Apparo Fast Edit

Standalone Version

Training Guide for the first steps

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1 Introduction

1.1 What is Apparo Fast Edit

- Apparo Fast Edit is bridging the gap between the IT and the business departments, making it easy for managers, accountants etc. **to create forms, data entry masks and even complex workflows for quick data input** without special knowledge in a programming language.

- Apparo Fast Edit is **a high-performance data entry software**. With it, you can enter, edit, delete data and also easily import data from Excel files in different ways (via email, via copy&paste or as file import).

- With Apparo Fast Edit, you can

  a) **build stand-alone data entry solutions,** or
  b) **extend your BI reporting system (e.g. IBM Cognos BI) or your enterprise portal**

1.2 What were the driving forces behind the development?

- Reporting and Data Entry should be connected.

- Business requirements should be implemented very flexibly.

- Business departments want fast solutions, without waiting for IT development.

- System should be integrated completely in BI or enterprise portal systems.

- Software should be able to expand and grow depending on needs.

- Software should be easy to use, also by business departments.

1.3 Resulting cornerstones of Apparo Fast Edit

- Forms definable in the Apparo Designer, without programming knowledge.

- Powerful variables and scripts or database procedures to maximize the flexibility

- Security based on existing authorization system (e.g. LDAP, Active Directory)

- Data quality must be secured by possible input validation of data types and values.

- Excel and CSV import possible (manual or automatic), also handling of file attachments.

Due to its many features Apparo Fast Edit can be adapted to fit almost any need.
The online help in the Apparo Designer helps to start immediately by giving explanations and hints on all features and settings.

There are two sides of Apparo Fast Edit

*- the **Backend** (Apparo Designer), on which forms, masks and Workflows are set up as so-called Business Cases*

*- and the **Frontend**, on which these forms are filled with data.*

1.4 Target groups and goal of this tutorial

- The target groups of Apparo Fast Edit are persons who create and edit data entry forms, for example in business units. No programming knowledge is necessary!

- The focus of this tutorial is to explain the basic thoughts and models that are necessary to translate a problem into a Fast Edit Business Case, and to highlight important features.

- After completing this tutorial, the user should be able to create simple and also complex Business Cases so that data can be entered easily and quickly into reports, dashboards, mask and forms into any relational database.

This tutorial is intended to help you through the first steps with Fast Edit. It also touches many more advanced topics to give you an overview over the vast possibilities.
You can find extensive information about the Fast Edit features in the document "User Guide", in the doc und https://doc.apparo.solutions and in the Training menu of the Apparo Designer (Movies & more).

1.5 Technical requirements

1. Apparo Fast Edit has to be installed and started.

2. A web browser has to be available, as Apparo Fast Edit is a web-based software.

3. The BI system has to be installed and ready.

4. As the language of the Fast Edit interface and the tutorial is English, basic English knowledge is necessary.

5. No BI Installation is needed for the standalone version.

1.6 Basic Handling

- *Fields with an *(asterisk) have to be filled in.*

Since Apparo Fast Edit works with databases and tables, buttons like "OK", "Cancel" etc. have a defined effect in terms of database transactions.

a) **"OK" (without a "Close" available)**: All changes are stored in the database and the Business Case is closed.
b) **"OK" (with a "Close" available)**: All changes are stored in the database.
c) **"Close"**: All changes are stored in the database and the Business Case is closed.
d) **"Cancel"**: Rolls back database transaction(s). No changes are saved.

Note:

- *"OK" and "Close" are sending a COMMIT command.*
- *All button texts can be changed in the Apparo Designer on the "Button Titles" register, but this will not change their effect.*
- *If the feature 'auto commit' is enabled all changes are stored immediately.*

2 Main Concepts

In the following section, you will find a general overview of the main concepts and the technological background of Apparo Fast Edit.
For more technical information on the subject, please refer to the “System Architecture” document.

2.1 Databases and Users

Example: IBM Cognos BI & Apparo Fast Edit

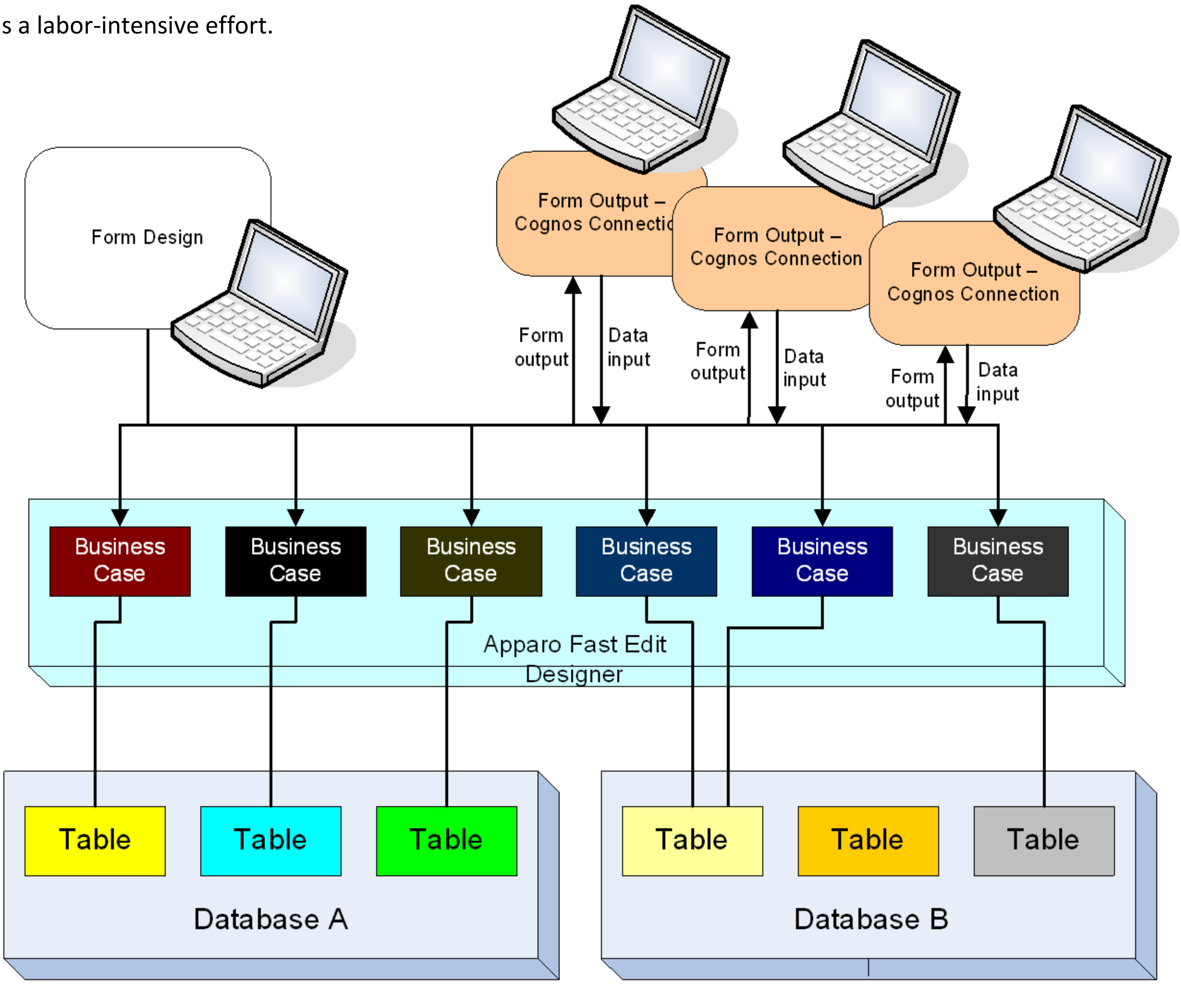
Apparo Fast Edit bridges the gap between the database, the form designer and the user.

IBM Cognos BI is a software that is optimized for data output.

That means:

a) setting up the input forms and
b) adding the data

is a labor-intensive effort.



With Apparo Fast Edit, a power user can build forms and masks which refer to tables in the database without any programming knowledge.

Members of the same or other business departments can use these forms for quick data entry in stand-alone forms or within a Cognos Report.

2.2 Usage of Apparo Fast Edit

Apparo Fast Edit is intended for collecting any type of data, changing of data and for the output of data.

Typical use cases of Apparo Fast Edit are the maintenance of:

- Master data
- Addresses
- Personnel data
- Project times and status
- User designations, lists and codes
- Report distribution (bursting table)
- …basically any kind of figures, measures, survey results, plan data etc.

In addition, you can comment on Control Reports and release the comments.

2.3 Business Cases (BC)

The cornerstones of Apparo Fast Edit are the so-called Business Cases.
Each Business Case is an application that can be started in a Business Intelligence System or stand-alone.
A Business Case contains input fields, prompts, logos, lookups, titles, buttons and functionality like deleting data, inserting, Excel-import and so on.

- While you can include more than one database and table in your Apparo Fast Edit set-up, each Business Case refers to only one table/view (lookups can refer to a different table).

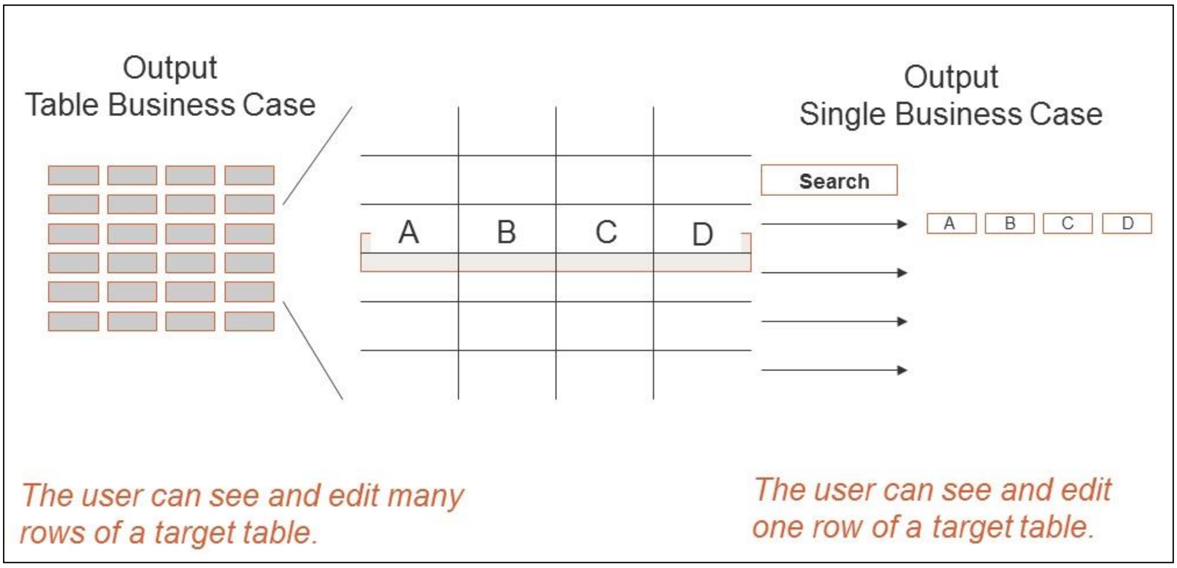
- If you want to combine data of different tables, you need to use e.g. a master-detail relationship between Business Cases, as explained in the section “Linking Business Cases as Master-Detail connection“.

- You can filter the displayed data of a Business Case by another table (e.g. country > factory > personnel display). This is called a data hierarchy and explained in the section “Optimizing Business Cases”.

2.4 Business Case types

Business Cases come in 5 slightly different types:

- the Table Business Case (TBC) and
- the Single Business Case (SBC)
- the Email Business Case (EBC) to send emails
- the Email Import Business Case to import data sent by emails
- Action Business Cases to start scripts, executables, DB functions and so on


Output
Table Business Case
A
B
C
D
Output
Single Business Case
Search
A
B
C
D
The user can see and edit many rows of a target table.
The user can see and edit one row of a target table.

Similarities:

- Can be used with search fields, filters, buttons…

Differences:

Table Business Case (TBC)

- Shows data of a whole database table (one row at a time for full display).
- Fewer available widget types than for the single Business Case, due to restrictions in display space (one table per screen).

Single Business Case (SBC)

- Shows only the columns of one database table row. (Via Search next rows available.)
- More widgets types than the table Business Case, due to less restriction in space (only one data set per screen).

Typical cases for Single Business Cases:

- Data entry in a single data record
- Display of detailed entries from a table Business Case.
- Data entry of product or staff details.

Typical cases for a Table Business Cases:

- Data entry
- Display of long data lists.
- Data entry from Excel sheets
- Data export into Excel

When you open a single Business Case report, you can transport primary key(s) and report variables to the Business Case.

3 Clients

3.1 Definition

Clients facilitate the **management of different business units**.

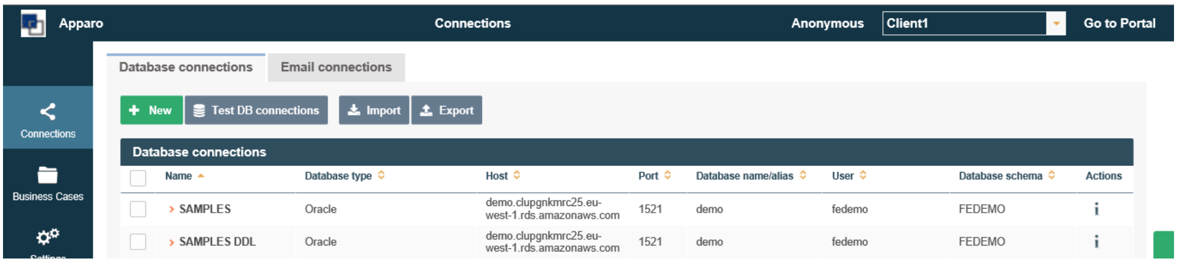
They enable the strict separation of the administration of the business cases in the designer and the easier separation of data from different departments.

Only super-users can create or edit clients, designer users don't have access to this feature.

Every user group can be assigned to one or more clients.

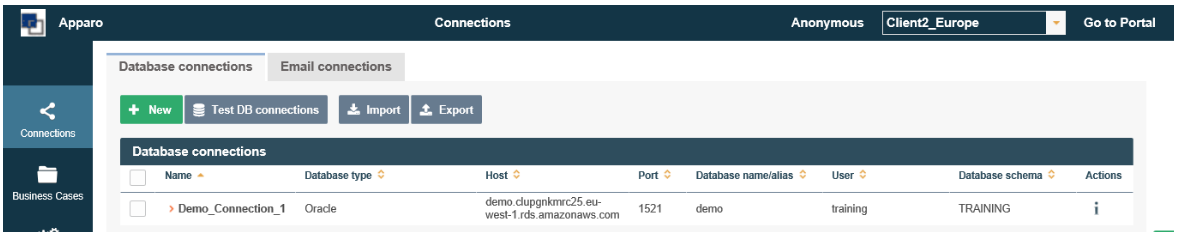
Is a user assigned to more than one client, he can select the client he wants to use in top right corner.

Each client represents a capsulated Apparo Fast Edit environment with own connections, Business Cases, language, settings and security:



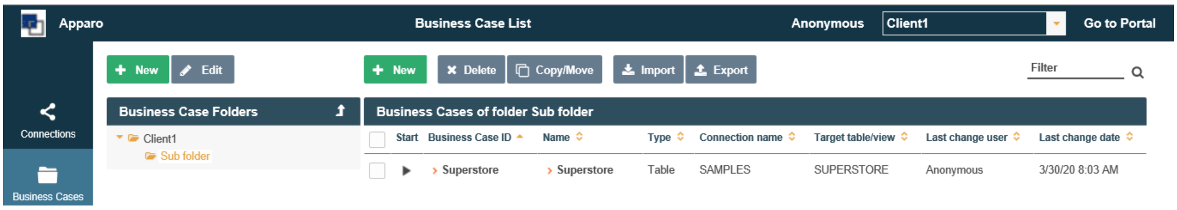
□	Name	Database type	Host	Port	Database name/alias	User	Database schema	Actions
□	› SAMPLES	Oracle	demo.clupgnkmrc25.eu-west-1.rds.amazonaws.com	1521	demo	fedemo	FEDEMO	i
□	› SAMPLES DDL	Oracle	demo.clupgnkmrc25.eu-west-1.rds.amazonaws.com	1521	demo	fedemo	FEDEMO	i

Database connections of 'Client 1'



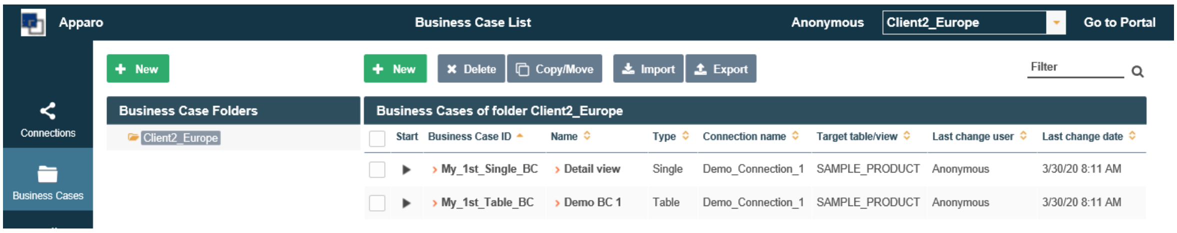
□	Name	Database type	Host	Port	Database name/alias	User	Database schema	Actions
□	› Demo_Connection_1	Oracle	demo.clupgnkmrc25.eu-west-1.rds.amazonaws.com	1521	demo	training	TRAINING	i

Database connections of 'Client2_Europe'



□	Start	Business Case ID	Name	Type	Connection name	Target table/view	Last change user	Last change date
□	▶	› Superstore	› Superstore	Table	SAMPLES	SUPERSTORE	Anonymous	3/30/20 8:03 AM

Business Case of 'Client 1'

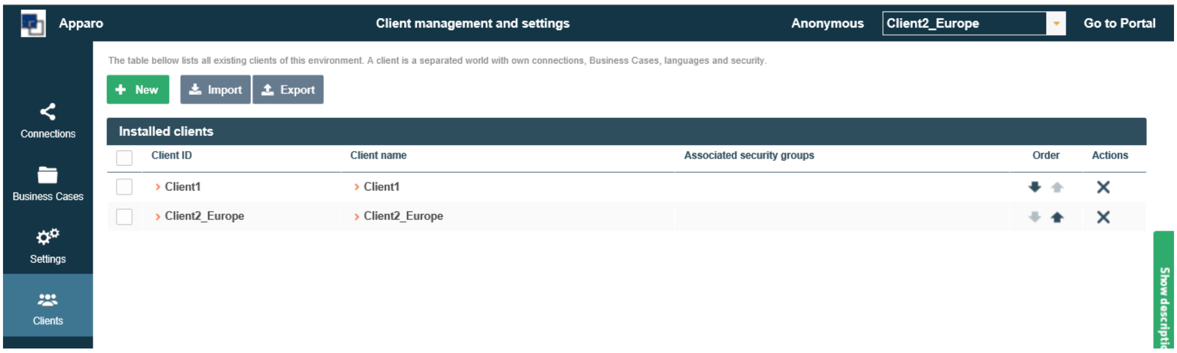


□	Start	Business Case ID	Name	Type	Connection name	Target table/view	Last change user	Last change date
□	▶	› My_1st_Single_BC	› Detail view	Single	Demo_Connection_1	SAMPLE_PRODUCT	Anonymous	3/30/20 8:11 AM
□	▶	› My_1st_Table_BC	› Demo BC 1	Table	Demo_Connection_1	SAMPLE_PRODUCT	Anonymous	3/30/20 8:11 AM

Business Cases of 'Client2_Europe'

3.2 Creating a new client

The client tab can be opened with the button on the left menu. Click on ‘New‘ to add a client:



The table bellow lists all existing clients of this environment. A client is a separated world with own connections, Business Cases, languages and security.

