



Operation Manual

DB Manager. Form Builder

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DB Manager users access database record information through editing windows. These editing windows can be:

- Data tables – forms in which database records are represented as table rows and record fields as columns.
- Data forms – forms in which database record fields are arranged in the order set during the form's design.

Form Builder is used to create new forms and edit existing ones. These forms are used as DB Manager editing windows.

This document is intended for DB Manager users (bank or processing center employees) who are system administrators.

When working with the document, it is recommended to use the following resources from the OpenWay documentation series:

- DB Manager Manual
- DB Manager. Menu Editor
- DB Manager User Management

The following notation is used in the manual:

- Screen form field labels are shown in *italics*.
- Screen form button labels are shown in square brackets, such as [Approve].
- Sequences for selecting user menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: "Database → Change password".
- Key combinations in DB Manager are shown in angular brackets, for example <Ctrl>+<F3>.
- Variables that differ for each local instance, for example, directory and file names, as well as file paths, are shown in angular brackets; for example, <OWS_HOME>.

Warnings and information messages are indicated as follows:



Warnings about potentially hazardous situations or actions.

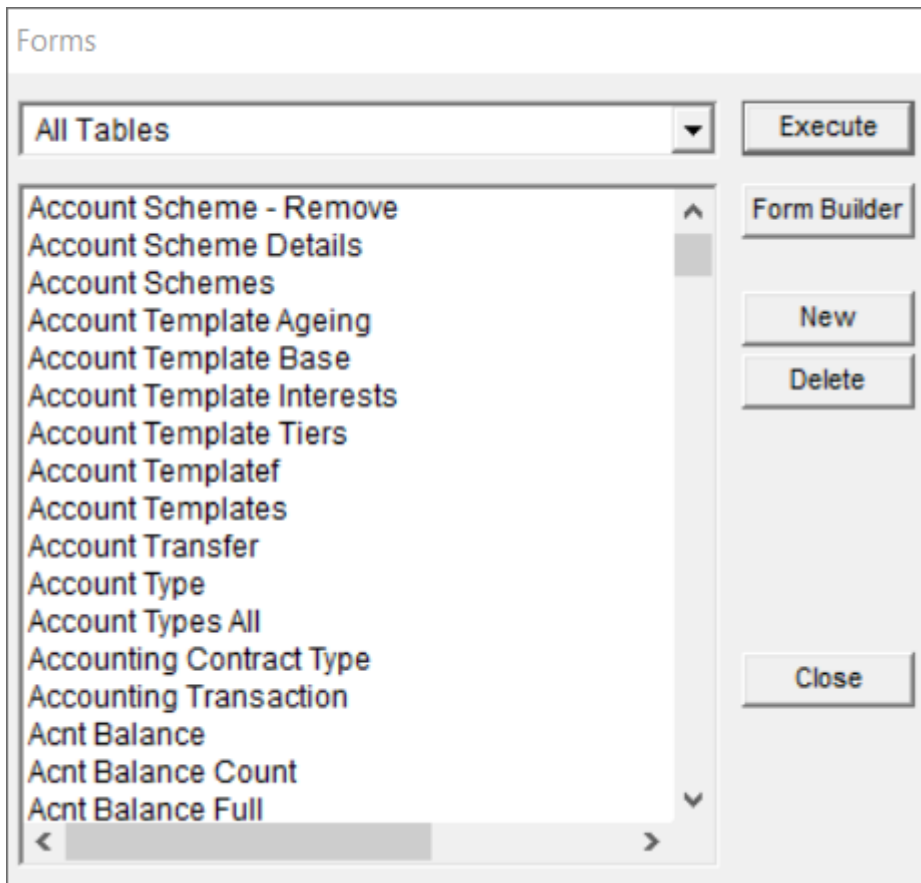


Information about important features, additional options, or the best use of certain system functions.

1 Working with Form Builder

To start Form Builder, select "Database → Forms" in the DB Manager system menu or press the <F2> key.

The "Forms" window will open. This window contains a field with a drop-down list of database tables, and a list of forms created on the basis of these tables.



Window for selecting a form to be edited

By default, when the "Forms" window opens, a list of forms for all tables will be shown. The list contains a large number of form names. To simplify the search for the required form, it is recommended to select the name of the table to which the form belongs.

To select a form for editing, click on its name in the list of forms, and then click the [Form Builder] button. Clicking this button opens the "Editing form" window with the message "Form Editor will reset the form layout to default. To avoid this you should use 'design mode'". This message warns that when working with Form Builder after saving changes for data forms, the design of form elements (field size and location, colors, etc.) will be changed to the default design. Clicking [OK] in the "Editing form" window opens the Form Builder window (see the figure in the section "[Form Builder window](#)"). If the design of data form elements should not be changed to the default design, it is recommended to edit forms in design mode ("Form → Design Mode", <Ctrl>+<D>).

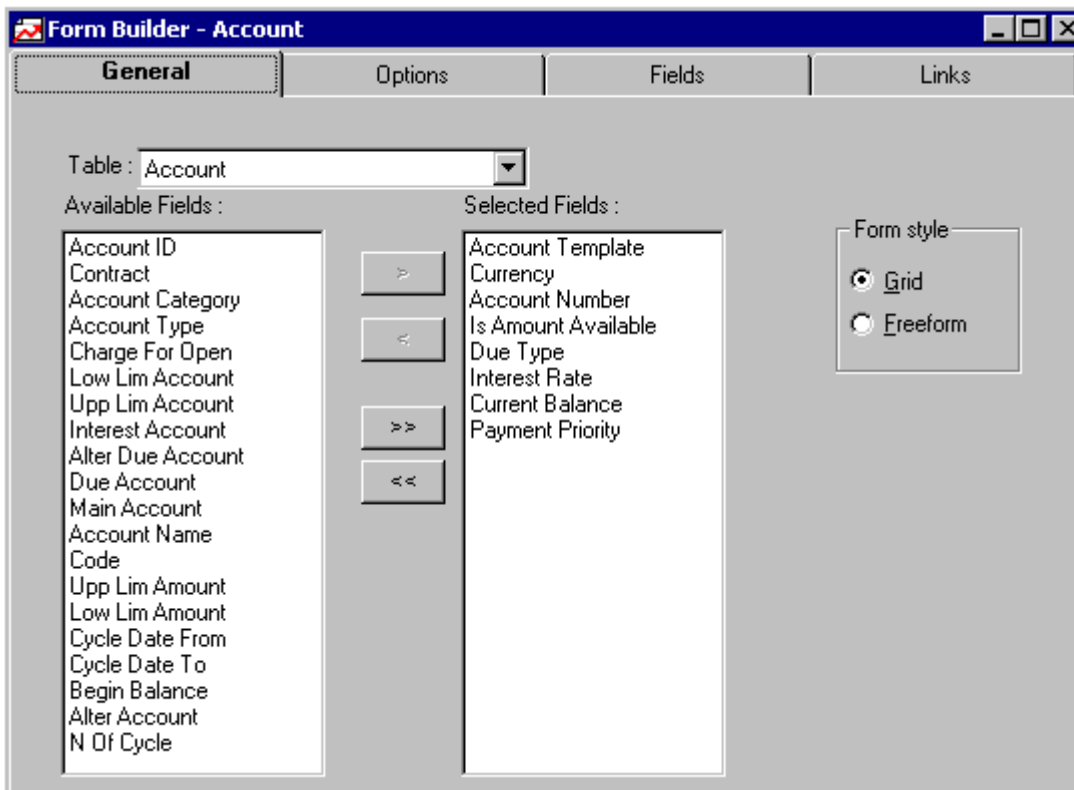
To create a new form, click the [New] button.

To delete a custom form (see "[Restoring standard forms](#)"), click [Delete].

Clicking the [Execute] button or double-clicking on a form's name opens this form.

1.1 Form Builder window

After a form has been selected for editing or the procedure for creating a new form has been started, the Form Builder window opens.



Form Builder window ("General" tab)

The Form Builder window makes it possible to define a form's general properties and specify database objects required to create the form. The window contains four tabs:





- "General" – describes general properties
- "Options" – describes additional parameters
- "Fields" – list of the form's fields and their properties
- "Links" – list of the form's links with other forms.

1.1.1 Form Builder window. "General" tab

The "General" tab of the Form Builder window contains the following fields:

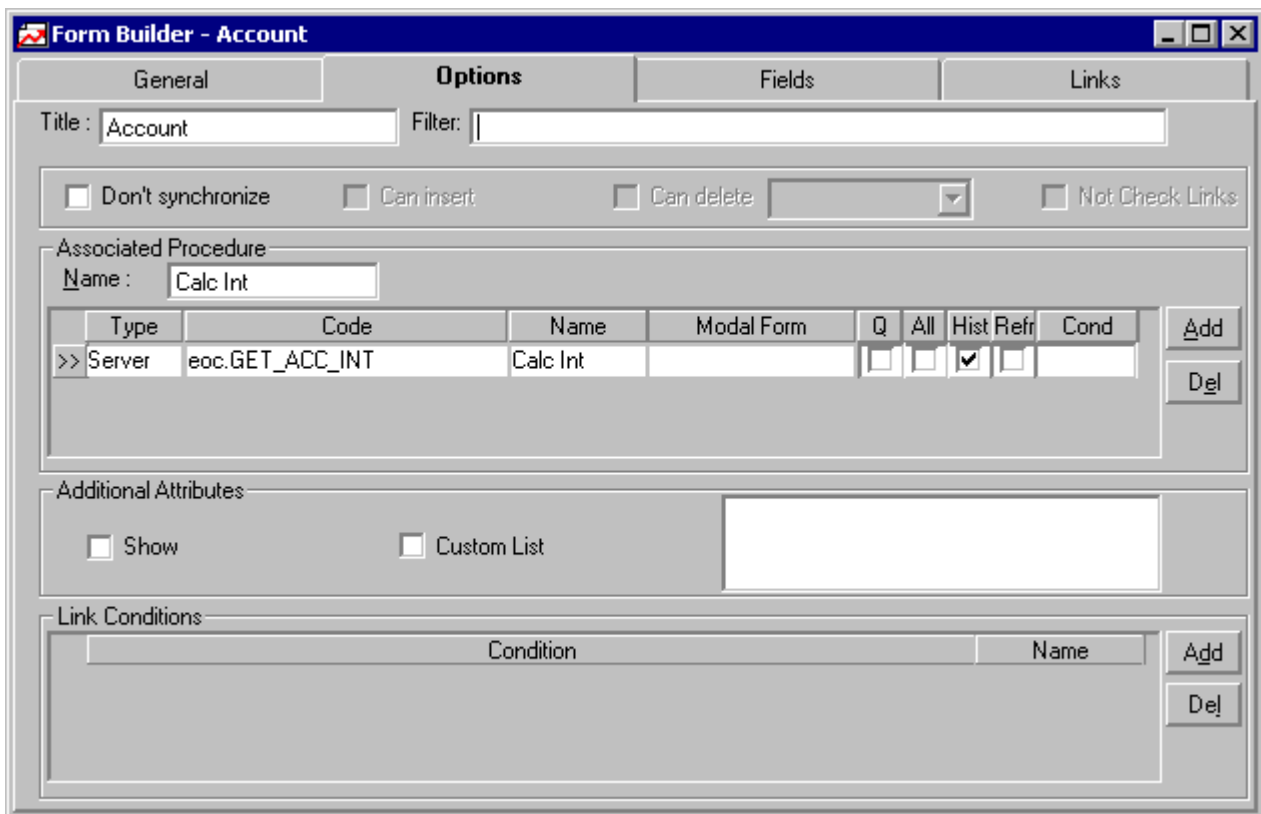
- *Table* – name of the database table the form is based on.
- *Available Fields* – list of all the database table's fields.
- *Selected Fields* – database table fields used in the form.
- *Form style* radio buttons that define the type of form.

- *Grid* – data table.
- *Freeform* – data form.

Control buttons are used to select database table fields for inclusion in a form. To add a field, click on its name in the *Available Fields* list and then click the  button. To remove a field, click on its name in the *Selected Fields* list and then click the  button. To add all a database table's fields to a form, click the  button, to remove all fields from a form, click the  button.

