1. Sign on the iSeries/400 system as security officer (QSECOFR)
2. Delete DBUnifier with the DLTLIB command. Type DLTLIB and press F4 to prompt for the following options:

(Delete Library Command display)

```
Delete library (DLTLIB)

Type choices, press Enter.

Library . . . . . DBUNIFIER Name

Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Work with DBUnifier Applications (WRKDBUAPP)

The Work with DBUnifier Applications display is the major starting point for working with one or more DBUnifier Applications. Using this display, you can select (and therefore, start) one or more of the following primary tasks:

- Create a new Application.
- Change, copy, display or delete an existing application.
- Print the definition of an application
- Run an application to view or maintain database information.

```
DBUnifier (version 4.2)
Work with DBUnifier Applications 11/09/04
16:12:06
Library . . . . . *LIBL      Name, *LIBL, F4 for list
Subset . . . . . *ALL       Name, generic*
Position to . . . . .          Starting characters

Type options (and DBUnifier Application), press Enter.
1=Create  2=Change  3=Copy  4=Delete  5=Display  6=Print  9=Run

Opt  Application Library      Text
--  -
--  EXAMPLE      DBUNIFIER  An Example DBUnifier Application
--  FM_LIST      DBUNIFIER  Example - Selection List Of Presidents
--  OUTPUTQ      DBUNIFIER  Example - Prompt/Select Output Queue
--  SAMPLE      DBUNIFIER
--  STATE      DBUNIFIER  State File Maintenance
--  STATECODE    DBUNIFIER  List of State Codes

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  Bottom
F24=More Keys

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```

Work with DBUnifier Application Options

Options	Description of Option
1=Create	Creates (defines) a new application. When this option is processed, the Work with DBUnifier Application display is shown so you can start defining an application.
2=Change	Change an existing application. The Work with DBUnifier Application display is shown for this option also.
3=Copy	Copies an existing application. The Copy DBUnifier Application display is shown.
4=Delete	Deletes an existing application. The Confirm Deletion of DBUnifier Application display is shown.
5=Display	Shows the application without being able to change it. (To change the application, choose option 2.) the Work with DBUnifier Application display is shown.
6=Print	Prints the application definition. The DBUnifier Application definition is printed to an out queue.
9=Run	Runs an application. Depending on the application definition, a database file will be displayed or the ability to maintain the database is allowed.

Work with DBUnifier Application Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Work with DBUnifier Applications display.

F4=Prompt	The Prompt command key displays a list of possible values that are available for the field where the cursor is located when it is pressed.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The “Command” command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Work with DBUnifier Application display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Working with a List of DBUnifier Applications

When you work with a list of DBUnifier Applications there are several functions to help you. Here are some possibilities:

- To see all the applications in a different library or group of libraries, you can press the Enter key after changing the value in the Library prompt and typing blanks or an asterisk (*). You are shown all the applications that you have the authority to use that exist in that library or group of libraries. (You indicate which libraries are to be checked by specifying a library name, a special library name [such as *LIBL], or a generic library name in the Library prompt.)
- To see a particular subset (a smaller group) of application names, you can type a generic name in the subset prompt and press the Enter key. If you know at least the starting characters in the name you are looking for, this function can reduce the time needed to locate it.
- To see if more than one library contains a specific application name, you can type that application name in the Subset prompt and type *ALL in the Library prompt before you press the Enter key. You are shown all the applications by that name for which you have authority to use.
- To position the list to a specific name, type the name (or the starting characters in the name) in the Position to prompt and press the Enter key. This function can also reduce the time needed to locate an application.
- You can also use a combination of these things at the same time. For example, you could specify a different library name, generic library name or special library name in the Library prompt, a subset value in the Subset prompt, a specific application name or the starting characters of an application name in the Position to prompt, and then press the Enter key to show the desired subset list of application names.

Selecting a Library

The library name indicates where you want to store a new application or where an existing application is already stored. To look at or use a different library, or list of libraries from which you can choose, do either of the following:

- Type the name of the library, a generic library name, or a special library name in the Library prompt and press the Enter key. A list of all the applications in that library or group of libraries for which you have the authority to use is shown. If there are multiple libraries, the applications are listed in alphabetical order within each library. The libraries themselves are shown in alphabetical order if *ALL, *ALLUSR, or a generic library name is specified. If you specify *LIBL or *ALLUSR, the libraries are shown in the order that they are listed in the library list.
- Move the cursor to the Library prompt and either leave the prompt blank or type a generic name or a special library name, then press F4 to list the libraries. A list of the libraries that you are authorized to use is shown.

DBUnifier Application Processor Functionality

This chapter describes the functionality of the DBUnifier Application Processor. The application processor accesses a DBUnifier Application and allows you to view and maintain information from a database file. Functionality is determined by the options that are specified during the application creation or (definition). There are two major screens within the Application Processor, the first screen to be displayed, when the application processor is invoked, is the Initial Multi-Record Display (Subfile) screen, the second major screen is the Record Detail portion screen.

Initial Multi-Record Display (Subfile)

The following shows and describes the functionality of the Initial Multi-Record Display (Subfile).

(Initial Multi-Record Display (Subfile) screen)

```
An Example DBUnifier Application
Presidents Master File Maintenance 11/15/04
10:37:48

Type options, press Enter.
 1=Select  2=Change  4=Delete  5=Display Details
Key
Opt Value  Name                      City
█          1 GEORGE WASHINGTON      MOUNT VERNON
_          2 JOHN ADAMS         QUINCY
_          3 THOMAS JEFFERSON    CHARLOTTESVILLE
_          4 JAMES MADISON        MONTEPELIER STATION
_          5 JAMES MONROE        RICHMOND
_          6 JOHN QUINCY ADAMS    QUINCY
_          7 ANDREW JACKSON      HERMITAGE
_          8 MARTIN VAN BUREN    KINDERHOOK
_          9 WILLIAM HENRY HARRISON NORTH BEND
_         10 JOHN TYLER          RICHMOND
_         11 JAMES POLK          NASHVILLE
_         12 ZACHARY TAYLOR      ST MATTHEWS
More...

F1=Help  F3=Exit  F5=Refresh  F12=Cancel
F6=Set Key Position  F15=Define Search  F16=Perform Search

User Define Message Line
```

Initial Multi-Record Display (Subfile) Options

Options	Description of Option
1=Select	Select, returns the Relative Record Number and the Record Data to the calling program. By typing a 1 next to the entry list, and pressing the Enter key, the first entry selected will be returned to the calling program. This option is available in all execution modes.
2=Change	Change, displays the Record Detail portion screen of the application processor. If there are fields that have been defined as input capable, those values are changeable. This option is only available when the application processor is invoked with *UPDATE, *FULL, or *NODELETE execution modes.
4=Delete	Deletes, displays the Confirm Deletion of Record display. After you verify this is the correct entry you would like deleted, Press the Enter key to confirm deletion of the record. If a User Defined Exit program has been defined for the (Program to call before record is updated) exit point, this program will be executed prior to the deleting of the record. This option is only available when the application processor is invoked with *FULL execution mode.

5=Display Display, displays the Record Detail portion screen of the application processor. The fields selected for display are shown. If there are no fields selected in the Define Screen Field Details display, this option is will not be made available, otherwise, this option is available in all execution modes.

Initial Multi-Record Display (Subfile) Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Initial Multi-Record Display (Subfile).
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F6=Set Key Position	The Set Key Position command key displays the Set Position display window. DBUnifier Application Processor determines the key fields defined in the database file being processed, displays entry fields for those key fields, then sets the file position based off the input value. The Initial Multi-Record Display is then reloaded starting from this file position.
F9=Insert Record	The Insert Record command key displays the Record Detail portion of the application processor. If there are fields that have been define as input capable, their initial values are displayed and their values are changeable. Once field validations have been satisfied, The record is inserted into the database file being processed. This option is only available when the application processor is invoked with *FULL execution mode.
F12=Cancel	The Cancel command key exits the user from the Initial Multi-Record Display (Subfile).
F15=Define Search	The Define Search command key shows the Define Search display. After search criteria has been defined and the enter key is pressed, the application processor searches for a matching entry in the database being processed. If a matching record is found (before the maximum number of records to search limit is reached), the Initial Multi-Record Display is reloaded starring with the matching entry. <i>(This functionality is only available when the Query Selection Expression is *ALL.)</i>
F16=Perform Search	The Perform Search command key continues the search process defined in the Define Search display. <i>(This functionality is only available when the Query Selection Expression is *ALL.)</i>
F24=More Keys	The More Keys command key displays other command keys that are available.

AND – Continues connections

OR – Separates connections

Test	The Test prompt field allows the following comparison tests:			
	EQ -	Equal	NE -	Not equal
	GT -	Greater than	LT -	Less than
	GE -	Greater than or equal	LE -	Less than or equal
	CT -	Contains value	NC -	Does Not Contain value

Value The Value prompt field allows the entry of a Field, Numeric Value, or Character string that is wrapped in single quotes. This is the value that is used in the comparison with the associated field.

Define Search Command Keys

Command Keys	Description of Command Key
--------------	----------------------------

F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Search display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F12=Cancel	The Cancel command key exits the user from the Define Search display.
F13=Change Defaults	The Change Defaults command key displays the Change Search Defaults window. From this window you can define the Occurrences to process (Next or Previous), Kind of match to process (Same Case or Ignore Case), and the maximum number of Records to Search at one time.
F24=More Keys	The More Keys command key displays other command keys that are available.

Using More Than One Comparison Test

When you use more than one comparison, you need to tell the DBUnifier Processor how to connect them by typing a connection in the AND/OR column. The two types of connections are:

- **AND** Continues connections
- **OR** Separates connections

All of the comparisons that are connected by the AND(s) must be true for the field value to be accepted by that group of comparisons.

Comparison Tests

You can specify these tests in comparisons:

- **EQ** Equal. Use this test to determine if the contents of the field and the value are equal.
- **NE** Not equal. Use this test to determine if the contents of the field and the value are not equal.
- **GT** Greater than. Use this test to determine if the contents of the field is greater than the value.

-
- **LT** Less than. Use this test to determine if the contents of the field is less than the value.
 - **GE** Greater than or equal. Use this test to determine if the contents of the field is greater than or equal to the value.
 - **LE** Less than or equal. Use this test to determine if the contents of the field is less than or equal to the value.
 - **CT** Contains. Use this test to determine if the value specified is contained in the field selected.
 - **NC** Does Not Contain. Use this test to determine if the value specified is (Not) contained in the field selected.

Fields as Comparison Values

If you use a field as a value (that is, in the *Value* column on the display), the field can be any field that has been previously defined in the DBUnifier Application. Also, the fields being compared do not have to be the same length, and numeric fields do not have to have the same number of decimal positions.

Character Constants as Comparison Values

A character constant is simply characters enclosed in apostrophes. The apostrophes are important, because DBUnifier assumes that any group of character not enclosed by apostrophes is a field name. The characters in the constant can be any combination of letters, numbers or special characters (such as *, ?, #, \$, @) that might be found in the tested field. You must use apostrophes around a character constant, even if it contains only numbers. Remember also, the special characters underscore (_) and percent (%) have certain meanings when used in a LIKE and NLIKE test.

If the character constant you specify contains an apostrophe, you must enter it as two apostrophes, so DBUnifier does not think it has reached the end of the constant. DBUnifier counts two apostrophes within a constant as a single apostrophe.

Numeric Constants as Comparison Values

You must not enclose a numeric constant in apostrophes. A numeric constant can be from 1 to 31 digits long. Also, do not include a currency sign (to indicate a monetary value) or a thousands separator (to indicate thousands, millions, and so on) within the numeric constant.

Detail Record Display

The Detail Record Display screen displays the field values and labels that were specified in the Define Screen Field Detail, when defining the DBUnifier Application. When the DBUnifier Processor is initiated in *INQUIRY execution mode, field values cannot be changed. When it is initiated in *UPDATE, *FULL, and *NODELETE execution mode, the field values that have been defined as Input capable are maintainable. This is the same screen that is shown when inserting a record. When inserting a record, the initial value defined in the Define Extended Field Attributes screen is displayed. Use the Page Up and Page Down keys to view multiple pages.

Validation restrictions that are defined in the Define DBUnifier Application program are enforced for input fields, User Defined Field Prompt Programs are executed, DBUnifier Applications that are tied to prompt fields can be processed, and the List of Values Prompt window can be displayed for input fields. The following screen shows a sample Detail Record Display screen.

(Detail Record Display screen)

```

An Example DBUnifier Application
Presidents Master File Maintenance
11/15/04
15:15:18

Type options, press Enter.

Delete Flag . . . . . _
Record Key . . . . . 1
Name . . . . . GEORGE WASHINGTON
Alternate Name . . . . . WASHINGTON
Title . . . . . PRESIDENT
Company Name . . . . . MOUNT VERNON ESTATE
Address #1 . . . . .
Address #2 . . . . .
Address #3 . . . . .
City . . . . . MOUNT VERNON
State/Province . . . . . VA
Country . . . . . UNITED STATES
Postal Code . . . . . 22121
Phone Number . . . . . 703.780.2000
Fax Number . . . . .

More...
F3=Exit  F4=Prompt  F5=Refresh  F10=Validation Msgs  F12=Cancel

User Define Message Line
  
```

Detail Record Display Command Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exists from the Detail Record Display screen.
F4=Prompt	The Prompt command key searches the DBUnifier Application definition and determines if a User Define Prompt Program or DBUnifier Application has been assigned to the field for prompting. Also, if a List of Values has been defined, a prompt screen will be displayed and allow you to select from possible values.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Validation Messages	The Validation Messages command key displays a window that shows all the validation error message
F12=Cancel	The Cancel command key exits the user from the Initial Multi-Record Display (Subfile).

Creating a DBUnifier Application

This chapter describes the process of creating a DBUnifier Application that can be used to display and maintain AS/400 databases. The chapter begins with selecting option 1 (Create) on the Work with DBUnifier Applications display and then it introduces the six other possible definition steps you can use to define an application or change part of an existing application. The detail for each definition steps are described in later chapters. For detail of each of the major tasks please refer to their corresponding chapters.