Installed clients

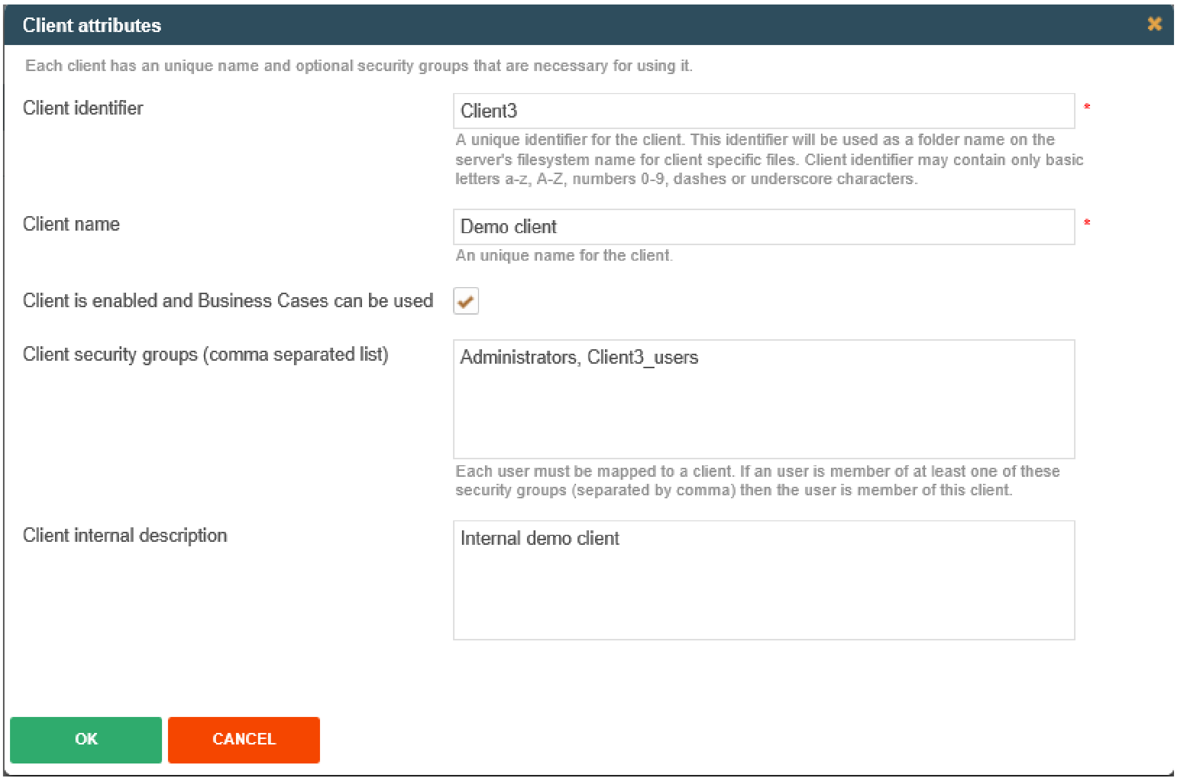
□	Client ID	Client name	Associated security groups	Order	Actions
□	› Client1	› Client1		⬇ ⬆	✕
□	› Client2_Europe	› Client2_Europe		⬇ ⬆	✕

Clients can be imported and exported

3.2.1 Client head

When creating a client you will be asked to fill these main settings:

- **Client identifier** = unique ID
- **Client name** = name, that will be shown
- **Client security groups** = assign security groups to this client
- **Client internal description** = description text for documentation purposes



Each client has an unique name and optional security groups that are necessary for using it.

Client identifier: Client3 *

A unique identifier for the client. This identifier will be used as a folder name on the server's filesystem name for client specific files. Client identifier may contain only basic letters a-z, A-Z, numbers 0-9, dashes or underscore characters.

Client name: Demo client *

An unique name for the client.

Client is enabled and Business Cases can be used ☑

Client security groups (comma separated list): Administrators, Client3_users

Each user must be mapped to a client. If an user is member of at least one of these security groups (separated by comma) then the user is member of this client.

Client internal description: Internal demo client

Click ‘OK’ to move on

3.2.2 Client security groups

This security groups are used to assign and to check the authorization.

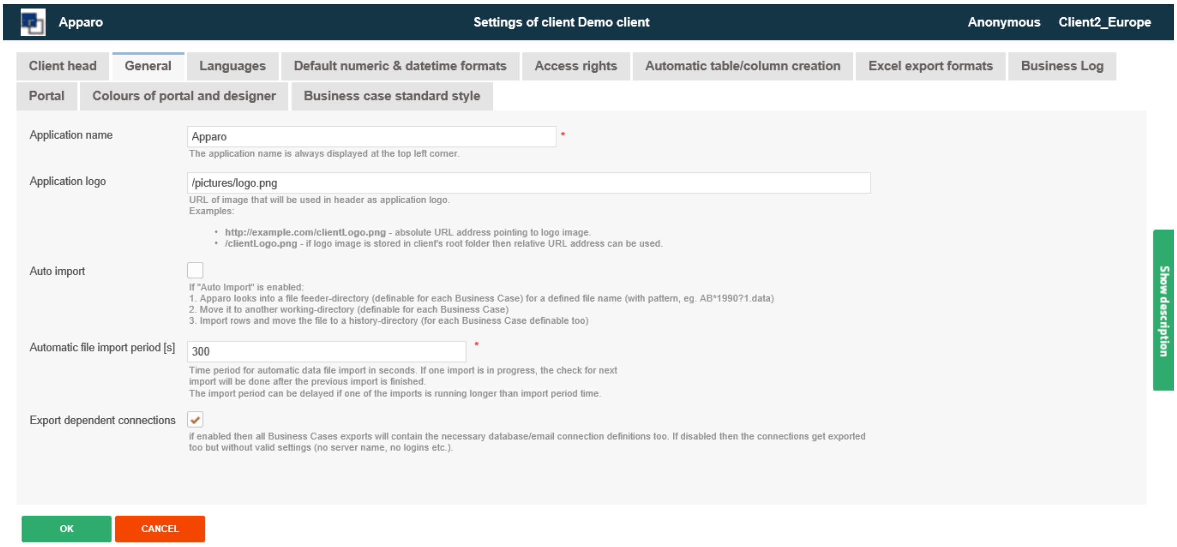
Authorization:
Apart from administrators are only users who are members of the entered security groups, entitled to run the Business Cases of this client.

Assignment:
When you open a Business Case without client ID, e.g. from a BI report or an e-mail, the security group of clients will be used to assign the appropriate Business Case.
Without security group or if the user is member of more than on client, the allocation of Business Cases with the same ID, existing in different clients, is based on the order of the clients in the list from top to bottom.

3.2.3 General settings

The general settings are containing these properties:

- **Application name** = This name is shown in the top left corner. Default is 'Apparo'
- **Application logo** = Optional. A logo can be shown next to the application name
- **Auto import** = Enables client-wide the automated file import (server background) feature
- **Import period** = When auto import is enabled, this is the interval in seconds to check the defined folders for new Excel files for the auto import feature
- **Export dependent connections** = if enabled then all Business Cases exports will contain the necessary database/email connection definitions too. If disabled then the connections get exported too but without valid settings (no server name, no logins etc.).


Apparo
Settings of client Demo client
Anonymous
Client2_Europe
Client head
General
Languages
Default numeric & datetime formats
Access rights
Automatic table/column creation
Excel export formats
Business Log
Portal
Colours of portal and designer
Business case standard style
Show description
OK
CANCEL

Application name: Apparo *
The application name is always displayed at the top left corner.

Application logo: /pictures/logo.png
URL of image that will be used in header as application logo.
Examples:

- **http://example.com/clientLogo.png** - absolute URL address pointing to logo image.
- **/clientLogo.png** - if logo image is stored in client's root folder then relative URL address can be used.

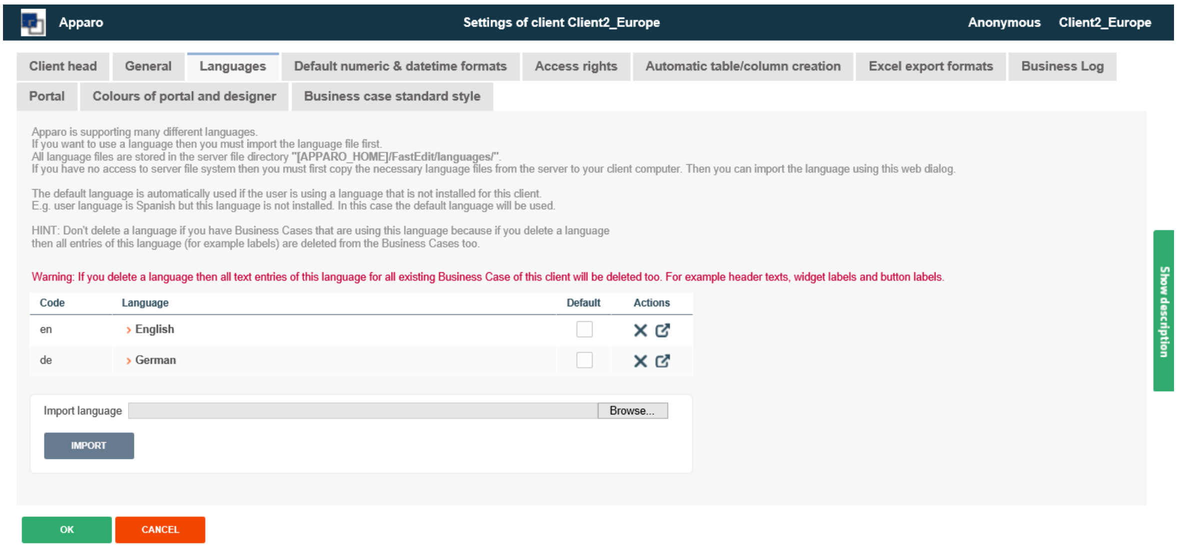
Auto import: □
If "Auto Import" is enabled:
1. Apparo looks into a file feeder-directory (definable for each Business Case) for a defined file name (with pattern, eg. AB*1990?1.data)
2. Move it to another working-directory (definable for each Business Case)
3. Import rows and move the file to a history-directory (for each Business Case definable too)

Automatic file import period [s]: 300 *
Time period for automatic data file import in seconds. If one import is in progress, the check for next import will be done after the previous import is finished.
The import period can be delayed if one of the imports is running longer than import period time.

Export dependent connections: ☑
if enabled then all Business Cases exports will contain the necessary database/email connection definitions too. If disabled then the connections get exported too but without valid settings (no server name, no logins etc.).

3.2.4 Languages

When creating a client there are no languages installed.
You can import them from: [APPARO_HOME]/FastEdit/languages
When importing clients from older versions, you have to import the languages again, due to new language definitions.


Apparo
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Apparo is supporting many different languages.
If you want to use a language then you must import the language file first.
All language files are stored in the server file directory **"[APPARO_HOME]/FastEdit/languages/"**.
If you have no access to server file system then you must first copy the necessary language files from the server to your client computer. Then you can import the language using this web dialog.

The default language is automatically used if the user is using a language that is not installed for this client.
E.g. user language is Spanish but this language is not installed. In this case the default language will be used.

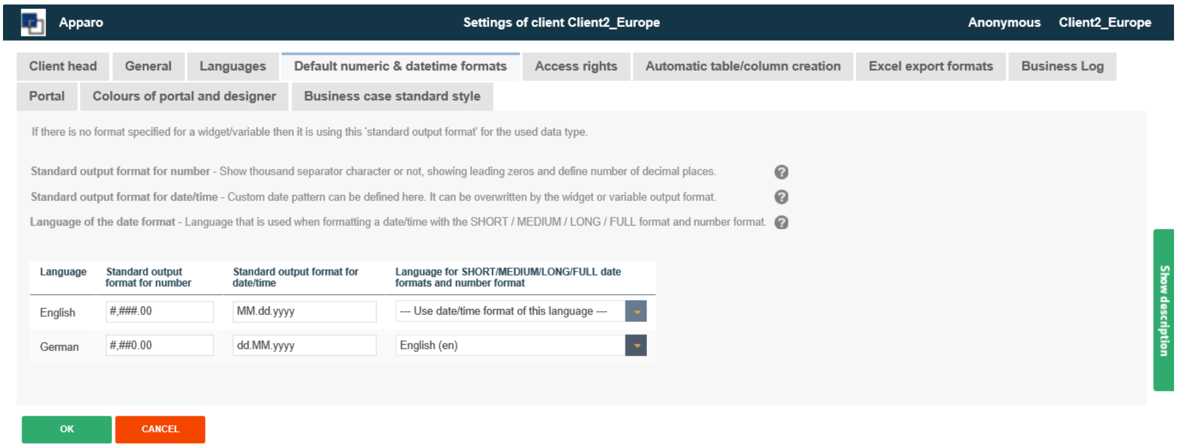
HINT: Don't delete a language if you have Business Cases that are using this language because if you delete a language then all entries of this language (for example labels) are deleted from the Business Cases too.

Warning: If you delete a language then all text entries of this language for all existing Business Case of this client will be deleted too. For example header texts, widget labels and button labels.

Code	Language	Default	Actions
en	› English	□	✕ ↗
de	› German	□	✕ ↗

3.2.5 Default formats

In ‘Default numeric & date time formats’ you can adapt the defaults of these date types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If there is no format specified for a widget/variable then it is using this 'standard output format' for the used data type.

Standard output format for number - Show thousand separator character or not, showing leading zeros and define number of decimal places.

Standard output format for date/time - Custom date pattern can be defined here. It can be overwritten by the widget or variable output format.

Language of the date format - Language that is used when formatting a date/time with the SHORT / MEDIUM / LONG / FULL format and number format.

Language	Standard output format for number	Standard output format for date/time	Language for SHORT/MEDIUM/LONG/FULL date formats and number format
English	#,###.00	MM.dd.yyyy	--- Use date/time format of this language ---
German	#,##0.00	dd.MM.yyyy	English (en)

With the setting **Language for SHORT/MEDIUM/LONG/FULL date formats and number format** you can adapt the used number and date/time format for each language.
In the example we set German with English formats.

3.2.6 Access rights

Define restrictions for accessing secured parts of Apparo Fast Edit. Only users with listed security groups will be able to access these particular functions.

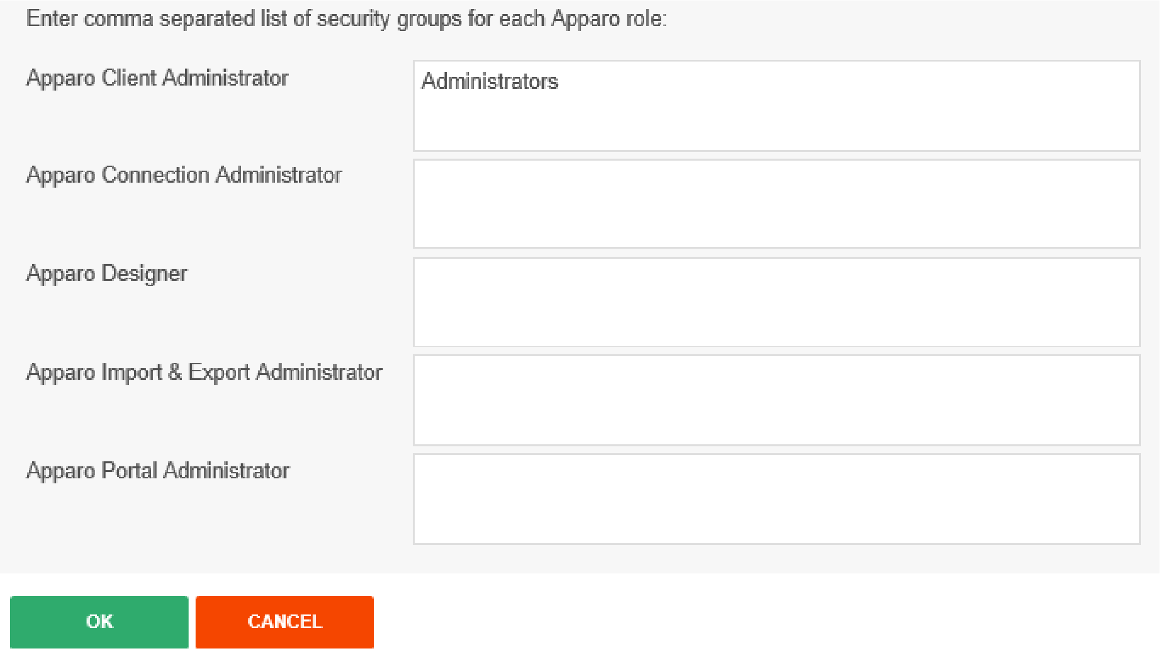
Apparo Client Administrator: has unrestricted access to all features of this client
If no security group is defined, all mapped users will have admin access, which means folder and BC-level access rights will have no impact.

Apparo Connection Administrator: can create, edit and delete database and email server connections

Apparo Designer: manages Business Cases - can create, delete and edit Business Cases and folders

Apparo Import & Export Administrator: can import and export Business Cases and connections

Enter comma separated list of security groups for each Apparo Fast Edit role:



Enter comma separated list of security groups for each Apparo role:

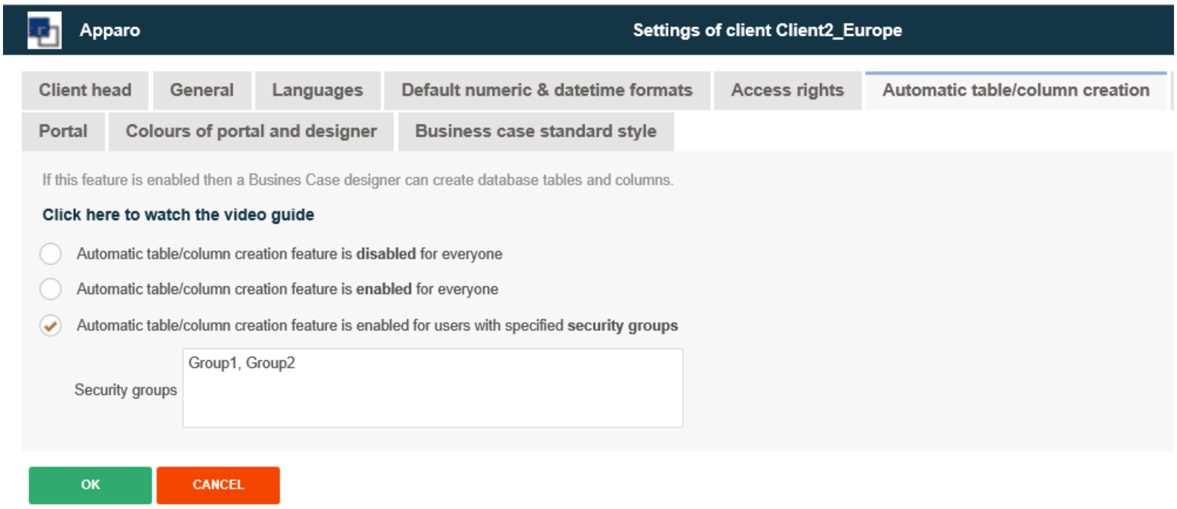
Apparo Client Administrator	Administrators
Apparo Connection Administrator	
Apparo Designer	
Apparo Import & Export Administrator	
Apparo Portal Administrator	

When left empty, no restrictions are set.