1.1.2 Form Builder window. Form Builder window: "Options" tab

The "Options" tab is used to set rules for working with records, define parameters for calling associated procedures, and create conditions according to which buttons for calling an associated procedure and child windows will be either shown in or missing from the form, depending on the type of record, and also if deletion (*Can delete*) and insertion (*Can insert*) of records is allowed or prohibited.



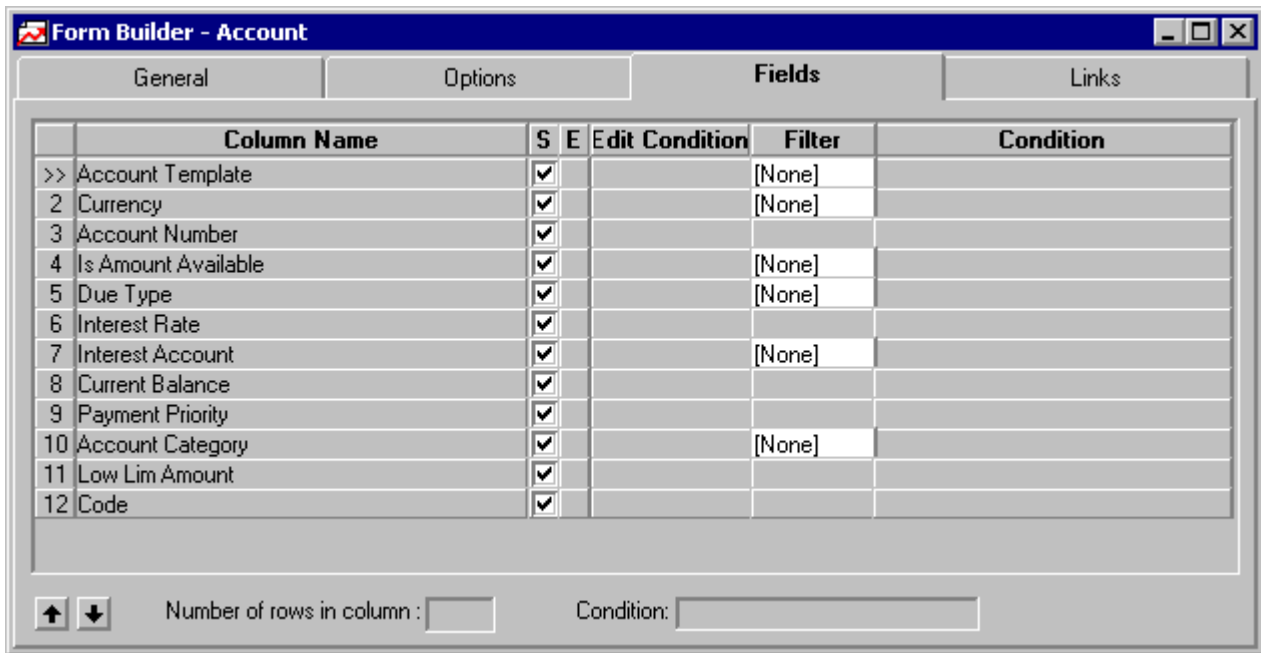
Type	Code	Name	Modal Form	Q	All	Hist Refr	Cond
>> Server	eoc.GET_ACC_INT	Calc Int		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Form Builder window ("Options" tab)

For more information about the "Options" tab's fields, see the section "[Setting form parameters](#)".

1.1.3 Form Builder window. "Fields" tab

The "Fields" tab of the Form Builder window contains information about how the fields of database records are displayed in the form and about queries.



	Column Name	S	E	Edit Condition	Filter	Condition
>>	Account Template	<input checked="" type="checkbox"/>	<input type="checkbox"/>		[None]	
2	Currency	<input checked="" type="checkbox"/>	<input type="checkbox"/>		[None]	
3	Account Number	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
4	Is Amount Available	<input checked="" type="checkbox"/>	<input type="checkbox"/>		[None]	
5	Due Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>		[None]	
6	Interest Rate	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
7	Interest Account	<input checked="" type="checkbox"/>	<input type="checkbox"/>		[None]	
8	Current Balance	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
9	Payment Priority	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
10	Account Category	<input checked="" type="checkbox"/>	<input type="checkbox"/>		[None]	
11	Low Lim Amount	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
12	Code	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

Number of rows in column :
Condition:

Form Builder window ("Fields" tab)

The tab contains a table, fields and control buttons.

The table has the following columns:

- **Column Name** – names of database record fields included in the list of fields that are used in the form being edited.
- **S(how)** – checkbox indicating whether the field is displayed in the form. If this checkbox is not selected, the corresponding field will not be displayed when the form opens.
- **E(dit)** – checkbox indicating whether the field can be edited (only available if the Show checkbox is selected). If this checkbox is selected, the field's value in the form can be edited.
- **Edit condition** – condition that must be met to allow editing of the field value. This condition is set on the "Options" tab in the *Link Conditions* field group (for more information, see "[Setting form parameters](#)").
- **Filter** – specifies a rule (type) to filter data for a database table column. A form will show only records where the value in the field meets the condition shown in the *Condition* column. For a database records fields that cannot be filtered, the *Filter* field is inactive. This field can be edited if it allows values to be selected from a list.
- "None" – no filtering.
- "Static" – filtering according to a constant value selected from a list in the *Condition* field and shown in the column of the same name.
- "Dynamic" – filtering according to a local constant taken from the "Local_constants" database table when the form is opened. The name of the local constant is selected from the *Condition* list and is shown in the column of the same name.
- **Condition** – contains the field value which will be used for filtering. Depending on the value in the *Filter* column, the *Condition* column will contain the value of the field itself or the name of the local variable whose value will be used for filtering when the form is opened.





Note that when adding new records, the field being filtered will be unavailable for editing while working with the form and the field value will be determined by filter conditions.

Data filtering defined by values contained in the *Filter* and *Condition* cells is a property of a form and performed when the form is opened, regardless of what the user does.

Custom filtering is described in the section "Entering and editing data" document "DB Manager Manual", and in the document "DB Manager. Menu Editor" (see "Working with Menu Editor", the section "Editing menu subitems", "Form type" subsection).

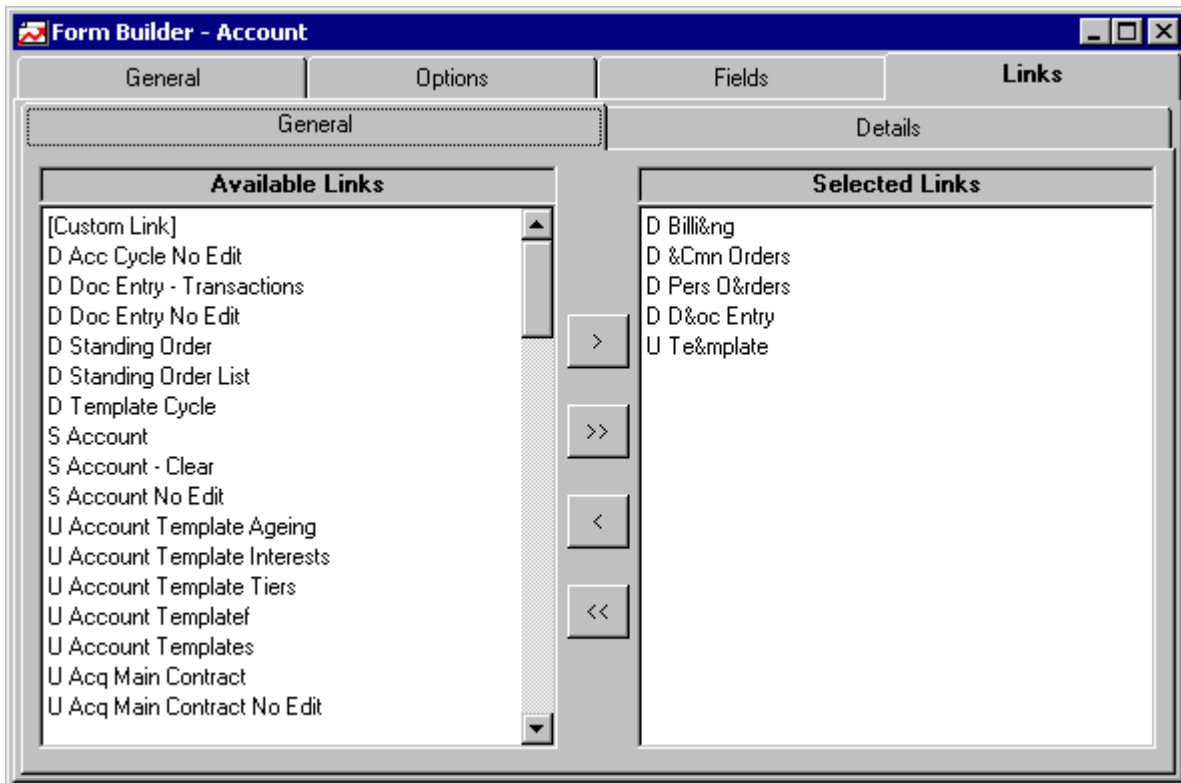
The "Fields" tab also contains the following fields:

- *Condition* – contains a list for setting filtering conditions (like the *Condition* column).
- *Number of rows in column* – when a new data form is created, a database record's fields are initially arranged in columns; the number of database record fields in each column of the form can be specified here. The order of fields in a form can be changed.

The  and  buttons are used to change the order of fields in the form being edited. This order determines the default order of fields in the query window (see the section "Queries" of the document "DB Manager Manual"). To change field order, click on the required field in the *Column Name* field and click the appropriate button the necessary number of times.

1.1.4 Form Builder window. "Links" tab

The "Links" tab contains two tabs: "General" and "Details". The "Links/General" tab contains contains a list of forms that can be opened from the form that is being edited. The "Links/Details" tab is used to set parameters for opening a child form (for more information, see the section "[Links to other forms](#)").



Form Builder window ("Links") tab





The form being edited is the parent and the form being opened is the child. Parent and child forms may be based on either the same database table or on different ones.

There are five types of links between forms:

- "Self" – both forms are based on the same database table. When the child form is opened, it will contain data about the current record in the parent form. This type of link is used, for example, to show a list of database records in the parent form and in the child form, illustrate a full set of fields for the current record (for instance, the "Acquiring Contracts" form and "Balance" form).
- "Up" – the child form contains a record to which the parent form's current record refers (for example, the "Acquiring Contracts" form and "Clients" child form).
- "Down" – the child form contains records that refer to the parent form's current record (for example the "Acquiring Contracts" form and the "Devices" child form).
- "History" – the child form contains a table with the history of changes to the corresponding record.
- "Custom" – the type of link between forms is specified using special fields in the window for setting the child form's parameters (see "[Links to other forms](#)").

The "Links" tab contains two lists:

- *Available Links* – a list of forms that can be opened from the form being edited. The name of each of these forms is preceded by the possible type of its link with the parent form: U(p), D(own), S(elf), H(istory) or C(ustom).
- *Selected Links* – list of selected child forms that can be opened when working with the parent form.

Control buttons are used to select child forms that can be opened from the parent form. To add a form, click on its name in the *Available Links* list and click the  button. To remove a form, click on its name in the *Selected Links* list and click the  button. To add all available forms to the list of child forms that can be opened, click the  button; to remove all child forms from the list of those that can be opened, click the  button.

1.2 Saving an edited form

After a form has been edited, select the "Editor" item from the DB Manager system menu.

The item contains the following subitems:

- "Save" (<Ctrl>+<S>) – save the form.
- "Save As" – save the form with a new name.
- "Close" – exit Form Builder without saving the results of editing.



Note that for the form to be correctly displayed on the screen, when saving the form use one of the following screen resolutions: 1024x768, 1152x864, 1280x960, 1400x1050, 1440x1080, 1600x1200, 1920x1440.

Note saving forms from the Form Builder window will result in the replacement of the locations of data form fields and of data table column names with those used by default.

The record sorting order that was set when working with a form (see the section "Sorting data in forms" of the document "DB Manager Manual") is saved when the form is saved.

After editing, forms are saved in the work directory (see "[Storing forms in standard directories](#)").