Starting DBUnifier Application Definition

You start DBUnifier Application definition by selecting option 1 (Create) on the Work with DBUnifier Applications display and by specifying the name of the application you want to create.

To specify an application name, you type the name of the application in the (Application prompt) that you want to define, and you specify the name of the library (Library prompt) in which it is to be stored. Or, you can choose from the list of names to select the application name and library name you want to use.

The DBUnifier Application name must begin with an alphabetic character (A through Z, \$, #, or @) and can be followed by no more than 9 alphanumeric characters (A through Z, 0 through 9, \$, #, @ or _).

When you are creating an application, you can check this list to see what names are already used before you choose a new name. Type a 1 in the Option prompt field, the new name in the Application prompt field and type the library name in the Library prompt field.

(Work with DBUnifier Applications display)

```
DBUnifier (version 4.2)
Work with DBUnifier Applications 11/09/04
16:12:06

Library . . . . . *LIBL      Name, *LIBL, F4 for list
Subset . . . . . *ALL       Name, generic*
Position to . . . . .          Starting characters

Type options (and DBUnifier Application), press Enter.
1=Create  2=Change  3=Copy  4=Delete  5=Display  6=Print  9=Run

Opt  Application Library      Text
--  -
--  EXAMPLE      DBUNIFIER  An Example DBUnifier Application
--  FM_LIST      DBUNIFIER  Example - Selection List Of Presidents
--  OUTPUTQ      DBUNIFIER  Example - Prompt/Select Output Queue
--  SAMPLE       DBUNIFIER
--  STATE        DBUNIFIER  State File Maintenance
--  STATECODE    DBUNIFIER  List of State Codes

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  Bottom
F24=More Keys

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```

Selecting Definition Steps When Defining a DBUnifier Application

When you specify option 1 (Create) on the Work with DBUnifier Application display, you are shown the Define DBUnifier Application display. Where you select one, several or all of the definition options needed to define your application.

The only definition step that you are required to select is Specify File Selections. You do not have to select all of these definition steps, use only those that you need. Most of these steps do not have to be done in specify order (although the order shown is

recommended when you need to use most of them). Each step you select is a separate process that shows you one or more displays as you need them.

(Define DBUnifier Applications display)

```
DBUnifier (version 4.2)
Define DBUnifier Application 11/09/04
                             16:15:27
Application . . . : EXAMPLE      Option . . . . . : CREATE
Library . . . : DBUNIFIER

Type options, press Enter. Press F21 to select all.
1=Select

Opt   DBUnifier Application Options
  1   Specify file selections
  -   Define result fields
  -   Define initial multi-record display
  >   Specify screen options
  -   Define screen field details
  -   Define exit programs

F1=Help  F3=Exit  F5=Refresh  F10=Command Entry  Bottom
F24=More Keys
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```

The Define DBUnifier Application display is the primary display from which you start define your application.

Making your Choices

To select the options that you want to use from those listed in the DBUnifier Definition Option column, type a 1 in the Opt (option) column beside each of those options, then press the Enter key. The displays for the options you select are then shown one after the other so you can create those parts of the application.

Following are brief descriptions of each of the definition steps

Specify file selections

This option is required, and you use it to specify the file from which you want your application to obtain information.

Define result fields

Use this option to define fields that do not exist in your file but you want to use in your application.

Making your Choices (continued)

Define initial multi-record display

Use this option to select the fields (from your selected file) and your result field(s) that you want to appear on the multi record display (subfile). You also specify in what order you want them to appear.

Specify screen options

Use this option to select the screen size of the multi-record display (subfile), define the screen headings and the column labels.

Define screen field details

Use this option to select and sequence the fields that will be processed in the detail (record) portion of the application. The field labels, field position on screen, and extended attributes (such as field level validation, field prompting, and associated message) are also defined with this option.

Define exit programs

Use this option to define the exit point programs that are associated to the application.

Specifying and Selecting a File

This chapter describes how you select and use a database file that is to be displayed and maintained. Specifying file selection (the first option on the Define DBUnifier Application display) is the first step that you can use to define an application. This step includes specifying (or changing) the file you want to select for you application and seeing which file is already selected. This step also allows you to select, when necessary, file and member for the file.

The displays related to the file selection process are:

- Specify File Selections
- Select File (optional)
- Select Library (optional)
- Select Member (optional)

Specifying File Selection

The file selection process includes selecting a file from which your application will get data and also specifying the library containing the file, and the file member.

(Specify File Selection display)

```
DBUnifier (version 4.2)
Specify File Selection
3/22/05
14:44:16

Type choices, press Enter.

File . . . . . EXAMPLELF      Name, F4 for list
Library . . . . . *LIBL      Name, *LIBL, F4 for list
Member . . . . . *FIRST      Name, *FIRST, F4 for list
Format . . . . . EXAMPLE##

F1=Help  F3=Exit  F4=Prompt  F5=Refresh

Bottom
F24=More Keys

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```

The Specify File Selection display is used to specify a database file that you want to display or maintain in your application. If you are creating or changing an application definition, you should complete all the information needed for the file selection before you start on the other options. Based on the values you entered and the key you press, DBUnifier shows you the displays you need. The order of prompting for a file is: file, library, and member.

The following special values are shown in the prompts for the file selection when it first appears: *FIRST (for members) and *LIBL (for library).

Choosing a File

To choose a file, move the cursor to the File prompt and type the name of a file. If you want to choose a file from a list of file names, you can press F4 (with the cursor at the File prompt). The Select File display is shown, and on this display you can choose a file for you application.

Choosing a Library

Because the file you want to select may be in a different library, you can specify a different library name, generic library name, or special library name for the file selection.

- If you type a generic library name or special library name in this prompt and press the Enter key, that library group is searched for the file named in the File prompt.
- If you type a generic library name or a special library name and then press the F4 with the cursor in this prompt, the specified list of library names are shown on the Select Library display. When you select the library you want from the list and press the Enter key, you will return to this display with the selected name filled in.

Choosing a Member

Similarly, if you want to choose from a list of members, move the cursor to that prompt and press F4 to see the associated display, and select the member name you want to be used with that file. Then, when you return to the Specify File Selection display, that name is shown in the prompt. If you did not select a member name, DBUnifier resolves the special default value. DBUnifier will supply the first format name in the Format field.

Selecting Files

The Select File display shows you a list of files from which you can select a file that your application is to display or maintain. This display appears if you position the cursor on the File prompt of a display and the press F4 (Prompt). The following is an example of how the Select File display might appear.

(Select File display)

```
DBUnifier (version 4.2)
Select File                                     11/09/04
                                                16:19:47

Library . . . . . *LIBL      Name, *LIBL, F4 for list
Subset . . . . . EXAMPLE*   Name, generic*
Position to . . . . .       Starting characters

Type option (and File), press Enter.
1=Select

Opt  File          Library      Text
 1  EXAMPLELF     DBUNIFIER  Template - Logical File Keyed By Key
-   EXAMPLEL1     DBUNIFIER  Template - Logical File Keyed By Name
-   EXAMPLEL2     DBUNIFIER  Template - Logical File Keyed By Alternate Na
-   EXAMPLEPF     DBUNIFIER  Template - Physical File Keyed By Key

Bottom

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F24=More Keys

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```

The list on this display includes all files (for which you have the needed authority) that are in the library shown at the top of the display. If you specified a generic file name as a file name on the Specify File Selection display, it is used as a subset value on this display, and only the file names starting with those generic characters are included in the list. (You can specify another subset value on the display to change the subset shown.)

You can use the Library prompt to see the files that exist in a different library or group of libraries.

If you want to select a particular library from a list of libraries, press F4 with the cursor positioned in the Library prompt. The list that is shown contains only libraries that you have authority to use.

If you do not want or need to see a list of libraries, type the name of a library, a generic library name, or one of the following special library names *LIBL, *CURLIB, *USRLIBL, *ALLUSR, or *ALL.

After you have entered a value in the Library prompt at the top of the display, press the Enter key and a list of the files that you are authorized to use from that library appear.

```
DBUnifier (version 4.2)
Select Library 11/09/04 15:45:23
Position to . . . . . *LIBL Starting character(s)
Type option (and Library), press Enter.
1=Select

Opt  Library      Text
-   *LIBL
-   *CURLIB
-   *USRLIBL
-   *ALLUSR
-   *ALL
-   #CGULIB
-   #DFULIB
-   #DSULIB
-   #LIBRARY
-   #SDALIB

More...

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F24=More Keys

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```

To move (position) the list of file names so that it starts with a particular name, move the cursor to the Position to prompt and type all of the characters or one or more of the starting characters in the name you want, and press the Enter key. If a specific library name is used in the Library prompt, DBUnifier moves the list so that the first position shown contains the first file name that starts with the characters you typed.

Once you have located the file you want, type a 1 in the Opt (option) field next to the file name you want. After you have made your selection, press the Enter key to return to the Specify File Selection display. The file you selected will be returned to the File prompt field.

Selecting File Members

The Select Member display appears when you position the cursor on the Member prompt of a display and press F4 (Prompt). The Select Member display shows you a list of members and allows you to select the one from which your application can process data. This display appears only when you are creating or changing an application.

(Select Member display)

```
DBUnifier (version 4.2)
Select Member
11/09/04
16:24:19
File . . . . . : EXAMPLELF
Library . . . . : *LIBL
Type options, press Enter.
1=Select
Opt  Member      Text
 1  EXAMPLELF    Template - Logical File Keyed By Key
Bottom
F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F24=More Keys
(C) Copyright ProData Computer Services, Inc. 2004
```

If you came from the Specify File Selection display you can specify which member you want DBUnifier to process data from. The names of the members that currently exist in the file show in the Member column. You can choose a member by typing a 1 in the Opt column to the left of the member.

When you press the Enter key on the Select Member display, the member you selected is then shown in the Member prompt on the display that you return to.

Defining Result Fields

This chapter describes how you define result fields. They need to be defined in your application if the information that you want to present in your application does not exist as a field in your selected file.

After you have defined a result field, you can use them like any other field that exists in your file selection.

Please note:

(When a User Defined Field value is changed in a DBUnifier application, the value will not be reflected in the database record being processed. User Defined field values are only passed into Exit Programs as a separate data structure, which then can be processed.)

Creating Results Fields

The Define Result Fields display appears if you typed a 1 next to the Define result fields option on the Define DBUnifier Application display. You use the Define Results Fields display to create the User Defined fields you need for your application. (The following display has some sample fields listed in the bottom part.)



To define a result field, you specify a unique name for the result field by entering a name in the Field column on the Define Result Fields display. You cannot specify the name of a field that exists in your selected file, the list in the lower part of the display shows you these field names. To page through the field list, position the cursor in the list part of the display and use the Page Up and Page Down keys.

You specify the length and number of decimal positions for a numeric result field by filling in the Len and Dec prompts on this display. The expression entered is used as the column label (Field Text) for the result field.

Result Field Name

Since DBUnifier result field names are similar to database field names, create them according to the following rules:

- Start the name with an alphabetic character (A through Z, \$, #, or @) and use no more than 9 alphanumeric characters (A through Z, 0 through 9, \$, #, @ or _) for the remaining characters. Do not use blanks within the name.
- Do not use any names from the list on the lower part of the display or the names of other result fields.

Expressions

An **expression** is a representation of a value with field names, constants, functions, or keyword appearing alone or in combination with operators. It can be either a numeric, character, date, time or timestamp expression.

- A **numeric expression** assigns numbers or performs an operation (calculation) on them Numeric expressions can contain the following operators:
 - ③ + (Addition)
 - ③ - (Subtraction)
 - ③ * (Multiplication)
 - ③ / (Division)

- A **character expression** assigns characters or performs an operation on them. Character expressions can contain the following operators or functions:
 - ③ || (Concatenation Operator)
 - ③ SUBSTR (Substring function)
 - ③ VALUE (Value function)
 - ③ DIGITS (Digits function)

- A **date expression** performs an operation on a date. Date expressions can contain the following operators or functions:
 - ③ + (Addition)
 - ③ - (Subtraction)
 - ③ CHAR
 - ③ DATE ③ DAY
 - ③ DAYS
 - ③ MONTH
 - ③ YEAR

- A **time expression** performs an operator on a time. Time expressions can contain the following operators or functions:
 - ③ + (Addition)
 - ③ - (Subtraction)
 - ③ CHAR ③ TIME
 - ③ HOUR
 - ③ MINUTE
 - ③ SECOND
 - ③ MICROSECOND

- A **timestamp expression** performs an operation on a timestamp. Timestamp expressions can contain the following operators or functions:
 - ③ + (Addition)
 - ③ - (Subtraction)
 - ③ CHAR
 - ③ TIMESTAMP

Numeric Expressions

To define a numeric result field (that is, a result field that contains a numeric value), you need to follow the rules for creating numeric expressions. A numeric expression for a result field can contain the following, alone or in combination:

- **Numeric field names** (names of fields that contain numeric values). You can use the names of numeric fields listed on the lower part of the display (numeric fields have number shown in the Len and Dec column) and the names of previously defined numeric result fields.)

- **Numeric constants** (any numbers such as 7 or -20.5) The rules for using numeric constants are:
 - ③ The total length can be no more than 31 digits. This includes the digits both to the left and right of the decimal point but does not included the decimal point.
 - ③ Use the correct decimal separator.
 - ③ Do not use a currency symbol (like \$2500), and do not use thousands separators (like 2,500).

Character Expressions

To define a character result field, you need to follow the rules for creating character expressions. A character expression for a result field can contain the following, alone or in combination:

- **Character field names.** Names of fields that contain character data.
- **Character constants.** Characters enclosed in apostrophes, such as 'ProData' or 'This text includes blanks and special characters.' The rules for using character constants are:
 - ③ The character constant must be enclosed in apostrophes.
 - ③ Any combination of letters, numbers or special characters (like #,\$,%,*) can be used.
 - ③ If two apostrophes are used within a character string, the two apostrophes become a single apostrophe in the resulting field.
 - ③ Words with lowercase and uppercase letters are used exactly as typed.
 - ③ If a character constant represents a valid date, time, or timestamp, and is used with a date, time or timestamp field, it is considered a date, time or timestamp constant.
- **Concatenation Operation:** Character expressions can include one or more concatenation operations.
 - ③ An example usage of concatenation is *Value-1* || *Value-2*.

Character Functions

Character expressions can include the character functions SUBSTR, DIGITS, and VALUE.

SUBSTR Function The SUBSTR function returns part of a character value. The form is: SUBSTR(*value*, *offset*, *length*)

- *Value* is the name of a character field, a character expression, or a character constant
- *Offset* is the starting character position within the field or character constant. (An expression can also be used for the offset)
- *Length* is the number of characters that make up the substring. (An expression can also be used for the length)
- You must use commas between the substring elements; blanks are allowed after the commas.
- If the Offset and Length values cause the substring to exceed the right end of the field, you will receive an error message.

DIGITS Function The DIGITS function returns a character representation of a number. The form is: DIGITS(*expression*)

- The argument must be an integer or decimal value. The result of the function is a fixed-length character string.
- The result is a string of digits that represents the absolute value of the argument without regard to its scale. The result does not include a sign or a decimal point.

VALUE Function The VALUE function can be used in any type of expression: character, numeric, date, time, or timestamp. The VALUE function, VALUE(x,y), returns the first argument that is not null. The arguments are evaluated in the order in which type are specified. The arguments must be compatible. The form is: VALUE(x,y,z)

Date, Time, and Timestamp Expressions

Date, time, and timestamp data types and values can be assigned to result fields. A date, time, or timestamp expression for a result field can contain the following, alone or in combination:

- **Date, time, or timestamp field names.** Names of fields that contain date, time, or timestamp values.
- **Character constants.** Characters enclosed in apostrophes, such as '12/17/1995'. The rules for using character constants are:
 - ③ The character constant must be enclosed in apostrophes.
 - ③ If a character constant represents a valid date, time, or timestamp, and is used with a date, time or timestamp field, it is considered a date, time or timestamp constant.
- **Date, time, and timestamp functions and Operation:** One or more of the following functions and arithmetic operations:
 - ③ + (Addition)
 - ③ - (Subtraction)
 - ③ CHAR
 - ③ CURRENT
 - ③ DATE ③ DAY
 - ③ DAYS
 - ③ MONTH
 - ③ YEAR ③ TIME
 - ③ HOUR
 - ③ MINUTE
 - ③ SECOND
 - ③ MICROSECOND
 - ③ TIMESTAMP
- **Durations.** A length of time, represented by a labeled durations, date duration, time duration, or time duration.

Removing Results Fields

To remove a result field, blank out all references to the field and its definition on the Define Result Fields display. You must remove all occurrences of it from the applications definition.

Displaying File Selected

The Display File Selections display appears when you press F18 (Files) for a display where F18 is listed on the bottom of the display. The Display File Selections display shows the file that you selected for use in the application. The information on this display is for your information only; it cannot be changed here.

(Display File Selections display)