3.2.7 Automatic table/column creation

Defines the rights of designer users to use the automatic table creation feature.
When enabled, Apparo Fast Edit can create automatically tables or columns using a defined database connection.

This feature is disabled by default and can be enabled for everyone or for specified user groups only.



Apparo — Settings of client Client2_Europe

Client head
General
Languages
Default numeric & datetime formats
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If this feature is enabled then a Busines Case designer can create database tables and columns.

Click here to watch the video guide

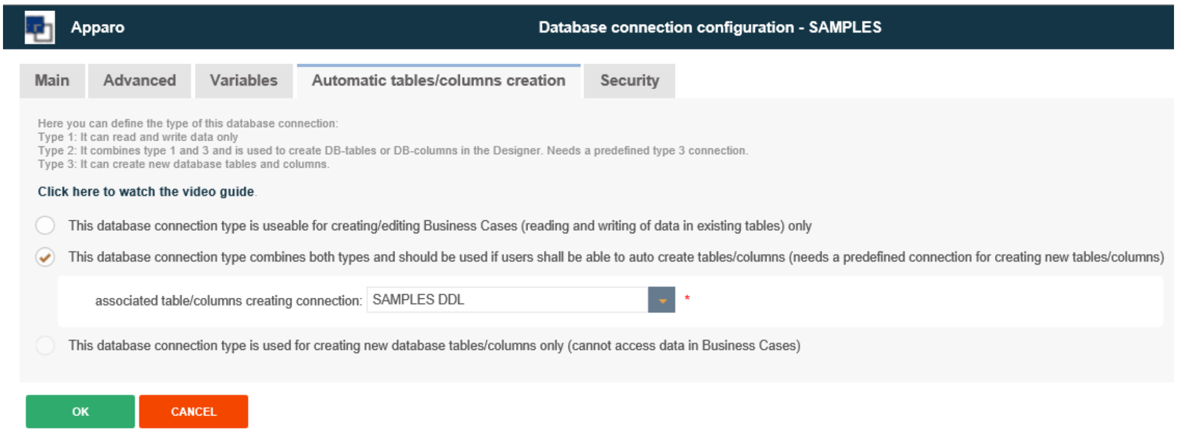
○ Automatic table/column creation feature is **disabled** for everyone

○ Automatic table/column creation feature is **enabled** for everyone

● Automatic table/column creation feature is enabled for users with specified **security groups**

Security groups: Group1, Group2

To use this feature you need a database connection of type DDL (This database connection type is used for creating new database tables/columns only) that will be mapped to database connection of type DML (This database connection type combines both types and should be used if users shall be able to auto create tables/columns)



Apparo — Database connection configuration - SAMPLES

Here you can define the type of this database connection:
Type 1: It can read and write data only
Type 2: It combines type 1 and 3 and is used to create DB-tables or DB-columns in the Designer. Needs a predefined type 3 connection.
Type 3: It can create new database tables and columns.

Click here to watch the video guide.

○ This database connection type is useable for creating/editing Business Cases (reading and writing of data in existing tables) only

● This database connection type combines both types and should be used if users shall be able to auto create tables/columns (needs a predefined connection for creating new tables/columns)

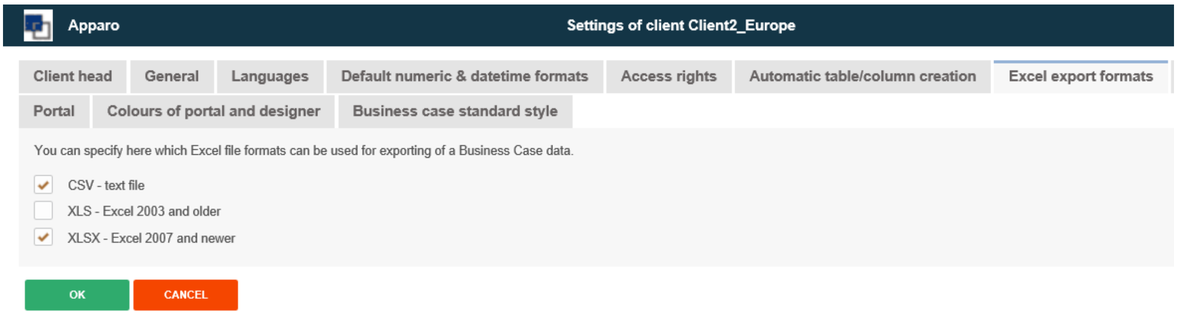
associated table/columns creating connection: SAMPLES DDL *

○ This database connection type is used for creating new database tables/columns only (cannot access data in Business Cases)

This will be explained more detailed in a later chapter.

3.2.8 Excel export formats

To define the allowed excel export formats



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You can specify here which Excel file formats can be used for exporting of a Business Case data.

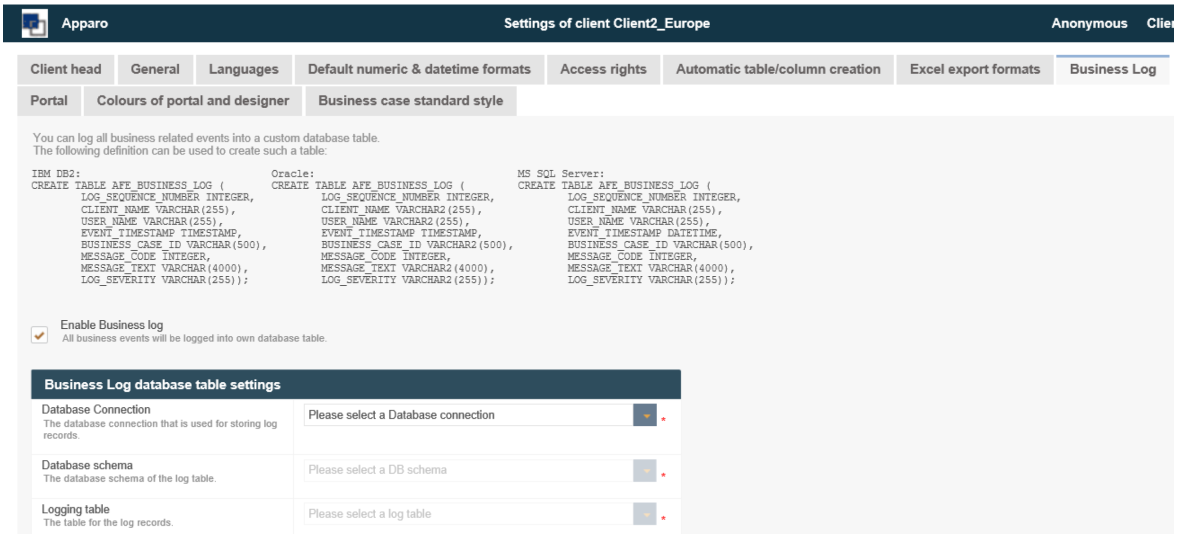
☑ CSV - text file

□ XLS - Excel 2003 and older

☑ XLSX - Excel 2007 and newer

3.2.9 Business Log

You can store all user activities (Business Cases, Designer) into a free definable database table.



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You can log all business related events into a custom database table.
The following definition can be used to create such a table:

```
IBM DB2:                              Oracle:                               MS SQL Server:
CREATE TABLE AFE_BUSINESS_LOG (       CREATE TABLE AFE_BUSINESS_LOG (       CREATE TABLE AFE_BUSINESS_LOG (
        LOG_SEQUENCE_NUMBER INTEGER,          LOG_SEQUENCE_NUMBER INTEGER,          LOG_SEQUENCE_NUMBER INTEGER,
        CLIENT_NAME VARCHAR(255),             CLIENT_NAME VARCHAR2(255),            CLIENT_NAME VARCHAR(255),
        USER_NAME VARCHAR(255),               USER_NAME VARCHAR2(255),              USER_NAME VARCHAR(255),
        EVENT_TIMESTAMP TIMESTAMP,            EVENT_TIMESTAMP TIMESTAMP,            EVENT_TIMESTAMP DATETIME,
        BUSINESS_CASE_ID VARCHAR(500),        BUSINESS_CASE_ID VARCHAR2(500),       BUSINESS_CASE_ID VARCHAR(500),
        MESSAGE_CODE INTEGER,                 MESSAGE_CODE INTEGER,                 MESSAGE_CODE INTEGER,
        MESSAGE_TEXT VARCHAR(4000),           MESSAGE_TEXT VARCHAR2(4000),          MESSAGE_TEXT VARCHAR(4000),
        LOG_SEVERITY VARCHAR(255));           LOG_SEVERITY VARCHAR2(255));          LOG_SEVERITY VARCHAR(255));
```

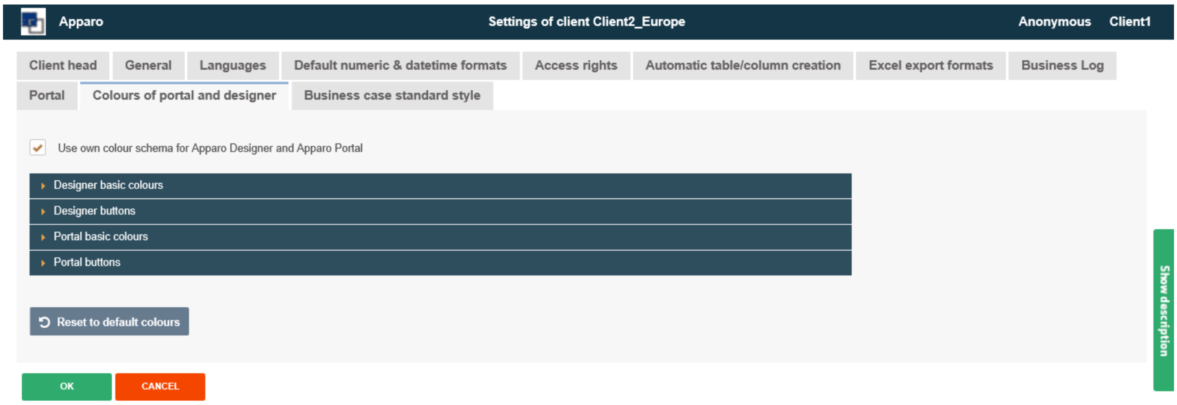
☑ Enable Business log
All business events will be logged into own database table.

Business Log database table settings

Database Connection The database connection that is used for storing log records.	Please select a Database connection *
Database schema The database schema of the log table.	Please select a DB schema *
Logging table The table for the log records.	Please select a log table *

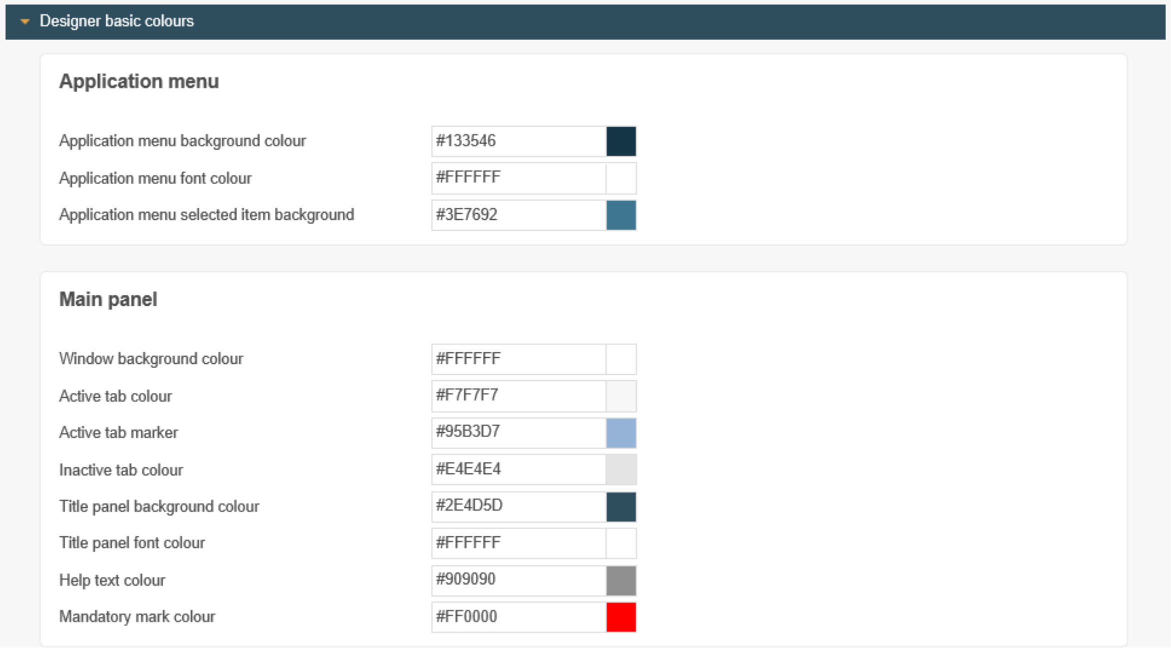
3.3 Colors of portal and designer

Portal settings are available only in the Standalone Version



☑ Use own colour schema for Apparo Designer and Apparo Portal

Allows to change standard colors by code or color picker.



Application menu

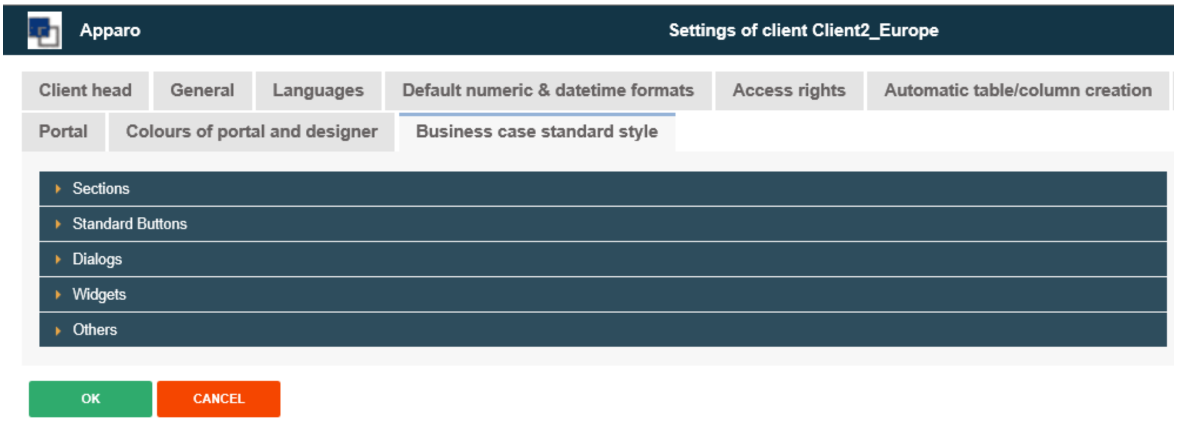
Application menu background colour	#133546
Application menu font colour	#FFFFFF
Application menu selected item background	#3E7692

Main panel

Window background colour	#FFFFFF
Active tab colour	#F7F7F7
Active tab marker	#95B3D7
Inactive tab colour	#E4E4E4
Title panel background colour	#2E4D5D
Title panel font colour	#FFFFFF
Help text colour	#909090
Mandatory mark colour	#FF0000

3.4 Business case standard style

Here you can define default Business Case style settings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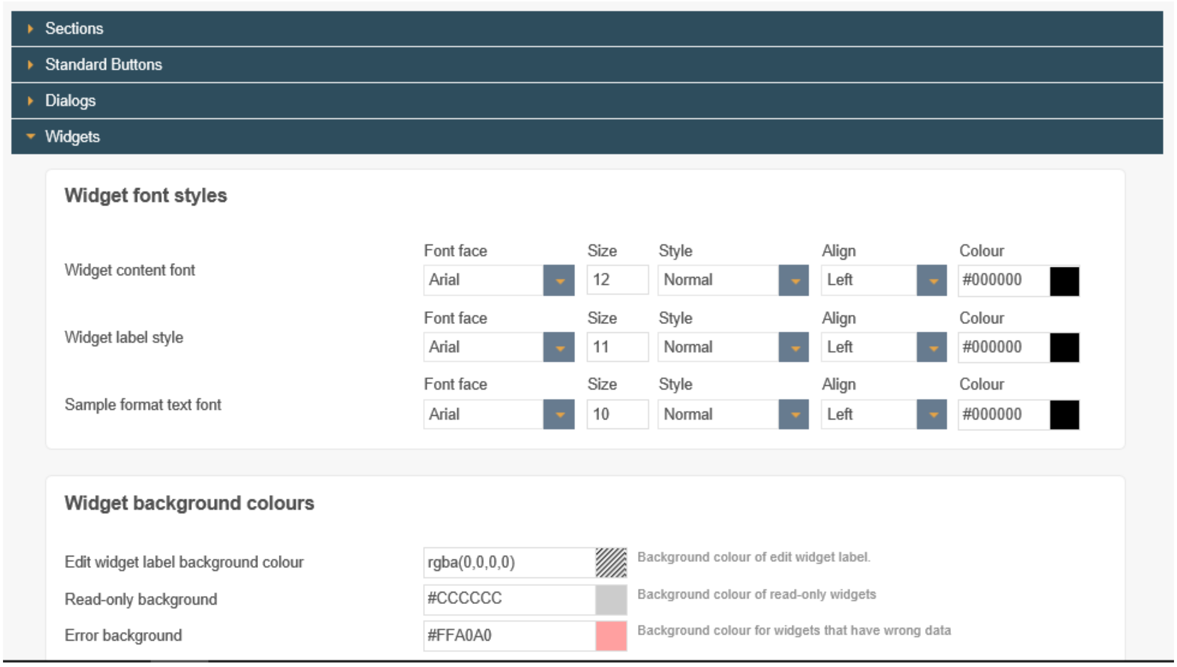
OK
CANCEL

Contains font and style settings for dialogs, buttons, widgets…



Widget font styles

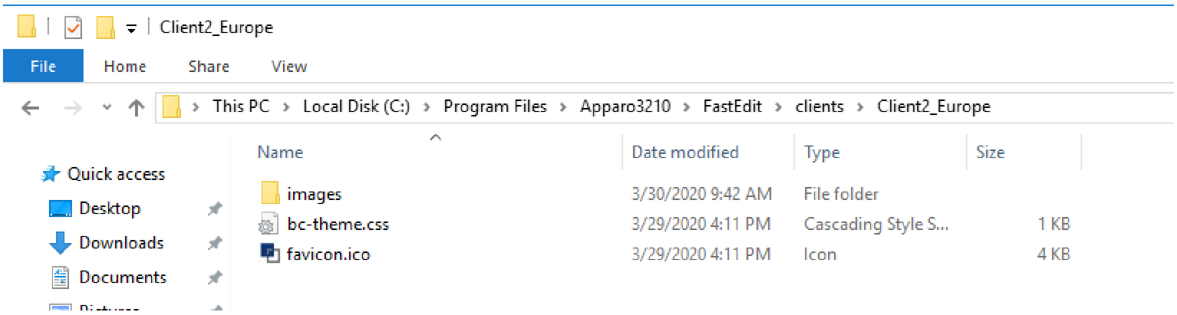
	Font face	Size	Style	Align	Colour
Widget content font	Arial	12	Normal	Left	#000000 ■
Widget label style	Arial	11	Normal	Left	#000000 ■
Sample format text font	Arial	10	Normal	Left	#000000 ■

Widget background colours

Edit widget label background colour	rgba(0,0,0,0) ▨	Background colour of edit widget label.
Read-only background	#CCCCCC	Background colour of read-only widgets
Error background	#FFA0A0	Background colour for widgets that have wrong data

3.5 Templates, Styles, Colors and Fonts

In the client folder you will find different ways to create your own templates and to define a preset design.



