

Micro Focus Data Express™

Life Cycle Guide



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1. About this Guide

This guide provides step-by-step instructions to help you handle modifications within the layout of the files already processed by Data Express.

The use of Data Express requires a minimum experience of the mainframe platform z/OS.

We recommend you carefully read the following users guides, which supplement this guide:

Guide	Description
<i>Installation Guide</i>	Explains installation procedures.
<i>Data Model Guide</i>	Describes the structure of the tables that comprise the Data Express Knowledge Base.
<i>User Guide (z/OS)</i>	Explains Data Express functions accessible from the z/OS system.
<i>Front End Guide</i>	Shows how to perform basic functions from the graphical front-end.
<i>Data Masking Guide</i>	Explains the Data Masking module.
<i>Data Subset Extraction Guide</i>	Explains how to create a new environment, starting from an existing environment and on the basis of selection criteria specified by the user.

2. Considerations

Bear in mind the following points about Data Express:

- To use this product, you must have the correct licence. See the *Installation Guide* for more details.
- You do not need to analyze the sources of the programs in the application in order to use Data Express.
- Data Express does not perform any operation capable of altering the analyzed data.

3. Life Cycle Introduction

Life Cycle is a tool within Data Express that keeps track of each modification applied to the file structure of your application, and prevents loss of information when these structural changes occur.

Note:

- The Life Cycle is taken to mean exclusively the entering, into the database, of new data stores or modifications of the layout of existing data stores and not of modifications of the content that leave the file layout unaltered.
- The algorithm used for the recognition of file modifications is based on the modifications of the sources (copybook COBOL and PL/I, SYSPUNCH, and DCLGEN) associated with the files. Direct-access DB2 files are the exception. The recognition of their modifications is based on the information contained in the DB2 system tables.

Known Restriction:

- For DB2 tables with non-direct access, Life Cycle requires SYSPUNCH and DCLGEN to be partitioned data set (PDS) members, even though the cataloging phase supports SYSPUNCH and DCLGEN as sequential files. If you want to use Life Cycle and you have cataloged SYSPUNCH in a sequential file, you will need to delete it from the knowledge base and re-catalog it as a PDS member.

3.1. Life Cycle Phases

In order to detect all the changes, the z/OS solution provides specific jobs that must be scheduled and executed. These operations are grouped into three phases:

1. *Changed Data Stores Identification* (reading the IMPSRC file)
2. *Changed Data Elements Identification*
3. *Apply Identified Changes*

Note: For all phases, data stores are processed at the moment the phase is launched.

3.1.1. Phase 1: Changed Data Stores Identification

Phase 1 of the Life Cycle, *Changed Data Stores Identification*, involves the following events:

- Flat file population. Use the Toolkit to populate the IMPSRC, which contains a list of data stores and corresponding I/O areas that have been modified.

Note: For more information, see chapter *Load IMPSRC for Life Cycle* in your *Toolkit (z/OS)* guide.

- File changes are identified. All copybooks included in the specified PDS or DB2 owner tables are scanned and compared with the structures already defined in the Data Express Knowledge Base.

- A sequential guide file is created. This file is a list of information about the matches between the data stores included in the Data Express Knowledge Base and the copybooks, or of the modified DB2 tables.

The guide file information is accessible in the **Work with Changed Data Stores** area.

Note: The guide file is followed by the IMPSRC file, which is created from the job **Load Sequential for Life Cycle** to recognize the modified sources. This Life Cycle feature of the toolkit can be omitted if the list is produced by your development management tool.

Before proceeding to the next phase, the list in the **Work with Changed Data Stores** area should be examined in order to confirm it and to possibly integrate additional information.

3.1.2. Phase 2: Changed Data Elements Identification

Phase 2 of the Life Cycle, *Changed Data Elements Identification*, involves the following events:

- Field changes are identified. All copybooks included in the specified PDS or DB2 owner tables are scanned and compared with the structures already defined in the Data Express Knowledge Base.
- A second guide file is created on the basis of the guide file generated during the previous phase. This file is a list of information about the matches between the data elements belonging to the file included in the Data Express Knowledge Base and the data elements of the copybooks or of the modified DB2 tables.

The guide file information is accessible in the **Work with Changed Fields** area.

Note: The recognition of the modified sources can be omitted if the list is produced by your development management tool.

Before proceeding to the next phase, this list in the **Work with Changed Fields** area should be examined in order to confirm it and to possibly integrate additional information.

3.1.3. Phase 3: Apply Identified Changes

Phase 3 of the Life Cycle, *Apply Identified Changes*, involves the following events:

- Identified changes are applied.
- File information, which is already contained in the Data Express Knowledge Base, is saved in an appropriate format. This includes sampling rules, associations of classes with fields, associations of the Data Changer with routines, test environment creation methods, and definitions of combined fields.
- If required, a backup of the old data is made.
- The modified data stores are analyzed again, and the previously saved information is applied to them, taking the new layouts into account.

3.2. Sequential Steps

The Life Cycle comprises several steps that are to be performed in the following order:

1. Definition of environment:
 - **Work with Companies** – determine whether to enable the backup of a company and, if necessary, create a backup company.
 - **Work with Release** – determine the priority order of the PDSs containing information on the file layouts to define which information is new and which is old.
2. Definition of the Life Cycle phases:
 - Schedule Phase 1 (*Changed Data Stores Identification*) – identify the PDS or schema (DB2 owner) on which the Life Cycle is to be launched. This phase consists of feeding in a guide file that contains a list of files and corresponding I/O areas that have been modified.
 - Schedule Phase 2 (*Changed Data Elements Identification*) – create, on the basis of the guide file generated during the previous phase, a second guide file that contains matches between old and new fields.
 - Schedule Phase 3 (*Apply Identified Changes*) – save, in an appropriate format, the information on files already contained in the Data Express Knowledge Base (for example, sampling rules, associations of classes with data elements, associations of masking routines, test environment creation methods, and definition of combined data elements), analyzes the modified data stores again and applies the previously saved information to them taking the new layouts into account.
3. Modification of the guide files produced during the *Changed Data Stores Identification* and *Changed Data Elements Identification* phases in the following areas:
 - **Work with Changed Data Stores**
 - **Work with Changed Fields**
4. Effective launch of scheduled phases:
 - Start **Life Cycle Job**

3.3. Concepts and Terms

This section describes concepts and terms specific to the Life Cycle.

3.3.1. Release Groups

A new version of an application can use new files and, thus, new data or it can handle the existing files differently by defining new layouts.

