

Import / Export module for Pharos- Business Navigator

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I. Introduction.

Data import module in Pharos allows import of necessary data to Pharos from various other software packages which may have such data or export data from Pharos into other applications. This is powerful utility which has advanced features and support of multiple data formats. The supported data formats in import are as follows:

- XML
- HTML
- MS Access database
- Paradox
- Dbase
- Text
- Excel
- Lotus
- Quattro Pro

The data import and export can be made initially in manual mode allowing defining schemes of import/export for particular tables. Several such schemes can be defined into one combination allowing automatic run of the import or export procedures for several databases or tables by using predefined schemes of import/export. The schemes identify data sources and data destinations and include optional intermediate calculations on data being processed.

In order to run import one needs to open "Database" menu item in the main PHAROS screen and select "Import tables".

2. General sequence of steps.

The objective of import is to select the source data which are necessary for Pharos, process them by particular formulas and put the results into the appropriate Pharos tables. As the necessary data can be stored in different databases and files with various formats and on different PC in LAN there are the following situations:

1. Source data are in one file which contains complete information for preparing data for all Pharos tables.
2. Source data are in several files and should be extracted, processed and saved into particular Pharos tables.
3. One Pharos table can be prepared by using several source files or databases.

The import / export procedure consists of two main options:

1. Defining the import/export.
2. Running the import/export.

The objective of the first option is to define the relations between the source and destination data sets and calculations which are to be made when data are taken from the source data set and finally putting into the destination Pharos tables.

There are the following components of the import process:

- Scheme
- Combination of schemes

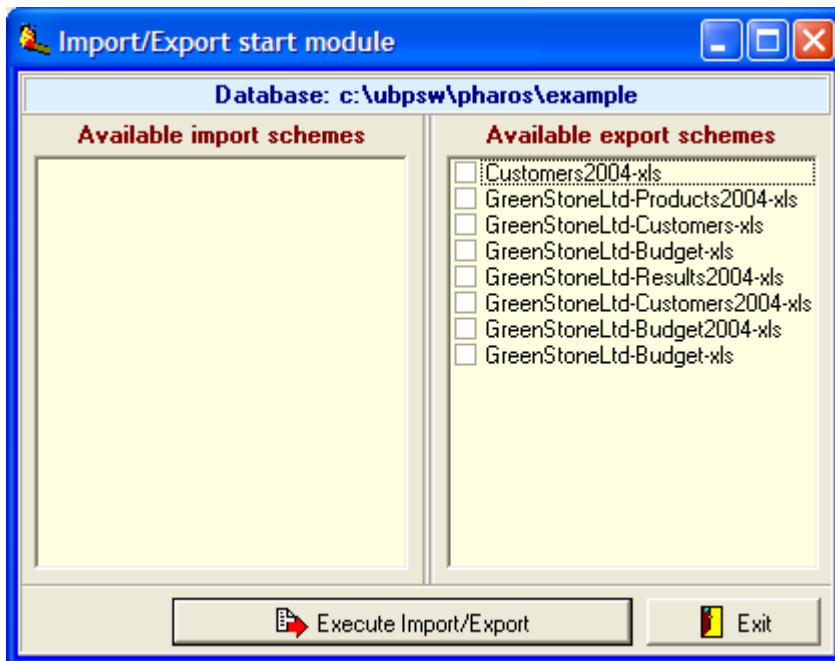
Scheme consists of the specifications defining processing of the source data accordingly to formulas introduced into the Formula Editor for particular source data set and the way the resulting data are brought into the Pharos tables (append, update, etc).

Scheme combination allows grouping of several schemes for their automatic runs. It defines several source data files being processed one by one and can be run manually or automatically. The result of the running of the scheme combination should be aimed at filling the Pharos table in with maximum available data.

The objective of the schemes and scheme combinations is to get possibility to run routine import and export operations easily and in automated mode after all initial definitions and checking of the runs.

3. Description of the Pharos Import/Export main window components.

Initial screen: The initial window allows selection of available schemes or combination of schemes to run without entering into the module. The selection initiates the appropriate data export or import procedures. If no selection is made or no schemes are available the user proceeds to export / import module.



Export / Import module screen.

Available tables: The window on the left contains the list of tables which are used in Pharos. The selected table becomes highlighted and all export/import operations are applied to this table. The checkmarks are filled in automatically upon the successful results of import. Note please that it does not reflect the fact if all fields have been filled in successfully. The import allows partial data transfer from external table into PHAROS table. The rest of data required by Pharos can be entered manually afterwards.

Import section

- Field: Selecting of available import schemes and scheme combinations by names saved previously.
- Button: "**Import using scheme**" is used for automatic run of the available selected procedure.
- Button: "**Define Import scheme**" is launching the import wizard which helps in specification of the all required parameters, data and conditions.
- Button: "**Applying result to Pharos**" is used for transferring the result of the import into PHAROS database.
- Button: "**Save scheme as ...**" allows saving the successfully implemented scheme of importing particular tables for future use.
- Button "Define scheme combination" can be used for making combination to be used later for regular import of data.

Export Section

- Field: Selecting of the available export schemes and combinations of schemes by names saved previously.
- Button: "**Export using scheme**" is used for automatic run of the selected scheme of scheme combination.
- Button: "**Define Export scheme**" is launching the export wizard which helps in identification of the all required export data and conditions.
- Button: "**Save scheme as ...**" allows saving the successfully implemented scheme for future use.
- Button: "**Define scheme combination**" allows saving the defined export combination of particular schemes under some name for future use.

The table which is shown under the buttons represents the initial (before import/export) and resulting (after import) Pharos table with the name which is highlighted in the upper left window. . It can be edited directly in the window before final saving.

Button View log file allows to review the results of the previously runs.

Buttons resembling "tape recorder controls" provide possibility of moving between records in the table by one up and down, to the first and to the last one as well as insert and delete any record.