Client2_Europe

File
Home
Share
View
This PC > Local Disk (C:) > Program Files > Apparo3210 > FastEdit > clients > Client2_Europe
Quick access
Desktop
Downloads
Documents

Name	Date modified	Type	Size
images	3/30/2020 9:42 AM	File folder	
bc-theme.css	3/29/2020 4:11 PM	Cascading Style S...	1 KB
favicon.ico	3/29/2020 4:11 PM	Icon	4 KB

The files can be found in the folders for each client.
[APPARO_HOME]\FastEdit\clients\<Client ID>

- Bc-theme.css
- Favicon.ico
- All pictures and backgrounds of the designer are stored in the subfolder "images"

3.5.1 Theme.css

The appearance of the designer and the business cases, you can change with CSS:

3.5.1.1 Styles for the Designer

The styles of the designer can be found in the accompanying commentary by theme.css.

Example

```
/* ---------------------------------------------------------------------------------------------------------------- */
/* ------- BUSINESS CASE SETTINGS LEFT MENU ------------------------------------------------------ */
/* ---------------------------------------------------------------------------------------------------------------- */

/* Menu items background */
div#designerForm\3A featureMenu,
div#settingsTab{
	border:none;
	background-color: #e0e0e0;
	background-image: url("images/menuBkg.png");
	background-repeat: repeat-y;
	background-clip: content-box;
	background-origin: content-box;
}
```

3.5.1.2 Styles for Business Cases

The colons used by the framework in the class designations have to be escaped in the CSS by \: Unfortunately, this does not work in older Internet Explorer, so we use in the following examples, the hex code "\3A"

Examples for addressing labels in different business case areas in CSS

Hint: *!important* prevents overwritting of the setting (e.g. by the property files or default styles)

Filter area

```
#businessCaseUIForm\3A searcharea  label {
color: #00ff00 !important;
font-size: 2em !important;
}
```

Edit area, Widget-Label

```
#businessCaseUIForm\3A editareaHeader label{
color: #ccc !important;
font-size: 1.5em !important;
}
```

Calculation area

```
#businessCaseUIForm\3A calcarea label{
color: #000 !important;
font-size: 3em !important;
}
```

Bulk update area

```
#businessCaseUIForm\3A bulkupdatearea label{
color: #eee !important;
font-size: 3em !important;
}
```

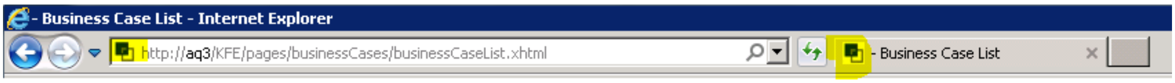
Header and Footer

```
#businessCaseUIForm\3A header label{
color: #eee !important;
font-size: 3em !important;
}
```

Header or footer can be so addressed only as a unit, but as you can use HTML in header and footer, as well as in almost all settings, e.g. the widget label, you can easily address any elements by Span tags: "<span class =" class_name "> TEXT </ span>".

3.5.2 Favicon.ico

The favicon is a small graphic that is displayed by the browser usually in the address bar and / or in the tab:


- Business Case List - Internet Explorer
http://aq3/KFE/pages/businessCases/businessCaseList.xhtml
- Business Case List

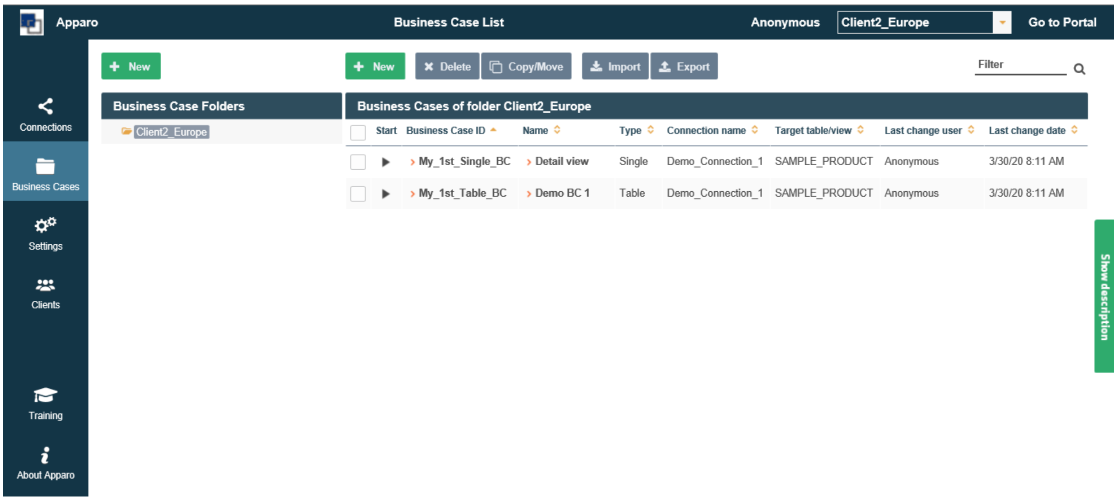
If you replace this file, please remind the right format .ico

4 The Apparo Designer

4.1 Introduction

In the following section, you will be introduced to the Apparo Designer.
The Apparo Designer is the area in which the Business Cases or Business Case sets are created. Anything from the database connection to the data fields, access rights, archiving, corporate design, data import etc. is defined here.

4.2 Start screen with a list of all Business Cases



Business Cases of folder Client2_Europe

Start	Business Case ID	Name	Type	Connection name	Target table/view	Last change user	Last change date
▶	My_1st_Single_BC	Detail view	Single	Demo_Connection_1	SAMPLE_PRODUCT	Anonymous	3/30/20 8:11 AM
▶	My_1st_Table_BC	Demo BC 1	Table	Demo_Connection_1	SAMPLE_PRODUCT	Anonymous	3/30/20 8:11 AM

At the start of the Apparo Designer, you will see a list of all business cases that are stored in the Apparo Repository. If the Apparo Repository does not contain any definition, this list will have no entries.

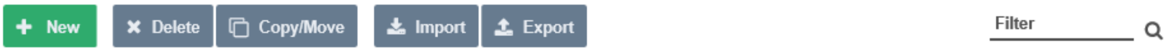
4.3 Definition

Each business case is an own application that can be called separately.

Business cases can be linked together, so that from the user's perspective, a business case can also consist of several masks.

All business cases are stored in the Apparo Repository, which is a separate database.

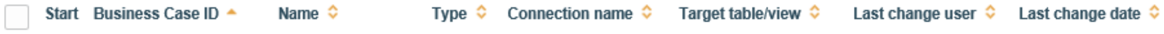
4.4 Buttons and Sorting



The following buttons are at your disposal:

- New - creates a new Business Case
- Delete - deletes all selected Business Cases
- Copy - copies all selected Business Cases
- Import - imports Business Cases from a file
- Export - exports selected Business Cases into a file
- Filter - filters all business cases from the input string by its ID

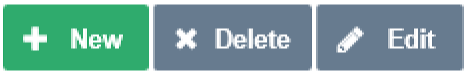
The sort can be changed by clicking the orange arrows:

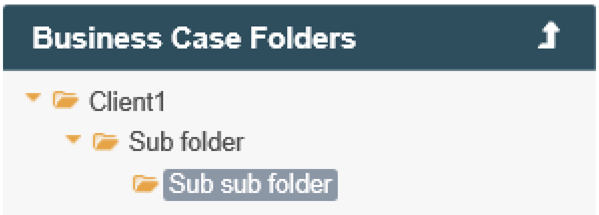


4.5 Folder

Business Cases can be grouped in folders. Inside the folder you can create subfolders.

For the Folders pane, there are three buttons:



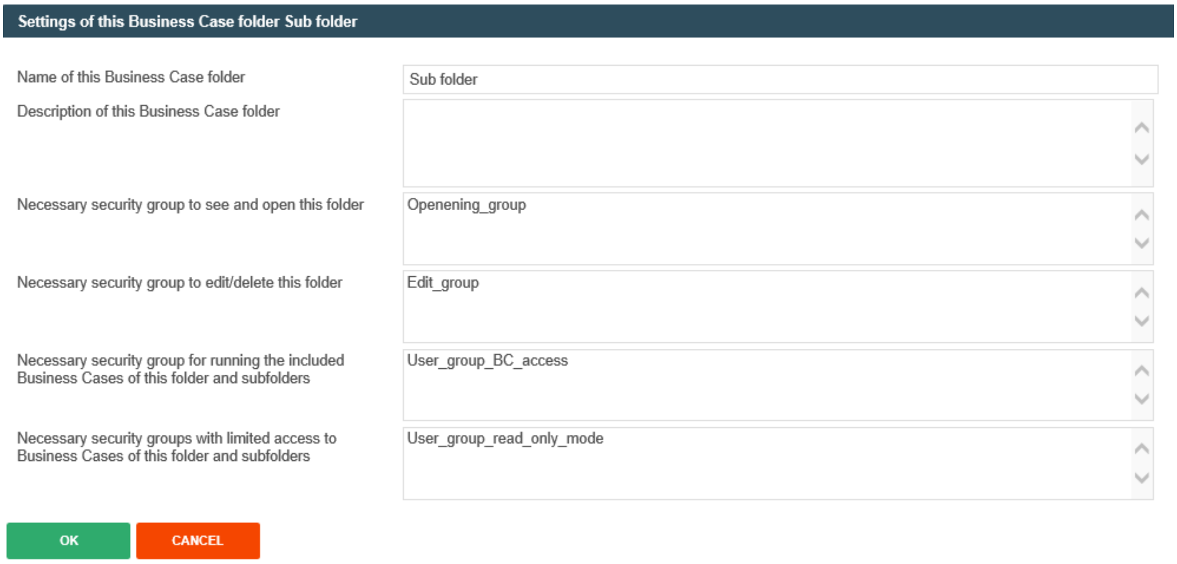

Business Case Folders

- Client1
  - Sub folder
    - Sub sub folder

Depending on the given rights, the user can:

- Create new folders and subfolders
- Delete folder if empty (subfolders)
- Change the properties of the folder

Folder properties:


Settings of this Business Case folder Sub folder

Name of this Business Case folder	Sub folder
Description of this Business Case folder	
Necessary security group to see and open this folder	Openening_group
Necessary security group to edit/delete this folder	Edit_group
Necessary security group for running the included Business Cases of this folder and subfolders	User_group_BC_access
Necessary security groups with limited access to Business Cases of this folder and subfolders	User_group_read_only_mode

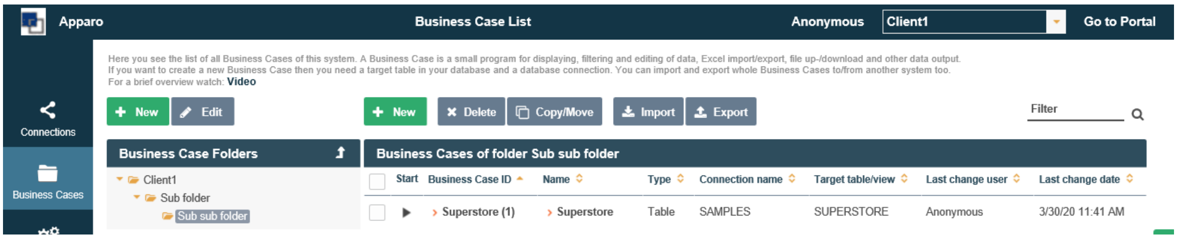
The following properties can be changed:

- Name of the folder
- The necessary security group to open the folder
- The necessary security group to edit the folder
- The necessary security group to execute containing Business Cases
- The necessary security group to execute containing Business Cases in limited mode (read only)

4.6 Description and normal mode

In the description mode most of the settings are explained briefly while the normal mode lacks these descriptions.

Example of the description mode:

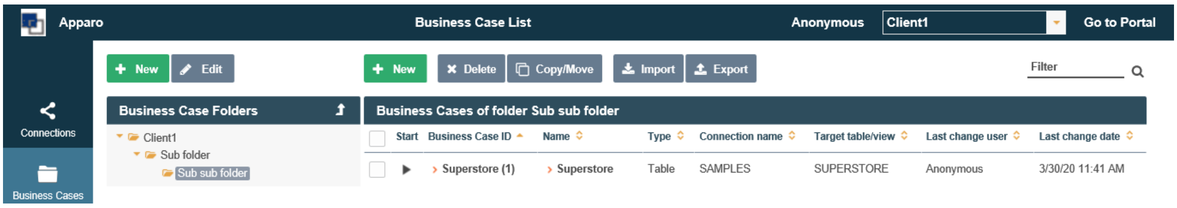


Here you see the list of all Business Cases of this system. A Business Case is a small program for displaying, filtering and editing of data, Excel import/export, file up-/download and other data output.
If you want to create a new Business Case then you need a target table in your database and a database connection. You can import and export whole Business Cases to/from another system too.
For a brief overview watch: **Video**

Business Cases of folder Sub sub folder

	Start	Business Case ID	Name	Type	Connection name	Target table/view	Last change user	Last change date
□	▶	› Superstore (1)	› Superstore	Table	SAMPLES	SUPERSTORE	Anonymous	3/30/20 11:41 AM

The same page in normal mode:



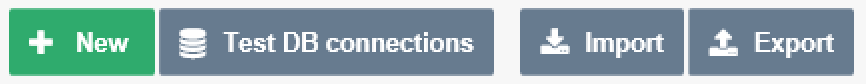
Business Cases of folder Sub sub folder

	Start	Business Case ID	Name	Type	Connection name	Target table/view	Last change user	Last change date
□	▶	› Superstore (1)	› Superstore	Table	SAMPLES	SUPERSTORE	Anonymous	3/30/20 11:41 AM

The Designer is switching the mode by clicking the **Show description** button on the right side of the screen.

4.7 Database connections

4.7.1 Buttons



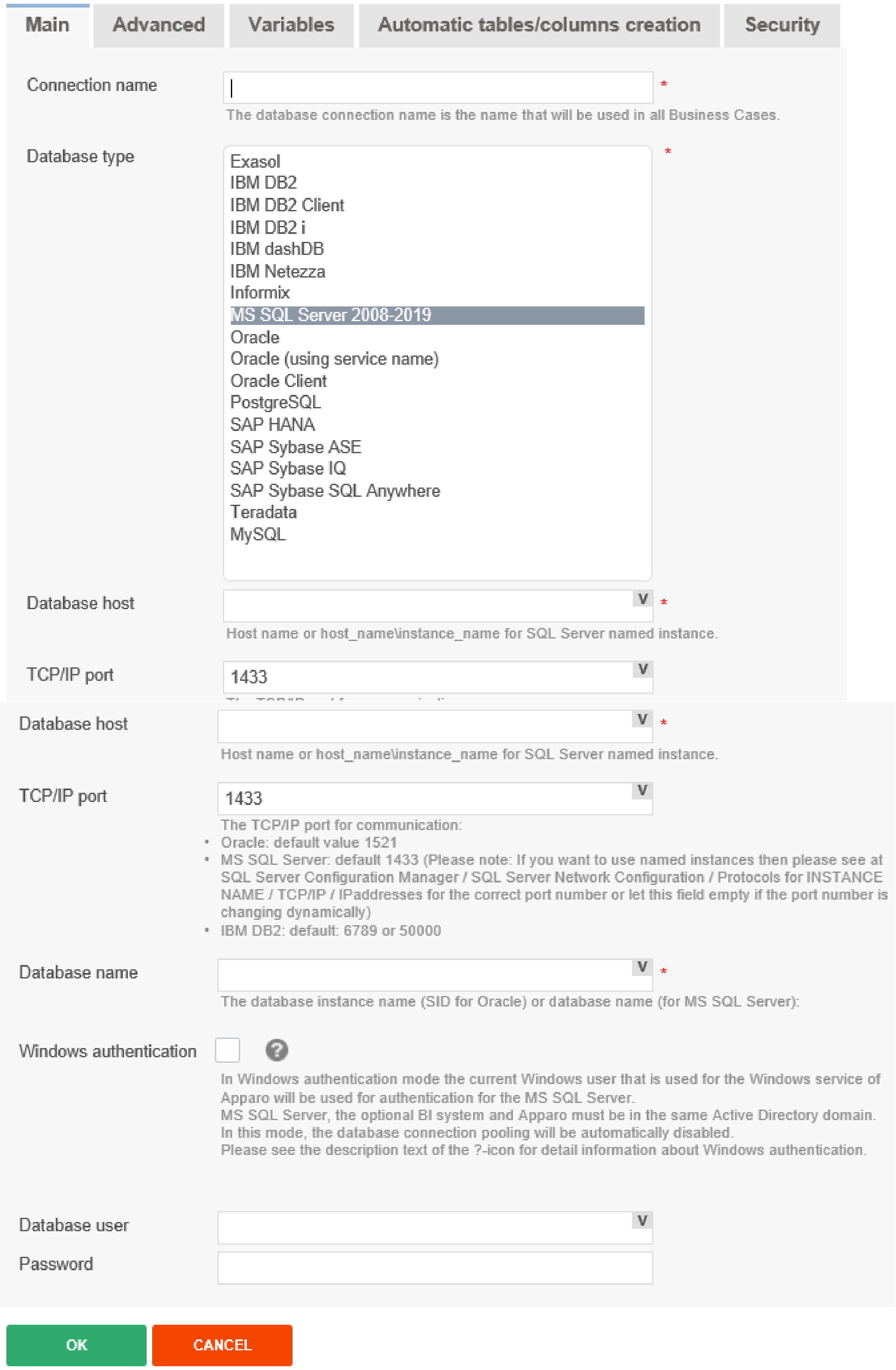
The following buttons are at your disposal:

- New - creates a new database connection
- Test DB-Connection - is testing all selected DB connections
- Import - imports DB connections from a file
- Export - exports all selected DB connections into a file

4.7.2 Creating a new database connection

Click on the button

4.7.3 Settings of the tab ‚Main‘



Connection name | *

The database connection name is the name that will be used in all Business Cases.

Database type *

Exasol
IBM DB2
IBM DB2 Client
IBM DB2 i
IBM dashDB
IBM Netezza
Informix
MS SQL Server 2008-2019
Oracle
Oracle (using service name)
Oracle Client
PostgreSQL
SAP HANA
SAP Sybase ASE
SAP Sybase IQ
SAP Sybase SQL Anywhere
Teradata
MySQL

Database host *

Host name or host_name\instance_name for SQL Server named instance.

TCP/IP port 1433

Database host *

Host name or host_name\instance_name for SQL Server named instance.

TCP/IP port 1433

The TCP/IP port for communication:

- Oracle: default value 1521
- MS SQL Server: default 1433 (Please note: If you want to use named instances then please see at SQL Server Configuration Manager / SQL Server Network Configuration / Protocols for INSTANCE NAME / TCP/IP / IPaddresses for the correct port number or let this field empty if the port number is changing dynamically)
- IBM DB2: default: 6789 or 50000

Database name *

The database instance name (SID for Oracle) or database name (for MS SQL Server):

Windows authentication □ ?