2 Form design

When working with a form, form design mode is enabled by selecting the "Form → Design Mode" item



from the system menu or clicking the **Design** button on the toolbar. This mode is only available if the form was opened as a parent form. If design mode must be enabled for a child form, the form must be loaded as a parent form. To do this, right-click on the form's name and select "Load as Main" from the context menu.

It is possible to do the following in form design mode:

- Specify the size and location of the form window.
- Set parameters for the form.
- Describe links to other forms.
- Specify the attributes and locations of form fields.

2.1 Location and size of a form window

The location and size of a DB Manager form window is changed in the following way:

- To relocate a form window on the screen, hold down the left mouse button and drag the window to the required location.
- To resize a form window, move the mouse cursor to the edge of the form. The cursor's appearance will change to a two-headed arrow. While holding down the left mouse button, move the cursor until the desired window size is obtained.

To save the window's new size and/ or location, save the form (see "[Saving an edited form](#)").

When you save a parent form, the sizes and location of opened child forms are also saved. To save the size and location of a child form that does not automatically open when its parent form is open, open the child form, adjust its size as described, place it where you want it and save its parent form. Then close the child form and save the parent form again.

2.2 Setting form parameters

A form's parameters determine what can be done with data. The "<Form name> options" window is opened by selecting the "Form → Options" system menu item.

The window contains the following fields:

- *Title* – form's name.
- *Filter* – additional condition for querying the form's data. This expression will be included in the "WHERE" clause of an SQL query.

- *Don't synchronize* – when this checkbox is selected, this form will not be synchronized when the "Database → Synchronize Forms" system menu item is selected (see "[Synchronizing custom forms](#)").
- *Can insert* – if this checkbox is selected, the form's [Ins] button becomes active. This button is used to create a new record in the database.
- *Can delete* – if this checkbox is selected, the form's [Del] button becomes active. This button is used to delete a record from the database.



A record can also be deleted from the database according to the conditions specified in the *Link Conditions* group. To do so, select the required condition from the drop-down list to the right of the *Can delete* checkbox.

- *Not Check Links* – when this checkbox is selected, a record is deleted without deletion of its linked records (for example, when deleting a Contract record without deleting a Subcontract record).



To avoid data integrity violation caused by careless deletion of records, we do not recommend selecting this checkbox without the approval of OpenWay.

Financial Institutions List options

Title: Filter:

☐ Don't synchronize
 ☒ Can insert
 ☒ Can delete
☐ Not Check Links

Associated Procedure

Name:

Type	Code	Name	Modal Form	Q	All	Hist	Refr	Cond	
>> Server	cdhc.CHECK_FI_ALL		Check Parns	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Additional Attributes

☐ Show
 ☐ Custom List

Link Conditions

Condition	Name	

Form options window

- *Associated Procedure* field group:
 - *Name* – name of a button that calls an associated procedure.



The name may include the "&" character. In this case, the letter that follows the "&" character in the button name will be underlined and pressing the <Alt>+<underlined letter> keys will be the same as clicking the button.

- *Type* – drop-down list for selecting the type of associated procedure:
 - "Server" – calls a database stored procedure.
 - "Client" – calls up a stored procedure on the client side.
 - "Menu item" – calls a menu item.
- *Code* – name of the associated procedure and parameters for calling it.
- *Name* – name of the procedure in a drop-down menu that is displayed after clicking the button that starts the associated procedure.
- *Modal form* – name of the modal form opened to set execution criteria (for example, the processing date) before starting the associated procedure.
- *Q* – when this checkbox is selected, the system will ask for confirmation to execute an associated procedure.
- *All* – when this checkbox is selected, the procedure is run for all the currently selected records.



For the *All* parameter to work correctly, the associated procedure must support reading the ID of the selected record from the user session's parameters (V_LOCAL_CONSTANTS). To get information about the mode of operation of the associated procedure provided as part of the standard set of menu items, please contact OpenWay.

Care must be taken when selecting the *All* checkbox. This should be done only when the associated procedure must actually be run for all the currently selected records.

- *Hist* – when this checkbox is selected, changes that the associated procedure makes to the corresponding record will be logged.
- *Refr* – when this checkbox is selected, after the associated procedure has finished, the form's content will be refreshed according to query conditions (see the section "Entering and editing data" of the document "DB Manager Manual").
- *Cond* – field with a list of conditions set using the *Link Conditions* field group that determine whether or not the button for calling an associated procedure for the active record will be shown.

Associated procedures are added and deleted by clicking the [Add] and [Del] buttons located to the right of the list.

- *Additional Attributes* field group (for more information about additional fields, see the section "Use of Additional Fields (Attributes) of the document "DB Manager Manual"):

- *Show* – when this checkbox is selected, the form will be displayed with additional fields (attributes).
- *Custom List* – when this checkbox is selected, only those additional fields (attributes) which have been selected in the list of attributes to the right of the field will be shown in the form.
- *Link Conditions* field group:
 - *Condition* – an expression which defines a condition. Depending on whether the record conforms to this condition, the buttons for calling an associated procedure and child windows will be displayed in the form or absent from it.
 - *Name* – name of the condition that will be shown in the *Cond* list for an associated procedure or link with a child window (see the section "[Links to other forms](#)").

Conditions are added and deleted by clicking the [Add] and [Del] buttons located to the right of the list.



Conditions are saved in PowerBuilder format for DataWindow objects (see the document "PowerBuilder 12.5 Users Guide"). For an example of creating expressions for these conditions, see the section "[Rules for creating conditions to work with forms](#)".

To save the parameters, use the "Form → Save" system menu item.

2.3 Rules for creating conditions to work with forms

Conditions for working with a form are written as DataWindow object PowerBuilder expressions (see the document "PowerBuilder 12.5 Users Guide"). An expression must return a logical value (True/False).

The expressions may use every field of the table the form is built on.

PowerBuilder special functions shown in the table below can be used.

Use of PowerBuilder special functions

Function	Purpose
abs(<x>)	Returns the absolute value (modulus) of <x>
mid(<s>,<pos>,<len>)	Selects a substring from <s>, from position <pos>, with a length of <len>
isNull(<x>)	Checks if the value of the <x> field is "Null"
len(<s>)	Returns the length of <s>

Function	Purpose
lower(<s>)	Converts every letter of <s> to lowercase
upper(<s>)	Converts every letter of <s> to uppercase
today()	Returns the current date

The use of PowerBuilder notation, such as the following, is allowed:

```
if (<X>, <TRUE_VAL>, <ELSE_VAL>)
case(<X> when <A> then <VAL_1> when <B> then <VAL_2> ... else <ELSE_VAL>)
```

The use of special functions, such as the following, is also allowed:

```
select_by_id("<select>",<id>)
```

Where "<select>" is a database query returning a Boolean value (1 – true, 0 – false), and where the "?" character is included instead of the database table record's unique ID; while <id> is the database table record's unique ID value used in the query instead of "?".

```
select_wo_par("<select>")
```

Where "<select>" is a database query returning a Boolean value (1 – true, 0 – false).

For example:

```
select_by_id("select decode(doc.trans_amount,0,0,1) from doc where doc.id=?",ID)
```

This function will return the value "1" (true) if the document's "trans_amount" field value is not null; otherwise, the function returns the value "0" (false).

Example. For the "Process Log" form (Full → Process Log → Process Log) a condition must be specified when the [Stop] button (stop a process being executed) will be available for processes with the "Active" status. This button will be absent from the form for processes with other statuses.

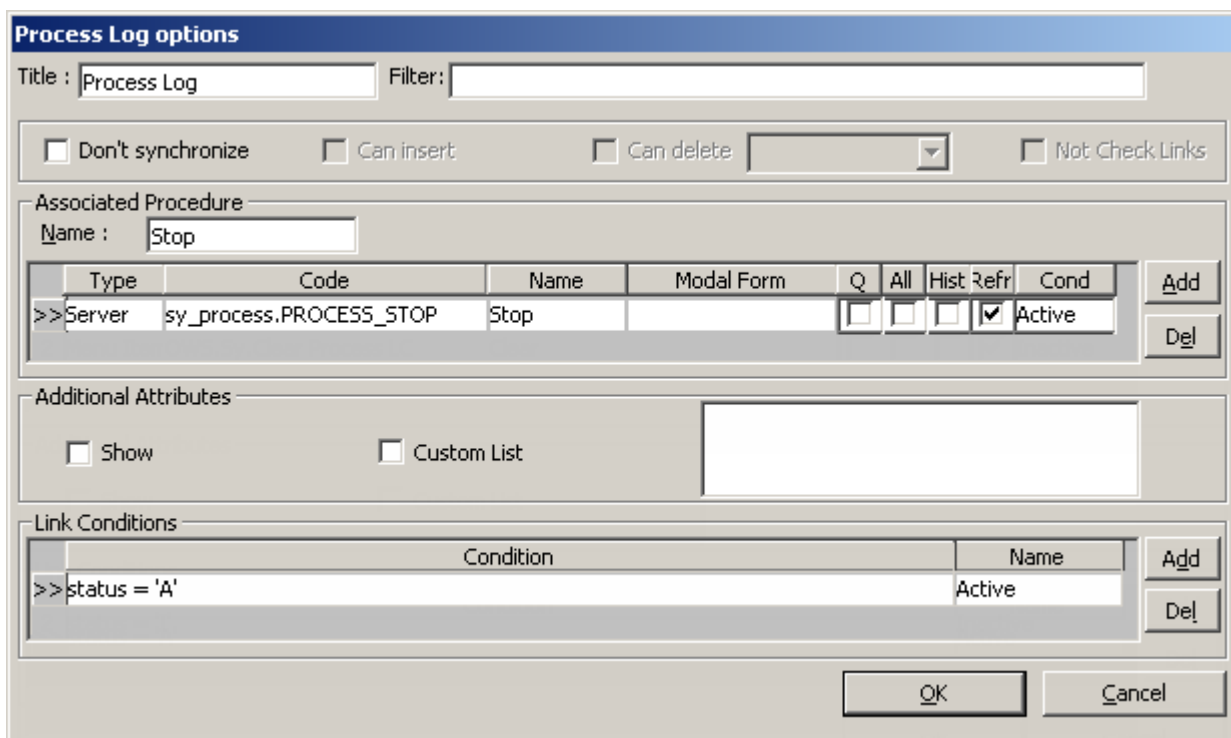
To do this, the following fields in the "Process Log Options" form must be filled in:

- *Condition* – specify the following condition in this field:

```
status = 'A'
```

- In the *Name* field of the *Link Conditions* group, specify the "Active" value.
- In the *Name* field of the *Associated Procedure* group, specify the name of the "Stop" button, and in the *Cond* field, select the "Active" value from the list.