4. Overview: Preparing the schemes.

The general import procedure consists of the following steps:

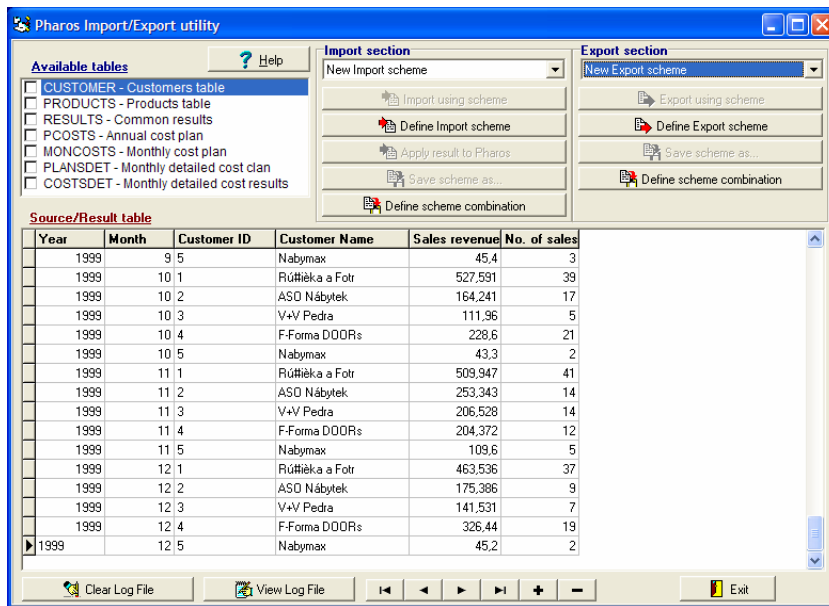
1. Preliminary analysis of the source tables, availability of the necessary data, formats of the particular datasets.
2. Defining the source table.
3. Defining the destination table.
4. Mapping of the necessary fields from the source to destination.
5. Defining intermediate calculations (for import only).
6. Checking the resulting tables.
7. Saving the schemes upon the successful results.
8. Applying the resulting tables to Pharos database.
9. Defining combination of schemes to run several import schemes automatically and achieve maximum completeness of filling Pharos tables with imported data.

The work requires careful review of the initial tables which are to be used as source tables, analysis of data which should be extracted into Pharos (Step1) and practices. Upon the completion of preparations one can start import or export procedure by clicking the button "**Define Import scheme**"

5. Exporting data from Pharos: The example for Excel destination tables.

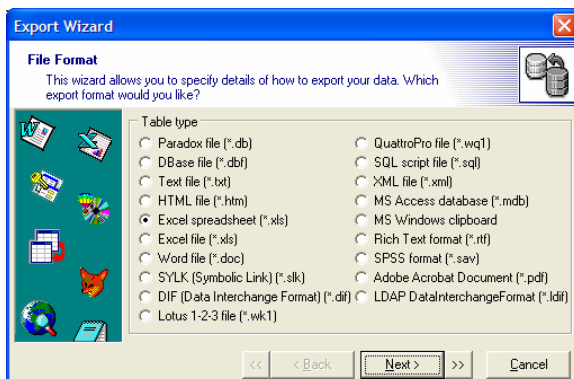
5.1. General rule: Select source table for export or destination table for import in the left window "Available tables". Note the table CUSTOMER should be selected and highlighted (see illustration below).

Its content is shown in the window below Source / Result table. One can move and resize columns in this table to provide better vision.

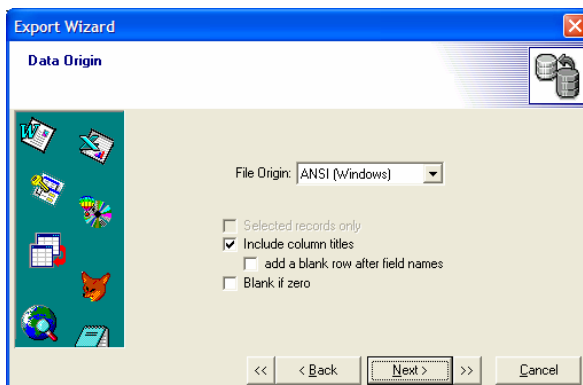


5.2. The steps:

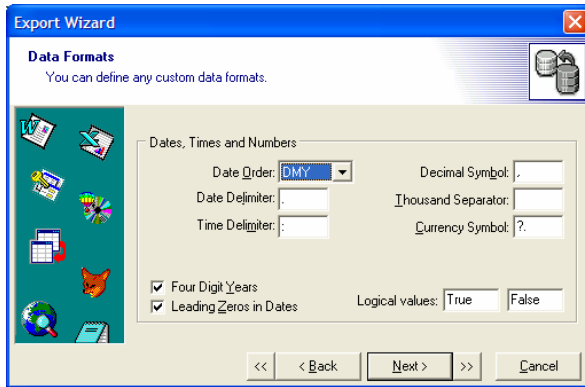
1. Press **Define Export scheme** button in the Export section on the right after the selection and noting of the source table to exported.
2. Select table format of the destination data and press **Next**.



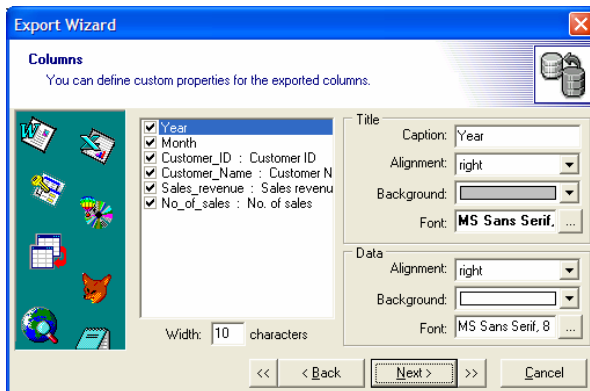
3. Check all default selections on the Data origin form and make changes if necessary or leave it as it is. Then press **Next** button.