In Windows authentication mode the current Windows user that is used for the Windows service of Apparo will be used for authentication for the MS SQL Server.
MS SQL Server, the optional BI system and Apparo must be in the same Active Directory domain.
In this mode, the database connection pooling will be automatically disabled.
Please see the description text of the ?-icon for detail information about Windows authentication.

Database user

Password

Depending on the selected connection, you must configure the following settings:

• Connection name	- Freely selectable unique identifier for the connection
• Database type	- select from list your database type
• Database host	- IP address or host name of the database
• TCP/IP Port	- listening port of the database
• Database name	- Name of the DB
• Working schema	- what schema must be used
• Database user	- user name of the login
• Password	- password of the login

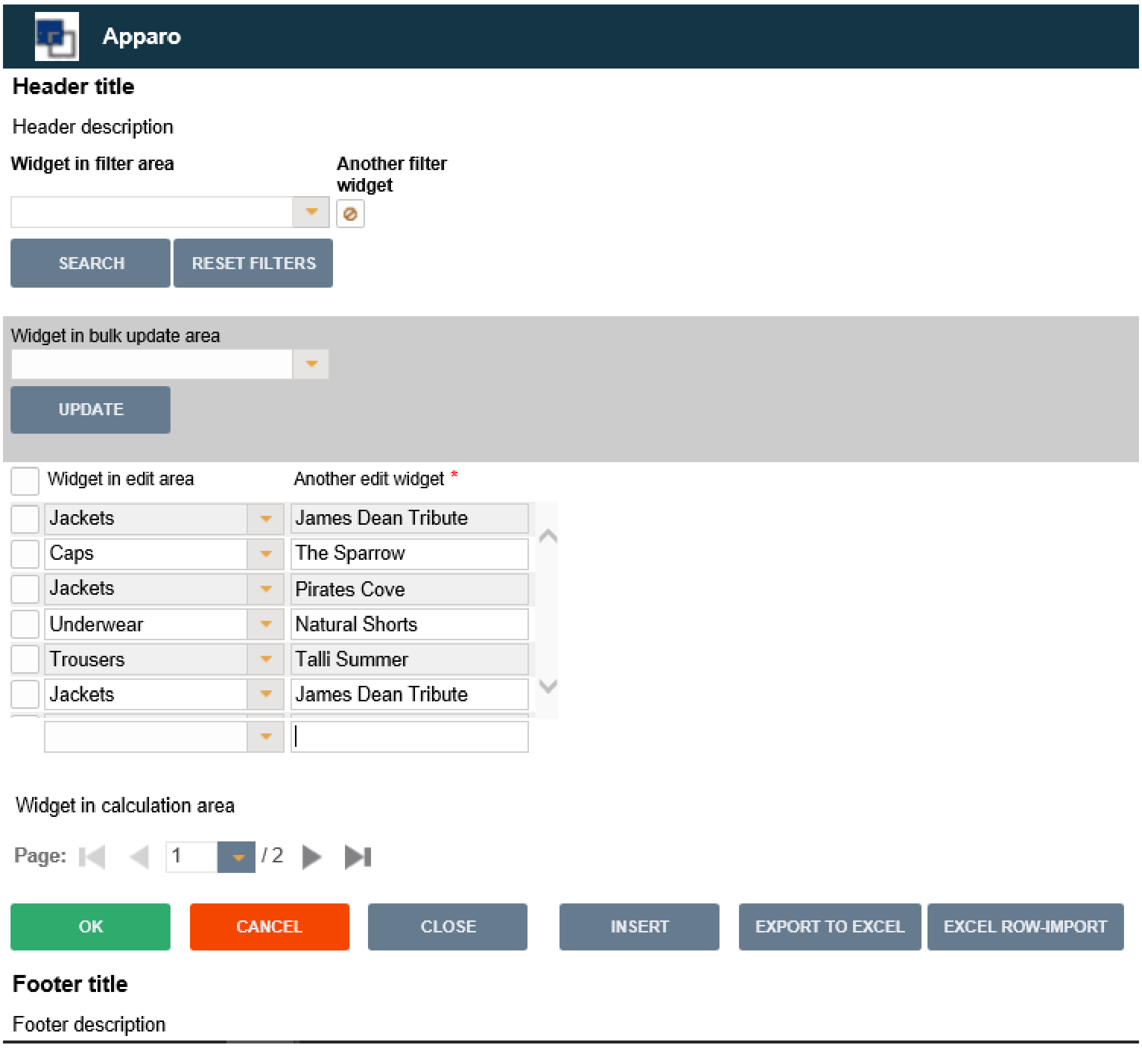
5 Creating a Table Business Case (TBC)

5.1 Introduction

In the following section, we will show the general steps to create a Business Case by using a table Business Case as example. All important points (creating, widgets, design, and output) are explained.
Remember that each Business Case refers to a specific table in a database. If you need data from several tables, you need to work with e.g. master-detail relationships or **Lookup** widgets.

5.2 Areas of a Table Business Case

A Table Business Case consists of different (partially optional) areas



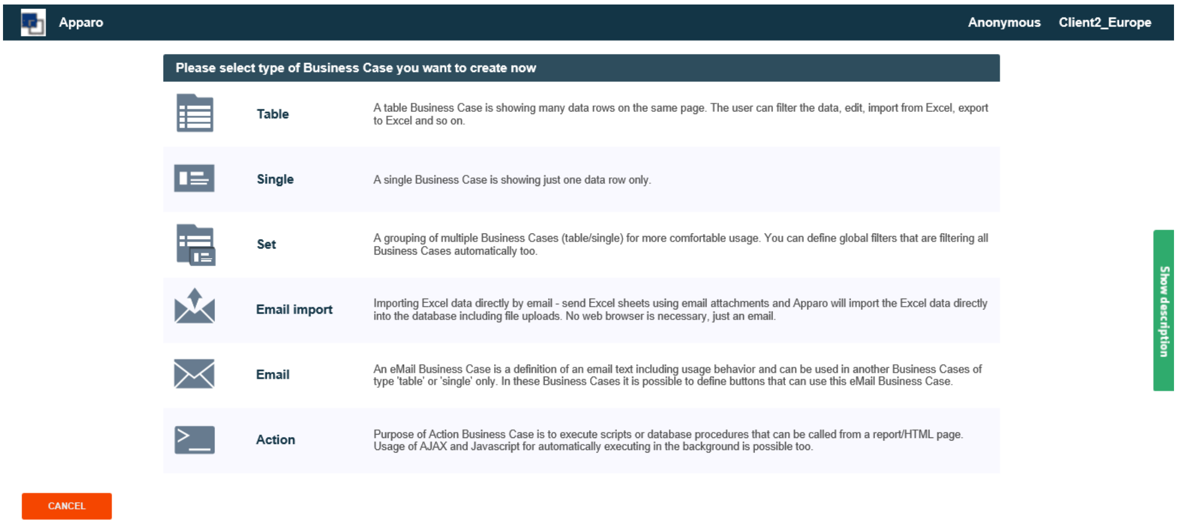
□	Widget in edit area	Another edit widget *
□	Jackets	James Dean Tribute
□	Caps	The Sparrow
□	Jackets	Pirates Cove
□	Underwear	Natural Shorts
□	Trousers	Talli Summer
□	Jackets	James Dean Tribute

Header area	- includes the title and description
Filter area	- for example, contains filter widgets to filter the data output
Bulk update area	- mass update panel
Edit area	- to modify existing data
Insert area	- for adding new records
Calculation area	- used to display information, such as text or calculations of variables
Navigation area	- includes page counter, navigation and buttons for resizing
Button area	- contains buttons
Footer area	- comparable to the header area

5.3 Create a new Business Case

Click on the button:

Now select the entry ‚Table‘



Apparo | Anonymous | Client2_Europe

Please select type of Business Case you want to create now

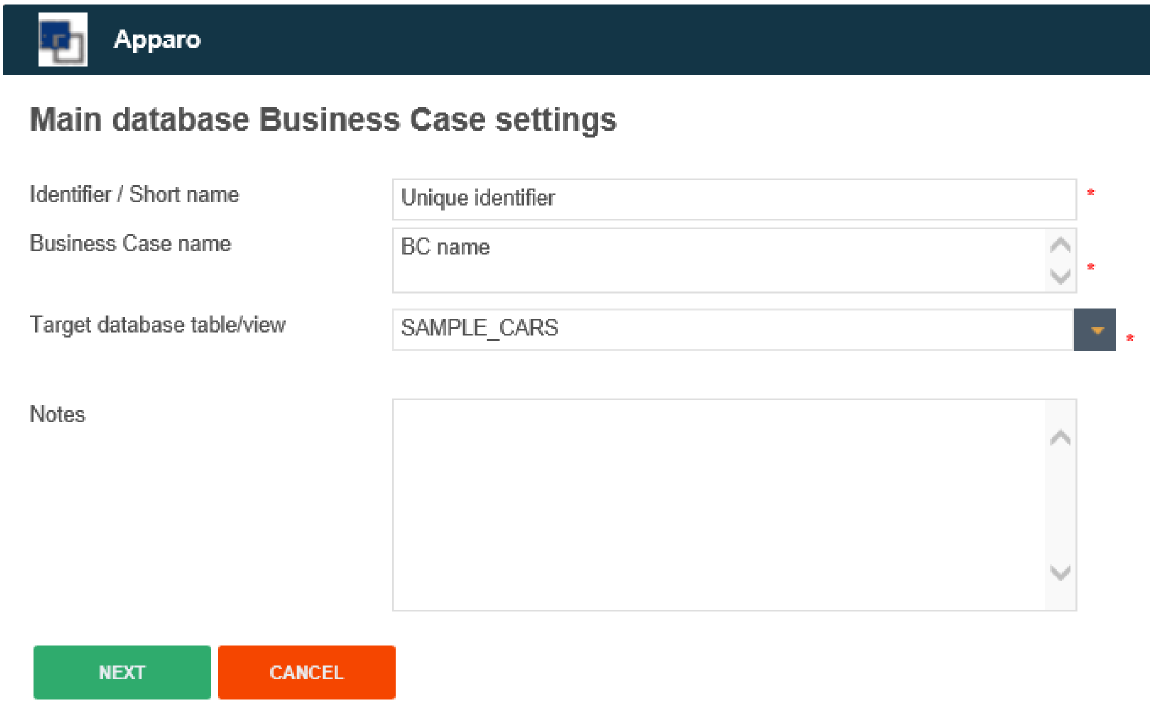
▤	Table	A table Business Case is showing many data rows on the same page. The user can filter the data, edit, import from Excel, export to Excel and so on.
▤	Single	A single Business Case is showing just one data row only.
▤	Set	A grouping of multiple Business Cases (table/single) for more comfortable usage. You can define global filters that are filtering all Business Cases automatically too.
✉	Email import	Importing Excel data directly by email - send Excel sheets using email attachments and Apparo will import the Excel data directly into the database including file uploads. No web browser is necessary, just an email.
✉	Email	An eMail Business Case is a definition of an email text including usage behavior and can be used in another Business Cases of type 'table' or 'single' only. In these Business Cases it is possible to define buttons that can use this eMail Business Case.
>_	Action	Purpose of Action Business Case is to execute scripts or database procedures that can be called from a report/HTML page. Usage of AJAX and Javascript for automatically executing in the background is possible too.

Business Case selection

Following, the general settings for the business case

Please provide a unique short name (ID), a name and select the target table.
The description is optional and can contain declarations, release notes, or other information.

If multiple database connections are set up, this selection is automatically extended by the points ‘database connection' and 'database schema'.



Apparo

Main database Business Case settings

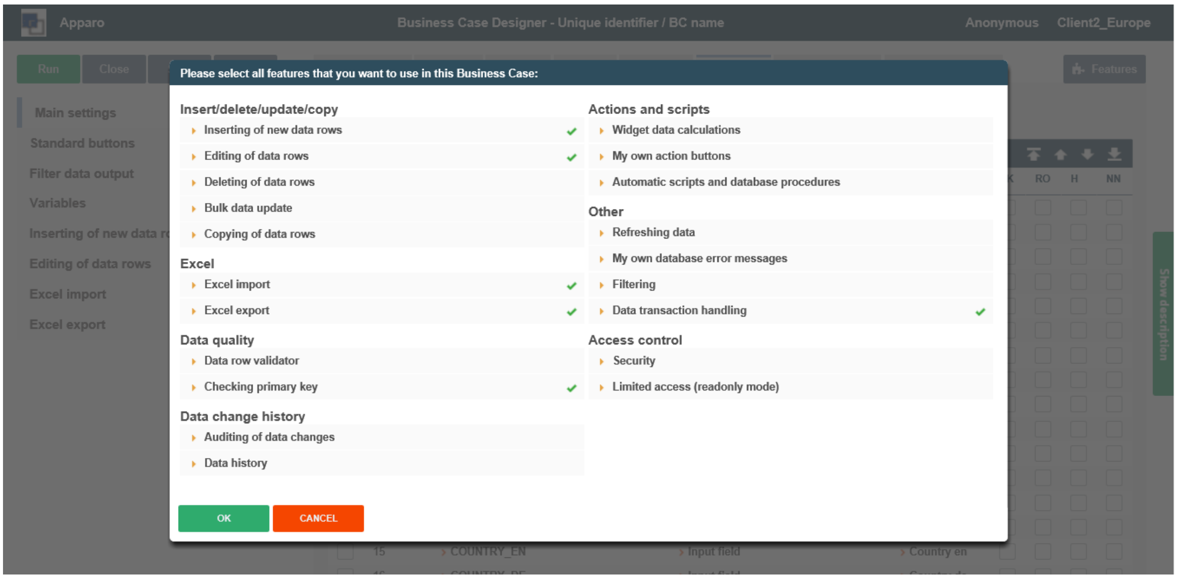
Identifier / Short name	Unique identifier *
Business Case name	BC name *
Target database table/view	SAMPLE_CARS *
Notes	

Main settings

5.4 Business Case Functions

The functions of a business case open automatically after creating a business case.

If the business case is opened later for editing again, you can open the feature selection with the button on top right corner: Features



Apparo | Business Case Designer - Unique identifier / BC name | Anonymous | Client2_Europe

Run | Close | Features

Main settings
Standard buttons
Filter data output
Variables
Inserting of new data r
Editing of data rows
Excel import
Excel export

Please select all features that you want to use in this Business Case:

Insert/delete/update/copy
- Inserting of new data rows ✓
- Editing of data rows ✓
- Deleting of data rows
- Bulk data update
- Copying of data rows

Excel
- Excel import ✓
- Excel export ✓

Data quality
- Data row validator
- Checking primary key ✓

Data change history
- Auditing of data changes
- Data history

Actions and scripts
- Widget data calculations
- My own action buttons
- Automatic scripts and database procedures

Other
- Refreshing data
- My own database error messages
- Filtering
- Data transaction handling ✓

Access control
- Security
- Limited access (readonly mode)

OK | CANCEL

The features are divided into seven sections. The various functions can be enabled or disabled as needed. If a function is activated, then the selection menu in the Business Case edit view will be extended accordingly.

The advantage of this activation is obvious, if the Business Case is opened for editing again after some time, then you can see with one look at the menu, which features are used in this business case.

5.5 Features areas and features

- **Insert/delete/update/copy**
  - Inserting of new data rows
  - Deleting of data rows
  - Bulk data update
  - Copying of data rows

- **Excel**
  - Excel Import
  - Excel Export

- **Data quality**
  - Data row validator
  - Checking primary key

- **Data change history**
  - Auditing of data changes
  - Data history

- **Actions and scripts**
  - Widget data calculations
  - My own action buttons
  - Automatic scripts and database procedures

- **Other**
  - Reloading reports
  - My own database error messages
  - Filtering
  - Data transaction handling

- **Access control**
  - Security
  - Limited access

5.6 Edit view of the Business Case

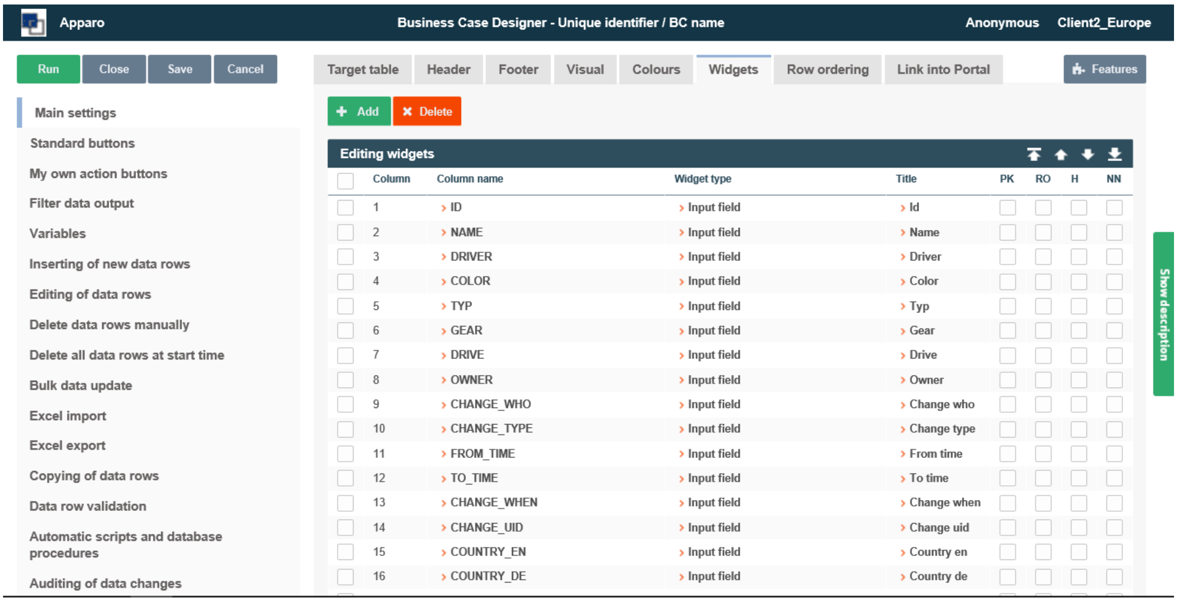
The edit screen is divided into two areas:

Menu bar, the buttons on the controller and all activated functions as menu items contains.

Buttons:

- **Start** - saves all changes and starts the business case
- **Close** - saves all changes and closes the edit view
- **Save** - saves all changes
- **Cancel** - discards any unsaved changes and closes the Business Case

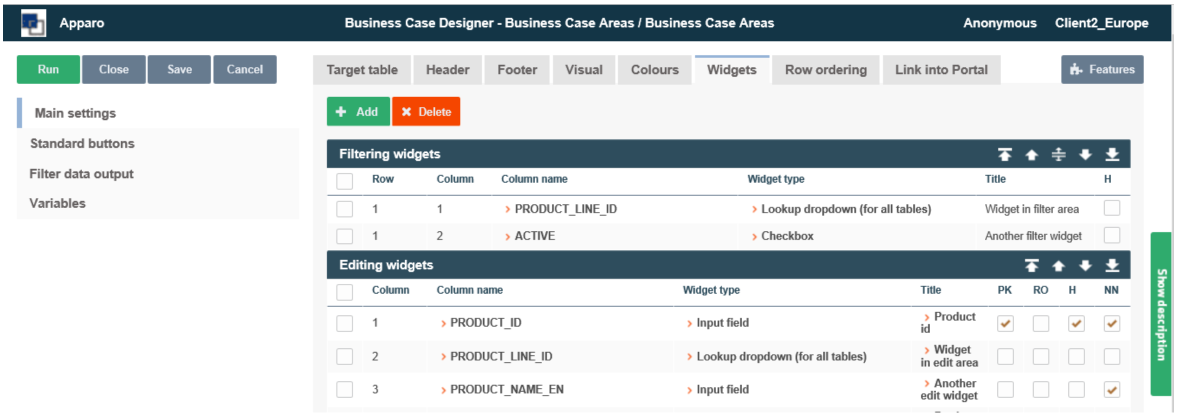
Settings area, contains settings for the various functions and optionally divided again into tabs.