To trace these modifications and keep handling data according to the same rules, Data Express relies on copybooks that describe file layouts.

Copybooks reside in a specific PDS. During the version shift, two different situations might develop:

- The copybook has been modified and still resides in the same PDS.
- The copybook has been modified, and the new copybook resides in a different PDS from the one in the obsolete version.

A release is a group of PDSs that has a priority order. Through the associated priority, Life Cycle can identify which source describes the file layout required by the new version of the application from many sources bearing the same names.

The 0 priority PDS contains the oldest sources and is called the parent PDS. Conversely, the highest priority PDS contains current sources.

The Life Cycle phases are launched for the parent PDS, and then the whole group of PDSs is processed following the priority order.

Note: Release groups do not apply to DB2 files because they do not rely on copybooks for the definition of their layouts.

3.3.2. Backup Company

A backup company is useful when all the information about the files that follow the Life Cycle procedure needs to be preserved.

During the definition of a company, the backup company associated with it can be defined. When the Life Cycle procedure is started on the files of a company associated with a backup company, the new file layouts will be visible within the company itself, whereas the information concerning the file with the layout considered to be obsolete may be retrieved from the backup company.

Note: Only one version for each file is stored in the backup company. Thus, if the Life Cycle causes a file to be modified twice, the backup company will only include the version before last and the version prior to that will no longer be stored.

3.3.3. Log Files

All the operations submitted from the client side are stored in log files that incorporate additional information including the submission date and time and whether or not the job was successful.

You can maintain log file information by using a specific function available on the client to delete entries (possibly starting from a given day).

4. Getting Started

This chapter is an overview of the Life Cycle function within Data Express. You should read it before using Life Cycle.

4.1. Starting Life Cycle

To start Life Cycle:

1. Start Data Builder. (See the chapter *Getting Started with Data Builder* in the *Front End Guide*.)
2. From the Data Builder main window: [Work with Data Stores], click  (Life Cycle). The Life Cycle Phases window appears, as shown below:

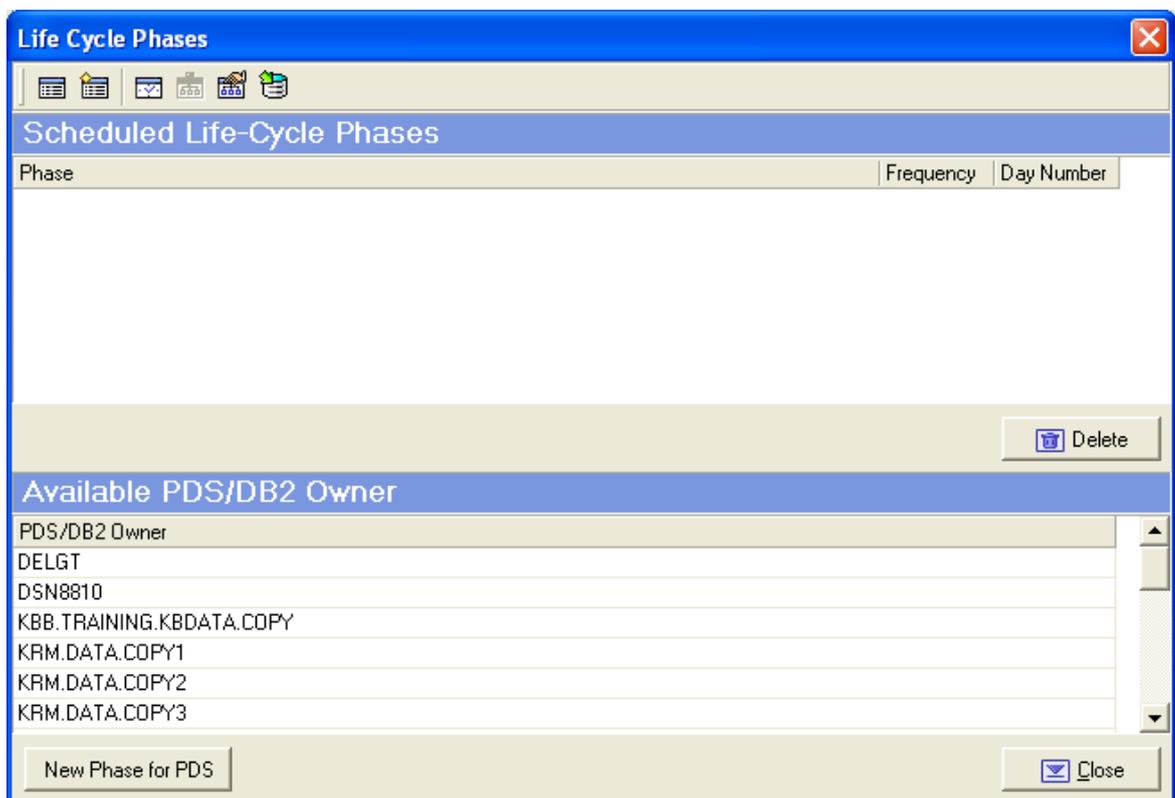


Figure 4-1: Life Cycle Phases Window

4.2. Window Contents

This section describes the toolbar and menus displayed in the **Life Cycle Phases** window.

4.2.1. Toolbar

The buttons listed in toolbars are described as follows:

-  – Scheduled Phase Properties
-  – New Scheduled Phase
-  – Set Time Limit for Previous Day
-  – Work with Releases
-  – Work with Companies
-  – Work with Changed Data Stores

4.2.2. Context Menus

This section outlines the commands included in context menus.

4.2.2.1. Column Sorting

A context menu to display a list of sort options can be displayed by right-clicking a column header.

Note: All changes to the grid layout are saved in the Windows system registry. For example, groups, column width attributes, column order attributes, and column font and color information. However, filtering and sorting preferences are not saved.

The column sorting context menu contains the following commands:

- **Sort Descending** – Sorts the list contents in descending order. The same result can be obtained by simply clicking the column heading.
- **Sort Ascending** – Sorts the list contents in ascending order. The same result can be obtained by simply clicking the column heading.
- **Group by This Column** – Groups the list according to the contents of the selected column if the Group Panel has been enabled.
- **Remove This Column** – Deletes the selected column.
- **Column Selector** – Displays a **Customize** window that contains a list of columns that have been removed previously. A column can be restored by performing a drag-and-drop operation to the desired position in the list. A column can be removed from a list by performing a drag-and-drop operation from the list to the **Customize** window.
- **Alignment** – Aligns the content of the columns to the center, right, or left as specified.
- **Best Fit** – Resizes the selected column to allow the content of each record to be displayed. The same result can be obtained by double-clicking the column's external margin.
- **Pick Color** – Allows the color of the selected column to be changed.
- **Pick Font** – Allows the font, font style, size, color, and script to be changed.