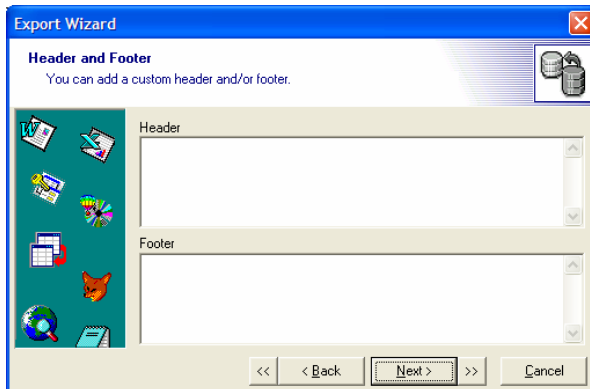
4. Check all default selections on the Data Formats form and make changes if necessary or leave it as it is. Then press **Next** button.
Recommendation: change Date order to DMY if it is standard.



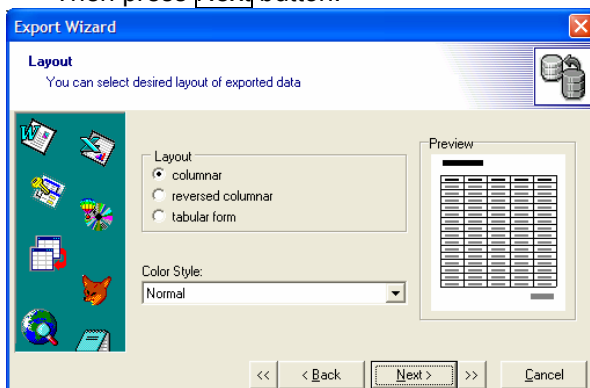
5. Check all default selections on the Columns form and make changes if necessary or leave it as it is. Then press **Next** button.



6. Add text to Header and Footer in the form if necessary or leave it as it is. Then press **Next** button.

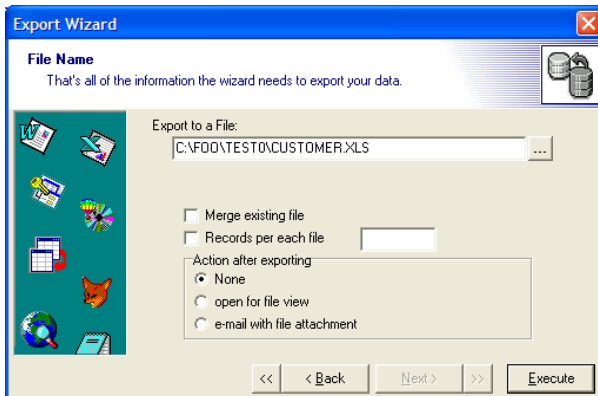


7. Check all default selections on the Layout form and make changes if necessary or leave it as it is. Then press **Next** button.

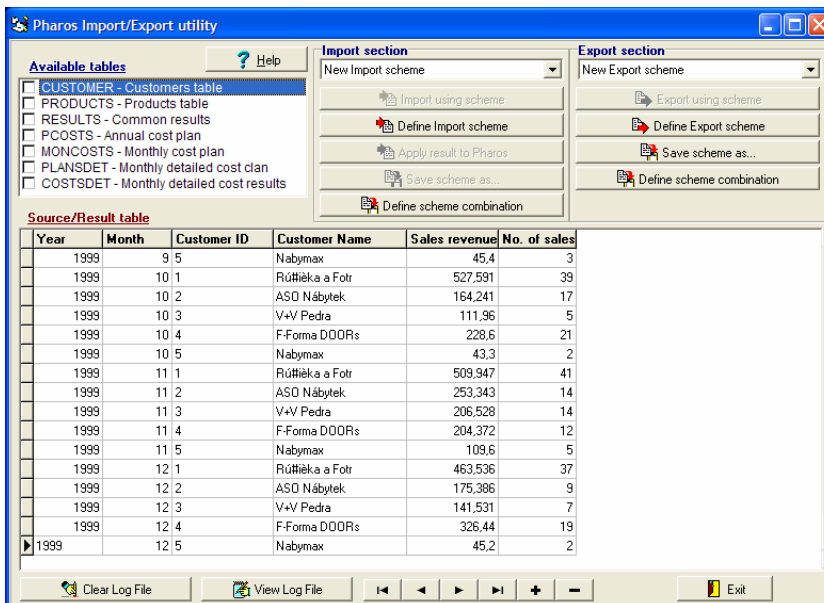


- Check all default selections on the File Name form and make changes if necessary or leave it as it is. Then press **Execute** button.

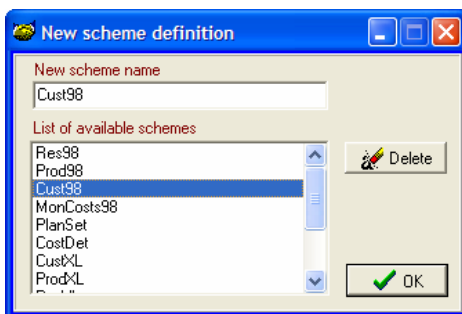
Note that previous selection of the destination directory file is saved and the file name provided accordingly to the selected source Pharos table CUSTOMERS.



- Press newly appeared button **Save scheme as ...** below the button Define Export scheme to save all previously made selections for future use.



- Type the new scheme name in the field New scheme name or select existing name to overwrite previously made selections and press OK.