Results of these settings:



Process Log options

Title : Filter:

☐ Don't synchronize
 ☐ Can insert
 ☐ Can delete
☐ Not Check Links

Associated Procedure
Name :

Type	Code	Name	Modal Form	Q	All	Hist	Refr	Cond
>>Server	sy_process.PROCESS_STOP	Stop		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Active

Additional Attributes
☐ Show
 ☐ Custom List

Link Conditions

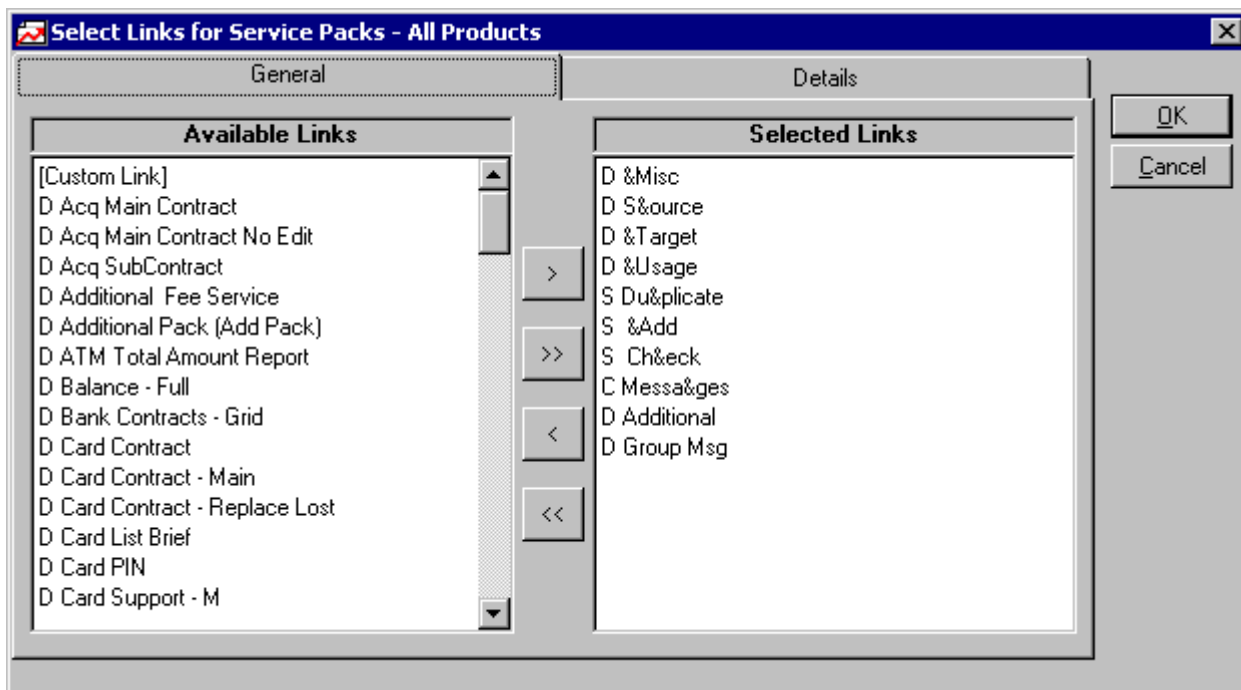
Condition	Name
>>status = 'A'	Active

OK Cancel

Example of condition use

2.4 Links to other forms

The list of child forms opened from a form being edited is set in the "Select links for" window opened by selecting the "Form => Links" system menu item.



Select Links for Service Packs - All Products

General Details

Available Links		Selected Links
[Custom Link]		D &Misc
D Acq Main Contract		D S&ource
D Acq Main Contract No Edit		D &Target
D Acq SubContract		D &Usage
D Additional Fee Service		S Du&plicate
D Additional Pack (Add Pack)		S &Add
D ATM Total Amount Report		S Ch&eck
D Balance - Full		C Messa&ges
D Bank Contracts - Grid		D Additional
D Card Contract		D Group Msg
D Card Contract - Main		
D Card Contract - Replace Lost		
D Card List Brief		
D Card PIN		
D Card Support - M		

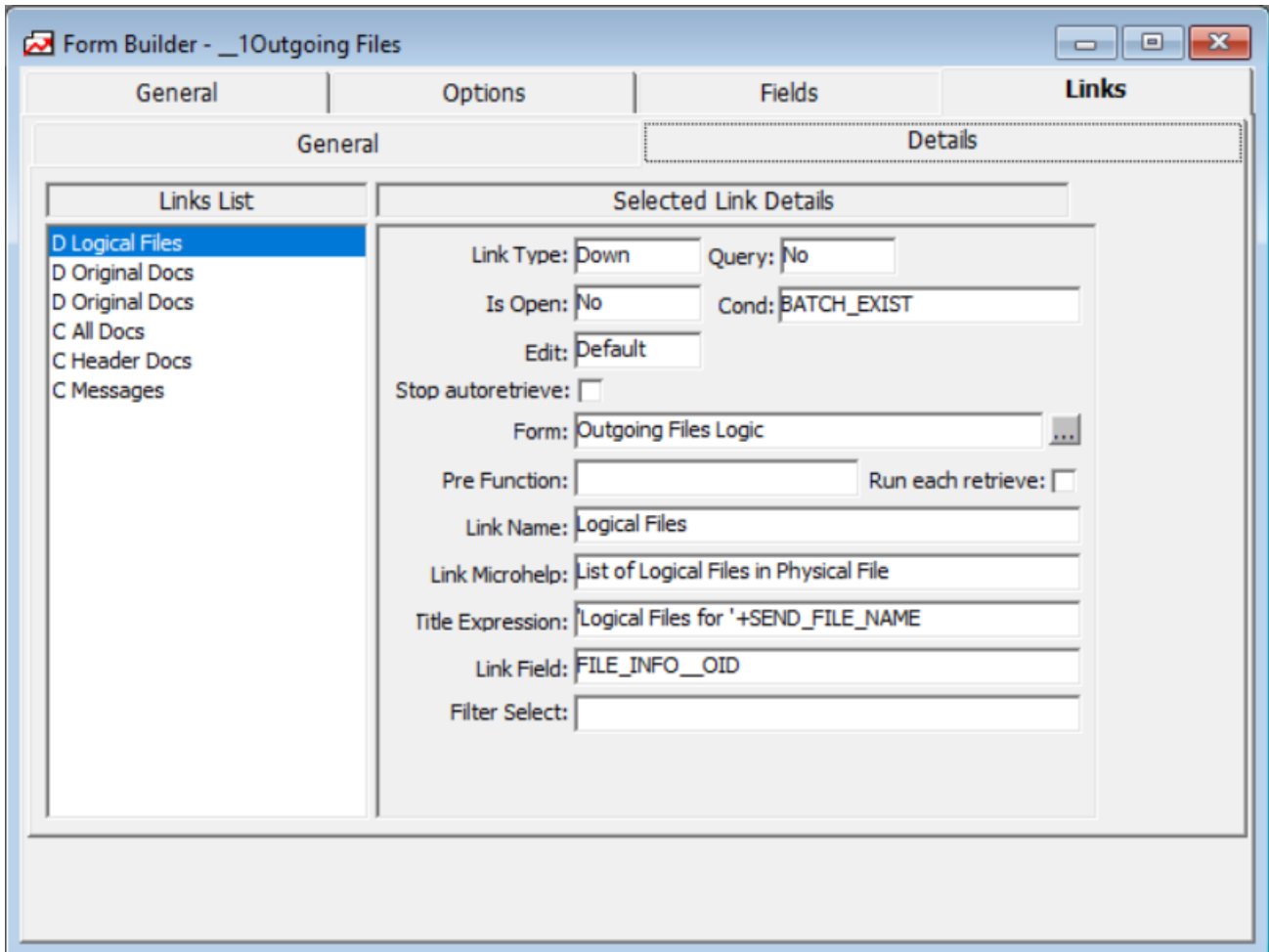
OK Cancel

Window for setting links to child forms ("General" tab)

Child forms that can be opened from a parent form are selected in the same way as in the Form Builder window (see "Form Builder window. "Links" tab").

Parameters for opening a child form can be set on the "Details" tab of the "Selected Links for <...>" window or in form design mode by selecting the system menu item "Links => <name of child form>".


The number of parameters for opening a child form depends on by the type of link to the child form. The type of link to a child form is determined by the value selected from the list in the *Link Type* field (see the section "Form Builder window. "Links" tab").



Window for setting links to child forms ("Details: tab)

The window for setting parameters of a link to child forms contains the following fields:

- *Link Type* – type of link with the child form.
- *Query* – if the value is "Yes", a query window will be opened before opening a child form.
- *Is Open* – if the value is "Yes", a child form opens automatically when the main form is opened.
- *Cond* – field with a drop-down list of conditions which are set in the form parameters window (see "Setting form parameters"; when a condition is selected in this field, a child form can only be opened for a record that meets this condition.
- *Edit* – specifies how child form fields are edited:
- "Default" – form fields are edited depending on form properties.

- "Not editable" – form fields cannot be edited.
- *Can delete* (for the "Custom" link type only) – if this checkbox is selected, the form's [Del] button will become active and can be used to delete a record from the database.
- *Stop Autoretrieve* – if this checkbox is selected, when a child form is called, automatic update of data in forms will be disabled.
- *Undelete* – (for the "History" link type only). If the field's value is "Yes", the [Undelete] button intended for restoring deleted records, will be present in the child form.
- *Form* – name of the child form; this name is entered manually or selected from a list by clicking the  button.
- *Pre Function* – name of the stored procedure that will be called before opening the child form.
- *Run each retrieve* – if this checkbox is selected, the stored procedure will be called each time the user goes to another record in a table form (and not only before opening the form).
- *Link Name* – name of the button that opens the child form. The name may contain the "&" character; in this case, the letter that follows the "&" character in the button name will be underlined and pressing the <Alt>+<underlined letter> keys will be the same as clicking the button.
- *Link Microhelp* – text of the message that appears in the status line when the mouse cursor hovers over the button for opening the child form.
- *Master Link Field* (for the "Custom" link type only) – name of a field in the parent form (in the form being edited).
- *Detail Link Field* (for the "Custom" link type only) – name of a field in the child form (in the form being opened).
- When there is no selection operator in the *Link Select* field, the form being opened will only show database records where the value of the child form's *Detail Link Field* field is the same as the value of the parent form's *Master Link Field* field.
- When there is a selection operator in the *Link Select* field, the form being opened will only show database records where, considering the selection condition, the value of the child form's *Detail Link Field* field is the same as the result of executing the selection operator that uses the value of the parent form's *Master Link Field* field.

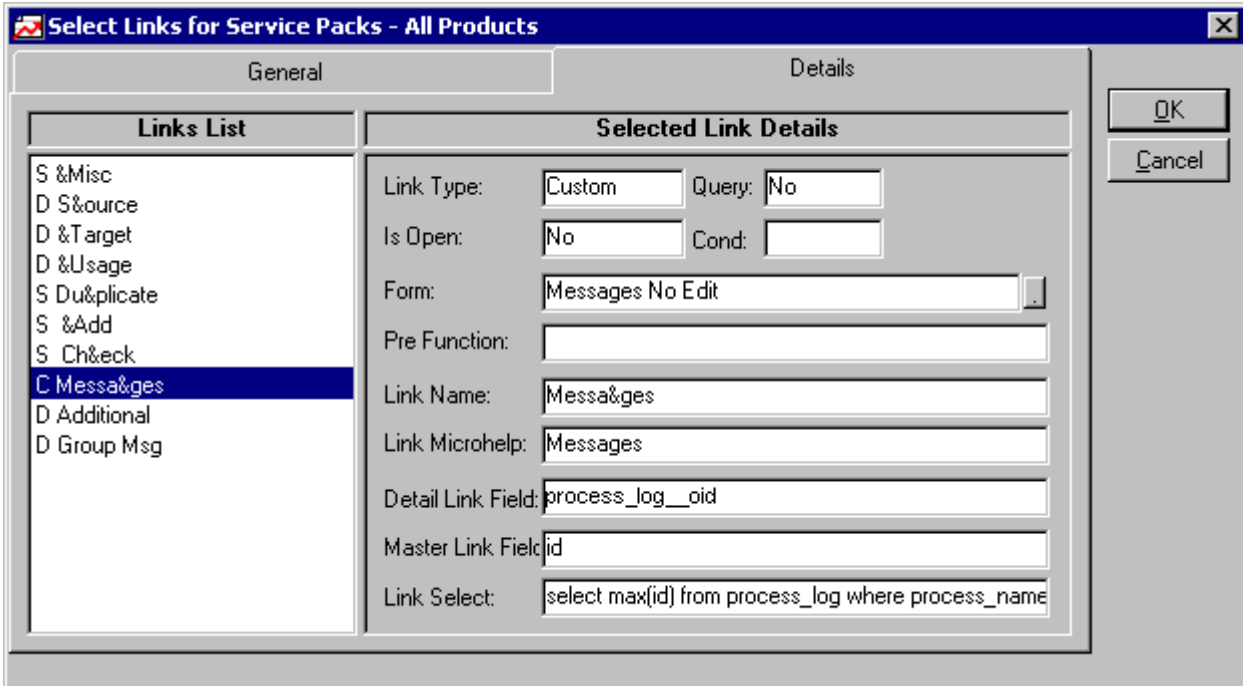


Only the names of identifier fields (which usually are named "<Field>__ID" or <Field>__OID), i.e. fields with the data type Oracle NUMBER(18,0), for example, "ACNT_CONTRACT__OID" or "ACC_SCHEME__ID" can be used as *Master Link Field* and *Detail Link Field* field values.