```
DBUnifier (version 4.2)
Display File Selections 11/05/04
                        15:06:37
Press Enter to continue.

  ID      File      Library      Member      Format
  EXAMPLELF  *LIBL      *FIRST      EXAMPLE##

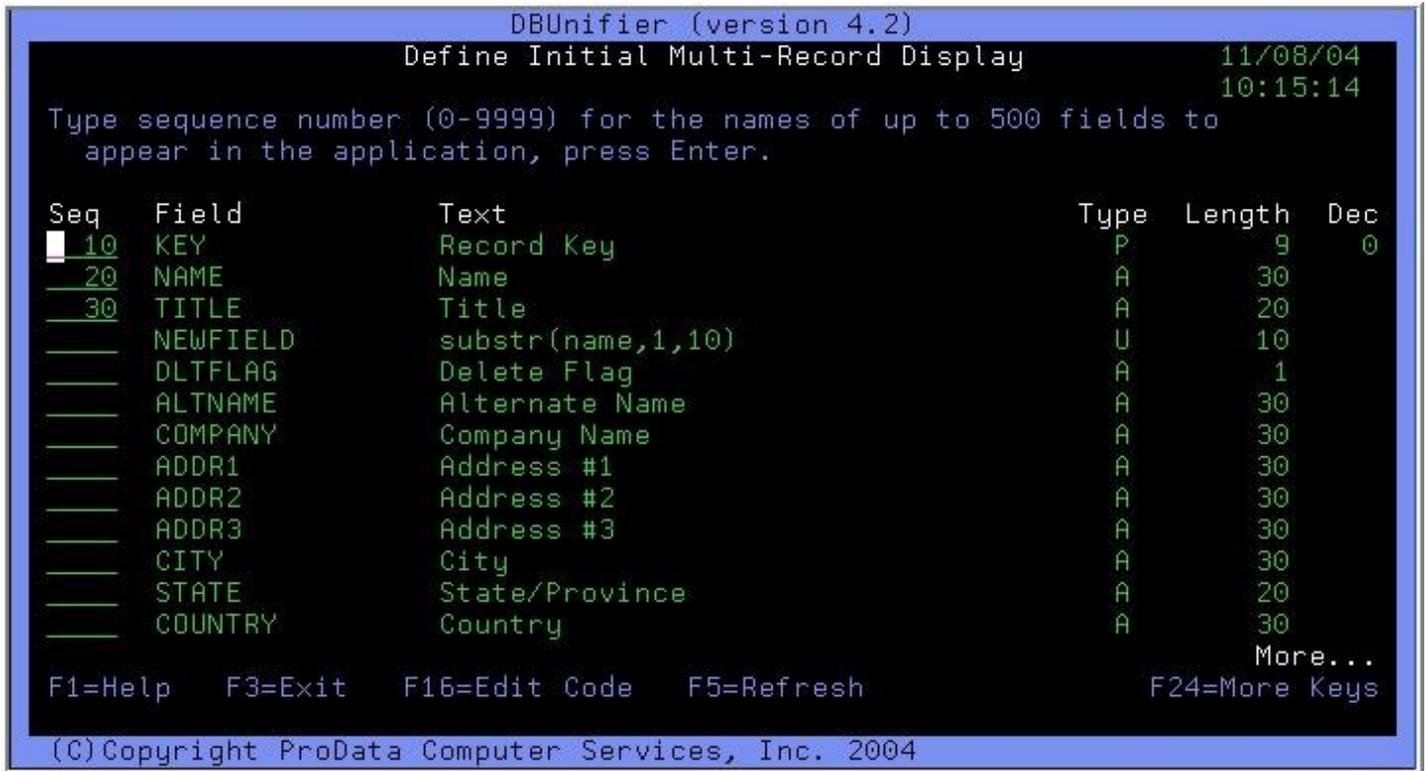
F1=Help  F3=Exit  F4=Prompt  F5=Refresh  Bottom
                        F24=More Keys
(C) Copyright ProData Computer Services, Inc. 2004
```

Pressing Enter, F3 (Exit), or F12 (Cancel) will return you to the previous display.

Defining Initial Multi-Record Display (Subfile)

The Define Initial Multi-Record Display allows you to select and sequence the fields that you want to display on the Initial MultiRecord Display (Subfile) and the sequence you want the fields to appear. You are also able to add edit codes to numeric fields for displaying.

(Define Initial Multi-Record display)



Define Initial Multi-Record Display (Subfile) Prompt Fields

Seq	Description of Prompt Field
0 -9999	You select a field by specifying a sequence number from 0 to 9999 in front of each field you want to select. Use the numbers in ascending sequence. You can delete a field from displaying by removing the number you specified in front of it. To change the sequence of the selected fields, just change the numbers.

Define Initial Multi-Record Display (Subfile) Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Initial Multi-Record Display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Initial Multi-Record Display.

F16=Edit Codes The Edit Codes command key allows you to assign an edit code for numeric values.

F18=Files The Files command key shows the Display File Selections display.

F24=More Keys The More Keys command key displays other command keys that are available.

Specifying Screen Options

The Specify Screen Options display allows you to define the Initial Multi-Record Display screen Size, Window Label, Display Screen Title, 2 rows of Column Headings, and the Window Footer. Initially the screen size will default to a “best fit” size, based on the field(s) you previously selected in the Define Initial Multi-Record Display. You can change the screen size by pressing the F13=Select Screen Size command key and selecting one of the available screen sizes.

```

                                (Specify Screen Options display)
                                DBUnifier (version 4.2)
                                Specify Screen Options                                11/08/04
                                                                                               11:23:21

Type choices, press Enter.

                                Window Label
                                _____
                                Display Screen Title
                                _____

Type options, press Enter.
  1=Select   5=Display Details
  Column Heading Line #1
Opt Column Heading Line #2
B 999999999 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
B 999999999 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
B 999999999 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

F1=Help   F3=Exit   F5=Refresh   F6=Set Key Position   F12=Cancel
F15=Define Search   F16=Perform Search

                                Window Footer
                                _____
                                Bottom
F1=Help   F3=Exit   F5=Refresh   F13=Select Screen Size   F24=More Keys

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```

Specify Screen Options Prompt Fields

Field	Description of Field
Window Label	The Window Label allows you to input the Window Label Text for your Initial Multi-Record Display (Subfile). This text is also displayed on the “Detail Screen” of your DBUnifier Application
Display Screen Title	The Display Screen Title allows you to input the screen title for your Initial Multi-Record Display (Subfile). This text is also displayed on the “Detail Screen” of your DBUnifier Application.
Column Heading	The Column Heading fields allow you to input the column headings for the rows of fields that were selected in the Define Initial Multi-Record Display. There are two lines of column headings that can be input.
Window Footer	The Window Footer allows you to input the Window Footer Text for your Initial Multi-Record Display (Subfile). This text is also displayed on the “Detail Screen” of your DBUnifier Application.

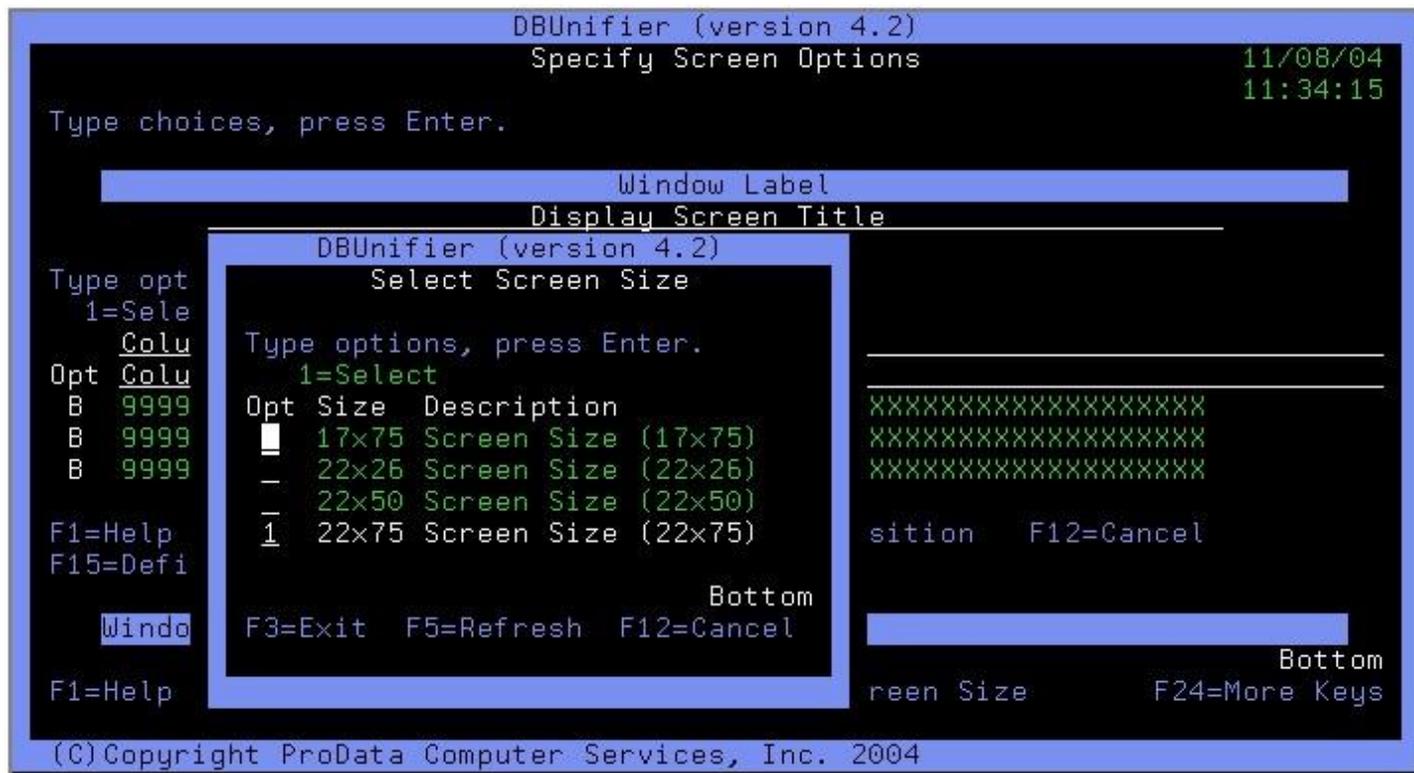
Specify Screen Options Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Specify Screen Options display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F11=Center	The Center command key centers the text for the field where the cursor is positioned, when the key is pressed.
F12=Cancel	The Cancel command key exits the user from the Specify Screen Options display.
F13=Select Screen Size	The Select Screen Size command key allows you select (from a list) one of the available screen sizes for your Initial Multi-Record Display (Subfile).
F14=Column Spacing	The Column Spacing command key allows you to Define Column Spacing for fields that have been selected for the Initial Multi-Record Display (Subfile)
F24=More Keys	The More Keys command key displays other command keys that are available.