- **Best Fit (All Columns)** – Resizes all the columns from the list to allow the content of each record to be displayed.

Note:

- Columns can also be sorted by clicking or performing a drag-and-drop operation on the column heading.
- Information displayed can be reduced by clicking a column heading, and then typing the first letter of the items you are interested in.

4.2.2.2. Grid Sorting

A context menu to display a list of functions for a grid can be displayed by right-clicking any place on the grid.

Note: All changes to the grid layout are saved in the Windows registry. For example, groups, column width attributes, column order attributes, and column font and color information. However, filtering and sorting preferences are not saved.

The grid functions context menu contains the following commands:

- **New Scheduled Phase from PDS/DB2 Owner** – Opens the **New Scheduled Phase from PDS/DB2 Owner** window (see the section *New Scheduled Phase from PDS/DB2 Owner* for more information).
- **Column Selector** – Displays a **Customize** window that contains a list of columns that have been removed previously. A column can be restored by performing a drag-and-drop operation to the desired position in the list. A column can be removed from a list by performing a drag-and-drop operation from the list to the **Customize** window.
- **Best Fit (All Columns)** – Resizes all the columns from the list to allow the content of each record to be displayed.
- **Export to File...** – Exports the information to a file using one of the following compatible formats:
 - comma separated value (**.csv**)
 - Hyper Text Markup Language (**.htm**)
 - text (**.txt**)
 - Excel (**.xls**)
 - Extensible Markup Language (**.xml**)
- **Show Summary Footer** – Displays the summary footer beneath the grid. By selecting a row and right-clicking the summary footer, a context menu displaying arithmetic operations you can perform on the selected row appears.

Note: Arithmetic operations are possible only on numeric contents.

Possible arithmetic operations include:

- **Summary** – Displays the sum of all quantities in the column. This option is active only for columns with integer or percentage values; if the value of the cells in a

specific column are represented as a percentage, their sum does not always equal 100%.

- **Minimum** – Displays the minimum value of all values in the column. The option is active only for columns with numerical values.
- **Maximum** – Displays the maximum value of all values in the column. The option is active only for columns with numerical values.
- **Count** – Displays the number of elements in a column.
- **Average** – Displays the arithmetic mean of all values in the column. The option is active only for columns with numerical values.
- **None** – Specifies using no arithmetic operation on a column.
- **Show Group Panel** – Displays the column name by which data is grouped above the grid. By dragging the column headers into this window, a group hierarchy can be defined.

Note: If data is being grouped by column, a footer panel is displayed beneath the grid for each group.

- **Filter Active** – If enabled, lets you choose data to be displayed on the grid; a downward arrow icon will appear in the column headers.

Click an arrow to choose the data to be displayed on the grid. This function lets you generate a personal filter.

Note: The time taken to display the window increases with the number of records to be loaded.

4.2.3. New Scheduled Phase from PDS/DB2 Owner

The **New Scheduled Phase from PDS/DB2 Owner** window displays all attributes for a selected field.

To access the **New Scheduled Phase from PDS/DB2 Owner** window, right-click the grid (see the section *Grid Sorting*), and then click **New Scheduled Phase from PDS/DB2 Owner**.

The **New Scheduled Phase from PDS/DB2 Owner** window is shown below:

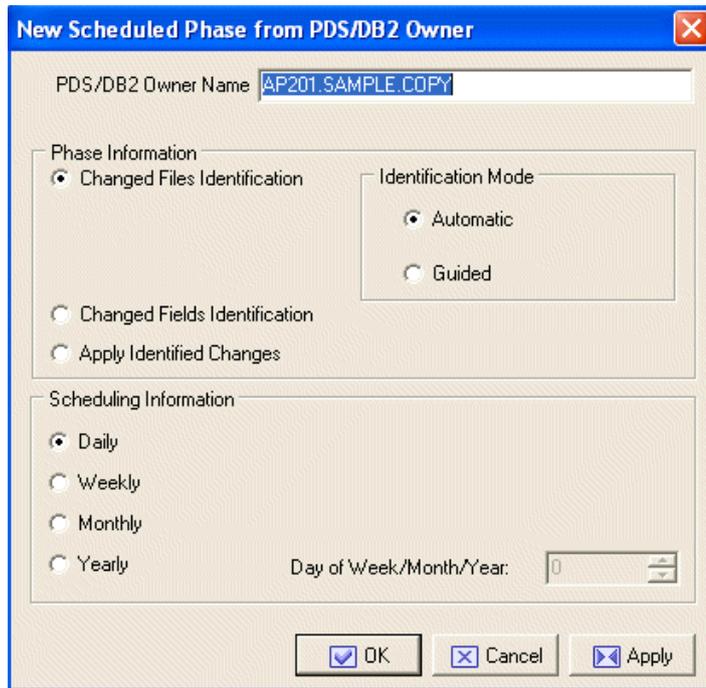


Figure 4-2: New Scheduled Phase from PDS/DB2 Owner Window

Note: To schedule the first phase of the Life Cycle, you need to determine the parent PDS (for all types of files, with the exception of direct access DB2 files) or the DB2 owner (for direct access DB2 files) on which the Life Cycle is to be launched.

The following list describes the fields listed in the **New Scheduled Phase from PDS/DB2 Owner** window:

- **Phase Information** – Indicator of the Life Cycle phase.

Note: If **Changed Files Identification** is selected, one of the following **Identification Mode** values must be selected:

- **Automatic** – Mode for enabling Life Cycle to identify all modifications on the sources belonging to the PDS or to the objects belonging to the DB2 Owner.
- **Guided** – Mode used if the guide file is partially fed by any development tool or by the user. (The file format, which must be located in the ***IMPSRC** product PDS, is described in detail in the *Data Model Guide*.) In this case, you are not required to specify the PDS name or the DB2 owner in the launch parameters.

- **Scheduling Information** – Indicator of how often the phase must be launched.

The following list describes the functions of the buttons listed beneath the fields in the **New Scheduled Phase** window:

- **OK** – Saves any changes that have not been applied and closes the window.
- **Cancel** – Cancels any changes made to the new scheduled phase and closes the window.

- **Apply** – Confirms the update/insertion data to the new scheduled phase.

5. Working with Life Cycle

This chapter describes the Life Cycle.