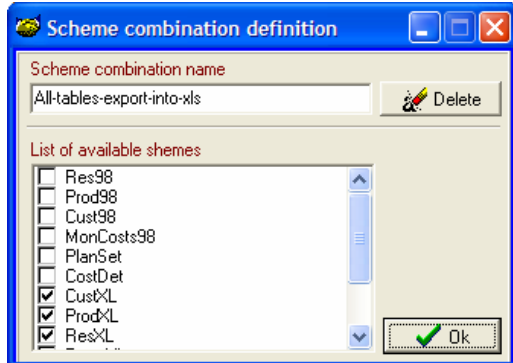


- Return to the Step 1, and select another table for Export or end the procedure.

5.3. Defining scheme combination in Export

After saving several schemes there is possibility to define one combination of schemes for future use. To make definitions click **Define scheme combination** button and enter new name of select existing name of from the list. Note that Scheme combination is presented with a star before the name what makes it distinguished to the saved schemes of tables.

The names of schemes which should be run in the Scheme combination should be checked in.



Press OK.

5.4. Checking the results

1. Select the name of the combination in the field at the top of Pharos Import/Export utility form in its upper right Export section by pressing small arrow on the right and press button **Export using scheme** to verify the correct running of the combination.
2. Press the button View Log File at the bottom of the window to review the results of the run.

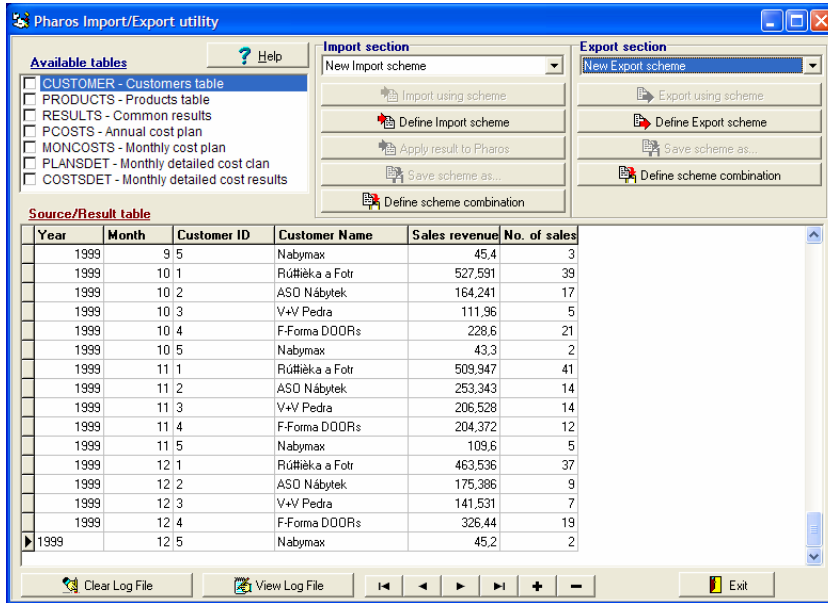
5.5. Practical recommendations

1. Develop good practices of working with Pharos data export by making several experiments in different subdirectories which can be located on various hard disks of PC.
2. Some export operations can be very slow, e.g. exporting large tables of Products or Detail Costs into MS Word file. It is considerably faster to make export into the Excel table first and then export the data into Word from Excel table, Another or export into Windows CLIPBOARD and then paste into WORD. The practice would allow selecting the most effective way of the work.

6. Importing data into Pharos: The procedure

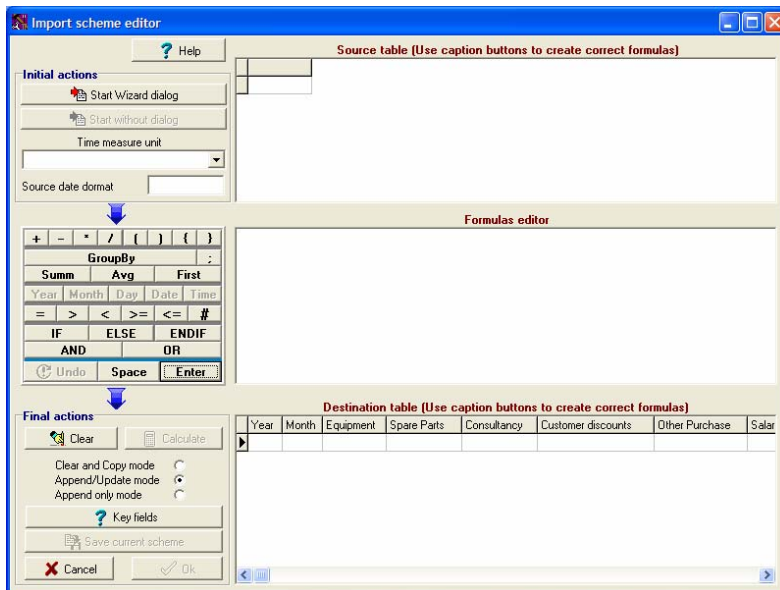
6.1. General rules

1. **MAKE IMPORT ONLY INTO THE COPY OF YOUR ENTERPRISE DATABASE UNTIL PROPER WORKING SKILLS AND UNDERSTANDING ARE DEVELOPED!**
2. **ALWAYS MAKE YOUR ENTERPRISE DATABASE BACK UP AFTER EACH SUCESSFUL DATA UPDATE AND SAVE IT IN SAFE and RELIABLE PLACE. The option "Automated backup" in "OPTIONS" helps to have the backup made after each working session automatically.**
3. Select source table for export or destination table for import in the left window "Available tables". Note the table CUSTOMER is highlighted as selected one (see illustration below). Its content is shown in the window below Source / Result table. One can move and resize columns in this table to provide better vision.