Specify Screen Options – Select Screen Size

The Select Screen Size display allows you to select the size of the Multi-Record Display screen. By pressing the F13=Select Screen Size command key from the Specify Screen Options display the following window will appear showing you the current screen size that has been assigned, and allow you to select a different screen size.

(Select Screen Size display)



Select Screen Size Options

Options	Description of Option
1=Select	Select a screen size for the Initial Multi-Record Display. By typing a 1 by the screen size and pressing the Enter key, the first entry selected will define which screen size to display.

Select Screen Size Command Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exits from the Select Screen Size display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F12=Cancel	The Cancel command key exits the user from the Select Screen Size display.

Specify Screen Options – Define Column Spacing

The Define Column Spacing display allows you to define the spaces between fields that are selected for the Multi-Record Display screen. By pressing the F14=Column Spacing command key from the Specify Screen Options display the following window will appear showing you the fields that have been selected, and allows you to enter the spaces that will appear to the left most of the field.

(Define Column Spacing display)

```

DBUnifier (version 4.2)
Specify Screen Options
3/11/05
13:26:41

Type choices, press Enter.
DBUnifier (version 4.2)
Define Column Spacing
3/11/05
13:26:44

Type information, press Enter.

Typ
 1
Opt
 B
 B
 B
 B
F1=
F15

Field          Column Spacing  Text          Type  Length  Dec
KEY            1              Record Key   P      9      0
NAME           1              Name         A     30
CITY           1              City         A     30
                XX
                XX
                XX

Bottom
F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F24=More Keys

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Bottom
F1=Help  F3=Exit  F5=Refresh  F13=Select Screen Size  F24=More Keys

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```

Define Column Spacing

Field	Description of Field
Column Spacing	Enter the number from 0 through 99 to indicate the number of spaces you want to appear in front of that field's column.

Select Screen Size Command Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exits from the Define Column Spacing display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F12=Cancel	The Cancel command key exits the user from the Define Column Spacing display.

Defining Screen Field Details

The Define Screen Field Details allows you to select and sequence the fields that are processed in the detail portion of the DBUnifier Application processor. Fields can be selected or omitted, Text Labels can be changed, Field Usage is defined, Edit Codes can be assigned to numeric values, and Extended field Attributes are maintained from this screen.

```
(Define Screen Field Details display)
DBUnifier (version 4.2)
Define Screen Field Details 11/08/04
11:50:41
Type sequence number (0-9999) for the names of up to 500 fields to
appear in the application, press Enter.

Seq      Field      Text      Usage  Type  Length  Dec
 10  > DLTFLAG  Delete Flag . . . . .  I   A    1
 20      KEY  Record Key . . . . .  I   P    9    0
 30      NAME  Name . . . . .      I   A   30
 40  ALTNAME  Alternate Name . . . . . I   A   30
 50      TITLE  Title . . . . .      I   A   20
 60  COMPANY  Company Name . . . . . I   A   30
 70  ADDR1    Address #1 . . . . .  I   A   30
 80  ADDR2    Address #2 . . . . .  I   A   30
 90  ADDR3    Address #3 . . . . .  I   A   30
100  CITY     City . . . . .      I   A   30
110  > STATE   State/Province . . . . . I   A   20
120  COUNTRY  Country . . . . .    I   A   30
130  POSTAL   Postal Code . . . . .  I   A   10
More...
F1=Help  F3=Exit  F4=Extended Attributes  F5=Refresh  F24=More Keys
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```

Define Screen Field Details Prompt Fields

Field	Description of Prompt Fields
Seq 0 -9999	You select a field by specifying a sequence number from 0 to 9999 in front of each field you want to select. Use the numbers in ascending sequence. You can delete a field from displaying by removing the number you specified in front of it. To change the sequence of the selected fields, just change the numbers.
Text	The default Field Label Text is retrieved from field text that is defined by the external file description. The text is the label that will be displayed when DBUnifier is executed and the Detail portion of the screen is processed.
Usage	Usage determines whether input is allowed into this field when being displayed. The default usage is O)utput Only. To allow input into this field change the usage prompt to I)ntput.

Define Screen Field Details Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Screen Field Details display.
F4=Extended Attributes	The Extended Attributes command key shows the Define Extended Field Attributes display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F11=Define Screen Layout	The Define Screen Layout command key shows the Define Screen Layout display. The Define Screen Layout allows you to determine the screen positioning of the fields and their label texts.
F12=Cancel	The Cancel command key exits the user from the Define Screen Field Details display.
F13=Display Screen Layout	The Display Screen Layout command key shows a sample of how the detail portion of the DBUnifier Application will appear when being processed.
F16=Edit Codes	The Edit Codes command key allows you to assign an edit code for numeric values.
F21=Select All	The Select All command key selects all the fields defined for this DBUnifier Application.
F24=More Keys	The More Keys command key displays other command keys that are available.

Defining Screen Layout

The Define Screen Layout allows you to define the Page, Line, and Column where a field will be presented in the detail portion of the DBUnifier Application processor. The page, line, and column change be changed for a field or a label, Text Labels can be changed, Field Usage is defined, Edit Codes can be assigned to numeric values, and Extended field Attributes are maintained from this screen.

Type information, press Enter.

Pag/Lin/Col	Use	Field	Text	Type	Len	Dec
1 6 3			Delete Flag	C		
1 6 30	I	> DLTFLAG		A	1	
1 7 3			Record Key	C		
1 7 30	I	KEY		P	9	0
1 8 3			Name	C		
1 8 30	I	NAME		A	30	
1 9 3			Alternate Name	C		
1 9 30	I	ALTNAME		A	30	
1 10 3			Title	C		
1 10 30	I	TITLE		A	20	
1 11 3			Company Name	C		
1 11 30	I	COMPANY		A	30	
1 12 3			Address #1	C		
1 12 30	I	ADDR1		A	30	

More...

F1=Help F3=Exit F4=Extended Attributes F5=Refresh

F24=More Keys

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(Define Screen Layout display)

Define Screen Layout Prompt Fields

Field	Description of Prompt Field
Page	Page specifies which page the field or label will be presented on when DBUnifier Application is being processed.
Line	Line specifies which line the field or label will be presented on when DBUnifier Application is being processed.
Column	Column specifies which column the field or label will be presented on when DBUnifier Application is being processed.
Usage	Usage determines whether input is allowed into this field when being displayed. The default usage is O)utput only. To allow input into this field change the usage prompt to I)input.
Text	The default Field Label Text is retrieved from field text that is defined by the external file description. The text is the label that will be displayed when DBUnifier is executed and the Detail portion of the screen is processed.

Define Screen Layout Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Screen Layout display.
F4=Extended Attributes	The Extended Attributes command key shows the Define Extended Field Attributes display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Screen Layout display.
F13=Display Screen Layout	The Display Screen Layout command key shows a sample of how the detail portion of the DBUnifier Application will appear when being processed.
F24=More Keys	The More Keys command key displays other command keys that are available.

Defining Extended Field Attributes

The Define Extended Field Attributes display allows you to define whether lowercase characters can be input into a field, The initial default value of a field when a new record is being inserted, an associated prompt program or DBUnifier Application, and Define multiple validity checks for a field.



Define Extended Field Attributes Prompt Fields

Field	Description of Prompt Field
Allow Lowercase	Allow Lowercase denotes whether to allow lowercase input into the field, (when usage is input). Uppercase input is forced when the value is N)o.
Initial Value	Initial Value determines the default value that is assigned to the field when an Insert action is requested from the DBUnifier Application processor.
Define Prompt Program	Specifying a Y)es in the Define Prompt Program shows the Define Prompt Program for Field display. You are able to denote an associated Prompt Program or DBUnifier Application that will be invoked when the F4 key is pressed on the field cursor location.
Validity Checks	Validity Checks prompt field performs the following action: 1=Relational Operators – Define Relational Operators display is shown. 2=Range – Define Range display is shown. 3=List of Values – Define List of Values display is shown.

Define Extended Field Attributes Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Extended Field Attributes display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The “Command” command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Extended Field Attributes display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Defining Prompt Program for Field

The Define Prompt Program for Field display allows you the ability to assign a User Defined prompt program or a DBUnifier Application that will be processed when the F4=Prompt command key is pressed on the cursor location of a field. The return value replaces the existing screen value of the field.

```

(Define Prompt Program For Field display)
DBUnifier (version 4.2)
Define Prompt Program For Field

Type choices, press Enter.

Sequence Number . . . . . 110
Field Name . . . . . STATE Type A Length 20
Field Heading . . . . . State/Province . . . . .

Enter a DBUnifier Application or User Defined Program for Field Prompting

Prompt Type . . . . . *DBUAPP *NONE, *DBUAPP, or *PGM
Application Name . . . . . STATECODE Name, F4 for list
Library . . . . . *LIBL Name, *LIBL, F4 for list
Return Field . . . . . STATE Name, F4 for list

F1=Help F3=Exit F5=Refresh F12=Cancel F24=More Keys

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```

Define Prompt Program for Field Prompt Fields

Field	Description of Prompt Field
Prompt Type	The Prompt Type allows any one of the following: *NONE – No prompting occurs for this field. *DBUAPP – A DBUnifier Application is specified for prompting on this field. *PGM – A User Define Program is specified for prompting on this field.
Application Name	Application Name defines the DBUnifier Application that is processed for the selection of a replacement for the screen field being prompted. To choose from a list of DBUnifier Applications, position the cursor on the Application Name prompt field and press the F4=Prompt command key.
Library	Library denotes the library where the DBUnifier Application resides or the Library where the User Defined Prompt Program exists that will be used for field prompting.
Return Field	The Return Field specifies the field value within the DBUnifier Application that is to be returned and replace the value of the field on the screen. To choose from a list of fields defined in the DBUnifier Application, position the cursor on the Return Field prompt field and press the F4=Prompt command key.

Program Name	Program Name defines the User Defined Prompt Program that is called for the selection of a replacement value for the screen field being processed. To choose from a list of program objects, position the cursor on the Program Name prompt field and press the F4=Prompt command key.
Return Offset	Return Offset defines the Offset Buffer Position of the value that is being returned from the User Defined Prompt Program. Which is used to replaces the value of the field on the screen.
Return Length	Return Length defines the length of the value, starting with the Offset Buffer Position that is being returned from the User Defined Prompt Program. Which is used to replace the value of the field on the screen.

Define Prompt Program for Field Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Prompt Program For Field display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The “Command” command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Prompt Program for Field display.
F15=Import	The Import command key Imports a List of Values from an existing DBUnifier Application.
F24=More Keys	The More Keys command key displays other command keys that are available.

Defining Relational Operators for Field (Validity Checks)

The Define Relational Operators display allows you to assign validity checking for a field. The input field value is tested against the relational operators and values defined. Input data will only be accepted if it matches the defined conditions. You can specify one test or as many as 24 tests. If the field value entered does not pass the defined test, the field will be highlighted. If an Error Message has been defined using the F8=Define Error Message, and the field does not pass the defined test, the defined error message will be sent to the display to notify the user of the error.

```
DBUnifier (version 4.2)
Define Relational Operators 11/09/04
                             09:38:13

Type choices, press Enter.

Sequence Number . . . . . 110
Field Name . . . . . STATE Type A Length 20
Field Heading . . . . . State/Province . . . . .

Type comparisons, press Enter. Specify OR to start each new group.
Tests: EQ, NE, LE, GE, LT, GT, LIKE, NLIKE

      AND/OR  Test      Value (Field, Number, or 'Characters')
      _____  _____  _____
      _____  _____  _____
      _____  _____  _____
      _____  _____  _____
      _____  _____  _____
      _____  _____  _____

F1=Help  F3=Exit  F5=Refresh  F8=Define Error Message  More...
F24=More Keys

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```

(Define Relational Operators display)

Define Relational Operators Prompt Fields

Using More Than One Comparison Test

When you use more than one comparison, you need to tell DBUnifier how to connect them by typing a connection in the AND/OR column. The two types of connections are:

- **AND** Continue connections
- **OR** Separates connections

All of the comparisons that are connected by the AND(s) must be true for the field value to be accepted by that group of comparisons.

Comparison Tests

You can specify these tests in comparisons:

- **EQ** Equal. Use this test to determine if the contents of the field and the value are equal.
- **NE** Not equal. Use this test to determine if the contents of the field and the value are not equal.
- **GT** Greater than. Use this test to determine if the contents of the field is greater than the value.
- **LT** Less than. Use this test to determine if the contents of the field is less than the value.
- **GE** Greater than or equal. Use this test to determine if the contents of the field is greater than or equal to the value.
- **LE** Less than or equal. Use this test to determine if the contents of the field is less than or equal to the value.
- **LIKE** Like. Use this test to determine if the contents of the field has a pattern similar to the value.
- **NLIKE** Not like. Use this test to determine if the contents of the field has a pattern that is not similar to the value.

Testing for Values that are Similar (LIKE NLIKE)

You use the LIKE test to determine if a field has a pattern that is similar to the test pattern you specify. You use the NLIKE test to determine if the field is not similar to the test pattern that you specify.

You must enclose the test pattern in apostrophes; use two apostrophes where the test pattern itself contains an apostrophe. If the test pattern consist of two apostrophes alone (''), it is treated as an empty sting.

You can use special characters to represent the position in the field that you do not care about:

- An underscore (`_`) means skip one character at that position and do not test for that character. Each underscore takes the place of one character in the field.
- A percent sign (`%`) mean skip as many characters a necessary to get the end of the field or to the next specified character. Each `%` takes the place of zero or more characters in the field. (Thus, you need not write a test pattern that is 15 characters long just because the field is 15 characters long.)

Fields as Comparison Values

If you use a field as a value (that is, in the *Value* column on the display), the field can be any field that has been previously defined in the DBUnifier Application. Also, the fields being compared do not have to be the same length, and numeric fields do not have to have the same number of decimal positions.