- *Link Select* (for the "Custom" link type only) – condition for selecting a child form's data.
- *Title Expression* – expression for calculating a child form's header in PowerBuilder 12.5 format (for more information, see the document "PowerBuilder 12.5 Users Guide"). Field names from the parent form (form being edited) can be used in the expression. For example, if the expression "'Linked Clients for ' + SHORT_NAME" expression is set for the parent form, the child form will have the header "Linked Clients for <Short_Name>", where <Short_Name> is the value of the parent form's SHORT_NAME (client name) field. If the field is not filled in, the child form will have the name "<Link_Name> for <rec_value>", where <Link_Name> is a button label (*Link Name* field value), and <rec_value> is the name of the current record.

- *Link Field* (for the "Down" or "Up" link types) – name of the field containing a link to another form.
- If the link type is (D)own – the name of a field in the child form.
- If the link type is (U)p – the name of a field in the form that is being edited.
- *Filter Select* – additional filtering of data from a child form for the "Down" link type – this expression will be included in the "AND" condition of the SQL query.

An example of setting parameters for opening a child form, "Custom" link type, is shown in the figure.



Links List	Selected Link Details
S &Misc	Link Type: Custom Query: No
D S&ource	Is Open: No Cond:
D &Target	Form: Messages No Edit
D &Usage	Pre Function:
S Du&plicate	Link Name: Messages
S &Add	Link Microhelp: Messages
S Ch&eck	Detail Link Field: process_log__oid
C Messa&ges	Master Link Field: id
D Additional	Link Select: select max(id) from process_log where process_name
D Group Msg	

Setting parameters for opening a child form ("Custom" link type)

In this example, the "Messages" child form will contain system messages generated by the last Approve procedure of the Service Package in question.

To meet the condition, the following parameters are set for opening the child form:

- Parent form – "Service Package"
- Child form – "Messages"
- Child form field – *Process_log__oid*.
- Parent form field – *id*.
- Select condition – "select max(id) from process_log where process_name='Renew Service Pack' and parameters = (select name from serv_pack where id = :arg)".

After the parameters of linking the parent form with child forms have been changed, the form that is being edited must be saved by selecting the "Form => Save" item of the system menu.

3 Designing data tables

Data tables consist of the following:

- The table itself, consisting of rows and columns. Rows correspond to database records and columns represent fields.
- Column names.
- Control buttons, etc.

3.1 Column order

The order of a data table's columns can be changed in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor on the column's name, hold down the left mouse button and drag the column to the required position to the left or right.

After changing column order, save the form (see "[Saving an edited form](#)").

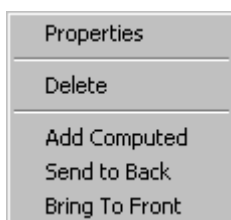
3.2 Column width

Column width can be changed in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor on the edge of the column (the cursor will change to a double-headed arrow) and, while holding the left mouse button down, drag the column's border to the left or right until the desired width is attained.

After changing column width, save the form (see "[Saving an edited form](#)").

3.3 Deleting columns

Columns can be deleted from a data table in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor in a field of the required column (not on the title) and right-click. Select "Delete" from the context menu that opens.



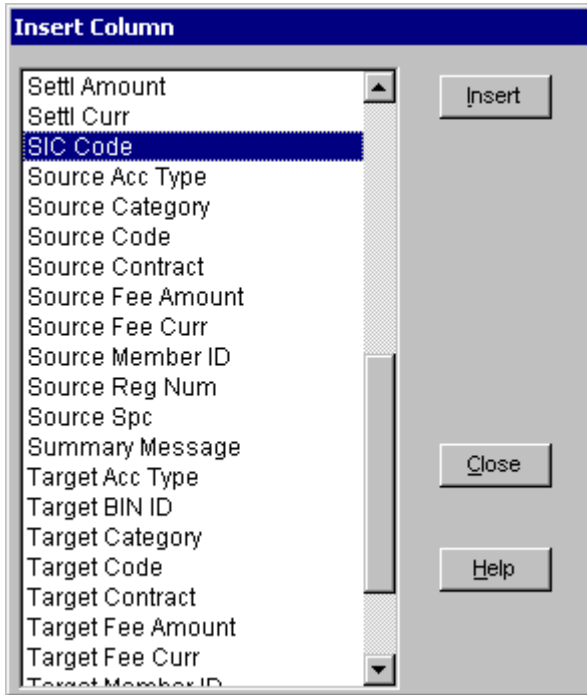
Context menu when editing a data table's columns



After deleting columns, save the form (see "[Saving an edited form](#)").

3.4 Adding columns

Columns can be added to a data table in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, select "Design → Insert → Field" in the the system menu and move the mouse cursor, which will assume the appearance of a cross, to the desired position and click the left mouse button. A window will open with a list of database fields that can be added as columns in the data table. Click on the required field and then click the [Insert] button.



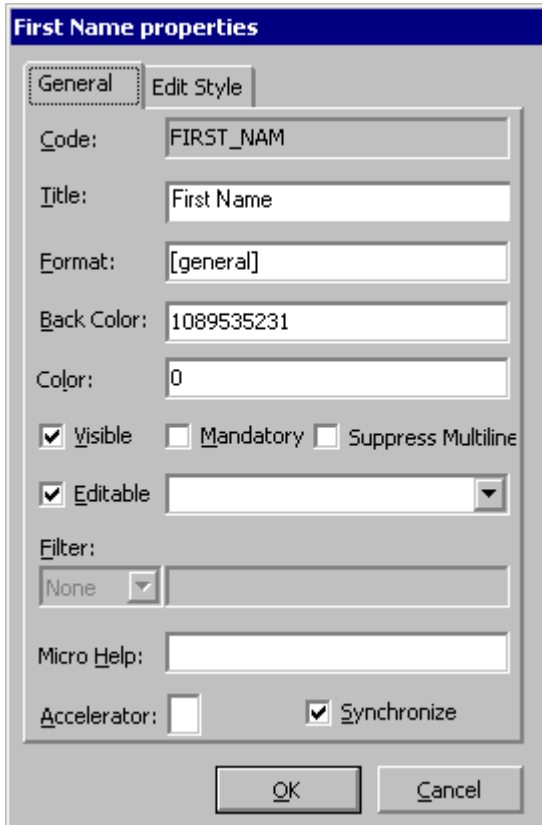
Selecting a database record's field when adding a column



After adding columns, save the form (see "[Saving an edited form](#)").

3.5 Column parameters

Data table column parameters are set in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor in a cell in the required column (not on the column title) and right click. In the context menu that opens, select "Properties"; a window with the column's parameters will open.



Window for setting data table column parameters

The window for setting a column's general parameters contains the following fields:

- *Code* – database field name.
- *Title* – data table column name (this field is filled in automatically and does not require the user to make any changes).
- *Format* – the format in which data will be displayed can be specified in this field's parameters (for more information, see "PowerBuilder 12.5 Users Guide"); this field is used if it is necessary to mask field contents (see "Masking field contents").
- *Color* – font color (see "Changing field text color").
- *Back Color* – background color (see "Changing field text color").
- *Synchronize* – if this checkbox is not selected, the field will not be synchronized when "Database => Synchronize Forms" is selected from the system menu (see "[Synchronizing custom forms](#)").
- *Visible* – if this checkbox is selected, the column will be shown in the data table.
- *Editable* – if this checkbox is selected, field values in the column can be edited.
- *Mandatory* – if this checkbox is selected, the fields in this column must be filled in.
- *Suppress Multiline* – if this checkbox is selected, it will not be possible to open the multi-line text editor window for this field.



It is recommended that this option be always used if it is necessary to mask field contents (see "Masking field contents") since the multiline editor does not support masking.

- *Filter* (active for columns for which data can be filtered) – select the type of filter (see "[Form Builder window. "Fields" tab](#)").
- *Accelerator* – this field is active for columns that allow data to be entered and edited. It can contain a Latin letter for creating a "hot key" <Alt>+<letter>) which switches the focus to this column's cell for the current record.



When creating "hot keys", avoid including letters reserved for standard buttons, such as [Delete] or [Insert], and system menu items, since a "hot key" defined in field properties redefines system settings.

- *Micro Help* – text of a message that appears in the status line when the mouse cursor is hovering over this column.



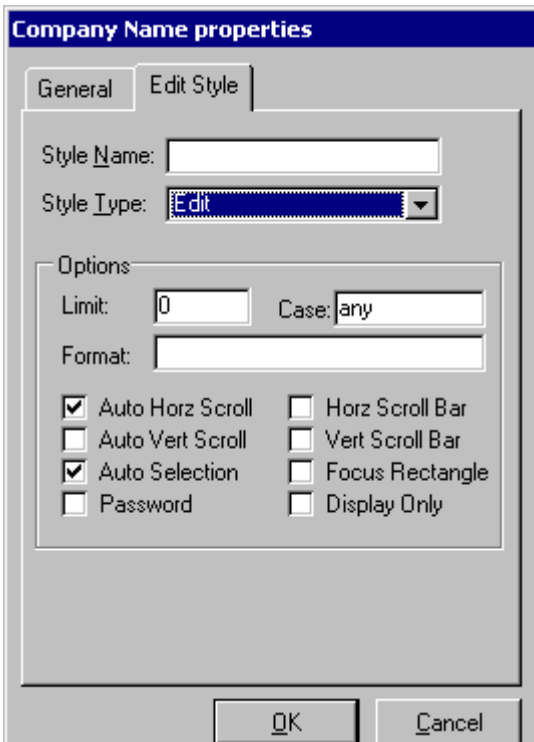
After setting column parameters, save the form (see "[Saving an edited form](#)").

Style parameters are set on the "Edit Style" tab of the column parameters window. The content of the tab depends on the style of the field whose parameters are being edited.

The following field styles are used in Way4:

- Edit – free-format input.
- EditMask – fixed-format input.
- DropDownListBox – select from an editable drop-down list.
- DropDownDataWindow – select from a list stored in the database.

3.5.1 Edit field



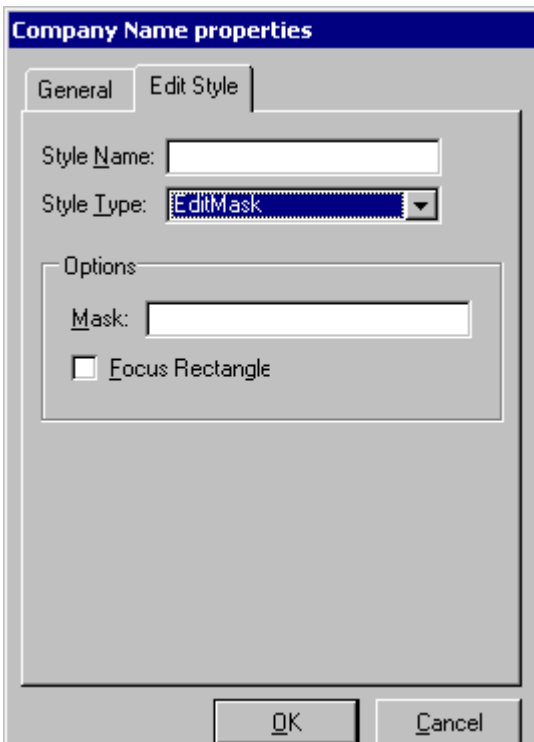
Form to set parameters for the "Edit" style

The *Edit Style* tab of the window for setting "Edit" style parameters contains the following fields:

- *Style Name* – (empty by default) list of the names of styles registered in Way4. Each registered style has its own set of parameters that cannot be edited. A user may set the required parameters for the style, leaving this field blank.
- *Style Type* – drop-down list of style types.
- *Limit* – maximum allowed number of characters that can be entered (the "0" value indicates there is no limit).
- *Case* – list to specify the case of displayed characters:
 - Upper.
 - Lower.
 - Any.
- *Format* – format for displaying data (for more information, see "PowerBuilder 12.5 User's Guide").
- *Auto Horz Scroll* – if this checkbox is selected, movement along the entire length of the string in the field is allowed by moving the cursor. This may be necessary if the number of characters in the string is more than the available viewing space.
- *Auto Vert Scroll* – if this checkbox is selected, the cursor may be moved vertically similar to the way described above.
- *Auto Selection* – if this checkbox is selected, the value of the field is highlighted when the cursor hovers over the field.
- *Password* – mode for displaying input data with "*" characters.
- *Horz Scroll Bar* – if this checkbox is selected, a horizontal scroll bar will appear when the field is activated.