Editing widgets

☐	Column	Column name	Widget type	Title	PK	RO	H	NN
☐	1	› ID	› Input field	› Id	☐	☐	☐	☐
☐	2	› NAME	› Input field	› Name	☐	☐	☐	☐
☐	3	› DRIVER	› Input field	› Driver	☐	☐	☐	☐
☐	4	› COLOR	› Input field	› Color	☐	☐	☐	☐
☐	5	› TYP	› Input field	› Typ	☐	☐	☐	☐
☐	6	› GEAR	› Input field	› Gear	☐	☐	☐	☐
☐	7	› DRIVE	› Input field	› Drive	☐	☐	☐	☐
☐	8	› OWNER	› Input field	› Owner	☐	☐	☐	☐
☐	9	› CHANGE_WHO	› Input field	› Change who	☐	☐	☐	☐
☐	10	› CHANGE_TYPE	› Input field	› Change type	☐	☐	☐	☐
☐	11	› FROM_TIME	› Input field	› From time	☐	☐	☐	☐
☐	12	› TO_TIME	› Input field	› To time	☐	☐	☐	☐
☐	13	› CHANGE_WHEN	› Input field	› Change when	☐	☐	☐	☐
☐	14	› CHANGE_UID	› Input field	› Change uid	☐	☐	☐	☐
☐	15	› COUNTRY_EN	› Input field	› Country en	☐	☐	☐	☐
☐	16	› COUNTRY_DE	› Input field	› Country de	☐	☐	☐	☐

Edit view in activation of all functions



Filtering widgets

☐	Row	Column	Column name	Widget type	Title	H
☐	1	1	› PRODUCT_LINE_ID	› Lookup dropdown (for all tables)	Widget in filter area	☐
☐	1	2	› ACTIVE	› Checkbox	Another filter widget	☐

Editing widgets

☐	Column	Column name	Widget type	Title	PK	RO	H	NN
☐	1	› PRODUCT_ID	› Input field	› Product id	✓	☐	✓	✓
☐	2	› PRODUCT_LINE_ID	› Lookup dropdown (for all tables)	› Widget in edit area	☐	☐	☐	☐
☐	3	› PRODUCT_NAME_EN	› Input field	› Another edit widget	☐	☐	☐	✓

Edit view in deactivation of all functions. Only the basic functions are displayed.

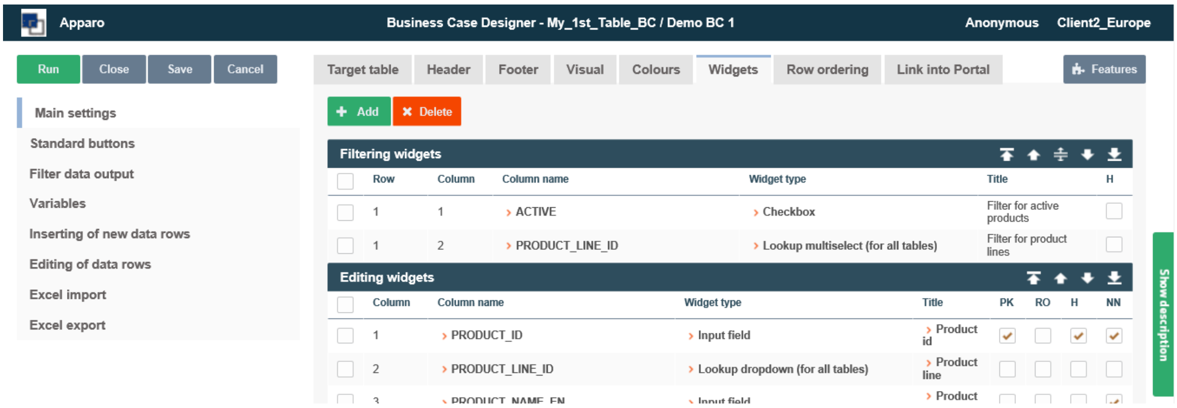
5.7 Business Case Settings

5.7.1 Main settings

The main settings are divided into several tabs and are containing the settings of the data source and the optics of the business case. Above all, it contains the widget settings.

Widgets are the actual control and output elements of a business case. This can be a filter, input or selection fields, buttons and more.

Because of their importance are Widgets the first tab you see when you open the Main settings.



Filtering widgets

□	Row	Column	Column name	Widget type	Title	H
□	1	1	› ACTIVE	› Checkbox	Filter for active products	□
□	1	2	› PRODUCT_LINE_ID	› Lookup multiselect (for all tables)	Filter for product lines	□

Editing widgets

□	Column	Column name	Widget type	Title	PK	RO	H	NN
□	1	› PRODUCT_ID	› Input field	› Product id	☑	□	☑	☑
□	2	› PRODUCT_LINE_ID	› Lookup dropdown (for all tables)	› Product line	□	□	□	□
□	3	› PRODUCT_NAME_EN	› Input field	› Product	□	□	□	☑

Main settings, Widgets

5.8 Widgets

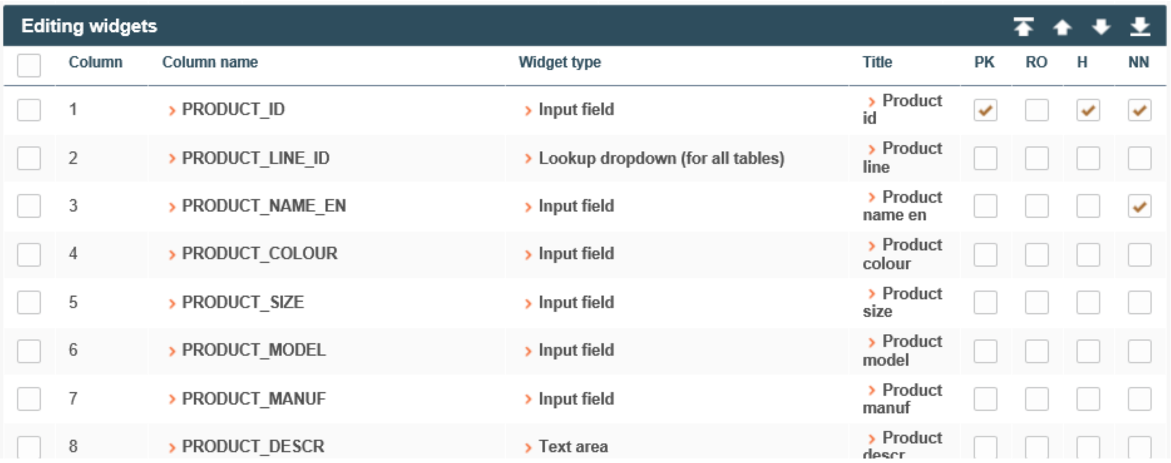
This chapter covers the central area of a Business Case.

Here you can have different widgets that are normally connected with the target table, positioned in different areas.

Each widget has its own individual settings.

5.8.1 Edit view

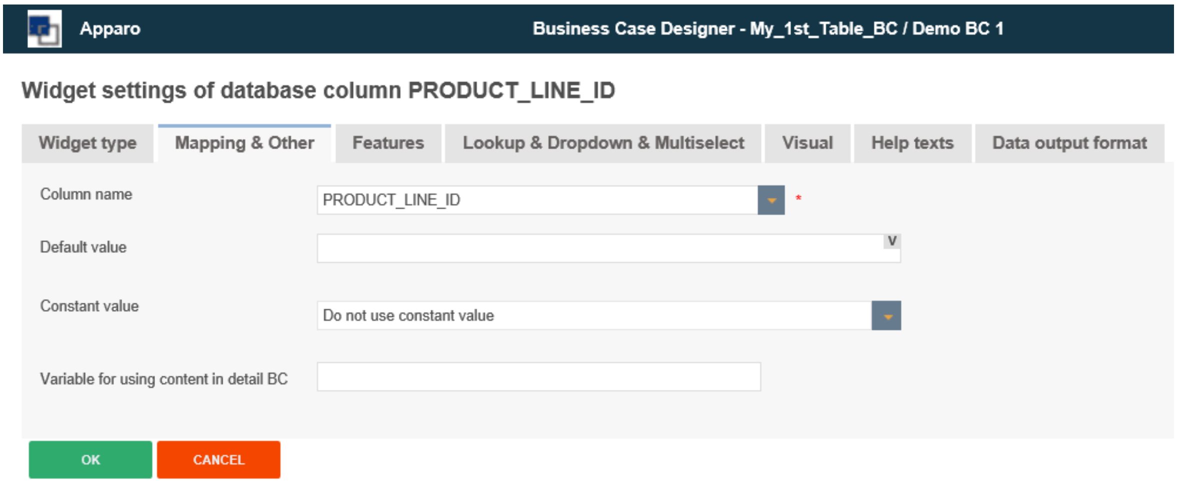
You can open the settings of an existing widget, by clicking on the column name or widget type:



Editing widgets

□	Column	Column name	Widget type	Title	PK	RO	H	NN
□	1	› PRODUCT_ID	› Input field	› Product id	☑	□	☑	☑
□	2	› PRODUCT_LINE_ID	› Lookup dropdown (for all tables)	› Product line	□	□	□	□
□	3	› PRODUCT_NAME_EN	› Input field	› Product name en	□	□	□	☑
□	4	› PRODUCT_COLOUR	› Input field	› Product colour	□	□	□	□
□	5	› PRODUCT_SIZE	› Input field	› Product size	□	□	□	□
□	6	› PRODUCT_MODEL	› Input field	› Product model	□	□	□	□
□	7	› PRODUCT_MANUF	› Input field	› Product manuf	□	□	□	□
□	8	› PRODUCT_DESCR	› Text area	› Product descr	□	□	□	□

Depending on the type of widget has the edit view different options, divided into tabs.



Business Case Designer - My_1st_Table_BC / Demo BC 1

Widget settings of database column PRODUCT_LINE_ID

Column name: PRODUCT_LINE_ID *

Default value:

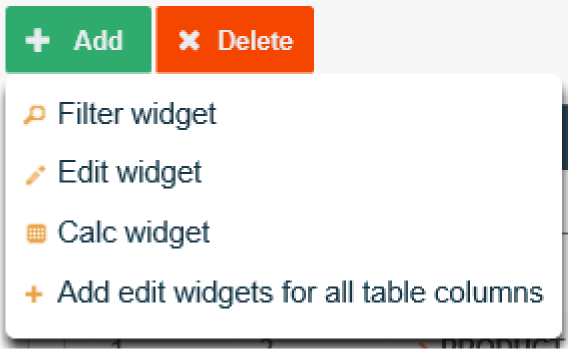
Constant value: Do not use constant value

Variable for using content in detail BC:

Widget edit view for the type ‚Lookup dropdown (for all tables)‘

5.9 Widget types and areas

When creating a new widget, you will first be asked for which area it is intended:



The option to add widgets for all database columns 'Add edit widgets for all table columns, is adding an ‘input field' widget for each existing database column, if no widget is existing for this database column.

The corresponding areas for the widget types are:

- **Filter area**
- **Edit area**
- **Bulk update area**
- **Calculation area**

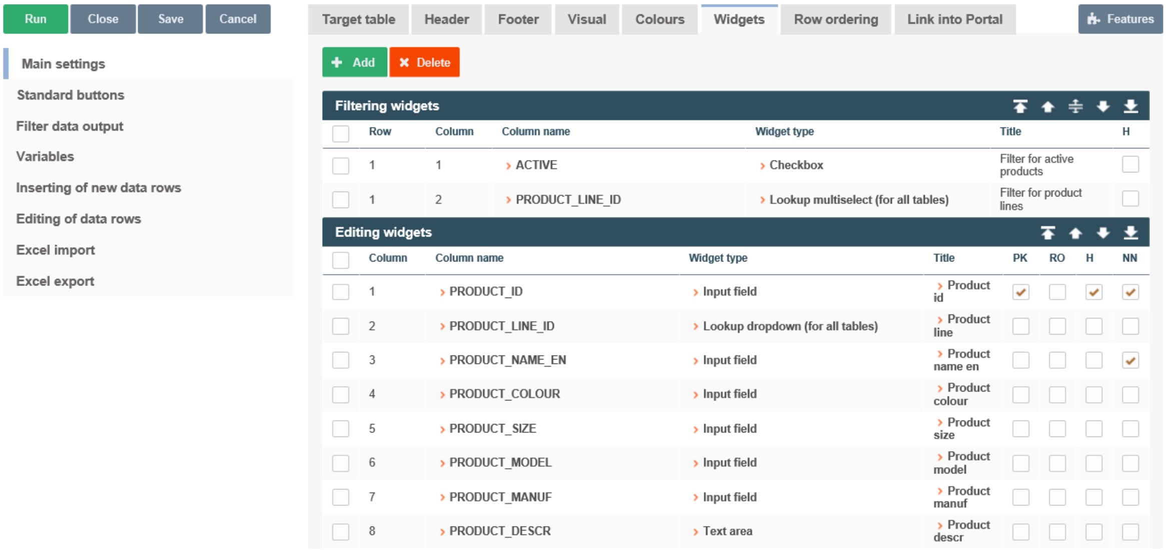
Based on the area for which the widget is thought, is there a selection of different widget types:

Input field - A standard entry field which allows the input of alphanumeric data
Text area - A multiline entry area that allows formatted text
Checkbox - Allows exactly two values, checked or not checked
Simple dropdown (for target table only) - Based on data in the target table
Lookup dropdown (for all tables) - Replaces numerical values with plain text from a 2nd table
Simple multiselect - Select multiple values
Lookup multiselect - Multiselect based on a lookup table
Label - Enables you to output text
Label with variables - Enables the output of text and values of variables
Spacer & Title - To set up void spaces between individual widgets
Business Case Link - To call e.g. detail BCs, data values are passed here
File Upload/Download - To attach files to data rows

Business Case Link and File Upload/Download can only be used in the edit area.

5.10 Widgets in the Edit Area

The edit area in a table business case (TBC) is mainly used for displaying data in list form and gives users the ability to edit the data.



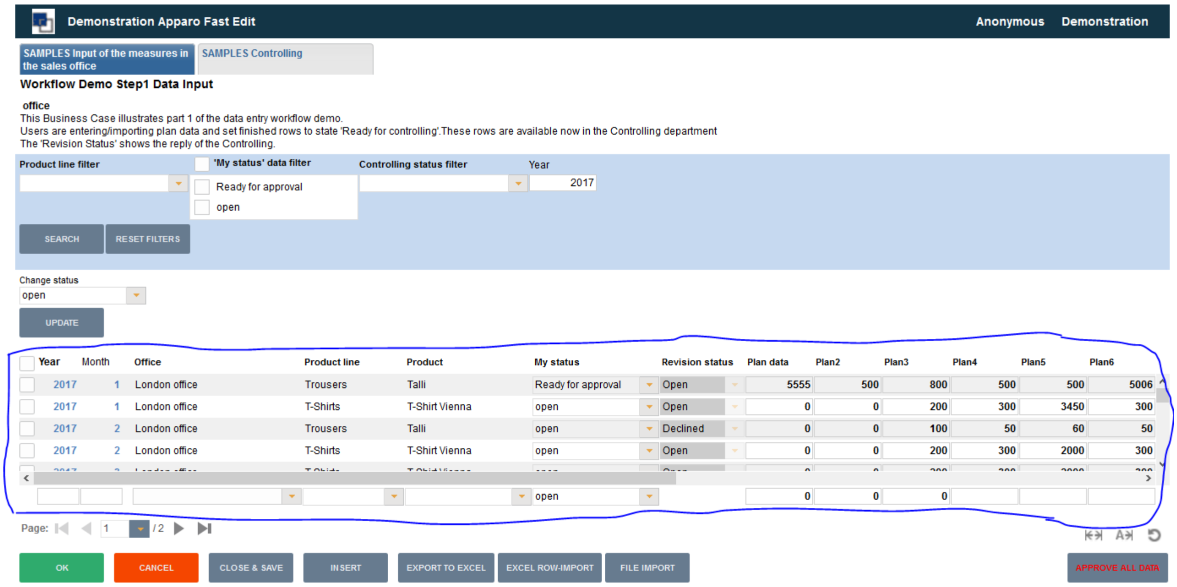
Filtering widgets

□	Row	Column	Column name	Widget type	Title	H
□	1	1	› ACTIVE	› Checkbox	Filter for active products	□
□	1	2	› PRODUCT_LINE_ID	› Lookup multiselect (for all tables)	Filter for product lines	□

Editing widgets

□	Column	Column name	Widget type	Title	PK	RO	H	NN
□	1	› PRODUCT_ID	› Input field	› Product id	☑	□	☑	☑
□	2	› PRODUCT_LINE_ID	› Lookup dropdown (for all tables)	› Product line	□	□	□	□
□	3	› PRODUCT_NAME_EN	› Input field	› Product name en	□	□	□	☑
□	4	› PRODUCT_COLOUR	› Input field	› Product colour	□	□	□	□
□	5	› PRODUCT_SIZE	› Input field	› Product size	□	□	□	□
□	6	› PRODUCT_MODEL	› Input field	› Product model	□	□	□	□
□	7	› PRODUCT_MANUF	› Input field	› Product manuf	□	□	□	□
□	8	› PRODUCT_DESCR	› Text area	› Product descr	□	□	□	□

Widgets of an area are grouped
Example for edit widgets in the user view:


Demonstration Apparo Fast Edit
Anonymous
Demonstration
SAMPLES Input of the measures in the sales office
SAMPLES Controlling

Workflow Demo Step1 Data Input

office
This Business Case illustrates part 1 of the data entry workflow demo.
Users are entering/importing plan data and set finished rows to state 'Ready for controlling'.These rows are available now in the Controlling department
The 'Revision Status' shows the reply of the Controlling.