Character Constants as Comparison Values

A character constant is simply characters enclosed in apostrophes. The apostrophes are important, because DBUnifier assumes that any group of character not enclosed by apostrophes is a field name. The characters in the constant can be any combination of letters, numbers or special characters (such as `*`, `?`, `#`, `$`, `@`) that might be found in the tested field. You must use apostrophes around a character constant, even if it contains only numbers. Remember also, the special characters underscore (`_`) and percent (`%`) have certain meanings when used in a LIKE and NLIKE test.

If the character constant you specify contains an apostrophe, you must enter it as two apostrophes, so DBUnifier does not think it has reached the end of the constant. DBUnifier counts two apostrophes within a constant as a single apostrophe.

Numeric Constants as Comparison Values

You must not enclose a numeric constant in apostrophes. A numeric constant can be from 1 to 31 digits long. Also, do not include a currency sign (to indicate a monetary value) or a thousands separator (to indicate thousands, millions, and so on) within the numeric constant.

Date, Time, Timestamp Constants as Comparison Values

A date, time, or timestamp constant must be enclosed in apostrophes and must be a valid date, time or timestamp with the appropriate separators.

Defining Ranges for Field (Validity Checks)

The Define Range display allows you to assign validity checking for a field. The input field value must be within the range of the two values (greater than or equal to the first value but less than or equal to the second). Input data will only be accepted if the value is within the defined range. You can specify one range test or as many as 24 tests. If the field value entered does not pass the defined test, the field will be highlighted. If an Error Message has been defined using the F8=Define Error Message, and the field does not pass the defined test, the defined error message will be sent to the display to notify the user of the error.

(Define Range display)



Define Range Prompt Fields

Field	Description of Prompt Field
Beginning Value	The Beginning Value prompt field allows the entry of a Field, Numeric Value, or Character string that is wrapped in single quotes. The value in the input field must be greater than or equal to this value.
Ending Value	The Ending Value prompt field allows the entry of a Field, Numeric Value, or Character string that is wrapped in single quotes. The value in the input field must be less than or equal to this value.

Define Range Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Range display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F8=Define Error Message	The Define Error Message command key displays the Define Error Message Text screen.

F10=Command	The “Command” command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Range display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Using More Than One Range Test

When you use more than one range test, DBUnifier will treat each test independent of the other range tests.

Fields as Range Values

If you use a field as a value (that is, in the *Value* column on the display), the field can be any field that has been previously defined in the DBUnifier Application. Also, the fields being compared do not have to be the same length, and numeric fields do not have to have the same number of decimal positions.

Character Constants as Range Values

A character constant is simply characters enclosed in apostrophes. The apostrophes are important, because DBUnifier assumes that any group of character not enclosed by apostrophes is a field name. The characters in the constant can be any combination of letters, numbers or special characters (such as *, ?, #, \$, @) that might be found in the tested field. You must use apostrophes around a character constant, even if it contains only numbers.

If the character constant you specify contains an apostrophe, you must enter it as two apostrophes, so DBUnifier does not think it has reached the end of the constant. DBUnifier counts two apostrophes within a constant as a single apostrophe.

Numeric Constants as Range Values

You must not enclose a numeric constant in apostrophes. A numeric constant can be from 1 to 31 digits long. Also, do not include a currency sign (to indicate a monetary value) or a thousands separator (to indicate thousands, millions, and so on) within the numeric constant.

Date, Time, Timestamp Constants as Range Values

A date, time, or timestamp constant must be enclosed in apostrophes and must be a valid date, time or timestamp with the appropriate separators.

Description The Description prompt field allows the entry of a character string that gives a more detailed description of the value used for validation.

Define List of Values Command Keys

Command Keys	Description of Command Key
---------------------	-----------------------------------

F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define List of Values display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F8=Define Error Message	The Define Error Message command key displays the Define Error Message Text screen.
F10=Command	The “Command” command key displays a command entry line. Which allows you to executed OS/400 commands.
F11=Center	The Center command key centers the text for the field where the cursor is position, when the key is pressed.
F12=Cancel	The Cancel command key exits the user from the Define List of Values display.
F15=Import	The Import command key displays the Import List of Values From DBUnifier Application display screen. From that screen you are able to import the List of Values for an existing DBUnifier Application.
F24=More Keys	The More Keys command key displays other command keys that are available.

Defining Database Validation for Field (Validity Checks)

The Define Database Validation for Field display allows you to assign validity checking for a field based off the existence or nonexistence of a field value in an externally described database. If the field value entered does not pass the defined test the field will be highlighted. If an Error Message has been defined using the F8=Define Error Message, and the field does not pass the defined test, the defined error message will be sent to the display to notify the user of the error.

(Define Database Validation display)

```

DBUnifier (version 4.2)
Define Database Validation                                     11/09/04
                                                            14:56:32

Type choices, press Enter.

Sequence Number . . . . . 110
Field Name . . . . . STATE Type A Length 20
Field Heading . . . . . State/Province . . . . .

Type Database Validations, press Enter.

Library      File      Field      Exists
*LIBL       STATEPF   STATE      *YES
*LIBL       _____ _____      *YES

F1=Help  F3=Exit  F5=Refresh  F8=Define Error Message  Bottom
F24=More Keys
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```

Define Database Validation Prompt Fields

Field	Description of Prompt Field
Library	The Library prompt field allows the entry of a library name of the file being used to validate the input field's value. The special library *LIBL can also be used to search through the users library list for the specified file.
File	The File prompt field allows the entry of a file that will be used to validate the input field's value.
Field	The Field prompt field allows the entry of the field that will be used to validate the input field's value.
Exists	The Exists prompt field allows the entry of either *YES or *NO. Specifying *YES denotes that the input field's value must exist in the field of the file residing in the library defined. Specifying *NO denotes that the input field's value must not exist in the field of the file residing in the library defined.

Define Database Validation Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Database Validation display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F8=Define Error Message	The Define Error Message command key displays the Define Error Message Text screen.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Database Validation display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Choosing a File

To choose a file, move the cursor to the File prompt and type the name of a file.

If you want to choose from a file from a list of file names, you can press F4 (with the cursor at the File prompt). The Select File display is shown, and on this display you can choose a file for your application. The following is a sample of the Select File display.

(Select File display)

```
DBUnifier (version 4.2)
Select File
11/09/04
15:46:51

Library . . . . . *LIBL      Name, *LIBL, F4 for list
Subset . . . . . STATEPF     Name, generic*
Position to . . . . .           Starting characters

Type option (and File), press Enter.
1=Select

Opt  File      Library      Text
  1  STATEPF   DBUNIFIER.  State Code - Physical File
  -  STATEPF   DBUNIFIER   State Code - Physical File
  -  STATEPF   WEBSTER     State Code - Physical File

Bottom

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F24=More Keys

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```

Select File Prompt Fields

Field	Description of Prompt Field
Library	The Library prompt field is used to see the files that exist in a different library or group of libraries.
Subset	The Subset prompt field is used to see a subset of the files that exist in the library or library group specified.
Position To	The Position To prompt field is used to move (position) the list of file names so that it starts with a particular name.
Opt	The Opt prompt field selects the file you would like returned to the calling program. Once you have located the file you want, type a 1 in the Opt (option) field next to the file name, press the Enter key to return to the Define Database Validation display. The file you selected will be returned to the File prompt field.

Select File Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Select File display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Select File display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Choosing a Library

Because the file you want to select may be in a different library, you can specify a different library name, generic library name, or special library name for the file selection.

- If you type a generic library name or special library name in this prompt and press the Enter key, that library group is searched for the file named in the File prompt.
- If you type a generic library name or a special library name and then press the F4 with the cursor in this prompt, the specified list of library names are shown on the Select Library display. When you select the library you want from the list and press the Enter key, you will return to this display with the select name filled in.

The following is a sample of the Select Library display.

```
(Select Library display)
DBUnifier (version 4.2)
Select Library 11/09/04 15:45:23
Position to . . . . . *LIBL Starting character(s)
Type option (and Library), press Enter.
1=Select
Opt  Library      Text
--  -
--  *LIBL
--  *CURLIB
--  *USRLIBL
--  *ALLUSR
--  *ALL
--  #CGULIB
--  #DFULIB
--  #DSULIB
--  #LIBRARY
--  #SDALIB
More...
F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F24=More Keys
(C) Copyright ProData Computer Services, Inc. 2004
```

Select Library Prompt Fields

Field	Description of Prompt Field
Position To	The Position To prompt field is used to move (position) the list of library names so that it starts with a particular name.
Opt	The Opt prompt field selects the library you would like returned to the calling program. Once you have located the library or group of libraries you want, type a 1 in the Opt (option) field next to the library name, press the Enter key to return to the Define Database Validation display. The library you selected will be returned to the Library prompt field.

Select Library Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Select Library display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Select Library display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Choosing a Field

To choose a field that will be used for validation by the input field, move the cursor to the Field prompt and type the name of the field.

If you want to choose a field from a list of fields that are in the specified file, you can press F4 (with the cursor at the Field prompt.) The Select Field display is shown, and on this display you can choose a field for use as validation of the input field. The following is a sample of the Select Field display.

(Select Field display)

```

DBUnifier (version 4.2)
Select Field                                     11/09/04
                                                15:39:38

File . . . . . : STATEPF
Library . . . . : *LIBL

Type options, press Enter.
1=Select

Opt Field      Text                               Type Length Dec
--  -
_  DLTF LG     Delete Flag                       A         1
_  STATE      State Code                         A         2
_  DESC       State Description                  A        30
_  TXRATE     Tax Rate                           S         5     4
_  ADDUSR     Added By User                       A        10
_  ADDPGM     Add Program                         A        10
_  ADDDAT     Add Date                            S         8     0
_  ADDTIM     Add Time                            S         6     0
_  LSTUSR     Last Update User                    A        10
                                                More...

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F24=More Keys

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```

Select Field Prompt Fields

Field	Description of Prompt Field
Opt	The Opt prompt field selects the field you would like returned to the calling program. Once you have located the field you want, type a 1 in the Opt (option) field next to the field name, press the Enter key to return to the Define Database Validation display. The field you selected will be returned to the Field prompt field.

Select Field Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Select Field display.

F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The “Command” command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Select Field display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Display Screen Layout

The Display Screen Layout display shows you an example of how the fields and labels will be presented on the detail portion of the DBUnifier Application. The window label, display screen title, window footer, fields and labels are presented as they will appear when the DBUnifier Application is being processed. Use the page up and page down keys to display multiple pages.

(Display Screen Layout display)

```
An Example DBUnifier Applicaton
Presidents Master File Maintenance      11/15/04
                                         09:53:44

Type options, press Enter.

Delete Flag . . . . . X
Record Key . . . . . XXXXXXXXXXXX
Name . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Alternate Name . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Title . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Company Name . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Address #1 . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Address #2 . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Address #3 . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
City . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
State/Province . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Country . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Postal Code . . . . . XXXXXXXXXXXX
Phone Number . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Fax Number . . . . . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

F1=Help  F3=Exit  F5=Refresh  F12=Cancel

More...

User Define Message Line
```

Display Screen Layout Command Keys

Command Keys	Description of Command Key
--------------	----------------------------

F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Display Screen Layout display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F12=Cancel	The Cancel command key exits the user from the Display Screen Layout display.

Define Exit Programs

The Define Exit Programs display allows you to define User Exit programs that will be executed at special exit points when a DBUnifier Application is being processed. Exit points are provided Before Data is Displayed on the detail portion execution process and Before the Record is Updated when records are being maintained.

```
(Define Exit Programs display)
DBUnifier (version 4.2)
Define Exit Programs 11/10/04
10:34:33

Type choices, press Enter.

Program to call before data is displayed.
Program . . . . . *NONE Name, F4 for list
Library . . . . . *LIBL Name, *LIBL, F4 for list

Program to call before record is updated.
Program . . . . . *NONE Name, F4 for list
Library . . . . . *LIBL Name, *LIBL, F4 for list

F1=Help F3=Exit F4=Prompt F5=Refresh F12=Cancel Bottom
F24=More Keys
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```

Define Exit Programs Prompt Fields

Field	Description of Prompt Field
Program To Call Before Data is Displayed	The Program to Call Before Data is Displayed prompt field defines the User Defined Exit program that is to be executed prior to the record field information being displayed on the detailed portion of the DBUnifier Application that is being processed. To choose from a list of *PGM (program) objects, position the cursor on the Program prompt field and press the F4=Prompt command key.

Library Library denotes the library where the *PGM (program) object resides. To choose from a list of libraries, position the cursor on the Library prompt field and press the F4=Prompt command key.

Program to Call Before Record is Updated The Program to Call Before Record is Updated prompt field defines the User Defined Exit program that is to be executed prior to the record being updated when the DBUnifier Application is processed. To choose from a list of *PGM (program) objects, position the cursor on the Program prompt field and press the F4=Prompt command key.

Library Library denotes the library where the *PGM (program) object resides. To choose from a list of libraries, position the cursor on the Library prompt field and press the F4=Prompt command key.

Define Exit Programs Command Keys

Command Keys Description of Command Key

F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Exit Programs display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Exit Programs display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Sample Exit Programs

There are sample User Exit Programs provided in library DBUNIFIER, file DBFSOURCE. The following table shows the library/file, member names, and simple description of Exit Point Programs.

Library	File	Member	Description
DBUNIFIER	DBFSOURCE	B4DISPLAY	An example exit program that showing parameters and data types utilized by DBUnifier Applications when processing a User Defined Exit program prior to the record field information being display on the detailed portion of the DBUnifier Application that is being processed.
DBUNIFIER	DBFSOURCE	B4UPDATE	An example exit program that shows the parameters ant data types utilized by DBUnifier Applications when processing a User Defined Exit program that is to be executed prior to the record being updated when the DBUnifier Application is processed.
DBUNIFIER	DBFSOURCE	STATE_EXIT	An example exit program used in DBUnifier Application STATE. This exit program has been assigned as the Program to Call Before Record is Updated for the STATE application.