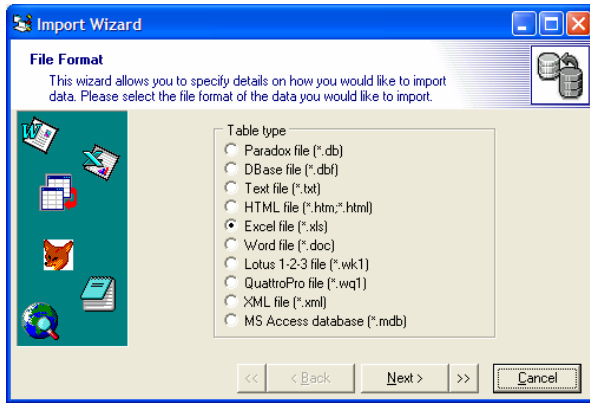


6.2. Import procedure example from Excel files

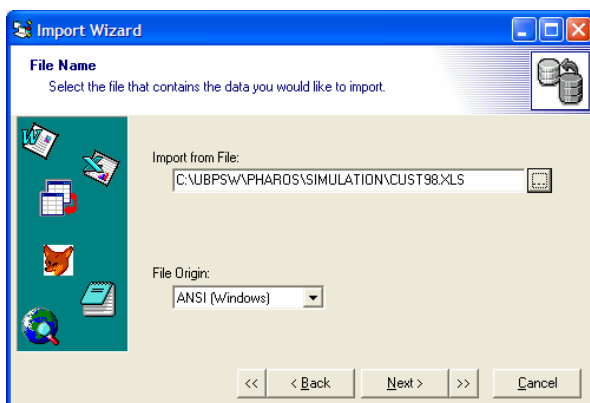
1. Click **Define Import scheme** button in the middle of Import section.
2. New window Import scheme editor appears. Click button Start Wizard dialog on the left.



3. Select format of the source table and press **Next**.



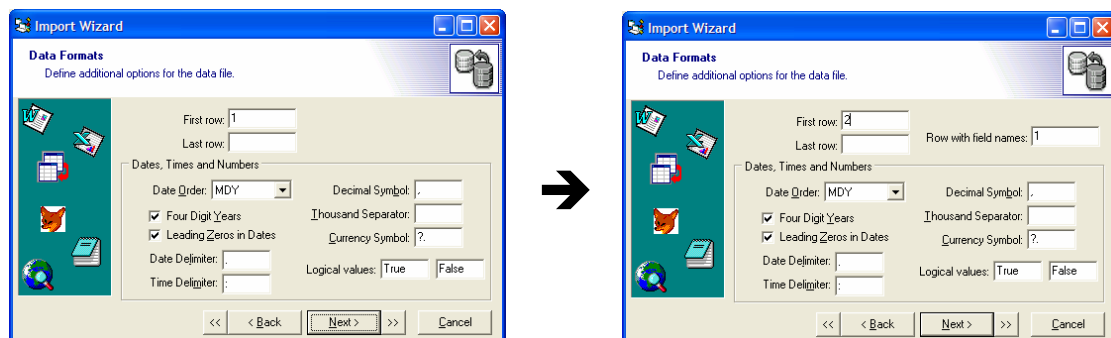
4. Check all default selections on the File name form and select correct name make changes if necessary or leave it as it is. Then press **Next** button.



5. Check all default selections on the Data Formats form and make changes if necessary or leave it as it is. Then press **Next** button.

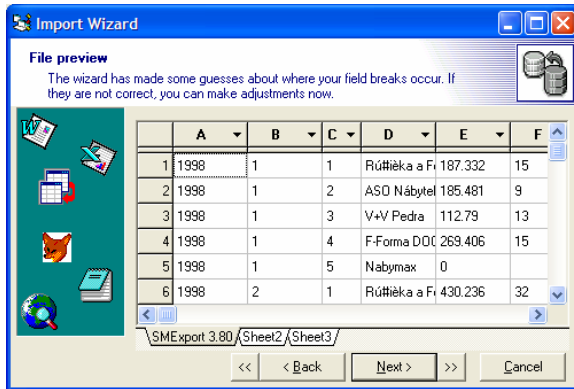
Note that if one types number 2 or greater into the "First row" field then new field Row with field name appears on the right. It allows defining the number of a row with field names (see illustration below).

Recommendations: (1) Change Date order to DMY if it is standard. (2) review the table content in the neighboring Excel window to learn the structure of imported table.

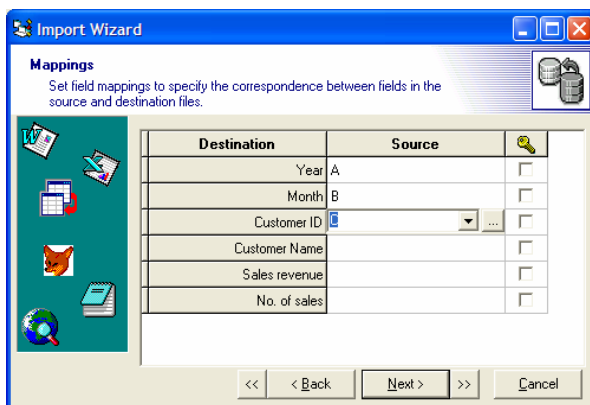


6. Check if the draft table is correct in the File preview form and return back if necessary to make changes or leave it as it is of correct. Then press **Next** button.

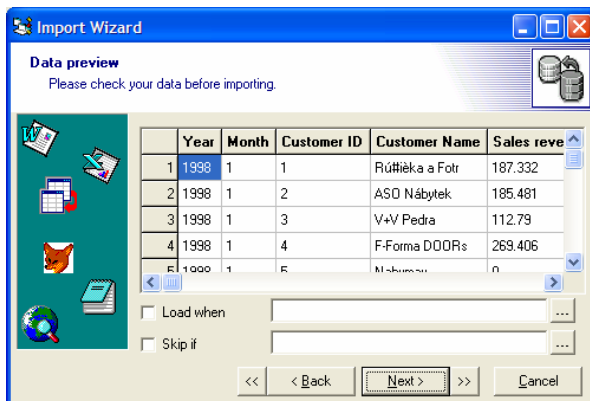
Note that one can resize the column width if desirable.