5.1. Definition of Environment

This section describes the first step of the Life Cycle: Definition of Environment.

5.1.1. Work with Companies

To access the **Work with Companies** area, click  (**Work with Companies**) from the **Life Cycle Phases** window. An example of the **Work with Companies** window is shown below:

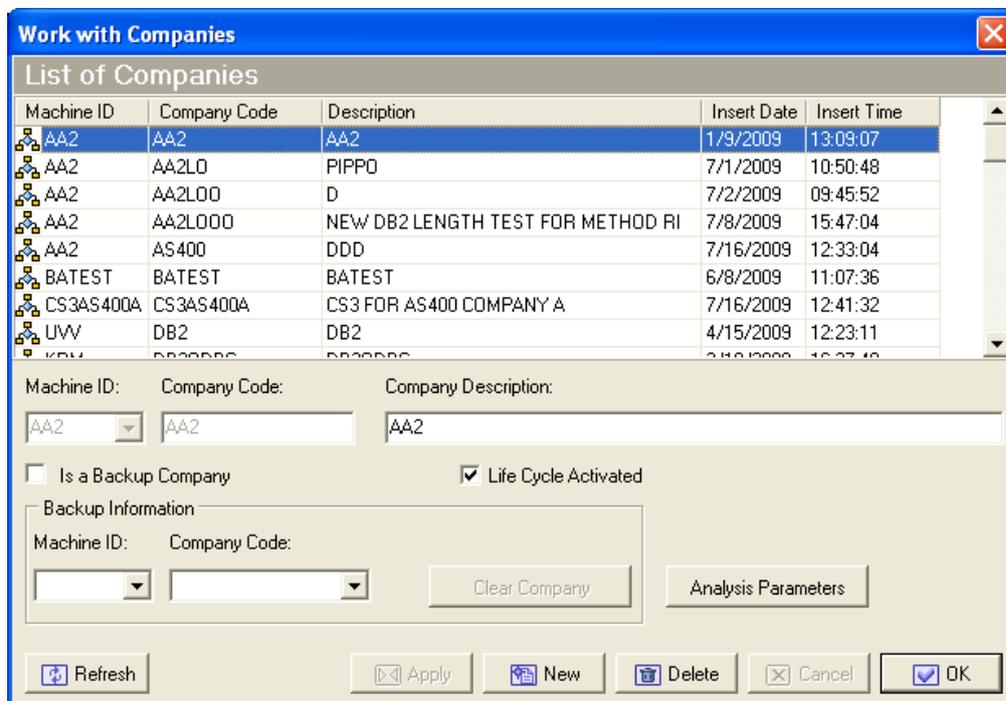


Figure 5-1: Work with Companies Window

5.1.1.1. New Company Creation

A new company can be created or an existing company can be modified or canceled from the **Work with Companies** window.

In addition, a company can be associated with information concerning the Life Cycle.

To create a backup company, just select the appropriate flag.

Warning: A backup company cannot be associated with more than one company.

While creating a standard company, you can decide whether to:

- Enable the Life Cycle for all the files belonging to the company without creating any backup company. In this case, the flag related to the enabling of the Life Cycle must be selected and the fields related to the identification of a backup company must be left empty. This is the default behavior.
- Inhibit the Life Cycle for all the files belonging to the company. In this case, no flag must be enabled.
- Enable the Life Cycle for all the files belonging to the company, creating a backup company within which all the information about the layouts which existed before the Life Cycle is preserved. In this case, you need to select the flag related to the enabling of the Life Cycle and then a company from those proposed.

5.1.1.2. Available Operations

The buttons at the bottom of the **Work with Companies** window are:

- **Apply** – Confirms the changes made to the company. Before changes are applied, a series of checks on non-key fields are performed; if the checks fail, the update is blocked.
- **New** – Initializes fields for insertion when creating a new company.
- **Delete** – Removes the highlighted company.
- **Cancel** – Cancels any changes made to the selected company. Any actions confirmed with the **Apply** button cannot be restored with **Cancel** but must be entered and confirmed again.
- **OK** – Saves any changes that have not been applied and closes the window.

5.1.2. Work with Release

A new or modified copybook may belong to a different PDS from the one in which the copybook to be replaced is located.

From the **Work with Release** window, a priority order can be defined for the PDSs so as to make clear which PDS contains the new information.

The PDSs may belong to a release with a priority or not. Only one source (the one with the highest priority) of several bearing the same name is considered within each release.

To access the **Work with Release** window:

1. Select a PDS included in the **Available PDS/DB2 Owner** list displayed in the **Life Cycle Phases** window, and then click **New Release**.

Note: If you click a DB2 Owner included in the **Available PDS/DB2 Owner** list displayed on the main form, the **New Release** button is not enabled because the release concept does not apply to this context.

2. Click  (**Work with Release**).

An example of the **Work with Release** window is shown below:

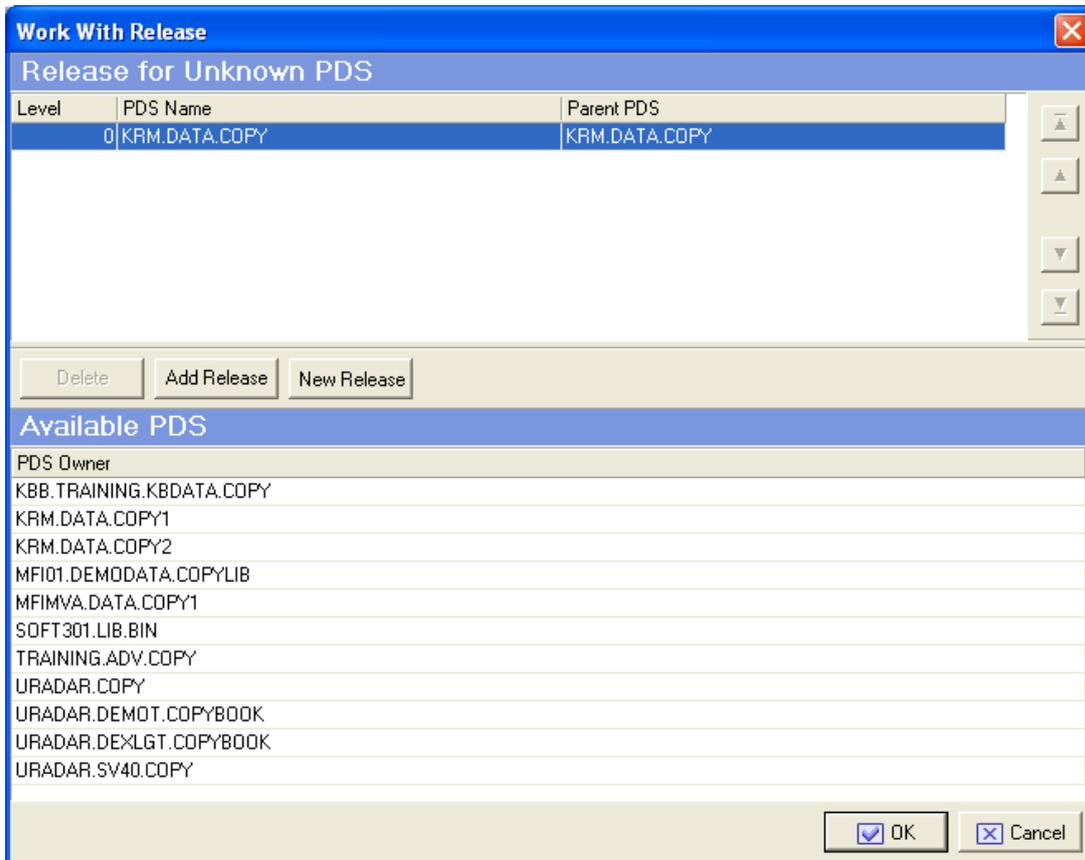


Figure 5-2: Work with Release Window

This window displays all the releases for the selected PDS in the upper list and all the available PDSs in the lower list. In this way, you should be able to drag and drop an item from the lower to the upper list or perform the same operation by clicking the **Add Release** button.

The PDS selected from the main form is displayed in this window in the upper list with row level **0**, which indicates that it is the parent PDS. This row must be inserted automatically and cannot be modified.

From this window it is possible to:

- Add a release from the available PDSs already loaded into the environment. You can either perform a drag-and-drop operation for an item from the lower to the upper list, or select an item from the lower list and click **Add Release**.
- Add a release from a new PDS. In this case, you must enter the name of the new PDS and all the relevant information in order to load it.
- Delete a release.

5.2. Schedule Life Cycle Phase 1

Schedule Life Cycle phase 1: *Changed Data Stores Identification*.

For more information about Life Cycle phases, see the chapter Life Cycle in the *Process for z/OS Guide*.

5.3. Modification of Guide Files

This section describes the first step of the Life Cycle: Definition of Environment.

5.3.1. Work with Changed Data Stores

After launching Phase 1 *Changed Data Stores Identification*, examine the list in the **Work with Changed Data Stores** area to confirm what Data Express has found, and possibly integrate it with additional information.

To access the **Work with Changed Data Stores** window, click  (**Work with Changed Data Stores**). An example of the **Work with Changed Data Stores** window is shown below:

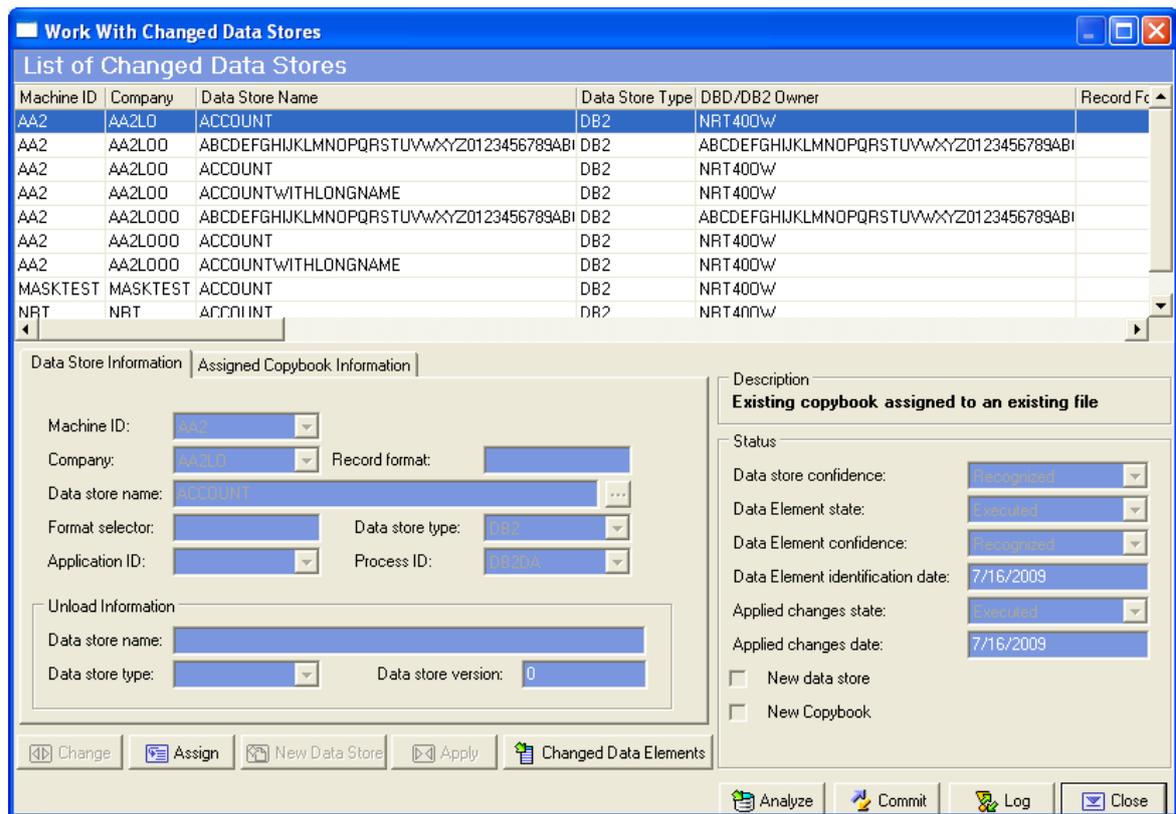


Figure 5-3: Work With Changed Data Stores Window

This window shows the list of the copybooks or new and/or modified DB2 tables.

Select any of these sources on which you want to get more detailed information and carry out operations. The information is displayed in the grid columns and, in a summarized form, in the

Status section. The **Data Element state** box displays a status for the phase of the Life Cycle that has been carried out on the source involved.

These fields can be modified by clicking the **Change** button: the value might change from **Executed** to **Not Executed** in case you want to re-execute the phase to which the field refers.

When a confidence field assumes a **Not recognized** value, it indicates whether Life Cycle needs additional information or user confirmation. Only when the field assumes the **Recognized** value, can the following phase be carried out.