Saving a DBUnifier Application

The Exit This Application display allows you to exit the DBUnifier Application definition process and save or discard changes made to the definition. If you are saving a newly created application, the object type *USRSPC (user space) cannot already exist in the library specified. If you are saving a changed version of an application, the original application name and library can be specified or a new application and library can be specified.

(Exit this Application display)

```
DBUnifier (version 4.2)
Exit this Application 11/10/04
11:29:51

Type choices, press Enter.

Save Application . . . Y Y=Yes, N=No

For a saved application:
Application . . . . . EXAMPLE Name
Library . . . . . DBUNIFIER Name, F4 for list

Text . . . . . An Example DBUnifier Application

F1=Help F3=Exit F4=Prompt F5=Refresh Bottom
F24=More Keys

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```

Exit this Application Prompt Fields

Field	Description of Prompt Field
Save Application If this is a new	The Save Application Prompt field allows you to specify if you would like to save the changes you have defined. DBUnifier Application, an object type *USRSPC will be created. If you specify "N" in the Save Application prompt field all changes will be discarded.
Application	The Application prompt field defined the name of the application that you are saving the definition. If this is a new application the definition will be saved. If this is a change to an existing application, a conflict will occur, and you will not be allowed to overlay the existing application.
Library	Library denotes the library where the DBUnifier application will be saved. To choose from a list of libraries, position the cursor on the Library prompt field and press the F4=Prompt command key.
Text	The Text prompt field allows you to assign some descriptive text about the application. The text reminds you what the DBUnifier Application is for when it is displayed in a list of applications.

Exit this Application Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Exit this Application display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Exit this Application display.
F24=More Keys	The More Keys command key displays other command keys that are available.

Copying a DBUnifier Application

The Copy DBUnifier Application (CPYDBUAPP) display allows you to copy a previously saved DBUnifier Application. This option allows you to copy an application from someone else's library into your library, copy an application so that you can change it without changing the original, or for any other purpose you may have.

(Copy DBUnifier Application display)

```

Copy DBUnifier Application (CPYDBUAPP)

Type choices, press Enter.

From application . . . . . > EXAMPLE      Name
Library name . . . . . > DBUNIFIER      Name, *CURLIB
To application . . . . .      *SAME        Name, *SAME
Library name . . . . .      *FROMLIB     Name, *FROMLIB

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
  
```

Copy DBUnifier Application Prompt Fields

Field	Description of Prompt Field
From Application	The From Application prompt field defines the DBUnifier Application that is to be copied.
From Application Library name	The From Application Library Name prompt field denotes the library where the DBUnifier application will be copied from.
To Application	The To Application prompt field defines the name of the new DBUnifier Application. The new application cannot previously exist in the library specified.
To Application Library name	The To Application Library Name prompt field denotes the library where the DBUnifier application will be copied into.

Copy DBUnifier Application Command Keys

Command Keys **Description of Command Key**

F3=Exit	The Exit command key exits from the Copy DBUnifier Application display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F9=All Parameters	The All Parameters command key shows the entry field for all parameters, including those not selected by entries on previous parameters and those commonly used.
F11=Keywords	The Keywords command key toggles between the version of the prompt display that shows possible choices and the version that show parameter keywords.
F12=Cancel	The Cancel command key exits the user from the Copy DBUnifier Application display.
F13=How to use this display	The How to use this display command key shows help for the prompt display.
F14=Command String	The Command string command key shows the resulting command as it would run with the parameter values currently entered.
F15=Error Messages	The Error Messages command key shows all error message that pertain to the command being entered.
F16=Complete Command	The Complete Command (command) key indicates all values needed have been entered, and requests the system to run the command without showing additional displays.
F24=More Keys	The More Keys command key displays other command keys that are available.

Deleting a DBUnifier Application

To delete a DBUnifier Application, from the Work with DBUnifier Applications display, type a 4 in the Opt field next to the DBUnifier Application name you wish to delete. Pressing the Enter key will display the Confirm Deletion of DBUnifier Application display.

(Confirm Deletion of DBUnifier Application display)

```
DBUnifier (version 4.2)
Work with DBUnifier Applications 11/10/04
14:51:27
Library . . . . . *LIBL      Name, *LIBL, F4 for list
Subset . . . . . *ALL       Name, generic*
Position to . . . . .          Starting characters

Type options (and DBUnifier Application), press Enter.
1=Create  2=Change  3=Copy  4=Delete  5=Display  6=Print  9=Run

Opt  A  DBUnifier (version 4.2)
  _  _  Confirm Deletion of DBUnifier Application 11/10/04
  4  E  14:51:29
  _  F  Press Enter to confirm your choices for Delete.
  _  O  Press F12=Cancel to return to change your choices.
  _  S
  _  S  Application . . . . . EXAMPLE
  _  S  Library . . . . . DBUNIFIER

F1=Hel  Bottom
(C) Cop  F1=Help  F3=Exit  F5=Refresh  F12=Cancel
(C) Copyright ProData Computer Services, Inc. 2004
```

Confirm Deletion of DBUnifier Application Prompt Fields

Field	Description of Prompt Field
Application	The Application display field shows the DBUnifier Application that is to be deleted.
Library	The Library display field shows the library where the DBUnifier application will be deleted.

Confirm Deletion of DBUnifier Application Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Copy DBUnifier Application display.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F12=Cancel	The Cancel command key exits the user from the Copy DBUnifier Application display.

Printing DBUnifier Applications Definition

You can print the DBUnifier Application Definition. The printout tells you what information is used to process the application. When you select option 6 (Print) on the Work with DBUnifier Applications display and press the Enter key, the application definition is printed immediately.

(Work with DBUnifier Applications display)

```

DBUnifier (version 4.2)
Work with DBUnifier Applications 11/09/04 16:12:06

Library . . . . . *LIBL      Name, *LIBL, F4 for list
Subset . . . . . *ALL       Name, generic*
Position to . . . . .          Starting characters

Type options (and DBUnifier Application), press Enter.
1=Create  2=Change  3=Copy  4=Delete  5=Display  6=Print  9=Run

Opt  Application Library      Text
---  -
-    EXAMPLE      DBUNIFIER  An Example DBUnifier Application
-    FM_LIST      DBUNIFIER  Example - Selection List Of Presidents
-    OUTPUTQ     DBUNIFIER  Example - Prompt/Select Output Queue
-    SAMPLE      DBUNIFIER
-    STATE       DBUNIFIER  State File Maintenance
-    STATECODE   DBUNIFIER  List of State Codes

F1=Help  F3=Exit  F4=Prompt  F5=Refresh  Bottom
F24=More Keys

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```

(The following page shows an example of the Printed DBUnifier Application Definition)

Example DBUnifier Application Definition Report

```

(DBUNIFIER/DBF6000)                DBUnifier Application Definition                12.12.54    PAGE: 1
                                      11/12/2004    WEBSTER
=====
Application : EXAMPLE - An Example DBUnifier Application
Library . . : DBUNIFIER
Version . . : V4R2-04056
Screen Size . . . : 22x75
Window Title . . . : An Example DBUnifier Application
Application Title . . : Presidents Master File Maintenance
Column Heading #1 . . : Key
Column Heading #2 . . : Value Name City
Copyright Notice . . : User Define Message Line
  
```

```

File . . . : EXAMPLELF      Library . . . : *LIBL      Member . . . : *FIRST      Format . . . : EXAMPLE##
Result Fields Expression      Length Decimal
NEWFIELD      substr(name,1,10)      10
Seq #  Field Name      Description      Type      Length      Decimal      Edit Code
10  KEY      Record Key      P      9      0      Z
20  NAME      Name      A      30
30  CITY      City      A      30
Seq #  Pag/Lin/Col Usage  Field Name      Pag/Lin/Col  Text      Type      Length      Decimal      Edit Code
10  1 6 30 I  DLTFLAG      1 6 3  Delete Flag . . . . . A      1
20  1 7 30 I  KEY      1 7 3  Record Key . . . . . P      9      0      Z
30  1 8 30 I  NAME      1 8 3  Name . . . . . A      30
40  1 9 30 I  ALTNAME     1 9 3  Alternate Name . . . . . A      30
50  1 10 30 I  TITLE      1 10 3  Title . . . . . A      20
60  1 11 30 I  COMPANYY   1 11 3  Company Name . . . . . A      30
70  1 12 30 I  ADDR1      1 12 3  Address #1 . . . . . A      30
80  1 13 30 I  ADDR2      1 13 3  Address #2 . . . . . A      30
90  1 14 30 I  ADDR3      1 14 3  Address #3 . . . . . A      30
100 1 15 30 I  CITY      1 15 3  City . . . . . A      30
110 1 16 30 I  STATE     1 16 3  State/Province . . . . . A      20
120 1 17 30 I  COUNTRY   1 17 3  Country . . . . . A      30
130 1 18 30 I  POSTAL    1 18 3  Postal Code . . . . . A      10
140 1 19 30 I  PHONE     1 19 3  Phone Number . . . . . A      25
150 1 20 30 I  FAX       1 20 3  Fax Number . . . . . A      25
160 2 6 30 I  EMAIL     2 6 3  email Address . . . . . A      50
170 2 8 30 I  ADDUSER   2 8 3  Added By User . . . . . A      10
180 2 9 30 I  ADDPGM    2 9 3  Add Program . . . . . A      10
190 2 10 30 I  ADDDATE   2 10 3  Add Date . . . . . L      10
200 2 11 30 I  ADDTIME   2 11 3  Add Time . . . . . T      8
210 2 12 30 I  LSTUSER   2 12 3  Last Update User . . . . . A      10
220 2 13 30 I  LSTPGM    2 13 3  Last Update Program . . . . . A      10
230 2 14 30 I  LSTDATE   2 14 3  Last Update Date . . . . . L      10
240 2 15 30 I  LSTTIME   2 15 3  Last Update Time . . . . . T      8

```

```

( Database Validation )
Field      File      Library      Field      Exists
STATE     STATEPF   *LIBL      STATE     *YES
( List of Values )
Field      Screen Title      Enforce Value      Description
DLTFLAG    List of Delete Codes  *YES      *Blank = Active

```

```

(DBUNIFIER/DBF6000)      DBUnifier Application Definition      12.12.54      PAGE: 2
                        11/12/2004      WEBSTER

```

```

( List of Values )
Field      Screen Title      Enforce Value      Description
DLTFLAG    List of Delete Codes  *YES      S
                                                D      Flagged For Deletion

```

```

( Prompt Program / Application )
Field      Type      Pgm/App      Library      Return      Start      Length
STATE     *DBUAPP   STATECODE    *LIBL      STATE      2      2
          *DBUAPP   STATECODE    *LIBL      STATE      2      2
          *DBUAPP   STATECODE    *LIBL      STATE      2      2
          *DBUAPP   STATECODE    *LIBL      STATE      2      2

```

```

( Error Message Information )
Field      Validation Routine      First/Second Level Message Text
DLTFLAG    List of Values      (1) The value entered for Delete Flat Is Invalid. Press F4 for a list
of values
This is the second level text - See Chris.
STATE     Database validation (1) Invalid State Code. Please correct & Retry.
(2) The State code entered was not found in STATEPF file. Please corre
ct and retry the operations.
***** End of Report *****

```

Running a DBUnifier Application

Running a DBUnifier Application consists of telling the DBUnifier Processor to use the Application definition to access the data you want to process. There are multiple ways to run an application. You can select option 9 (Run) from the Work with DBUnifier Applications display, Use the Start DBUnifier Processor (STRDBUAPP) command, Use the Run DBUnifier Processor (RUNDBUAPP) command within a CLP (Control Language Program), call the DBUnifier Processor directly from high level languages, such as RPG/ILE, RPG/400, RPG, or COBOL, Use the Start DBUnifier – Detail Processor (STRDBUDTL) command,

Use the Run DBUnifier – Detail Processor (RUNDBUDTL) command within a CLP (Control Language Program), or call the DBUnifier – Detail Processor directly from high level languages.

Start DBUnifier Processor (STRDBUAPP) command

The following is the Start DBUnifier Processor (STRDBUAPP) command that can be access directly or by selecting option 9 (Run) from the Work with DBUnifier Applications display.

```

                                (Start DBUnifier Processor display)
                                Start DBUnifier Processor (STRDBUAPP)

Type choices, press Enter.

Application name . . . . . > EXAMPLE      Name
Library name . . . . . > DBUNIFIER      Name, *CURLIB, *LIBL
Execution mode . . . . . > *FULL        *INQUIRY, *UPDATE, *FULL
File Name . . . . . > *DEFAULT        Name, *DEFAULT
Library name . . . . . > *LIBL          Name, *CURLIB, *LIBL
Member name . . . . . > *FIRST        Name, *FIRST
Query selection expression . . . > *ALL

Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys

```

Start DBUnifier Processor (STRDBUAPP) command Prompt Fields

Field	Description of Prompt Field
Application name	The Application Name prompt field specifies the DBUnifier Application name to be processed.
Application Library name	The Library Name prompt field qualifies the library from which the DBUnifier Processor will access the application definition. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the application definition.

Execution mode	The Execution Mode prompt field tell the DBUnifier Processor the mode the application is to be processed. The possible modes are *INQUIRY (for inquiry mode only), *UPDATE (which allows changes to be made to the database records), *FULL (which allows changes, inserts (adds) and deletions to the database records), and *NODELETE (which allows changes and inserts (adds) to the database records).
File name	The File Name prompt field specifies the database file to be accessed by the DBUnifier Processor. By using the default value *DEFAULT, the file that was specified when the application was defined is used.
File Library	The File Library Name prompt field qualifies the library where the file will be accessed. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the file to process.
Member name	The Member Name prompt field specifies the member name of the file you would like to process. The default value for this field is *FIRST, which denotes to the DBUnifier Processor to use the first member in the file defined.
Query Selection Expression	The Query Selection Expression prompt field specifies the selection values used to determine the records that are available to the DBUnifier Processor. The default value *ALL selects all records in the database file to process.