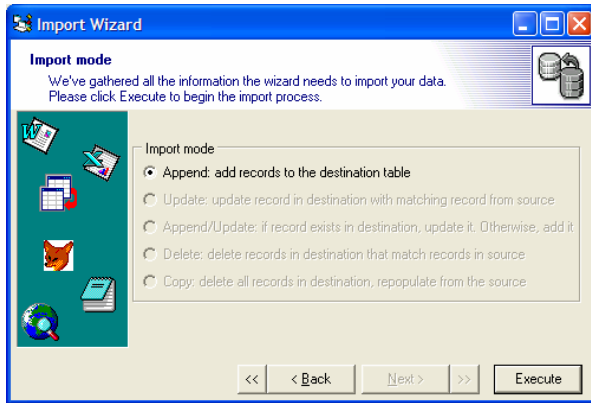
7. Make source column assignments to import data in the form "Mappings one by one. Then press **Next** button.



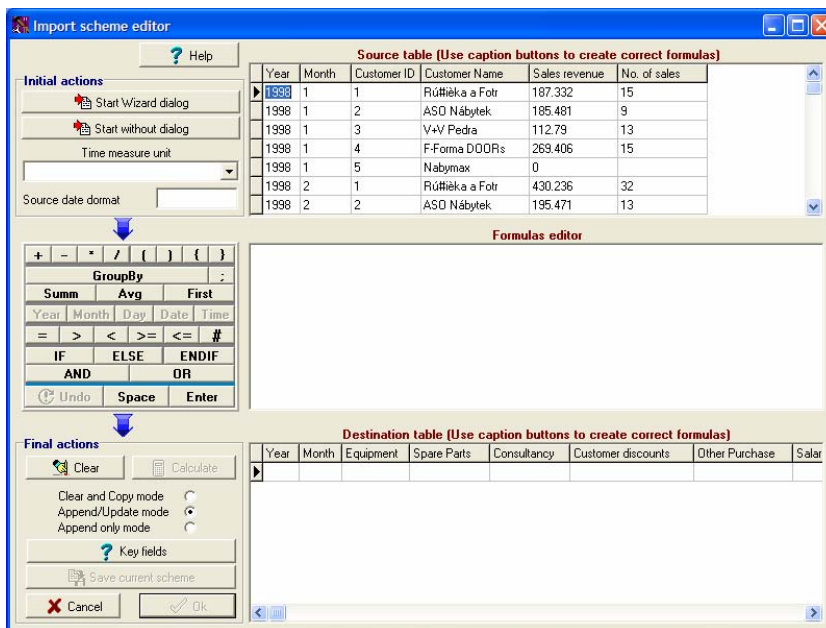
8. Check all data fields and its content on the "Data preview" form and enter additional rule definitions at the bottom if necessary. Then press **Next** button.



9. Finish the import definitions and click **Execute** button.

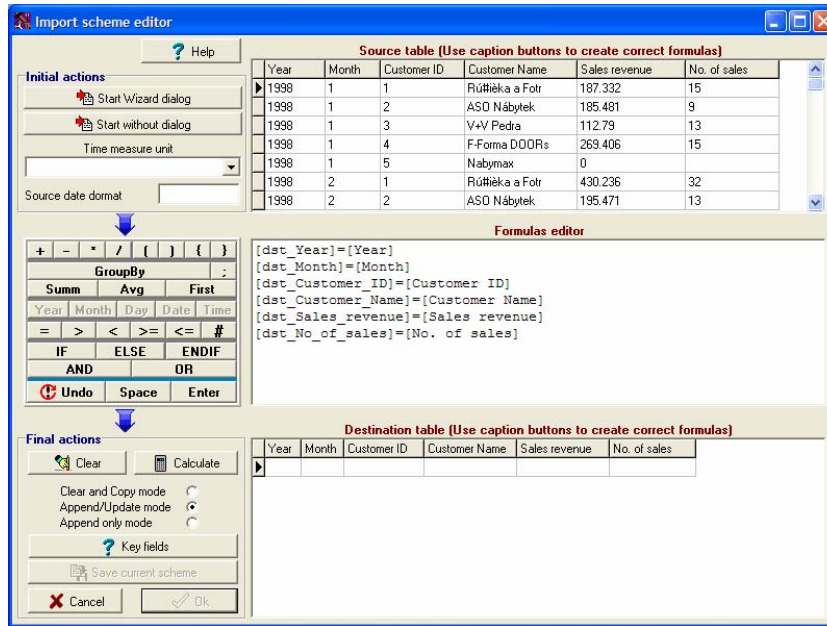


10. The results of intermediate importing of selected data columns appear on the screen in the upper section of the Import scheme editor. The columns can be resized for better view.



11. Make final selection of data to be imported by clicking the name of the column in the Destination table below and clicking the corresponding name in the Source table above. Press Enter key or click **Enter** button afterwards. In case of mistake use Backspace key on keyboard or **UNDO** button in the left side of editor screen for corrections (see additional sections below).

When finished the table should look as follows:



12. Click button Calculate to prepare final draft table ready for import into Pharos. If the table is acceptable one needs to select correct mode of its introduction into corresponding Pharos table. There are the following options:
 - Clear and Copy mode erasing the content of existing Pharos table
 - Append/Update mode adding data for new dates and updating (overwriting) data for existing months.
 - Append only mode for adding new data for dates which are missing in existing Pharos table.
13. Click OK to finish import procedure and OK for updating the Pharos table with new data.
14. The main Export/Import form appears back on the screen. At this only moment one has opportunity to save the Import definitions in the scheme under special name reflecting its content.
15. One combination of particular import schemes can be defined afterwards to be executed automatically when selected.
16. Return to the Step 0 and select another table for import if necessary or exit the procedure.