- *Vert Scroll Bar* – if this checkbox is selected, a vertical scroll bar will appear when the field is activated.
- *Focus Rectangle* – if this checkbox is selected, the active field will be highlighted with a dotted rectangle.
- *Display Only* – if this checkbox is selected, the value in the field cannot be changed, but it is possible to set the focus on this field and to move along the line/lines in the field.

3.5.2 Field for input in a specific format

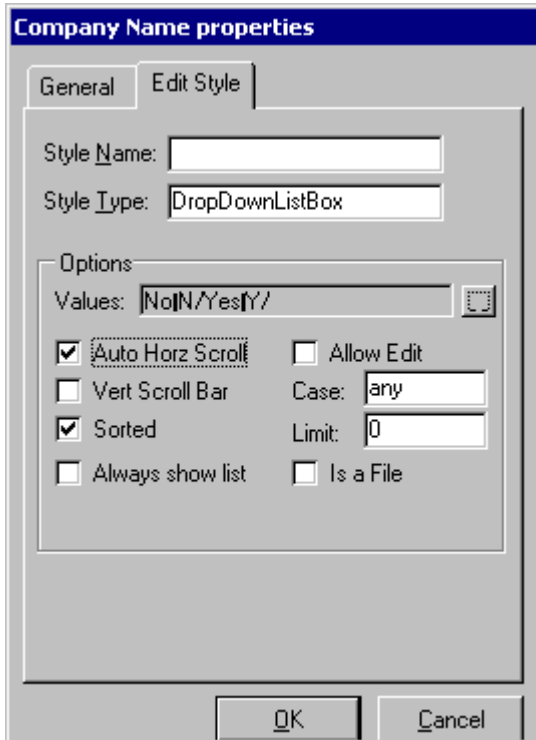


Form for setting "EditMask" style parameters

The form for setting "EditMask" style parameters contains the following fields:


- *Style Name* – (empty by default) list of the names of styles registered in Way4. Each registered style has its own set of parameters that cannot be edited. A user may set the required parameters for the style, leaving this field blank.
- *Style Type* – drop-down list of style types.
- *Mask* – specifies the format for data input (date, time, etc.), for more information, see "PowerBuilder 12.5 Users Guide".
- *Focus Rectangle* – if this checkbox is selected, the active field will be highlighted with a dotted rectangle.

3.5.3 Field with an editable drop-down list



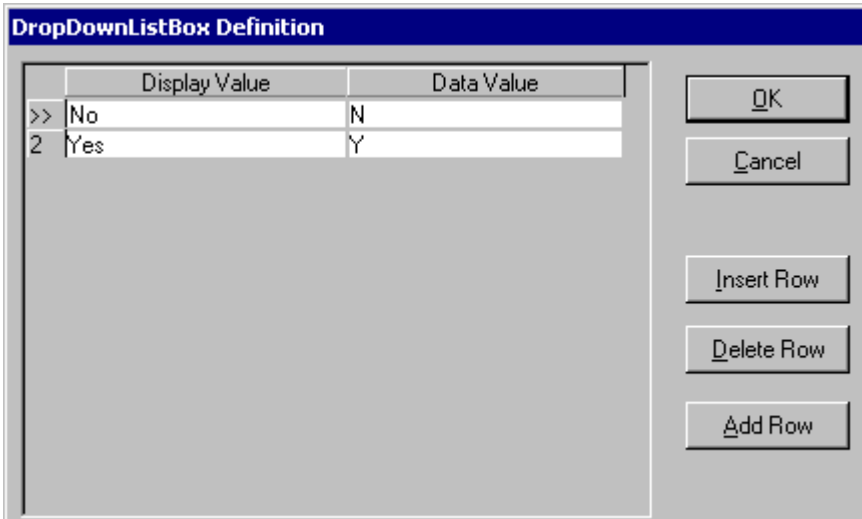
Form for setting "DropDownListBox" style parameters

The form for setting "DropDownListBox" style parameters contains the following fields:

- **Style Name** – (empty by default) list of the names of styles registered in Way4. Each registered style has its own set of parameters that cannot be edited. A user may set the required parameters for the style, leaving this field blank.
- **Style Type** – drop-down list of style types.
- **Values** – used to set a list of values that can be selected; to edit the list, click the  button to the right of the field. The "DropDownListBox Definition" form will open.

To insert an element before the active element in the list, to delete an element or to add an element to the end of the list, click the appropriate button: [Insert Row], [Delete Row] or [Add Row].

The value that will be shown in the list is specified in the *Display Value* field and the value that is passed to the system when the element is selected is specified in the *Data Value* field.



The dialog box titled "DropDownListBox Definition" contains a table with two columns: "Display Value" and "Data Value". The table has two rows: the first row has "No" in the Display Value column and "N" in the Data Value column; the second row has "Yes" in the Display Value column and "Y" in the Data Value column. To the right of the table are five buttons: "OK", "Cancel", "Insert Row", "Delete Row", and "Add Row".

	Display Value	Data Value
>>	No	N
2	Yes	Y

Form for setting the parameters of the "DropDownListBox" field's list

- *Auto Horz Scroll* – if this checkbox is selected, the cursor may be moved along the entire line shown in the field.
- *Vert Scroll Bar* – if this checkbox is selected, a vertical scroll bar will appear when the field is activated.
- *Sorted* – if this checkbox is selected, the elements of the list are sorted alphabetically.
- *Always Show List* – if this checkbox is selected, the list of values to choose from will open when the focus is set on this field with the <Tab> key; otherwise, when setting focus, this field will have a ▼ button for opening the list.
- *Allow Edit* – if this checkbox is selected, a field value can be selected from the list or input manually.
- *Case* – drop-down list to specify the case of entered characters:
 - Upper.
 - Lower.
 - Any.

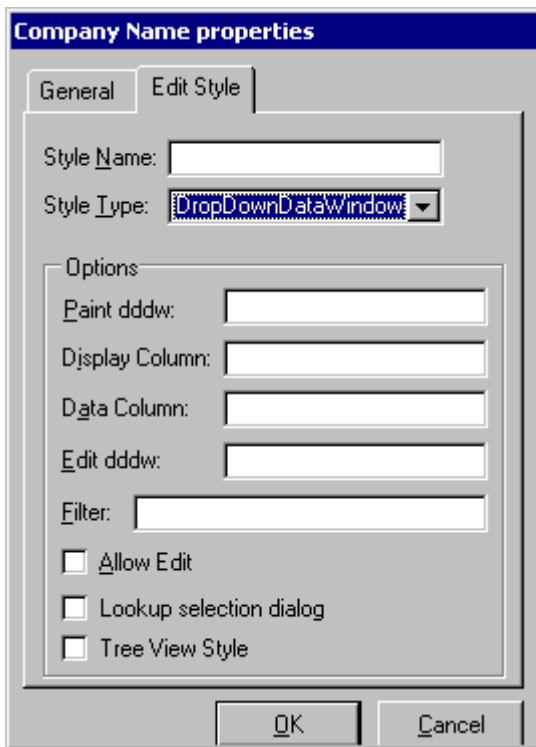
The value of this field is taken into account when the *Allow Edit* checkbox is checked.

- *Limit* – the maximum number of characters that can be entered ("0" means there is no limit). The value of this field is taken into account when the *Allow Edit* checkbox is selected.
- *Is a File* – if this checkbox is selected, the standard MS Windows "Open File" window will open when a value is entered in the field and selection of a file will automatically start an associated program.

If the *Is a File* checkbox is selected, the *Values* field and "DropDownListBox Definition" form are used to specify the type and format of the field being opened; the *Display Value* column of the "DropDownListBox Definition" form specifies the type of file that will be shown in the *Files of Type* field of the "Open File" window and the *Data Value* column specifies a file extension, for example, "*.txt" for text files.

- *File Dir* – specifies the path to the selected file; this field is present on the "Edit Style" tab only if the *Is a File* checkbox is selected.

3.5.4 Field with a drop-down list of values from the database



button.

Form for settings "DropDownDataWindow" style parameters

The form for setting "DropDownDataWindow" parameters contains the following fields:

- **Style Name** – (empty by default) list of the names of styles registered in Way4. Each registered style has its own set of parameters that cannot be edited. A user may set the required parameters for the style, leaving this field blank.
- **Style Type** – drop-down list of style types.



Options group fields should only be edited with the approval of OpenWay.

- **Paint dddw** – field with a list of objects registered in the system that define a database field and the way its values are displayed in the drop-down list.
- **Display Column** – the value that will appear in the list for selection; this value is defined by the object specified in the *Paint dddw* field.
- **Data Column** – the value that will be passed to the system when the corresponding list element is selected; this value is defined by the object specified in the *Paint dddw* field.
- **Edit dddw** – contains a list of dddw objects that make it possible to redefine the value specified in the *Paint dddw* field, for example to restrict the ability to select field values for editing.
- **Filter** – additional filtering condition; this expression will be included in the "WHERE" condition of the SQL query to the database table based on which the dddw object is generated. When specifying filtering conditions, the following formats can be used (<Column_Ref> is the name of the field in the database table based on which the dddw object specified in the *Paint dddw* field is generated):

- "<Column_Ref>=<Condition_Value>" – the field values is equal to <Condition_Value>.
- "<Column_Ref>!=<Condition_Value>" – the field value is not equal to <Condition_Value>.

Here <Condition_Value>:

- <Column_Current> – name of the field of the database table based on which this form is built; specified in capital letters.
- "<Constant>" – constant, specified in quotation marks (").
- @<Local Constant Column>@ – name of the LOCAL_CONSTANTS table field (local constants). The corresponding local constant will be checked as the condition. The field name must be specified in capital letters and enclosed in "@" characters.
- "<Column_Ref> IS NULL" – empty field (NULL).
- "<Column_Ref> IS NOT NULL" – field containing a value.
- "<Column_Ref> LIKE <SQL_LIKE_Pattern>" – field value matches the <SQL_LIKE_Pattern> pattern, as defined in SQL LIKE operator notation. For example, the '%abc%' pattern means the character sequence "abc" is found in the <Column_Ref> field.
- "<Column_Ref> IN (<SQL_IN_Values_List>)" – field value matches a value specified in a <SQL_IN_Values_List> set. Only literals (constants) can be used as values in the set.
- "<Column_Ref> NOT IN (<SQL_IN_Values_List>)" – the field value does not match the values specified in the <SQL_IN_Values_List> set. Only literals (constants) can be used as values in the set.



If several filtering conditions must be specified, a space is used as a separator.

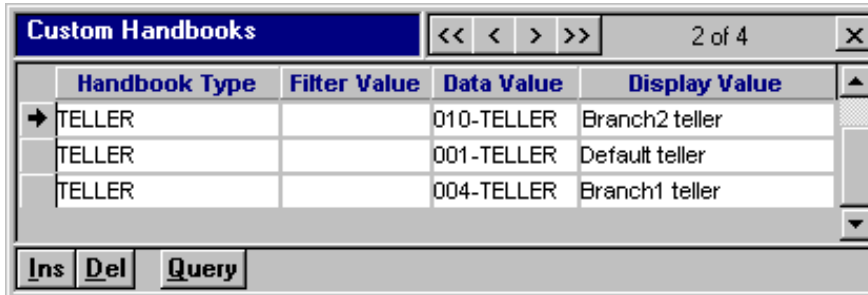
Examples of filling in the *Filter* field:

- F_I=F_I PCAT=PCAT GROUP_CODE="FLT"
- LANGUAGE=@LANGUAGE@
- APPL_PRODUCT__OID IS NOT NULL
- SHORT_NAME LIKE 'Jo%'
- COUNTRY IN ('Brazil', 'Argentina', 'Venezuela')
- *Allow Edit* – if this checkbox is selected, a field value can be selected from the list or input manually. For example, a currency code can be entered instead of selecting its abbreviation from the list.
- *Lookup Selection Dialog* – if this checkbox is selected, the list will be displayed as a dialog window for selecting a field value (see the section "Editing Fields" of the document "DB Manager Manual").
- *Tree View Style* – if this checkbox is selected, the list will be displayed as a tree. In this case, the reference table must be a hierarchy.