Start DBUnifier Processor (STRDBUAPP) command (Command) Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exits from the Start DBUnifier Application Processor command display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F9=All Parameters	The All Parameters command key show entry field for all parameters, including those not selected by entries on previous parameters and those commonly used.
F11=Keywords	The Keywords command key toggles between the version of the prompt display that shows possible choices and the version that show parameter keywords.
F12=Cancel	The Cancel command key exits the user from the Start DBUnifier Processor command display.
F13=How to use this display	The How to use this display command key shows help for the prompt display.
F14=Command String	The Command String command key shows the resulting command as it would run with the parameter values currently entered.
F15=Error Messages	The Error Messages command key shows all error message that pertain to the command being entered.
F16=Complete Command	The Complete Command (command) key indicates all values needed have been entered, and requests the system to run the command without showing additional displays.
F24=More Keys	The More Keys command key displays other command keys that are available.

Run DBUnifier Processor (RUNDBUAPP) command

The following is the Run DBUnifier Processor (RUNDBUAPP) command that can be access in CLP (Control Language Programs).

(Run DBUnifier Processor display)

```

Run DBUnifier Processor (RUNDBUAPP)

Type choices, press Enter.

Label . . . . .
Application name . . . . . EXAMPLE      Name
Library name . . . . . *LIBL          Name, *CURLIB, *LIBL
Execution mode . . . . . *INQUIRY     *INQUIRY, *UPDATE, *FULL
File Name . . . . . *DEFAULT        Name, *DEFAULT
Library name . . . . . *LIBL          Name, *CURLIB, *LIBL
Member name . . . . . *FIRST         Name, *FIRST
Query selection expression . . . *ALL

-----
Relative Record Number . . . . .      Number
Data Returned . . . . .                Character value

More...
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
  
```

Run DBUnifier Processor (RUNDBUAPP) command Prompt Fields

Field	Description of Prompt Field
Application name	The Application Name prompt field specifies the DBUnifier Application name to be processed.
Library name	application definition. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the application definition.
Execution mode	The Execution Mode prompt field tell the DBUnifier Processor the mode the application is to be processed. The possible modes are *INQUIRY (for inquiry mode only), *UPDATE (which allows changes to be made to the database records), *FULL (which allows changes, inserts (adds) and deletions to the database records), and *NODELETE (which allows changes and inserts (adds) to the database records).

File name	The File Name prompt field specifies the database file to be accessed by the DBUnifier Processor. By using the default value *DEFAULT, the file that was specified when the application was defined is used.
File Library	The File Library Name prompt field qualifies the library where the file will be accessed. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the file to process.
Member name	The Member Name prompt field specifies the member name of the file you would like to process. The default value for this field is *FIRST, which denotes to the DBUnifier Processor to use the first member in the file defined.
Application	The Library Name prompt field qualifies the library from which the DBUnifier Processor will access the
Query Selection Expression	The Query Selection Expression prompt field specifies the selection values used to determine the records that are available to the DBUnifier Processor. The default value *ALL selects all records in the database file to process.
Relative Record Number	The Relative Record Number of the record from the file being processed that was selected from the DBUnifier Processors Multi-Record Display screen. The return variable is a 10,0 digit integer. For RPG & RPG/400 the return variable can be defined as a *BIN4 field.
Data Returned	The Data Returned is data in the record from the file being process that was selected from the DBUnifier Processor Multi-Record Display screen. The record is returned in the format of the external data structure of the file being processed by the DBUnifier Processor. The Data Return Variable has a maximum length of 9999 characters.

Run DBUnifier Processor (RUNDBUAPP) command (Command) Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exits from the Run DBUnifier Application Processor command display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F9=All Parameters	The All Parameters command key shows entry field for all parameters, including those not selected by entries on previous parameters and those commonly used.
F11=Keywords	The Keywords command key toggles between the version of the prompt display that shows possible choices and the version that show parameter keywords.
F12=Cancel	The Cancel command key exits the user from the Run DBUnifier Processor command display.
F13=How to use this display	The How to use this display command key shows help for the prompt display.
F14=Command String	The Command String command key shows the resulting command as it would run with the parameter values currently entered.
F15=Error Messages	The Error Messages command key shows all error message that pertain to the command being entered.

F16=Complete Command The Complete Command (command) key indicates all values needed have been entered, and requests the system to run the command without showing additional displays.

F24=More Keys The More Keys command key displays other command keys that are available.

Start DBUnifier – Detail Processor (STRDBUDTL) command

The following is the Start DBUnifier – Detail Processor (STRDBUDTL) command that can be access directly.

(Start DBUnifier – Detail Processor display)

```
Start DBUnifier - Detail (STRDBUDTL)

Type choices, press Enter.

Application name . . . . . _____ Name
Library name . . . . . *LIBL Name, *CURLIB, *LIBL
Execution mode . . . . . *INQUIRY *INQUIRY, *UPDATE, *FULL...
File Name . . . . . *DEFAULT Name, *DEFAULT
Library name . . . . . *LIBL Name, *CURLIB, *LIBL
Member name . . . . . *FIRST Name, *FIRST
Relative Record Number . . . . . _____ Number

Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

Start DBUnifier – Detail Processor (STRDBUDTL) command Prompt Fields

Field	Description of Prompt Field
Application name	The Application Name prompt field specifies the DBUnifier Application name to be processed.
Library name	application definition. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the application definition.
Execution mode	The Execution Mode prompt field tell the DBUnifier Processor the mode the application is to be processed. The possible modes are *INQUIRY (for inquiry mode only), *UPDATE (which allows changes to be made to the database records), *FULL (which allows changes, inserts (adds) and deletions to the database records), and *NODELETE (which allows changes and inserts (adds) to the database records).
File name	The File Name prompt field specifies the database file to be accessed by the DBUnifier Processor. By using the default value *DEFAULT, the file that was specified when the application was defined is used.

File Library The File Library Name prompt field qualifies the library where the file will be accessed. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the file to process.

Application The Library Name prompt field qualifies the library from which the DBUnifier Processor will access the

Member name The Member Name prompt field specifies the member name of the file you would like to process. The default value for this field is *FIRST, which denotes to the DBUnifier Processor to use the first member in the file defined.

Relative Record Number The Relative Record Number prompt field specifies the record number that you wish to process. If this values is left blank, the first record in the file is processed.

Start DBUnifier – Detail Processor (STRDBUDTL) command (Command) Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exits from the Start DBUnifier – Detail Processor command display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F9=All Parameters	The All Parameters command key show entry field for all parameters, including those not selected by entries on previous parameters and those commonly used.
F11=Keywords	The Keywords command key toggles between the version of the prompt display that shows possible choices and the version that show parameter keywords.
F12=Cancel	The Cancel command key exits the user from the Start DBUnifier – Detail Processor command display.
F13=How to use this display	The How to use this display command key shows help for the prompt display.
F14=Command String	The Command String command key shows the resulting command as it would run with the parameter values currently entered.
F15=Error Messages	The Error Messages command key shows all error message that pertain to the command being entered.
F16=Complete Command	The Complete Command (command) key indicates all values needed have been entered, and requests the system to run the command without showing additional displays.
F24=More Keys	The More Keys command key displays other command keys that are available.

Run DBUnifier – Detail Processor (RUNDBUDTL) command

The following is the Run DBUnifier – Detail Processor (RUNDBUDTL) command that can be access in CLP (Control Language Programs).

(Run DBUnifier- Detail Processor display)

```

Run DBUnifier - Detail (RUNDBUDTL)

Type choices, press Enter.

Label . . . . .
Application name . . . . .      Name
  Library name . . . . .      *LIBL      Name, *CURLIB, *LIBL
Execution mode . . . . .      *INQUIRY   *INQUIRY, *UPDATE, *FULL...
File Name . . . . .          *DEFAULT   Name, *DEFAULT
  Library name . . . . .      *LIBL      Name, *CURLIB, *LIBL
Member name . . . . .        *FIRST     Name, *FIRST
Relative Record Number . . . . .      Number
Return Key Pressed . . . . .      Character value
Comment . . . . .