6.3. Running combinations of schemes.

When all import procedures are defined and working one can use predefined and tested schemes or scheme combinations to make fast data import into Pharos.

The names of the schemes are saved in one place. For example it can bring gradually problems of overwriting the existing name defined previously while Exporting in Excel when later it was necessary to make export into Access. Avoiding the problem is easy if one uses long names of the schemes and scheme combinations which represent the content of operation.

Example: One can use the following naming conventions

< Enterprise database name (in English or Local Language) > + <Table name & Description > + <Export file type for example Excel, (.xls) >

which may represent the following name

LeatherProdInc-Products2003- Export2Excel.EXP

Such practice would save users from many repeated jobs of redefining previously made schemes.

Notes about naming of the schemes:

- Current version of the export / import module for Pharos allows definition of ONLY ONE COMBINATION OF SCHEMES for EXPORT and ONE COMBINATION for IMPORT.
- The scheme name can have maximum length of 256 characters.
- The number of schemes is unlimited.

6.4. Checking the results

1. Select the name of the combination in the field at the top of Pharos Import/Export utility form in its upper right Export section by pressing small arrow on the right and press button

Export using scheme to verify the correct running of the combination.

2. Press the button View Log File at the bottom of the window to review the results of the run.

Note: Develop good practices of working with Pharos data export by making several experiments in different subdirectories which can be located.

Current version of Pharos v. 2 can work with one product type only. There is no possibility to aggregate production data of products with different measurements like units, liters, tons, etc

7. Inside the import: Defining the formulas for processing complex data

Click the header in the destination table column and the resulting identifier is printed in the **Formulae Editor** windows. It should be done for each destination column which should be calculated by using the source table data from one or more columns.

Each formula should begin with the definition

[Dst.Year]=

The extended set of operators can be used for defining the processing requirements.

Note: each function argument related to time should be used only with "Time" function preceding the argument. Time measurement units should be identified by selecting from the existing options as well.

The **UNDO** function can be used to restore the previous definitions. The "ENTER", "SPACE" and other functions can be entered by using keyboard as well.

When using of any group function like Summ, Avg (average) or First it should be preceded by the function GroupBy.

This version of editors does not allow use of one grouping function inside the other grouping function (analog in Access database is "Totals") for example the operation `Summ(Avg([Production Volume]))` is **not** allowed.

Examples:

a) Assignment:

```
[Dst.Year]=[Year]
[Dst.Month]=[Month]
[Dst.Purchase]=[Purchase]
[Dst.Personnel]=[Purchase]+[Others]
```

b) Using statistical functions with grouping by fields:

```
GroupBy ([Year] ; [Month])
```

```
[Dst.Year]=First([Year])
[Dst.Month]=First([Month])
[Dst.Purchase]=Summ([Purchase])
```

c) Using the statistical functions with grouping by fields by build-in functions *

```
GroupBy(GetYear([Date]);GetMonth([Date]))
[Dst.Year]=First([Year])
[Dst.Month]=First([Month])
[Dst.Purchase]=Summ([Purchase]+[Others])
```

d) Using conditional operators:

```
GroupBy([A];[B])
IF([A]>1997) AND([A]<1999)
  [Dst.Year]=First([A])
  [Dst.Month]=First([B])
  [Dst.Purchase]=Avg([C])
ENDIF
```

7.1. Build-in functions for data and time arguments:

All functions are available only when the field "Source Date Format" is filled in by defining the correct format string TdateTime in the Source table.

Examples are as follows: "yyyy/mm/dd" or dd.mm.yyyy or mm.dd.yyyy. The particular separators like . or / or – which appears in the source data string correspond to particular national Windows definitions for regional time/date settings.

1. GetYear() – extracting a year value from the field TdateTime by the time/date argument string.
2. GetMonth() - extracting a month value from the field TdateTime by the time/date argument string.
3. GetDay() - extracting a year value from the field TdateTime by the time/date argument string.
4. Date() – reformatting the value TdateTime into "yyyy-mm-dd" format.
 - i. This can be applied to the comparison of various values in time/date format. For example the comparison IF [Date] > "15.02.2002" can bring about the wrong result i.e. when Date="16.03.2001" as two strings are compared.
 - ii. Contrary the comparison IF GetDate([Date]) > "2002-02-15" provides for the correct result.
5. GetTime() – allows correct conversion of import data of the type "Time Per Unit" and "Production Time" into Pharos format. This function should be used in all such cases by default.

The following measurement units are processed in the source tables for the data types "TIME/UNIT" или "Production Time":

- a) Hours
- b) Minutes
- c) Seconds
- d) DateTime is one of the standard formats for storing data of this type. Real value means the number of days with additional decimals defining the part of the day.
- e) TimeStamp is another standard format for these data type. It has 8 byte format where 4 first leading bytes provides number of days and other last 4 bytes contain the number of milliseconds from the beginning of the day.
- f) PHAROS non formatted data of the type "TIME/UNIT" or "Production Time" presented in the format of a string "HHMMSS"
- g) PHAROS formatted data of the type "TIME/UNIT" or "Production Time" presented in the time/date format "HH:MM:SS" (HH-hours, MM-minutes, SS- seconds)

Note: The use of the build-in function GetTime() is obligatory when the button time is to be used in the Formulae editor. It becomes available only when the format "Time measure unit" is selected from the available values.

When finished one should click the button Calculate to obtain the resulting table presented in the lower window Destination table.

7.2. Saving the results

Select necessary option for saving of the results before pressing the button OK in the lower section of the Scheme editor window.

The selection options are as follows:

- Clear and Copy mode: remove all available data in the existing table and put the results instead.
- Append / Update mode: add the new data and replace the existing ones by the data which is available in the resulting table.
- Append only mode: add new data to the existing table without any modification of its content.

Pressing OK button allows saving the resulting table and quitting the wizard.

If the scheme name has not been identified user is prompted to enter the appropriate name.