The possible cases are outlined below:

1. New copybook is not associated to file. Even the case in which the source is new but refers to an additional format/segment of an existing file falls within this category.
2. Existing copybook is associated with existing file.
3. Existing copybook is not associated with any file.
4. New copybook is associated with new data store (for DB2 files only).

Note: If a copybook defines several file layouts and only one of these has changed, Data Express identifies all the data stores (including the non-modified data stores) as *changed data stores*. At the end of the Life Cycle, only the modified data stores will contain the modifications made.

5.3.1.1. Case 1 - New copybook is not associated with data store

If Phase 1 identifies a new copybook and Data Express cannot determine which data store the copybook should be associated with, you are asked to specify further information.

In this case, you should always specify an existing machine ID and a company name (not a backup company) for the copybook. There are three ways to make the confidence field take on the **Recognized** value:

- **Leave the copybook unassigned** – No other operation is required.
- **Set an existing data store** – A data store is specified from the list of data stores that already exist in the Knowledge Base, which is made available by clicking the **New Data Store**. The copybook is then associated with the selected data store.
- **Specify a new data store** – A new data store is specified, also entering all the information required to load it. The copybook is then associated with the new data store specified.

5.3.1.2. Case 2 - Existing copybook is associated with an existing data store

Phase 1 has detected that an existing copybook assigned to a data store has been modified. In this case, you cannot change anything about the copybook except for the data store assignments.

- **Leave the copybook assigned to the data store** – No other operation is required.
- **Set an existing data store** – A data store is specified from the list of data stores that already exist in the Data Express Knowledge Base, which is made available by clicking the **New Data Store** button. The copybook is then associated with the selected data store.

- **Specify a new data store** – A new data store is specified, also entering all the information required to load it. The copybook is then associated with the specified data store.

5.3.1.3. Case 3 - Existing copybook is not associated with any data store

Phase 1 has detected that an existing copybook has been modified but is not associated with any data store. This may indicate that the previously modified copybook had not been assigned to any data store or that the copybook has been modified to such an extent that Data Express is no longer able to reconstruct its association with the data store.

In this case, you cannot change anything about the copybook but can assign another data store or leave it unassigned.

- **Leave the copybook unassigned** – No other operation is required.
- **Set an existing data store** – A data store is specified from the list of data stores that already exist in the Knowledge Base, which is made available by clicking the **New Data Store** button. The copybook is then associated with the selected data store.
- **Specify a new data store** – A new data store is specified. (You must also enter all the information required to load it.) The copybook is then associated with the new data store specified.

5.3.1.4. Case 4 - New copybook is associated with new data store (for DB2 files only)

Phase 1 has detected a new DB2 file. In this case, you must specify an existing machine ID and a company name.

5.3.2. Schedule Life Cycle Phase 2: Changed Data Elements Identification

To schedule Life Cycle phase 2: *Changed Data Elements Identification*.

1. Right-click the required PDS/DB2 Owner in the **Life Cycle Phases** window, and click **New Scheduled Phase**. An example of the **New Scheduled Phase** window is shown below:

Figure 5-4: New Scheduled Phase Window

2. In the **Phase Information** section, click **Changed Data Elements Identification**.
3. In the **Scheduling Information** section, select the required option to indicate how often the phase must be launched.
4. Click **OK** or **Apply** to confirm the update/insertion data to the new scheduled phase.

5.3.3. Work with Changed Data Elements

The *Changed Data Elements Identification* phase performed should be confirmed and/or modified from the **Work with Changed Fields** window. The batch job identifies matches between the old copybook data elements. The processing operation might miss something (the value assumed by the confidence field is different from **Recognized**), so you must force the confidence field value to **Recognized**.

To access the **Work with Changed Fields** window:

1. Click  (**Work with Changed Data Stores**) from the **Life Cycle Phases** window. The **Work with Changed Data Stores** window is displayed:

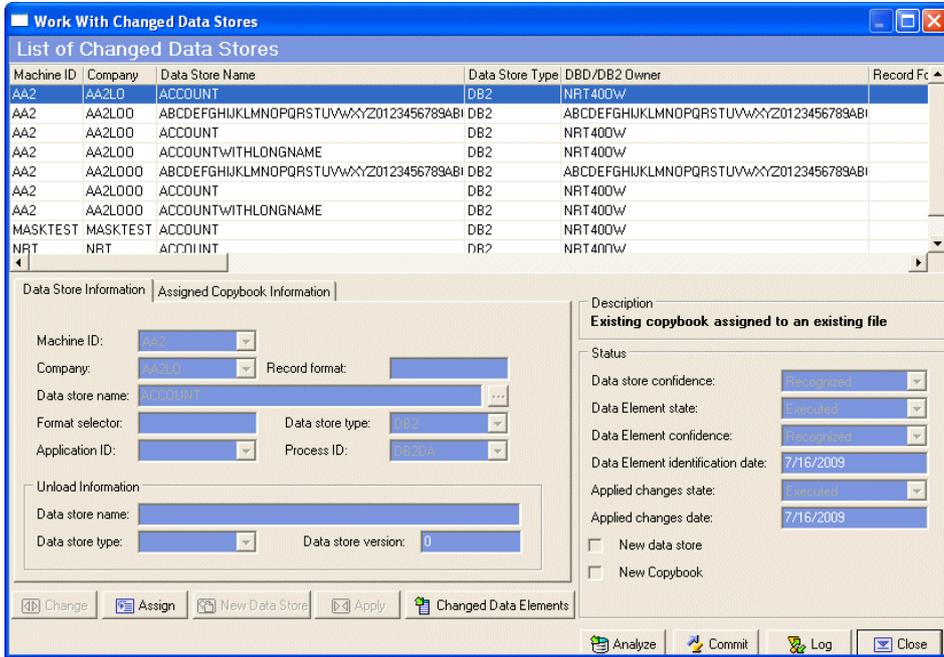


Figure 5-5: Work With Changed Data Stores Window

- Select the required row from the **List of Changed Data Stores** and click the **Changed Data Elements** button. An example of the **Work with Changed Fields** window is shown below:

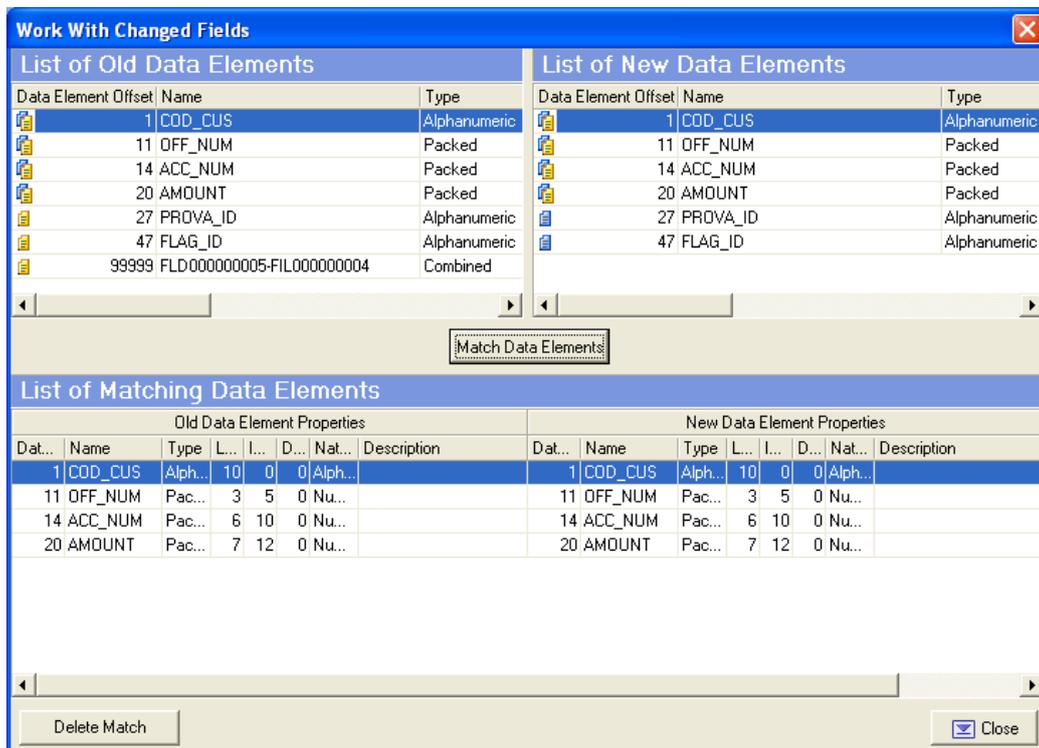


Figure 5-6: Work With Changed Fields Window

The two upper lists show the old and new data elements list for the selected source. Within the two lists, the different icons alongside the listed fields identify data elements that have been matched and data elements that have no matches.

The lower list shows the matches between the new and old data elements.

Note: If there are no matched data elements, this list will be empty.

- Identify new matches between data elements and define those that Data Express could not recognize.
- If required, modify or delete the matches identified by Data Express.

Note: Bear in mind that the following steps only apply to the records of the list of confirmed data elements.

- Select the two data elements to be compared from the upper lists, and click the **Match Data Elements** button to view matches in the lower list.

Note: To delete a match between data elements, select it from the lower list and click the **Delete Match** button.

Data Express automatically recognizes some relationships. Therefore, if only one data element has been added to a table, leaving everything else as it was, all the data elements will appear to be matching. The new data element is displayed on the right-hand side and no matching is needed. This form is used to specify the data elements that have changed, for

example, whenever a data element has been radically changed and the z/OS platform application cannot recognize it.

Data Express is designed to handle the following:

- data elements to be added (at the head, tail, or in the middle)
- data element to be split up into several data elements
- several data elements to be combined in a single data element (combined data element)
- data elements to be eliminated
- data element typology to be changed (type/length/decimals)

To identify matches between old and new data elements, Data Express mainly relies on the correspondence of:

- data element name
- position (the order number of the data elements) within the data store
- data element type and length

5.3.4. Schedule Life Cycle Phase 3

Schedule Life Cycle phase 3: *Apply Identified Changes*.

To schedule Life Cycle phase 3:

1. Right-click the required PDS/DB2 Owner in the **Life Cycle Phases** window, and click **New Scheduled Phase**.
2. In the **Phase Information** section, click **Apply Identified Changes**.
3. In the **Scheduling Information** section, select the required option to indicate how often the phase must be launched.
4. Click **OK** or **Apply** to confirm the update/insertion data to the new scheduled phase.

The modification application phase consists of adjusting the current file information on the basis of the types of changes involving the data elements, saving the previous information in a machine/backup company or creating it in another machine/company.

The possible cases are outlined below:

- Data elements are added: there is no information to retrieve
- A data element is split up into several data elements: the information on the old data element is lost

- Several data elements are combined into a single data element: the information on the old elements is lost
- Data elements are deleted: the information on the old data elements is lost
- Data element topology is changed (type/length/decimals): the information is retrieved. In addition, all the information related to the number of decimals is sorted out and messages are generated concerning any test environment creation rules that are no longer valid because data elements with the same class assignment have changed and become incompatible.

6. Work with Life Cycle Jobs

Life Cycle jobs can be scheduled from the **Work with Jobs** area.

For more information about the **Work with Jobs** area, see the chapter *Work with Jobs* in the *Front End Guide*.

6.1. Introduction

To access the **Work with Jobs** area:

1. Start Data Builder by clicking **All Programs > Micro Focus Data Express 4.0 > Data Builder**, or **Start > All Programs > Micro Focus Data Express 4.0 > Data Builder - CS**.

Note: If you are using Data Express on Windows Vista and User Access Control is enabled, you must run Data Builder as **Administrator**.

2. Click  (**Work with Jobs**) in the toolbar of the main window.

The **Work With Jobs** area is displayed as shown below:

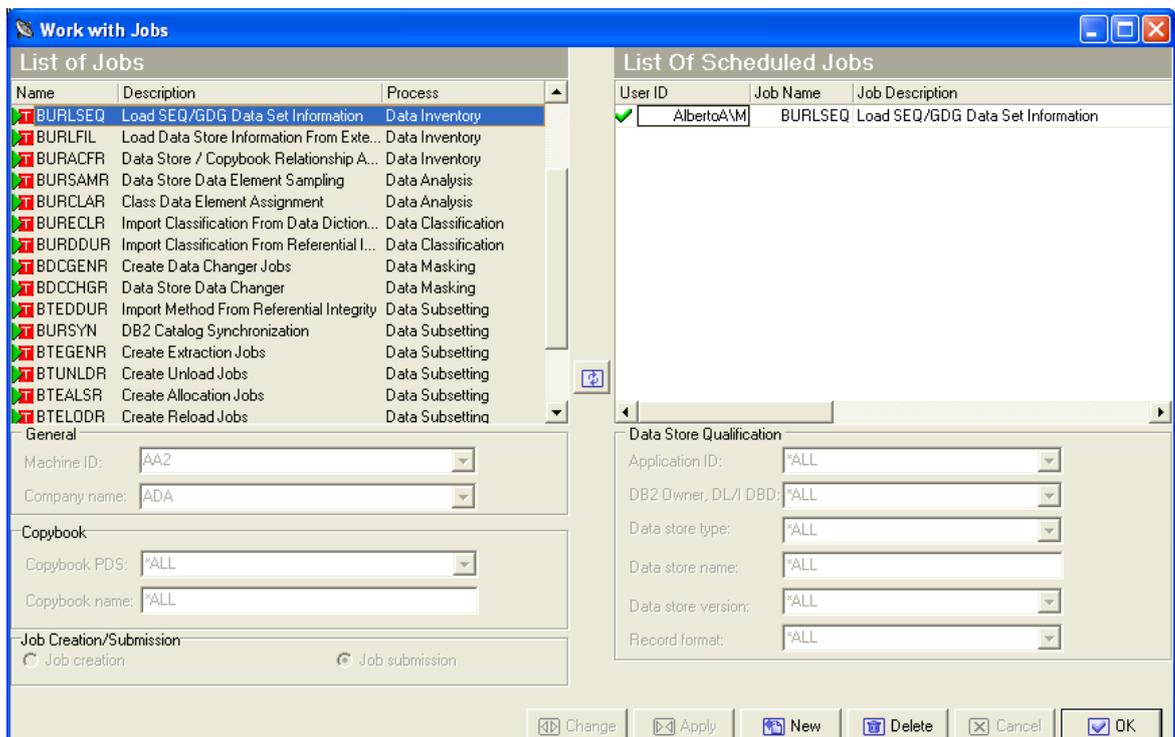


Figure 6-1: Work with Jobs Area

6.2. Scheduling Phases Using a JCL

On the basis of the content of the guide file, which is fed by the list of scheduled phases displayed in the **Life Cycle Phases** window, a JCL that is external to Data Express and is launched every evening submits the phases scheduled for the day.

For the phases following the copybook identification, only the records of the data store list that have been recognized by Data Express are processed.

A prototype of this JCL is included in the Data Express libraries in the partitioned JCL and is called **IURLC**. To customize it, modify the values **JOBNAME**, **JOBLIB**, **DSN name**, and **PLAN name**.

Use the **Set time limit** function to set the time limit in order to indicate whether a job has been launched today or yesterday to the z/OS application. When the Life Cycle job has finished executing, its finishing time is checked. If it precedes the time limit parameter, it indicates that the job was launched yesterday to the application. If the parameter is not specified, its value is assumed to be **09:00**.

The **Set time limit** function is accessible from the **Set time limit for previous day** window from the toolbar.



Figure 6-2: Set Time Limit

The buttons at the bottom of the **Set time limit for previous day** window are:

- **OK** – Applies the changes immediately and closes the window.
- **Cancel** – Cancels any changes made to the set time limit and closes the window.

6.3. Life Cycle Job Creation

The **Life Cycle** job executes each phase of the Life Cycle sequentially. Each phase is executed until confirmation is needed.

Note: Using the Life Cycle job to execute the Life Cycle phases does not take into consideration the list of scheduled phases (displayed in the **Life Cycle Phases** window) or the time limit parameter.

To create a **Life Cycle** job:

1. From the **Work with Jobs** window, click **New**.
2. In the **List of Jobs** section, select **BLCFILR- Life Cycle**.

- Click **Apply** to submit the job. The **Secondary Options** window appears:

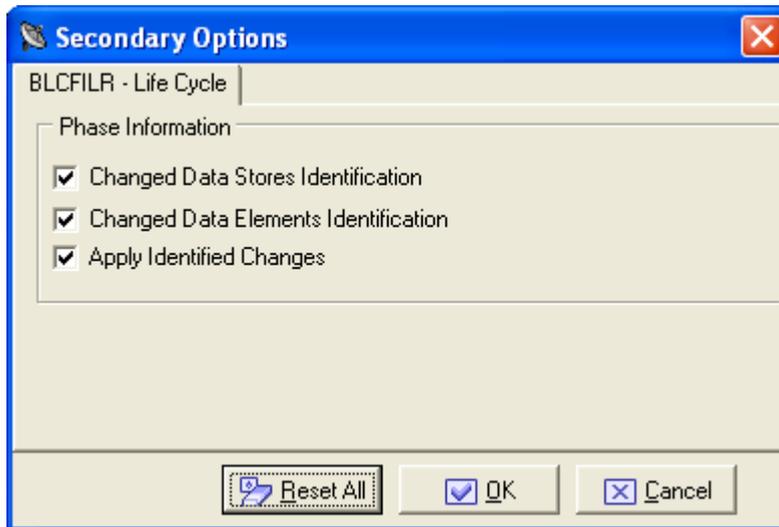


Figure 6-3: BLCFILR – Life Cycle Secondary Options

- In the **Secondary Options** window, select one or more phases according to your requirements.
- Click **OK**.

6.4. Clear Life Cycle History Job Creation

To create a **Clear Life Cycle History** job:

- From the **Work with Jobs** window, click **New**.
- In the **List of Jobs** section, select the **Clear Life Cycle History** job.
- In the **General** section, select the appropriate **Machine Id** and **Company name**.
- Click **Apply**. The **Secondary Options** window appears:



Figure 6-4: BLCCLR – Clear Life Cycle History Secondary Options

- In the **Secondary Options** window, specify values for the following fields:
 - Remove History Before** – Removes all Life Cycle information before the selected date.

- **Reorganize Table** – Performs a reorganization of the table after removing the Life Cycle information.

6.5. Available Operations

The buttons in the **List of Scheduled Jobs** section of the **Work with Jobs** window and the **Secondary Options** window are:

- **Change** – Lets you modify **File Qualification** parameters for the selected job if the job is scheduled but has not yet been submitted (**Flag Status** is **0**). Changes should be saved using the **Apply** button.
- **Apply** – Saves the information for the new job, but keeps the window open.
- **New** – Initializes fields for insertion when scheduling a new job.
- **Delete** – Cancels the execution of the selected scheduled job and removes the job from the **List of Scheduled Jobs** list. If the job is currently being executed (**Flag Status** is **1**), you will be prompted to confirm the deletion.
- **Cancel** – Cancels any changes. Any confirmations made with the **Apply** button cannot be undone with the **Cancel** button but must be instead entered and confirmed again.
- **OK** – Applies all changes and closes the window.
- **Reset All** – Clears the values of all fields.