3.5.5 Custom handbooks

Fields in which a value can be selected from a fixed list (DropDownDataWindow) can be configured to allow selection from a list defined by a custom handbook.

To create a custom handbook, select "Full → Configuration Setup → Client Classifiers → Custom Handbooks" from the user menu. The "Custom Handbooks" form will open.



Handbook Type	Filter Value	Data Value	Display Value
TELLER		010-TELLER	Branch2 teller
TELLER		001-TELLER	Default teller
TELLER		004-TELLER	Branch1 teller

Buttons: Ins, Del, Query

Form for creating a custom handbook

The form has the following fields:

- *Handbook Type* – handbook code.
- *Filter Value* – value according to which handbook rows will be selected.
- *Data Value* – value in the database table.
- *Display Value* – value displayed in the drop-down list.

A field with a redefined style is marked as "unsynchronizable". This is necessary to prevent fields with a redefined style from returning to the default style when synchronizing forms.

To connect to a custom handbook field, field style parameters must be changed. To do so, specify the following values in fields of the form for setting the style's parameters:

- In the *Paint dddw* field, select "sy_handbook f".
- In the *Display Column* field, specify "name".
- In the *Data Column* field, specify "code".
- In the *Filter* field, specify a filtering condition such as: GROUP_CODE=<handbook code> [FILTER=<form field>].

Usually, the filtering condition is set in the format "GROUP_CODE=<handbook code>", for example, GROUP_CODE="TELLER"

If an additional condition for filtering the content of a custom handbook must be set according to the value of a field of the form to which the field being edited also belongs, the *Filter Value* field of the "Custom Handbooks" table should be used. In this field, for each row of the custom handbook, the corresponding value stored in the database table must be shown (according to the value of the *Data Value* field), which will be used for filtering the handbook's content. For example, when filtering by client category, this field must contain identifiers for the handbook's rows: "A" for "Accountant", "C" for "Commercial" or "P" for "Private".

In this case, filtering conditions in the *Filter* field will look like this:

- "GROUP_CODE="<handbook code>" FILTER=<form file name>".

For instance, if the handbook is used while editing client data and the content of the handbook is filtered by client category, the filtering condition will look like this:

- "GROUP_CODE="handbook code" FILTER=CCAT".



Redefinition of style types is only recommended for free-form input fields (Edit).
Redefinition of styles for DropDownListBox and DropDownDataWindow fields is only allowed with OpenWay's approval.

3.5.6 Changing field text color according to a condition

The color of text in a field may be defined according to a condition. The syntax for such conditions is as follows:

```
<0~t><condition>
```

Here <0~t> is mandatory.

Conditions may be set with the use of IF and CASE statements:

```
if(<condition1>,if(<condition2>, ... <color 2>,<color 1>),<default color>)
case(<expression>when<condition>then<color> ... else<default color>)
```

To set the color, the RGB (x, y, z) function is used, which returns a color according to the values of three components: red (x), green (y), blue (z). The value of the parameter is between 0 and 255. According to the numeric value, the intensity of the specified color in the resulting color increases.



After a condition for text colors has been set, save the form by selecting the system menu item "Form → Save".

3.5.6.1 Example of using a condition to change field text color"

For the ATM monitoring form "Full → Acquiring → ATM Controller → ATM Monitor – All", a value for the *Status* column must be displayed in the appropriate color.

Table of color values for ATM status values

STATUS field value	Text color
OK	Blue
Information	Green
Warning	Orange
Error	Red
Not Configured	Yellow
Fatal Error	Black

Status field value options can be set in the window for defining a values for a drop-down list (see "Field with an editable drop-down list"). In the example, these values are as follows

DropDownListBox Definition

	Display Value	Data Value
>>	OK	0
2	Information	1
3	Warning	2
4	Error	3
5	Not Configured	4
6	Fatal Error	5

List of Status field values

Specify the following as Color field values:

```
0~tif(status <>"0~",if(status <>"1~",if(status <>"2~",if(status <>"3~", if(status <>"4~",RGB(0,0,0),RGB(255,255,0)),RGB(255,0,0)),RGB(255,127,0)), RGB(0,255,0)),RGB(0,0,255))
```

or

```
0~tcase(STATUS when ~"0~" then RGB(0,0,255)when ~"1~" then RGB(0,255,0) when ~"2~" then RGB(255,127,0) when ~"3~" then RGB(255,0,0) when ~"4~" then RGB(255,255,0)else RGB(0,0,0))
```



After a condition for text colors has been set, save the form by selecting the system menu item "Form → Save".

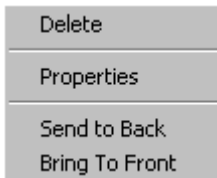
3.5.7 Masking field contents

If field contents must be masked, in the *Format* field of the window for specifying column parameters, specify an expression in PowerBuilder 12.5 format. To mask card contract numbers (according to PCI DSS), specify the following expression:

```
~tcase(CON_CAT when ~"C~" then (left(CONTRACT_NUMBER,6)+if(len(trim(CONTRACT_NUMBER))>6,~"*****~",~"~")+case(len(trim(CONTRACT_NUMBER)) when is>15 then right(trim(CONTRACT_NUMBER),3) when is=15 then right(trim(CONTRACT_NUMBER),2) when is=14 then right(trim(CONTRACT_NUMBER),1) else ~"~")) else CONTRACT_NUMBER)
```

3.6 Deleting column headings

Column headings can be deleted from a data table in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor on the heading of the required column and right-click. Select "Delete" from the context menu that opens.



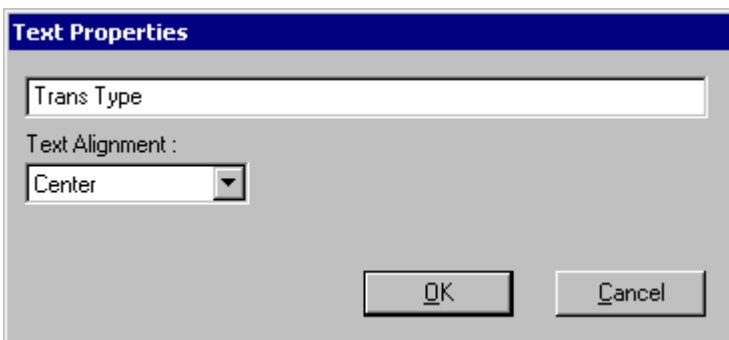
Context menu when editing column headings



After deleting column headers, save the form (see ["Saving an edited form"](#)).

3.7 Column heading text and style

The text and style of a column heading can be changed in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor on the heading of the required column and right-click. In the context menu that opens, select "Properties"; a window with the parameters of the column heading will open.



Window with a data table's column heading parameters

The heading's text can be set in this window, and the type of text alignment can be specified in the *Text Alignment* field:

- Center
- Left
- Right

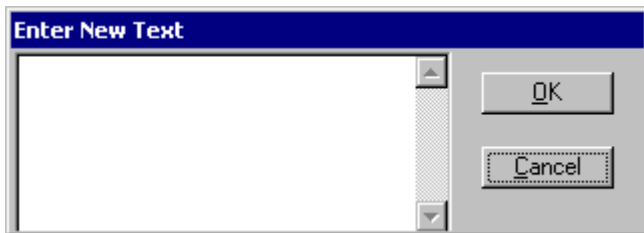


After changing the text and/or style of the column heading, save the form (see ["Saving an edited form"](#)).

3.8 Comments

Comments that appear in the status bar when the mouse cursor hovers over a column are entered in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, double-click on the column (not the heading). In the window that opens, enter the required text.

After entering the text of the comment for the column, save the form (see "[Saving an edited form](#)").

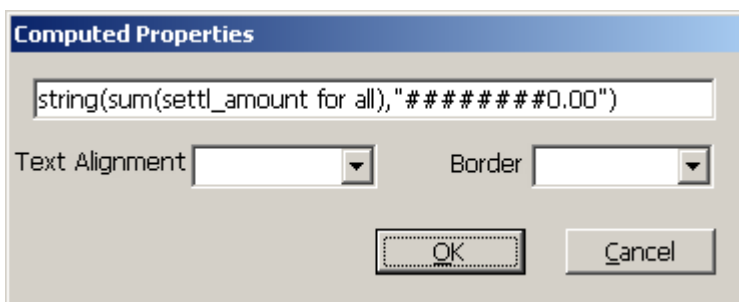


Window to enter comments for a column

3.9 Calculating totals

Totals for data table columns can be calculated in design mode. To do this, right-click on the column and select "Add Computed" from the context menu that opens. A row with totals will be added to the bottom of the table and the "Add Computed" item will disappear from the context menu.

To specify a formula for calculating totals, right-click in the totals cell for the selected column and select "Properties" from the context menu that opens. The "Computed Properties" window will open. In the top field of this window, enter a formula written in the computed expression language used in the PowerBuilder client-server application development system. For more information about the language for computed expressions, see "PowerBuilder Classic 12.5: DataWindow Reference (Chapter 1 "DataWindow Operators and Expressions" and Chapter 2 "DataWindow Expression Functions").



Window to enter a formula for calculating totals

The *Text Alignment* field of the "Computed Properties" window is used to specify how text in the cell with the computed expression will be aligned:

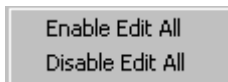
- Left
- Center
- Right

The *Border* field of the "Computed Properties" window is not used while working with data tables.

If totals must be calculated for another column, repeat the procedure described above.

3.10 Editing field content

In design mode, right-clicking on a form's window outside the table opens a context menu that can be used to allow editing the content of all the form's fields (Enable Edit All) or make all fields unavailable for editing (Disable Edit All).

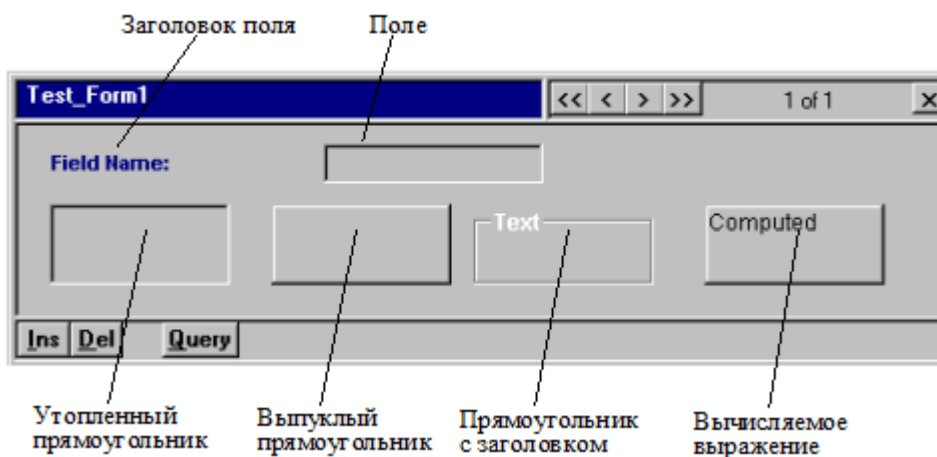


Context menu for allowing/prohibiting the editing of fields

4 Designing data forms

Data form elements are as follows:

- Fields
- Labels
- Computed expressions
- Elements for grouping fields:
 - frame – a sunken rectangle
 - plateau – a raised rectangle
 - GroupBox – a rectangle with a title

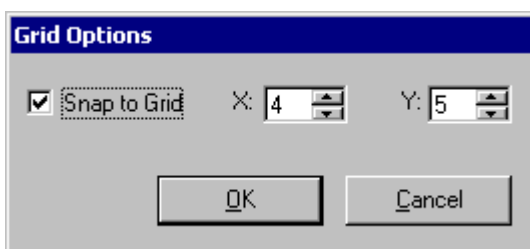


Data form elements

4.1 Moving form elements

Data form elements can be moved in design mode ("Form → Design Mode", <Ctrl>+<D>). To do so, click on the required elements while holding down the <Ctrl> key (the elements will be shaded). Then, release <Ctrl>, move the mouse cursor to one of the selected elements, click and drag the elements to the required position.