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
  
```

Run DBUnifier – Detail Processor (RUNDBUDTL) command Prompt Fields

Field	Description of Prompt Field
Application name	The Application Name prompt field specifies the DBUnifier Application name to be processed.
Application Library name	application definition. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the application definition.

Execution mode	The Execution Mode prompt field tell the DBUnifier Processor the mode the application is to be processed. The possible modes are *INQUIRY (for inquiry mode only), *UPDATE (which allows changes to be made to the database records), *FULL (which allows changes, inserts (adds) and deletions to the database records), and *NODELETE (which allows changes and inserts (adds) to the database records).
File name	The File Name prompt field specifies the database file to be accessed by the DBUnifier Processor. By using the default value *DEFAULT, the file that was specified when the application was defined is used.
File Library	The File Library Name prompt field qualifies the library where the file will be accessed. Special value *LIBL tells the processor to search all the libraries in the job's library list until the first match is found. Special value *CURLIB checks the current library for the job to locate the file to process.
Member name	The Library Name prompt field qualifies the library from which the DBUnifier Processor will access the The Member Name prompt field specifies the member name of the file you would like to process. The default value for this field is *FIRST, which denotes to the DBUnifier Processor to use the first member in the file defined.
Relative Record Number	The Relative Record Number of the record from the file being processed that was selected from the DBUnifier Processors Multi-Record Display screen. The return variable is a 10,0 digit integer. For RPG & RPG/400 the return variable can be defined as a *BIN4 field.
Return Key Pressed	The Return Key Pressed is the HEX value of the key that was pressed to initiate the termination of the DBUnifier – Detail Processor.

Run DBUnifier – Detail Processor (RUNDBUDTL) command (Command) Keys

Command Keys	Description of Command Key
F3=Exit	The Exit command key exits from the Run DBUnifier – Detail Processor command display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F9=All Parameters	The All Parameters command key shows entry field for all parameters, including those not selected by entries on previous parameters and those commonly used.
F11=Keywords	The Keywords command key toggles between the version of the prompt display that shows possible choices and the version that show parameter keywords.
F12=Cancel	The Cancel command key exits the user from the Run DBUnifier – Detail Processor command display.
F13=How to use this display	The How to use this display command key shows help for the prompt display.

F14=Command String	The Command String command key shows the resulting command as it would run with the parameter values currently entered.
F15=Error Messages	The Error Messages command key shows all error message that pertain to the command being entered.
F16=Complete Command	The Complete Command (command) key indicates all values needed have been entered, and requests the system to run the command without showing additional displays.
F24=More Keys	The More Keys command key displays other command keys that are available.

Query Selection Expression

The Query Selection Expression specifies the selection values used to determine which records are available for processing when the DBUnifier Processor is executed. The special value *ALL denotes that all the records in the physical or logical file and member specified are selected. Specifying an expression of up to 256 characters that describes the values used to determine which records are selected.

Arithmetic Operators

Operator	Description
s +	Addition
-	Subtraction
*	Multiplication
/	Division
**	Exponentiation
//	Remainder

String Operators

Operator	Description
s *CAT or	Concatenation
*CT	Contains



Functions	Description
------------------	--------------------



Relational

%ABSVAL	Accepts a numeric argument and returns the absolute value of the argument.
---------	--

Operators

Operator	Description
s *GT (>)	Greater than
*LT (<)	Less than
*EQ (=)	Equals
*GE (>=)	Greater than or Equal to
*LE,(<=)	Less than or Equal to
*NE (≠)	Not Equal to
*NG (¬>)	Not Greater Than
*NL (¬<)	Not Less Than

Logical Operators

Operator	Description
s *AND (&)	
*OR	
*XOR	
&&	Exclusive OR
*NOT (¬)	

Built in Functions

	The returned value has the same attributes as the argument, unless the argument is a *BIN2, in which case the returned value is a *BIN4.
%ACOS	Accepts a numeric argument and returns the arc cosine of the argument, in radians. %ACOS and %COS are inverse operations.
%AND	Accepts two or more character or hexadecimal string arguments and returns a string that is the bit-wise 'AND' (logical and) of the arguments. This function takes the first argument string, AND(s) it with the next string, and continues to AND each successive argument with the previous result. If an argument is encountered that is shorter than the previous result, it is padded on the right with blanks. The returned value is a string of type *HEX with the same length as the longest argument. If any of the arguments are variable-length, the maximum length is used as the length of the argument.
%ANTILOG	Accepts a numeric argument and returns the antilogarithm (base 10) of the argument. %ANTILOG and %LOG are inverse operations.
%ASIN	Accepts a numeric argument and returns the arc sine of the argument, in radians. %ASIN and %SIN are inverse operations.
%ATAN	Accepts a numeric argument and returns the arc tangent of the argument, in radians. %ATAN and %TAN are inverse operations.
%ATANH	Accepts a numeric argument and returns the hyperbolic arc tangent of the argument, in radians. %ATANH and %TANH are inverse operations.
%CHAR	Accepts a date/time argument and date/time format and returns the character representation of the argument using the specified format. The date/time argument can be a date, time, or timestamp field. The returned value is of type *CHAR.
%COS	Accepts a numeric argument and returns the cosine of the argument. The argument must be specified in radians. %COS and %ACOS are inverse operations.
%COSH	Accepts a numeric argument and returns the hyperbolic cosine of the argument. The argument must be specified in radians.
%COT	Accepts a numeric argument and returns the cotangent of the argument. The argument must be specified in radians.
%CURDATE	Obtains the current date based on a reading of the time-of-day clock. The returned value is of type *DATE. The format and separator are derived from the job attributes.
%CURTIME	Obtains the current time based on a reading of the time-of-day clock. The returned value is of type *TIME. The format and separator are derived from the job attributes.
%CURTIMESTP	Obtains the current timestamp based on a reading of the time-of-day clock. The returned value is of type *TIMESTP. The format and separator will be derived from the job attributes.
%CURTIMEZONE	Obtains the current time zone. The returned value is a packed decimal number (*DEC) with 6 digits and 0 precision.

Built in Functions (continued)

%DATE	Accepts a date/time argument and returns a date. The date/time argument can be a date or timestamp field, a character or hexadecimal field containing the external form of a date, a date literal, or a numeric field or literal value in the range 1 - 3,652,059. The returned value is of type *DATE.
%DAY	Accepts a date/time argument and returns the day part of the value. The date/time argument can be a date or timestamp field, a date duration or timestamp duration (field or literal), or a numeric field or literal. The returned value is of type *BIN4.
%DAYS	Accepts a date/time argument and returns an integer representation of the date. The date/time argument can be a date or timestamp field, a character or hexadecimal field containing the external form of a date, or a date literal. The returned value is of type *BIN4.
%DIGITS	Accepts a numeric argument and returns a character representation of its numeric value, not including the sign or a decimal point. The result is tagged with the CCSID of the current job. For example, %DIGITS (-1.5) returns the character string 15.
%DURDAY	Accepts an integer argument and returns a labeled duration of days. The integer argument for this function can be a numeric expression, a field, or a literal.
%DURHOUR	Accepts an integer argument and returns a labeled duration of hours. The integer argument for this function can be a numeric expression, a field, or a literal.
%DURMICSEC	Accepts an integer argument and returns a labeled duration of microseconds. The integer argument for this function can be a numeric expression, a field, or a literal.
%DURMINUTE	Accepts an integer argument and returns a labeled duration of minutes. The integer argument for this function can be a numeric expression, a field, or a literal.
%DURMONTH	Accepts an integer argument and returns a labeled duration of months. The integer argument for this function can be a numeric expression, a field, or a literal.
%DURSEC	Accepts an integer argument and returns a labeled duration of seconds. The integer argument for this function can be a numeric expression, a field, or a literal.
%DURYEAR	Accepts an integer argument and returns a labeled duration of years. The integer argument for this function can be a numeric expression, a field, or a literal.
%EXP	Accepts a numeric argument and returns a value that is the base of the natural logarithm (e) raised to a power specified by the argument. %EXP and %LN are inverse operations.
%HEX	Accepts an argument and returns the hexadecimal equivalent of the argument's value. The hexadecimal argument can be of any type. The returned value is of type *CHAR.

Built in Functions (continued)

%HOUR	Accepts a date/time argument and returns the hour part of the value. The date/time argument can be a time or timestamp field, a time duration or timestamp duration (either field or literal), or a numeric field or literal. The returned value is of type *BIN4.
%LEN	Accepts one argument and returns the number of bytes used to represent the value unless the value is a graphic field type. If the value is a graphic field type, the number of graphic characters is returned. The length argument can be of any type. The returned value is of type *BIN4.
%LN	Accepts a numeric argument and returns the natural logarithm of the argument. %LN and %EXP are inverse operations.
%LOG	Accepts a numeric argument and returns the common logarithm (base 10) of the argument. %LOG and %ANTILOG are inverse operations.
%MAX	Accepts one or more character-string, or date/time arguments, and returns the largest value from the list. Date/time arguments are arguments of type *DATE, *TIME, or *TIMESTP, or arguments that are date, time, or timestamp durations. String arguments must be no longer than 256 bytes.
%MICSEC	Accepts a date/time argument and returns the microsecond part of the value. The date/time argument can be a timestamp (field or literal), a timestamp duration (field or literal), a character field that contains the external form of a timestamp, or a numeric field or literal. The returned value is of type *BIN4.
%MIN	Accepts one or more character-string or date/time arguments, and returns the smallest value from the list. Date/time arguments are arguments of type *DATE, *TIME, or *TIMESTP, or arguments that are date, time, or timestamp durations. String arguments must be no longer than 256 bytes.
%MINUTE	Accepts a date/time argument and returns the minute part of the value. The date/time argument can be a time or timestamp field, a time duration or timestamp duration (either field or literal), or a numeric field or literal. The returned value is of type *BIN4.
%MONTH	Accepts a date/time argument and returns the month part of the value. The date/time argument can be a date or timestamp field, a date duration or timestamp duration (field or literal), or a numeric field or literal. The returned value is of type *BIN4.
%NONNULL	Accepts a list of two or more arguments and returns the first non-null value from the list. The items in the argument list can be fields or literal values of any type. The type of the returned value is that of the item selected from the list.
%NOT	Accepts a character or hexadecimal string argument and returns a string that is the bit-wise 'NOT' (logical not) of the argument. The returned value is a string of type *HEX with the same length as the argument.
%NULL	Accepts no arguments. It is used to select or omit records based on whether or not a field in the record contains a null value.

Built in Functions (continued)

%OR	Accepts two or more character-string arguments and returns a string that is the bit-wise 'OR' (logical inclusive or) of the arguments. This function takes the first argument string, OR(s) it with the next string, and then continues to OR each successive argument with the previous result. If an argument is encountered that is shorter than the previous result, it is padded with blanks. The final result is a string with the same length as the longest argument. If any of the arguments are variable-length, the maximum length is used as the length of the argument.
%RANGE	Is used to identify the lower and upper boundaries for the value of a field or expression. %RANGE must be specified as the right side of a relation whose operator is equal. The low-value and high-value argument must be field names, character strings, or numeric literals, to match the type of field or expression specified as left side of the relation. For example, to select only records where the numeric field NBRFLD has a value ranging from 10
%SECOND	Accepts a date/time athrough 20, specify: rgument and returns the seconds part of the value. The date/time argument can be a time or timestamp field, a time duration or timestamp duration (either field or literal), or a numeric field or literal. The returned value is of type *BIN4.
%SIN	Accepts a numeric argument and returns the sine of the argument. The argument must be specified in radians. %SIN and %ASIN are inverse operations.
%SINH	Accepts a numeric argument and returns the hyperbolic sine of the argument. The argument must be specified in radians.
%SQRT	Accepts a numeric argument and returns the square root of the argument.
%SST	Accept a character string, a starting position expression, and an optional length expression as arguments. They return a substring of the string argument with the length equal to the value specified by the length-expression.
%STRIP	Accepts a character string argument, an optional strip character, and an optional strip function as arguments. It returns a result string with the strip character removed from the string argument as specified by the strip function. The strip function can be one of three functions: <ul style="list-style-type: none"> *LEAD Remove leading strip character(s) *TRAIL Removes trailing strip character(s) *BOTH Remove both leading and trailing strip character(s) The default strip function is *BOTH.
%SUBSTRIN G	Accept a character string, a starting position expression, and an optional length expression as arguments. They return a substring of the string argument with the length equal to the value specified by the length-expression.
%SUM	Accepts a numeric argument and returns the sum of all the values for its argument. The argument must be a field name or an expression (not a literal).
%TAN	Accepts a numeric argument and returns the tangent of the argument. The argument must be specified in radians. %TAN and %ATAN are inverse operations.
%TANH	Accepts a numeric argument and returns the hyperbolic tangent of the argument. The argument must be specified in radians. %TANH and %ATANH are inverse operations.

Built in Functions (continued)

%TIME	Accepts a date/time argument and returns a time. The date/time argument can be a time or timestamp field, a character or hexadecimal field containing the external form of a time, or a time literal. The returned value is of type *TIME.
%TIMESTP	Accepts one or two date/time arguments and returns a timestamp.
%USER	Returns the user profile name of the job in which the query is running.
%VALUES	Used to identify a list of allowed values for a field or expression. %VALUES must be specified as the right side of a relation whose operator is equal. The allowed-value arguments must be character string or numeric literals, to match the type of the field or expression specified as the left side of the relation.
%VAR	Accepts a numeric argument and returns the variance of its argument for the group of records defined by the GRPFLD parameter. The argument must be a field name or an expression (not a literal).
%WLDCRD	Used to specify a pattern that performs a wildcard scan of the character or hexadecimal field or string expression (except for expressions made up of a single character-string literal) that must be specified as the left side of the relation. %WLDCRD must be specified as the right side of a relation whose operator is equal. The pattern-string argument must be a character-string, DBCS, or graphic literal, to match the left side of the relation. The wildcharacters argument is an optional parameter that specifies what 'wildcard' characters are used in the pattern-string.
%XLATE	Accepts a character-string argument and the name of a table object (*TBL), and returns a string that is the value of the first argument translated by using the contents of the table. The returned value is a string with the same length as the first argument.
%XOR	Accepts two or more character-string arguments and returns a string that is the bit-wise 'XOR' (logical exclusive or) of the arguments. This function takes the first argument string, XOR(s) it with the next string, and then continues to XOR each successive argument with the previous result. If an argument is encountered that is longer than the previous result, the previous result is padded with blanks before the XOR operation. If any of the arguments is variable-length, the maximum length is used as the length of the argument. The final result is a string of type *HEX with the same length as the longest argument.
%YEAR	Accepts a date/time argument and returns the year part of the value. The date/time argument can be a date or timestamp field, a date duration or timestamp duration (field or literal), or a numeric field or literal. The returned value is of type *BIN4.

Integrating a DBUnifier Application In to Your Applications

The DBUnifier Processor (DBF1000) can be called directly from high level languages, such as RPG/ILE, RPG/400, RPG and COBOL. This allows the ability to integrate DBUnifier Application into your existing applications and processes. There are examples of calling the DBUnifier Processor provided in file DBFSOURCE in library DBUNIFIER.

DBUnifier Processor (DBF1000) Parameter Group

Required	Parameter	Usage	Type
*Yes	DBUnifier Application and Library Name	Input	Char(20)
*Yes	Execution Mode	Input	Char(10)
*Yes	File and Library Name	Input	Char(20)
*Yes	Member Name	Input	Char(10)
*Yes	Query Selection Expression	Input	Char(256)
*No	Returned Relative Record Number	Output	Integer(10,0)
*No	Data Returned (Record Data)	Output	Char(32766)

DBUnifier Processor (DBF1000) Parameter Descriptions

DBUnifier Application and Library name

INPUT; CHAR(20)

The DBUnifier Application you want to process, and the library in which it is located. The first 10 characters contain the application name, and the second 10 characters contain the library name. You can use the following special values for the library name:

*LIBL Searches all the libraries in the job's library list until the first match is found.

*CURLIB Checks the current library for the job to locate the application definition.

Execution Mode

INPUT; CHAR(10)

Tells the DBUnifier Processor the mode the application is to be processed. The default mode is *INQUIRY. The following is the list of possible values.

*INQUIRY The DBUnifier Application is processed in inquiry mode only. Field values will not be changed, the record will not be updated, the insert, and delete record function is not accessible.

*UPDATE The DBUnifier Application is processed in update mode. Those fields with whose usage is I)input will allow data to be entered. After values have been validated the record will be updated. The insert and delete record function is not accessible.

*FULL The DBUnifier Application is processed in Full update mode. Those fields with whose usage is I)input will allow data to be entered. After values have been validated the record will be updated. Record inserts and deletes are allowed.

*NODELETE The DBUnifier Application is processed in *NODELETE mode. Those field with whose usage is Input will allow data to be entered. After values have been validated the record will be updated. Record inserts are allowed, record deletes are not.

File and Library Name

INPUT; CHAR(20)

The file that will be processed by the DBUnifier Application, and the library in which it is located. The first 10 characters contain the file name, and the second 10 characters contain the library name. By using the special value *DEFAULT, the file that was specified when the application was define is used. You can use the following special values for the library name:

*LIBL Searches all the libraries in the job's library list until the first match is found.

*CURLIB Checks the current library for the job to locate the file..

Member Name

INPUT; CHAR(10)

Defines the member name within the file you choose to process. The default value for this field is *FIRST, which denotes to the DBUnifier Processor to use the first member in the file defined.

Query Selection Expression

INPUT; CHAR(256)

Specifies the selection values used to determine the records that are available to the DBUnifier Processor. The default value *ALL selects all records in the database file to process.

Relative Record Number OUTPUT;

INTEGER(10,0)

Returns the relative record number, of the record from the file being processed that was selected from the DBUnifier Processor's Multi-Record Display screen. *If this return value is *zero, No Record Was Selected.* The return value is a 10,0 digit integer. For RPG & RPG/400 the return value can be defined as a *BIN4 field.

Data Returned

OUTPUT; CHAR(32766)

The value of the record, from the file being processed, that was selected from the DBUnifier Processor Multi-Record Display screen. The data is returned in the format of the external data structure of the file being processed.

Defining Audit Logging For DBUnifier Applications

The Define Audit Log Information display allows you to define the audit logging images (If any), you want to be written when a record is added, changed or deleted within a DBUnifier Application. This screen also allows you to denote the Audit Log File and Library. (*The Audit Log File must match the file layout of DBFHST in library DBUnifier*).

(Define Audit Log Information display)



Field	Description of Prompt Field
Audit Log Images	The Audit Log Images prompt field allows any one of the following entries: <ul style="list-style-type: none">*NONE – No audit logging is performed for DBUnifier Applications.*BOTH – Audit logging images are written to the Audit Log File showing the Before and After image of the record that are updated. After images are written showing Inserts and Deletes.*AFTER – Audit logging images are written to the Audit Log File showing only the After image of records that are updated. After images are also written showing Inserts and Deletes.
Audit Log File	The Audit Log File prompt field allows the entry of a DB2/400 data base file where audit logging information is to be stored. To choose from a list of *FILE (file) objects, position the cursor on the Audit Log File prompt field and press the F4=Prompt command key. <i>(The Audit Log File selected must match the File Layout of DBFHST in library DBUnifier.)</i>
Library	Library denotes the library where the Audit Log file resides. To choose from a list of libraries, position the cursor on the Library prompt field and press the F4=Prompt command key.

Define Audit Log Information Prompt Fields

Define Audit Log Information Command Keys

Command Keys	Description of Command Key
F1=Help	Help information has not yet been made available. This command key is for future use.
F3=Exit	The Exit command key exits from the Define Audit Log Information display.
F4=Prompt	The Prompt command key shows the list of possible values that can be assigned to the field.
F5=Refresh	The Refresh command key clears the screen and resets the display to its initial values.
F10=Command	The "Command" command key displays a command entry line. Which allows you to executed OS/400 commands.
F12=Cancel	The Cancel command key exits the user from the Define Audit Log Information display.
F24=More Keys	The More Keys command key displays other command keys that are available.