Product line filter:
□ 'My status' data filter: □ Ready for approval, □ open
Controlling status filter:
Year: 2017

Change status: open

□	Year	Month	Office	Product line	Product	My status	Revision status	Plan data	Plan2	Plan3	Plan4	Plan5	Plan6
□	2017	1	London office	Trousers	Talli	Ready for approval	Open	5555	500	800	500	500	5006
□	2017	1	London office	T-Shirts	T-Shirt Vienna	open	Open	0	0	200	300	3450	300
□	2017	2	London office	Trousers	Talli	open	Declined	0	0	100	50	60	50
□	2017	2	London office	T-Shirts	T-Shirt Vienna	open	Open	0	0	200	300	2000	300
						open		0	0	0			

Page: 1 / 2

In the edit area you can choose between these types of widgets:

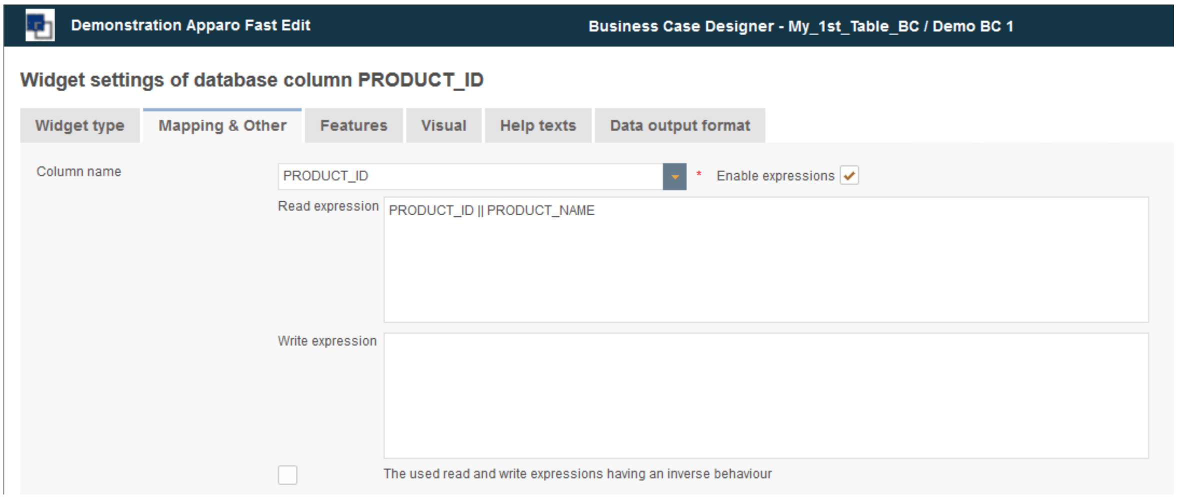
- **Input field** - A standard entry field which allows the input of alphanumeric data
- **Text area** - A multiline entry area that allows formatted text
- **Checkbox** - Allows exactly two values, checked or not checked
- **Simple dropdown** (for target table only) - Based on data in the target table
- **Lookup dropdown** (for all tables) - Replaces numerical values with plain text from a 2nd table
- **Label** - Enables you to output text
- **Label with variables** - Enables the output of text and values of variables
- **Spacer & Title** - To set up void spaces between individual widgets
- **Business Case Link** - To call e.g. detail BCs, data values are passed here
- **File Upload/Download** - To attach files to data rows

5.11 Special functions in the widget settings

There are some special functions in the widget settings:

5.12 Reading and Writing Expressions

Reading and writing expressions allow the usage of SQL to manipulate data before it is shown to users or stored to the database.


Demonstration Apparo Fast Edit
Business Case Designer - My_1st_Table_BC / Demo BC 1
Widget settings of database column PRODUCT_ID
Widget type
Mapping & Other
Features
Visual
Help texts
Data output format

Column name: PRODUCT_ID

Enable expressions ☑

Read expression: PRODUCT_ID || PRODUCT_NAME

Write expression:

□ The used read and write expressions having an inverse behaviour

Variables are allowed here

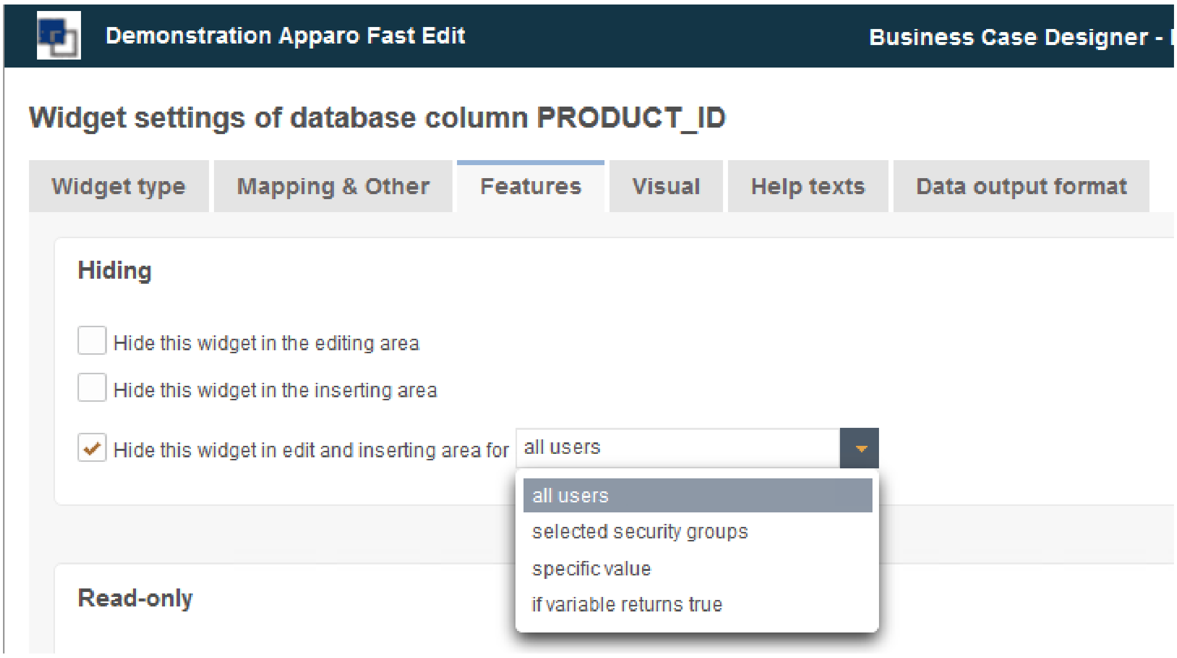
Common examples for expressions are:

TRIM()	- Removes spaces from strings
UPPER()	- Turns all letters into upper cases
LOWER()	- Turns all letters into lower cases

5.13 Conditional options

Many functions can be controlled with reference to conditions.

Thus, there are e.g. for the function ‚Hidden', which hides a widget for the user when activated, several options.



Demonstration Apparo Fast Edit

Business Case Designer -

Widget settings of database column PRODUCT_ID

Hiding

□ Hide this widget in the editing area

□ Hide this widget in the inserting area

☑ Hide this widget in edit and inserting area for all users

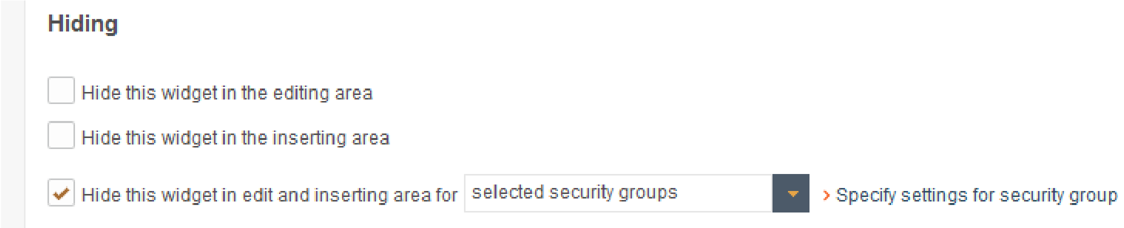
Read-only

For all users

This option is set by default. It hides the widget for all users.

For selected security groups

This hides the widget, but only for users who are member of one of the entered user groups. Other users can see the widget.



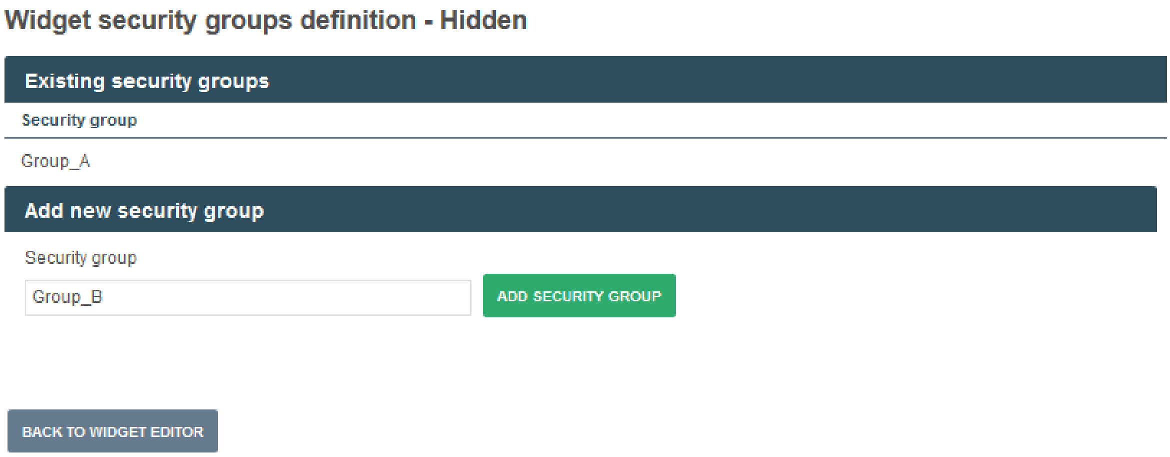
Hiding

□ Hide this widget in the editing area

□ Hide this widget in the inserting area

☑ Hide this widget in edit and inserting area for selected security groups

Hide the widget for the selected user groups



Widget security groups definition - Hidden

Existing security groups

Security group
Group_A

Add new security group

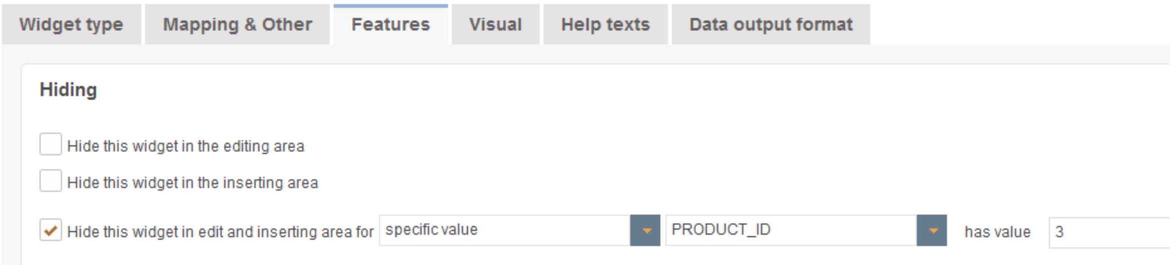
Security group

Group_B

Security group editor

For a specific value

The option applies here as soon as the value of one of the columns in the target table in the corresponding data row matches with the stored value.
In our example, the widget would be hidden once in a data row in the office ID column the value ‘3’ appears.



Hiding

□ Hide this widget in the editing area

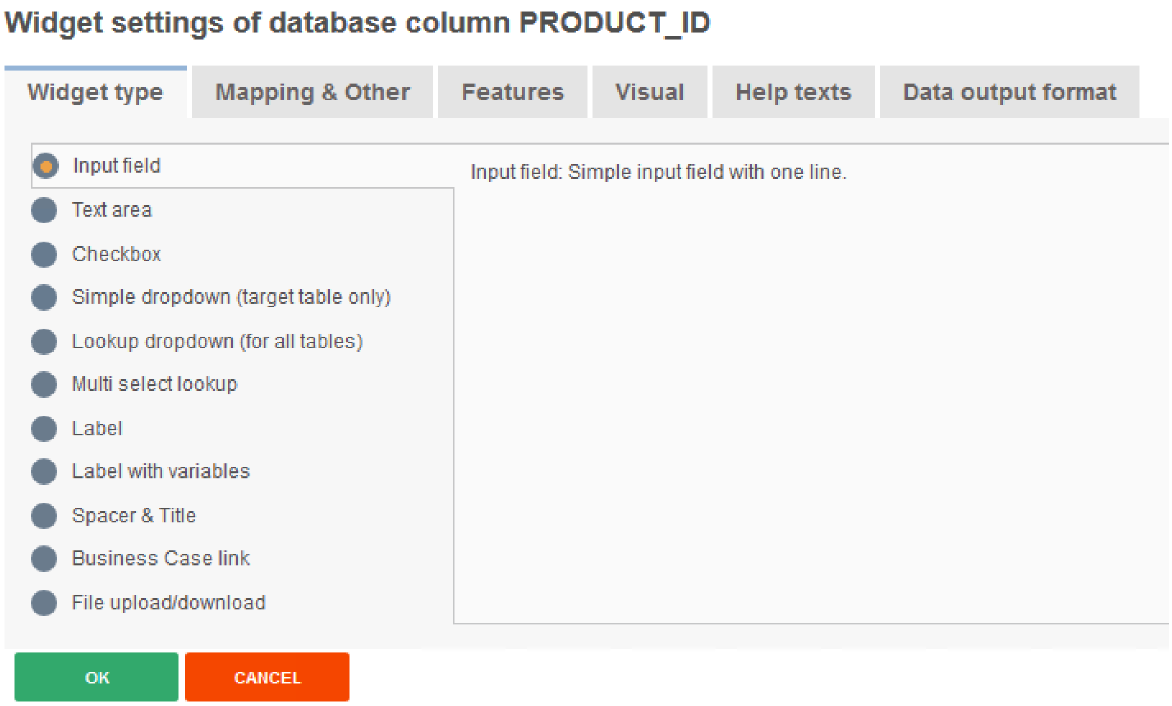
□ Hide this widget in the inserting area

☑ Hide this widget in edit and inserting area for specific value PRODUCT_ID has value 3

The values can also be configured dynamically by using variables. <%VARIABLE%>

5.14 Widget settings for the example ‚Input field‘

Each widget type has its own settings. The following settings using the example of the widget type ‚input field' can be found in almost all widget types. Distinctive features of each widget type are described in the following chapter ‚More widget settings'

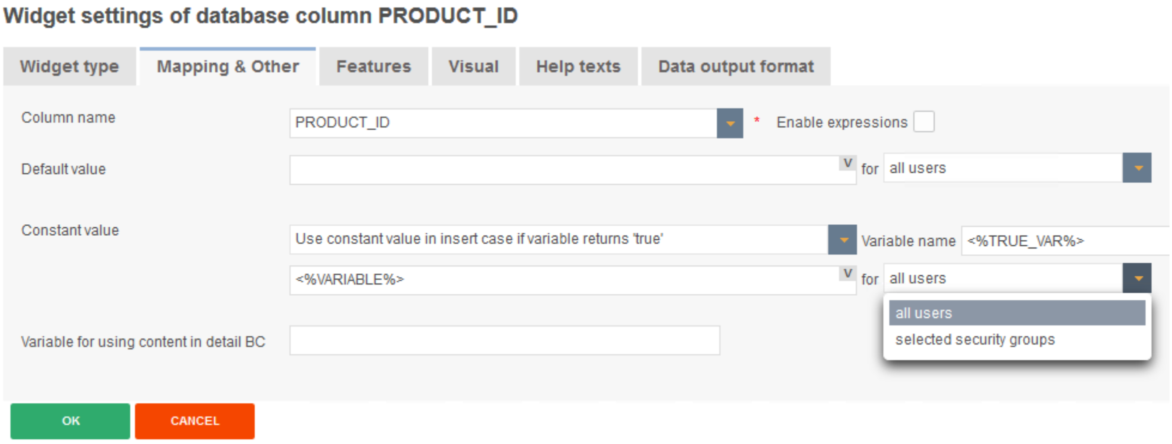


Widget settings of database column PRODUCT_ID

- ● Input field
- ○ Text area
- ○ Checkbox
- ○ Simple dropdown (target table only)
- ○ Lookup dropdown (for all tables)
- ○ Multi select lookup
- ○ Label
- ○ Label with variables
- ○ Spacer & Title
- ○ Business Case link
- ○ File upload/download

Input field: Simple input field with one line.

5.14.1 Mapping & Other



Widget settings of database column PRODUCT_ID

Column name: PRODUCT_ID * Enable expressions □

Default value: for all users

Constant value: Use constant value in insert case if variable returns 'true' Variable name <%TRUE_VAR%>

<%VARIABLE%> for all users

Variable for using content in detail BC

‚Order by‘ priority
Sorting the editing rows using this sort order (1,2,3,...: sorting ascending, -1,-2,-3,...: sorting descending etc.).
The number is defining the position of this widget in the order, for example -2: means ascending order, widget ist on 2. position of the order list
You cannot use same value for more than one widget e.g. -1,1 or 1,1

Column name
Here you can select the database column that is connected to this widget. The widget is reading the content of the column and is writing to this column. It is possible to use a variable in this column name too.

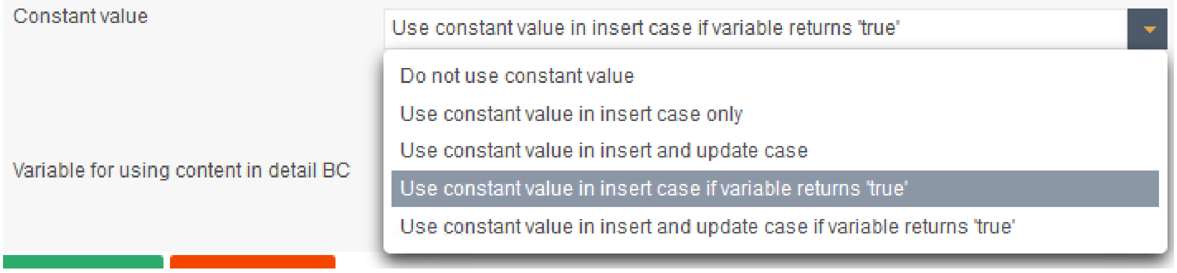
Default value

If you define a default value (using a variable is possible too) then the user will see this value in this input field in the inserting area. It is possible to define different default values for different user roles/groups. Use English format to define numeric or date values. Default value of lookup widget must be the lookup key value.

Constant value

A constant value is a value that will be always used for this widget. Even if the widget is hidden, read-only or if the user is inserting a value, then the constant value will be used. It is possible to define different constant values for different user roles/groups.

The function ‚constant value‘ has the following options:



Constant value

Use constant value in insert case if variable returns 'true'

Variable for using content in detail BC

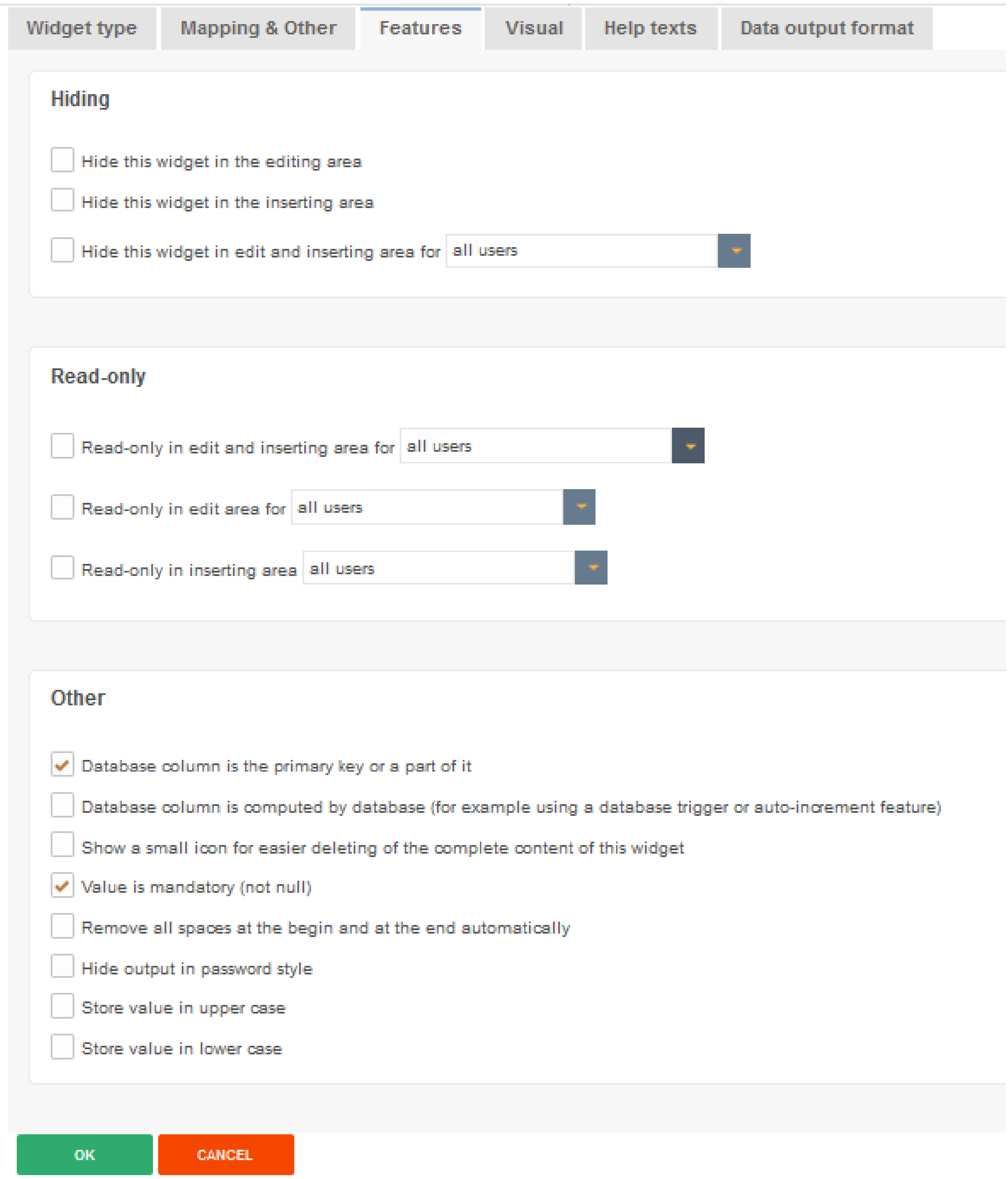
Do not use constant value
Use constant value in insert case only
Use constant value in insert and update case
Use constant value in insert case if variable returns 'true'
Use constant value in insert and update case if variable returns 'true'

Variable for using content in detail BC

If this Business Case has a widget of type 'Business Case Link' for opening a detail Business Case, it is possible to define a variable that contains the value of the current widget.
The detail Business Case can use this report variable with the current value of this widget for example for output.
Important: In the detail Business Case you must define this report variable in tab "Variables" too.