A step can be set for moving a data form's elements. To do so, select "Design → Grid" from the system menu. The "Grid Options" window will open.



Setting Snap to Grid options

If the *Snap to Grid* checkbox is selected, a data form's element will snap to an invisible grid. The horizontal and vertical dimensions of the grid's cells are set by the user in the X: and Y: fields, respectively. As a result, a data form element will be moved horizontally and vertically with a fixed step that is defined by the dimensions of the grid cell.



After moving elements, save the form (see "[Saving an edited form](#)").

4.2 Changing element size

The size of a data form element can be changed in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, move the cursor to the edge of the element (the cursor's shape will change to a double-headed arrow). Hold down the left mouse button and drag the mouse to set the element's desired dimensions.



After changing the size of elements, save the form (see "[Saving an edited form](#)").

4.3 Deleting elements

Data form elements can be deleted in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, place the mouse cursor onto the item to be deleted, right-click and select "Delete" from the context menu that opens.



After deleting elements, save the form (see "[Saving an edited form](#)").

4.4 Arranging elements

Data form elements can be arranged in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, while holding down the <Ctrl> key, click on the required elements, select the system menu item "Design → Arrange" and from the menu that opens, select the desired method for arranging the elements:

- "Align Left" (<Ctrl>+<Alt>+<L>) – aligns elements to the left, the first selected element is used as an example.
- "Align Right" (<Ctrl>+<Alt>+<R>) – aligns elements to the right, the first selected element is used as an example.
- "Align Up" (<Ctrl>+<Alt>+<U>) – aligns elements to the top, the first selected element is used as an example.

- "Align Down" (<Ctrl>+<Alt>+<D>) – aligns elements to the bottom, the first selected element is used as an example.
- "Size Horizontally" (<Ctrl>+<Alt>+<H>) – changes the width of elements, the first selected element is used as an example.
- "Size Vertically" (<Ctrl>+<Alt>+<V>) – changes the height of elements, the first selected element is used as an example.
- "Space Horizontally" (<Shift>+<Alt>+<H>) – changes the horizontal space between elements according to the distance between the first two selected elements.
- "Space Vertically" (<Shift>+<Alt>+<V>) – changes the vertical space between elements according to the distance between the first two selected elements.

Align Left	Ctrl+Alt+L
Align Right	Ctrl+Alt+R
Align Up	Ctrl+Alt+U
Align Down	Ctrl+Alt+D
Size Horizontally	Ctrl+Alt+H
Size Vertically	Ctrl+Alt+V
Space Horizontally	Shift+Alt+H
Space Vertically	Shift+Alt+V

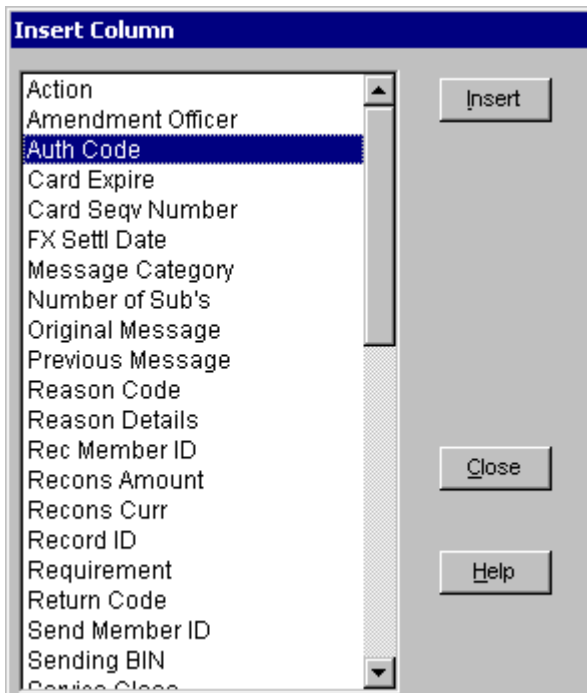
Methods for arranging elements



After changing the arrangement of elements, save the form (see "[Saving an edited form](#)").

4.5 Adding fields

Fields can be added to a data form in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, select "Design → Insert → Field" and click on the place in the form where the new field must be inserted. A window will open with a list of fields for the corresponding database table record.



List of database table record fields that can be added to a data form

Click on the required field in the list and then click the [Insert] button.

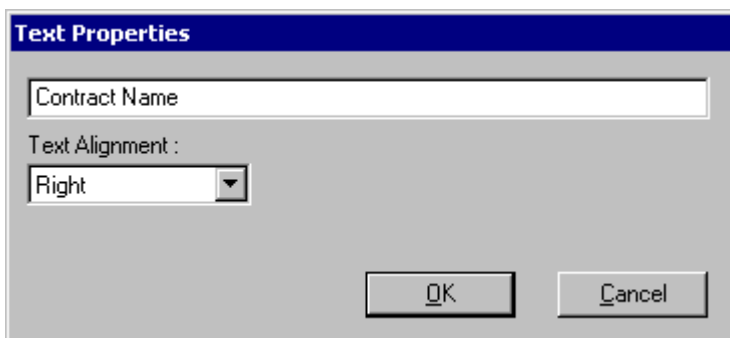


After adding fields, save the form (see "[Saving an edited form](#)").

4.6 Adding text

A caption, for example a field label, can be added to a data form in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, select the system menu item "Design → Insert → Text", click on the place in the form where the caption must be inserted, and edit the caption's text.

To edit a caption, right-click on it and select "Properties" from the context menu. The "Text properties" window will open. In the top field of this window, the caption's text can be edited and in the *Text Alignment* field, the type of text alignment can be selected from a list: left-justified (Left) or right-justified (Right).



Window for editing a caption's text



After adding or editing captions, save the form (see "[Saving an edited form](#)").

4.7 Adding group boxes

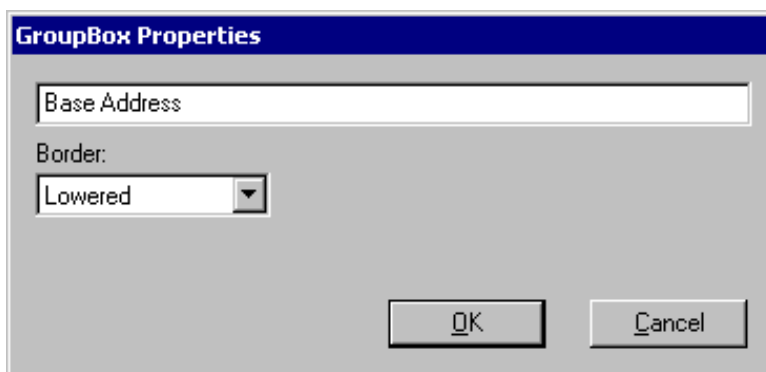
Field grouping elements can be added to a data form in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, select the system menu item "Design → Insert" and in the menu that opens, select:

- "Frame" – add a sunken rectangle.
- "Plateau" – add a raised rectangle.
- "GroupBox" – add a rectangle with a label.

To edit the parameters of a "GroupBox" rectangle, right-click on it and select "Properties" from the context menu. The "GroupBox properties" window will open.

The label can be edited in the top field of this window and the type of border can be selected from the list in the *Border* field:

- "Box" – simple border.
- "Lowered" – sunken border.
- "Raised" – raised border.



Window for setting a "GroupBox" rectangle



After adding field grouping elements and editing their parameters, save the form (see "[Saving an edited form](#)").

4.8 Adding computed fields

Computed expressions can be added to a data form in the same way as a row of totals is added to a data table (see "[Calculating totals](#)").

The way an element with a computed expression will be shown in a form can be selected from the list in the *Border* field:

- "None" – no highlighting.
- "Lowered" – highlighted by a sunken rectangle.
- "Raised" – highlighted by a raised rectangle.



After adding elements with computed expressions and editing their parameters, save the form (see "[Saving an edited form](#)").

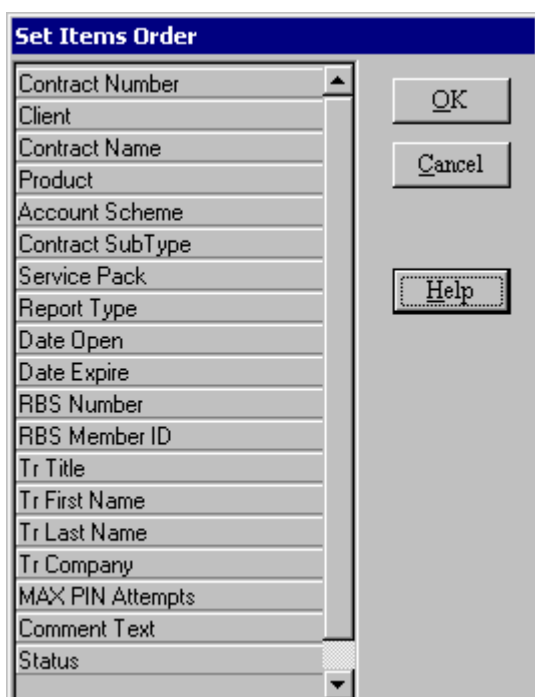
4.9 Field parameters

For a description of parameters of editable fields and the list of styles for editable fields, see the section "[Column parameters](#)".

4.10 Setting field navigation order

When working with a data form in DB Manager, the <Tab> key is used to navigate from field to field.

Field navigation order when pressing the <Tab> is set in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, select the system menu item "Design → Tab Order". The window "Set Items Order" will open. This window contains an ordered list of data form fields.



Window for setting field navigation order

To change the order of field navigation, click on the field in the "Set Items Order" window's list and while holding the left mouse button down, move the cursor, which changes to a rectangle, to the required position in the list.



After changing field navigation order, save the form (see "[Saving an edited form](#)").

4.11 Element overlay order

The order for layering elements in a data form is set when fields and captions are placed inside field grouping elements ("Frame", "Plateau", "GroupBox") used for highlighting groups of fields (see "[Adding group boxes](#)").

The layering order can be changed in design mode ("Form → Design Mode", <Ctrl>+<D>). To do this, right-click on a form element and select "Send to Back" or "Bring to Front" from the context menu.

5 Appendix: Concept of storing forms in Way4 standard directories

5.1 Way4 file server standard directories

File server standard directories and their access privileges are described in the section "Privileges for Way4 directories" of the document "DB Manager User Management".

5.2 Storing forms in standard directories

Forms are stored in physical files with the "*.srd" extension. These files are stored in the standard system directories <OWS_HOME> and <OWS_WORK>, in the subdirectories "<OWS_directory_name>/client/shared/forms", respectively.

Forms supplied with the distribution and stored in <OWS_HOME> are considered standard. Any editing or deletion of them is prohibited.

Standard forms in the <OWS_HOME> directory can only be modified by OpenWay representatives and they are only updated during system upgrade.

5.3 Custom forms

If standard forms need to be edited or modified when, for instance, their field labels are translated into a local language or when users create systems of their own forms, copies of these forms are saved in the working directory. During further work with the system, these copied forms will be called to the screen instead of standard ones.



To get information about the directory from which a form was opened, right-click the title of the form and select "Form Information" from the context menu. The path to the form file is shown in the *File* field of the form parameters window that opens.

5.4 Synchronizing custom forms

When the system version has been upgraded, start the procedure for synchronizing custom forms. The procedure includes the verification of correspondence between the fields of custom forms and those of the upgraded database tables. This procedure check for the corresponding fields in database tables and that the data types of these fields and form fields match. If discrepancies are found, a dialog

window will be displayed prompting the user to made changes for the corresponding form columns or fields.

To start the procedure, select the system menu item "Database → Synchronize Forms".



It is sufficient to run this procedure once after every system upgrade.

5.5 Restoring standard forms

There are two ways to restore a standard form when an edited (custom) form from the <OWS_WORK> directory is used to work with the system: with or without saving the custom form.

To use the standard form when working with the system , the corresponding file must be removed from the working directory. To do so, either click the [Delete] button in the window for selecting a form for editing, or use the operating system's file manager to delete the form's physical file.

For it to be possible to restore the edited custom form, its file with the "*.srd" extension must be saved in another directory on the disk.