Recommendations:

- Always try to save all schemes and results of your definitions even if it does not look as it may be used once more.
- The formulas in the formula editor windows can be Cut and Pasted by using external file of typical formulas in MS Word, WordPad, notepad, etc,

8. Description of fields in Pharos tables.

The set of tables which are to be prepared for Pharos run include as follows:

Plans

- Table "Monthly cost plan"
- Table "Monthly detailed cost plan"

Results

- Table "Monthly results"
- Table "Customers"
- Table "Details Cost Results"
- Table "Products"

Note that file name conventions used in Pharos tables allow having names up to 8 symbols in the name field and up to 3 symbols as file name extension.

8.1. The table "Costs Plan"

Name	Description	Field type
1. Year		
2. Month		
3. Purchase	Purchase costs – money	Numeric (Float)
4. Personnel	Personnel costs – money	Numeric (Float)
5. Buildings	Buildings costs – money	Numeric (Float)
6. Office	Office costs – money	Numeric (Float)
7. Sales	Sales costs – money	Numeric (Float)
8. Others	Other costs – money	Numeric (Float)
9. Depreciation	Depreciation costs – money	Numeric (Float)
10. Financial	Financial costs – money	Numeric (Float)

11. Materials	Material costs – money	Numeric (Float)
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8.2. The table "Monthly Details Cost Plan"

Name	Description	Field type
1. Year		
2. Month		
3. Equipment	Equipment costs – money	Numeric (Float)
4. Spare Parts	Spare Parts costs – money	Numeric (Float)
5. Consultancy	Consultancy costs – money	Numeric (Float)
6. Customer discounts	Customer discounts – money	Numeric (Float)
7. OtherPur	Other Purchase costs – money	Numeric (Float)
8. Salaries	Salaries – money	Numeric (Float)
9. Social	Social costs – money	Numeric (Float)
10. Training	Training costs – money	Numeric (Float)
11. Insurance	Insurance costs – money	Numeric (Float)
12. OtherPer	Other Personnel costs	Numeric (Float)
13. Rent	Rent costs – money	Numeric (Float)
14. Energy	Energy costs – money	Numeric (Float)
15. Other Build	Other Building costs – money	Numeric (Float)
16. Office materials	Office material costs – money	Numeric (Float)
17. Stationeries	Stationary costs – money	Numeric (Float)
18. Phone/Fax	Phone/Fax costs – money	Numeric (Float)
19. Computers	Computer costs – money	Numeric (Float)
20. Literature	Literature costs – money	Numeric (Float)
21. OtherOff	Other Office costs – money	Numeric (Float)
22. Marketing mater.	Marketing materials – money	Numeric (Float)
23. Shipping	Shipping – money	Numeric (Float)
24. Representations	Representations – money	Numeric (Float)
25. Other Sal	Other Sales costs – money	Numeric (Float)
26. Customer Claims	Customer Claims – money	Numeric (Float)
27. Revision	Revision – money	Numeric (Float)
28. OthersOther	Others costs –money	Numeric (Float)

8.3. Common "Results" table.

Name	Description	Field type
1. Year		
2. Month		
3. Purchase	Purchase costs – money	Numeric (Float)
4. Personnel	Personnel costs – money	Numeric (Float)
5. Buildings	Building costs – money	Numeric (Float)
6. Office	Office costs – money	Numeric (Float)
7. Sales	Sales costs – money	Numeric (Float)
8. Others	Other costs – money	Numeric (Float)
9. Depreciation	Depreciation costs – money	Numeric (Float)
10. Financial	Financial costs – money	Numeric (Float)
11. Extra	Reserved field (must be 0)	Numeric (Float)
12. Accounts receivable	Accounts receivable – money	Numeric (Float)
13. Accounts payable	Accounts payable – money	Numeric (Float)
14. Reserv	Reserved field (must be 0)	Numeric (Float)
15. Deliveries	Deliveries – number	Numeric (Integer)
16. Deliveries with defect	Deliveries with defect – number	Numeric (Integer)
17. Produced	Produced volume–volume measure units	Numeric (Float)
18. Number of defects	Number of defects–volume measure units	Numeric (Float)
19. Sold	Sold volume–volume measure units	Numeric (Float)
20. Production personnel	Production personnel – number	Numeric (Integer)

21. Total personnel	Total personnel – number	Numeric (Integer)
22. Average time/unit	Average production time / unit	String (hhmmss) 6chars
23. Material costs	Material costs – money	Numeric (Float)
24. Sales revenue	Sales revenue – money	Numeric (Float)
25. Production time	Production time (not in use. Must be 0)	Numeric (Float)
26. Active customers	Active customers - number	Numeric (Integer)
27. Total customers	Total customers – number	Numeric (Integer)
28. Customers Revenue	Customers Sales Revenue -money	Numeric (Float)

8.4. The table "Customers".

Name	Description	Field type
1. Year		
2. Month		
3. Customer ID	Customer ID	String (up to 15 chars)
4. Customer Name	Customer Name	String (up to 20 chars)
5. Sales revenue	Sales revenue for month – money	Numeric (Float)
6. No. of sales	Number of sales for month	Numeric (Integer)

8.5. The content of "Monthly Details Cost Results" is equal to "Monthly Details Costs Plan" table.

8.6. The table "Products"

Name	Description	Field type
1. Year		
2. Month		
3. ID	Product ID	String (up to 15 chars)
4. Name	Product Name	String (up to 20 chars)
5. Produced	Produced volume – volume measure units	Numeric (Float)
6. Defects	Production with defects – volume measure units	Numeric (Float)
7. Sold	Sold production volume – volume measure units	Numeric (Float)
8. MaterialCosts	Material Costs per production unit – money	Numeric (Float)
9. SalesPrice	Sales price of production unit – money	Numeric (Float)
10. TimePerUnit	Production time per unit	String (hhmmss) – 6chars