5.14.2 Features

In the tab Features you can control the behavior of the widget in detail.



Hiding

□ Hide this widget in the editing area

□ Hide this widget in the inserting area

□ Hide this widget in edit and inserting area for all users

Read-only

□ Read-only in edit and inserting area for all users

□ Read-only in edit area for all users

□ Read-only in inserting area all users

Other

☑ Database column is the primary key or a part of it

□ Database column is computed by database (for example using a database trigger or auto-increment feature)

□ Show a small icon for easier deleting of the complete content of this widget

☑ Value is mandatory (not null)

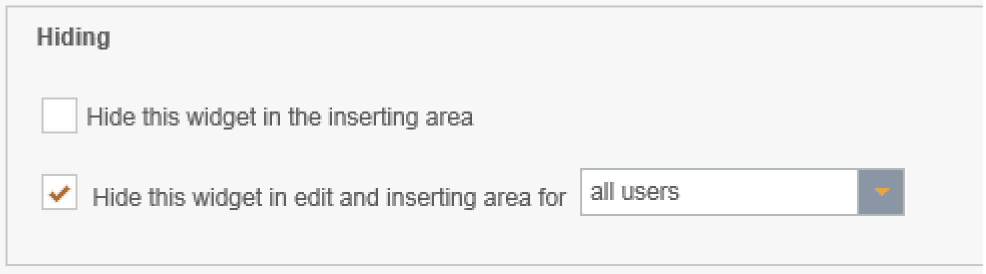
□ Remove all spaces at the begin and at the end automatically

□ Hide output in password style

□ Store value in upper case

□ Store value in lower case

Hiding-Group
Includes options for hiding widgets.



Hiding

□ Hide this widget in the inserting area

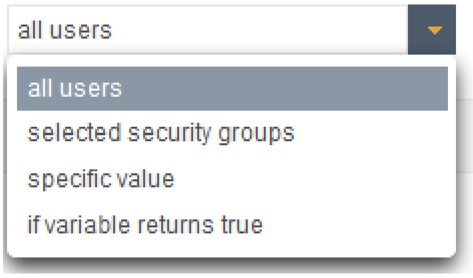
☑ Hide this widget in edit and inserting area for all users

Hide this widget in the inserting area

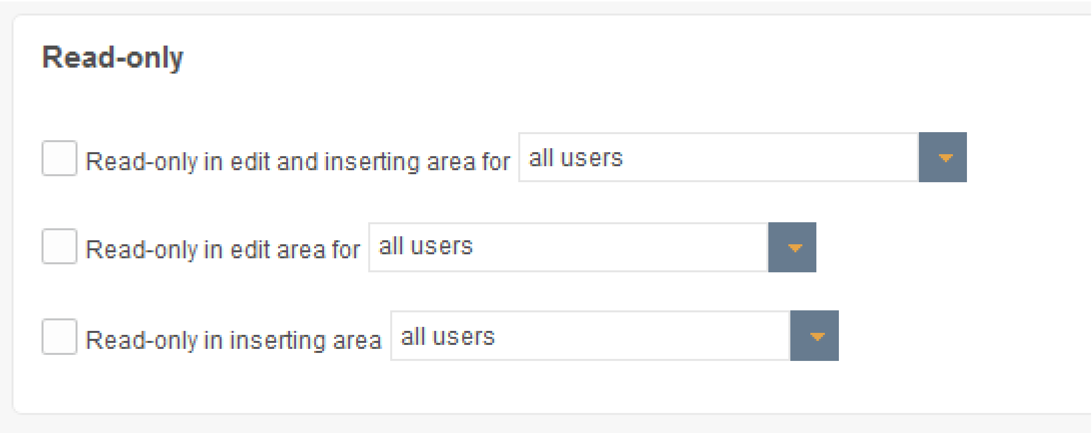
If enabled, the user will not see this widget in the inserting area. If you use a constant value then it will be used no matter if the widget is hidden or not.

Hide this widget in edit and inserting area for
The data field is to be used, but not shown in insert and editing area, optional security group based. That means this widget can be hidden for certain user groups only.

Options:



Read only group
Includes options to disable the entering or changing of values in widgets



Read-only

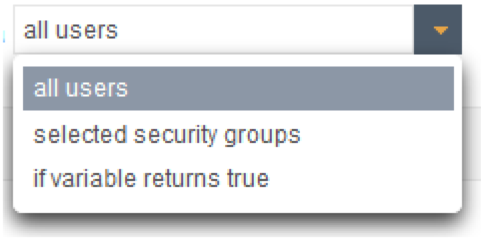
□ Read-only in edit and inserting area for all users

□ Read-only in edit area for all users

□ Read-only in inserting area all users

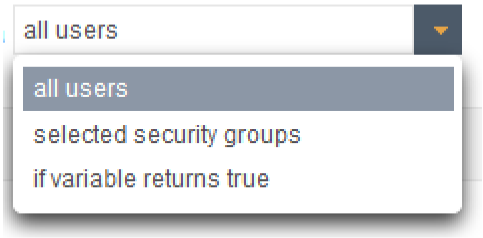
Read-only in edit and inserting area for
The data field cannot be altered in editing and inserting area but it is still visible with another background color, optional security group based.

Options:



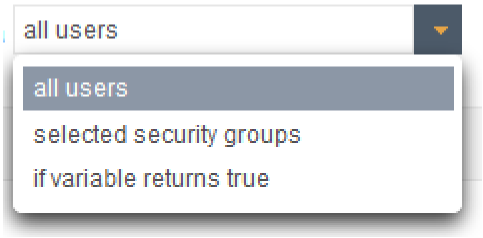
Read-only in edit area for
The data field cannot be altered in editing area, optional security group based. Read-only widgets have an own background color.

Options:



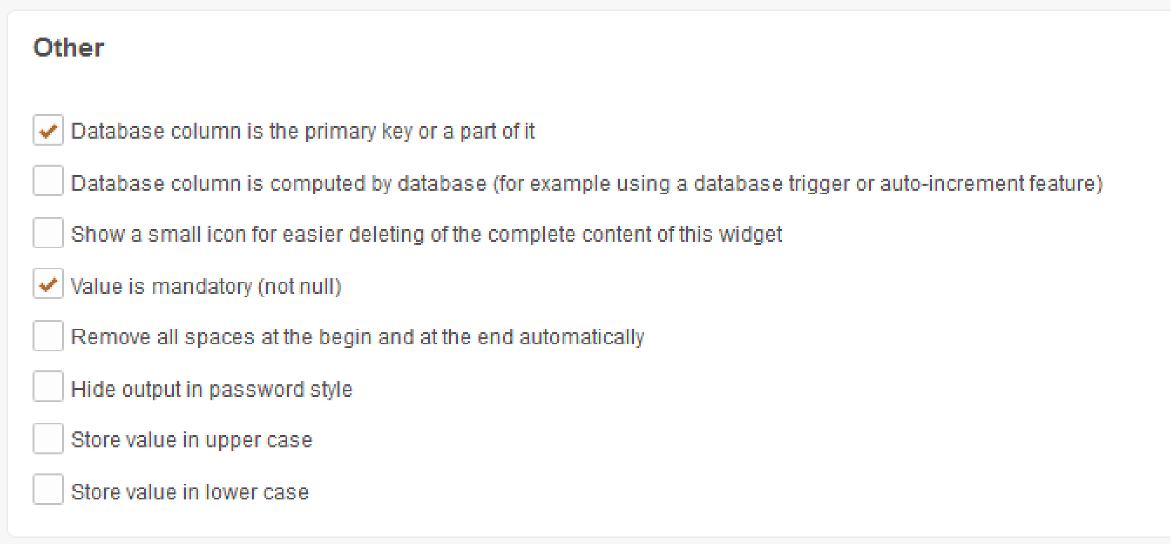
Read-only in inserting area
The data field cannot be altered in inserting area, optional security group based. Read-only widgets have an own background colour.

Options:



Other-Group

Contains all other settings



Other

☑ Database column is the primary key or a part of it

☐ Database column is computed by database (for example using a database trigger or auto-increment feature)

☐ Show a small icon for easier deleting of the complete content of this widget

☑ Value is mandatory (not null)

☐ Remove all spaces at the begin and at the end automatically

☐ Hide output in password style

☐ Store value in upper case

☐ Store value in lower case

Database column is the primary key or a part of it
The widget is the primary key of the underlying table or is an part of the key (with combined keys). This definition is independent of the primary key definition in the database and at least one column must be defined as primary key. A primary key is identifying an unique data row of the target table/view.

Database column is computed by database (for example using a database trigger or auto-increment feature)
The database table column value is filled automatically by the database (e.g. with triggers, auto-increment field). Apparo Fast Edit is not changing this value in the target table.

Show a small icon for easier deleting of the complete content of this widget
Showing a small delete icon for deleting the widget content.

Value is mandatory (not null)
If a widget value is mandatory then the user must input a value into this widget (or using default or constant value). The definition of this behavior is independent from the definition of the target table column in the database.
If a filtering widget is mandatory it is a good idea to define a default value for him too. You will avoid some error messages at the Business Case startup.

Remove all spaces at the begin and at the end automatically
If enabled then all spaces at the begin and end are removed automatically before storing into database table

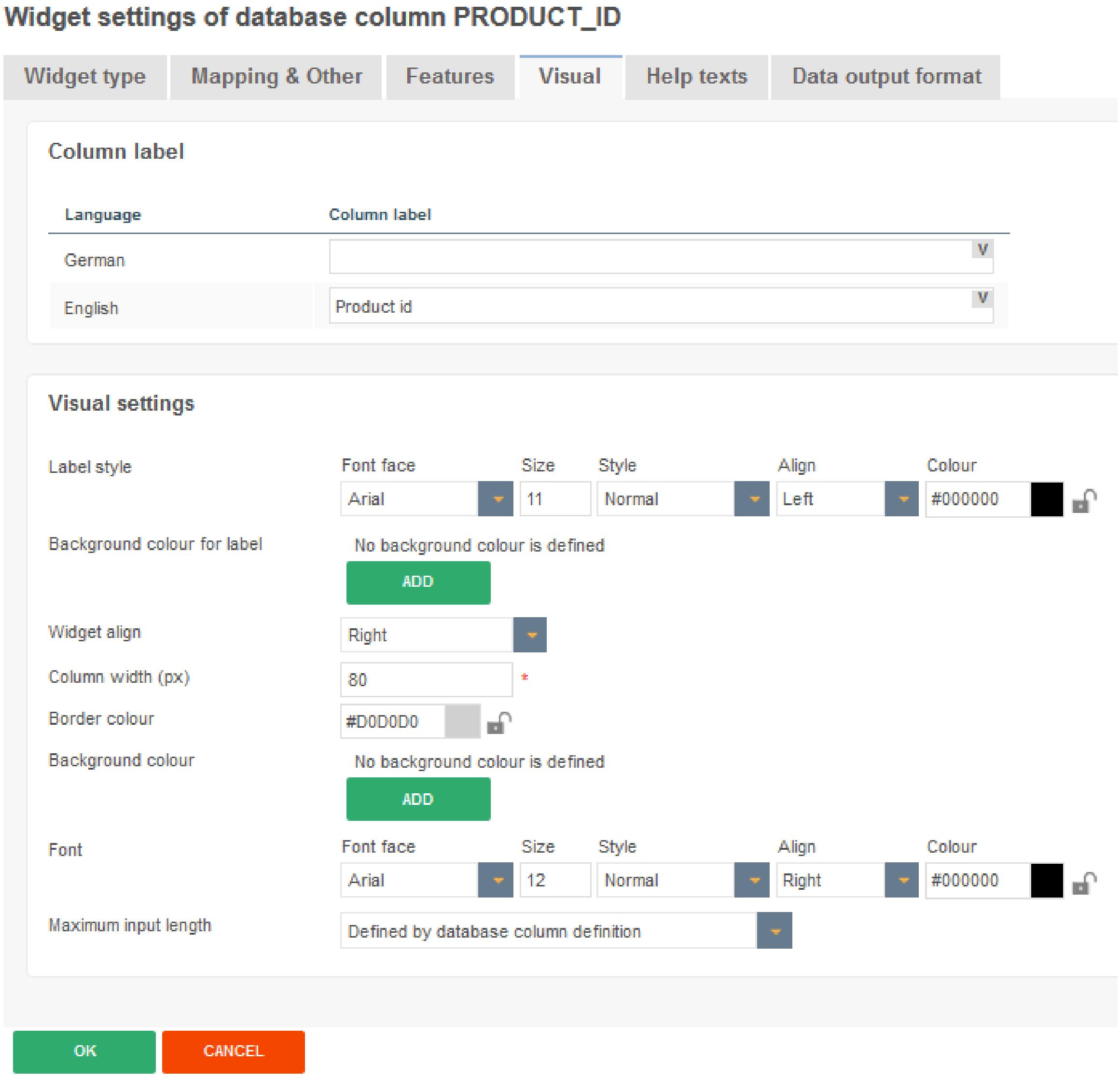
Hide output in password style
The input is hidden on screen

Store value in upper case
If enabled then all characters are changed to upper case before storing into database table

Store value in lower case
If enabled then all characters are changed to lower case before storing into database table

5.14.3 Visual

In the tab ‚Visual' you will find the header (column heading), and settings for the layout, and settings to limit the maximum allowed input length in this widget.
By default the maximum entry length is defined by the database column definition, for example Varchar(20) allows a maximum of 20 alphanumeric characters. This can be further limited by the input of an own value
.



Widget settings of database column PRODUCT_ID

Column label

Language	Column label
German	
English	Product id

Visual settings

	Font face	Size	Style	Align	Colour
Label style	Arial	11	Normal	Left	#000000 ■

Background colour for label: No background colour is defined

Widget align: Right

Column width (px): 80 *

Border colour: #D0D0D0

Background colour: No background colour is defined

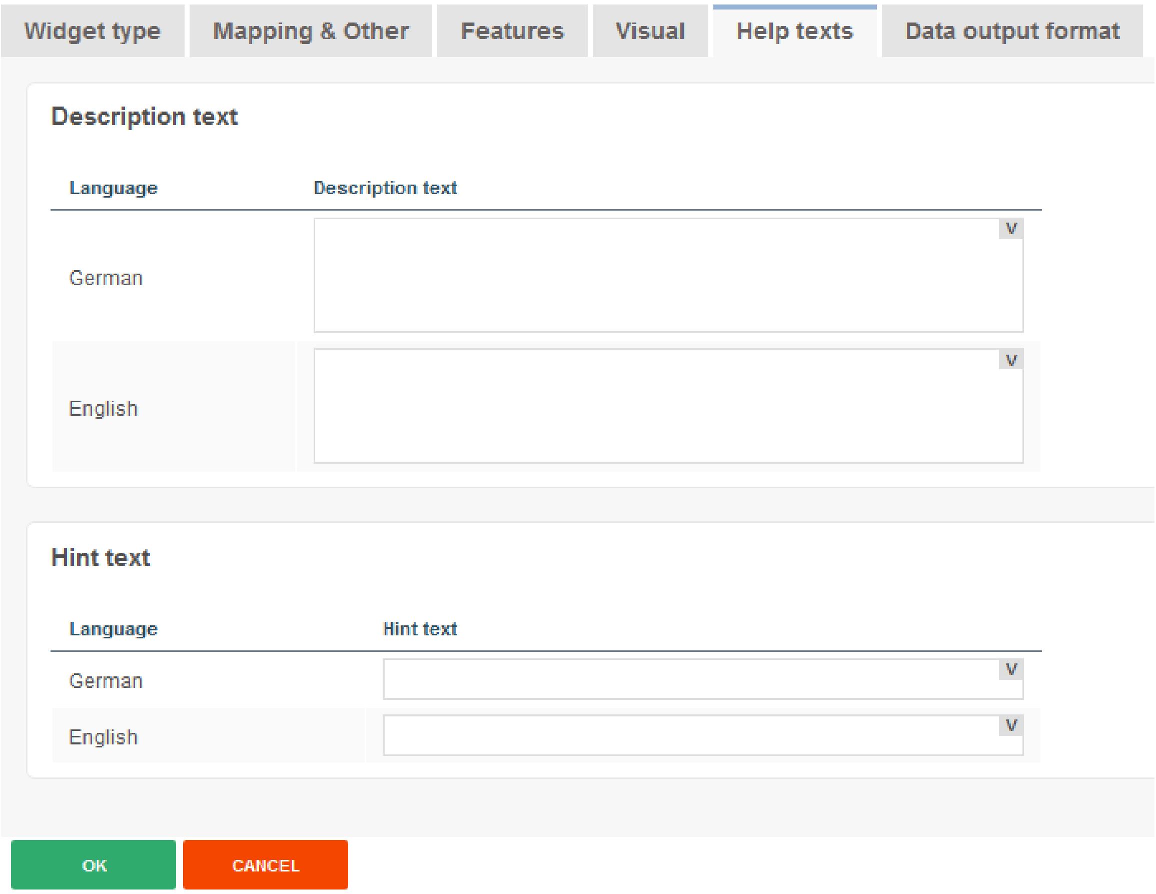
	Font face	Size	Style	Align	Colour
Font	Arial	12	Normal	Right	#000000 ■

Maximum input length: Defined by database column definition

The layout can also be controlled global using the client settings or by CSS.

5.14.4 Help texts

Contains the settings for description and hint text



Description text

Language	Description text
German	
English	

Hint text

Language	Hint text
German	
English	

Description text

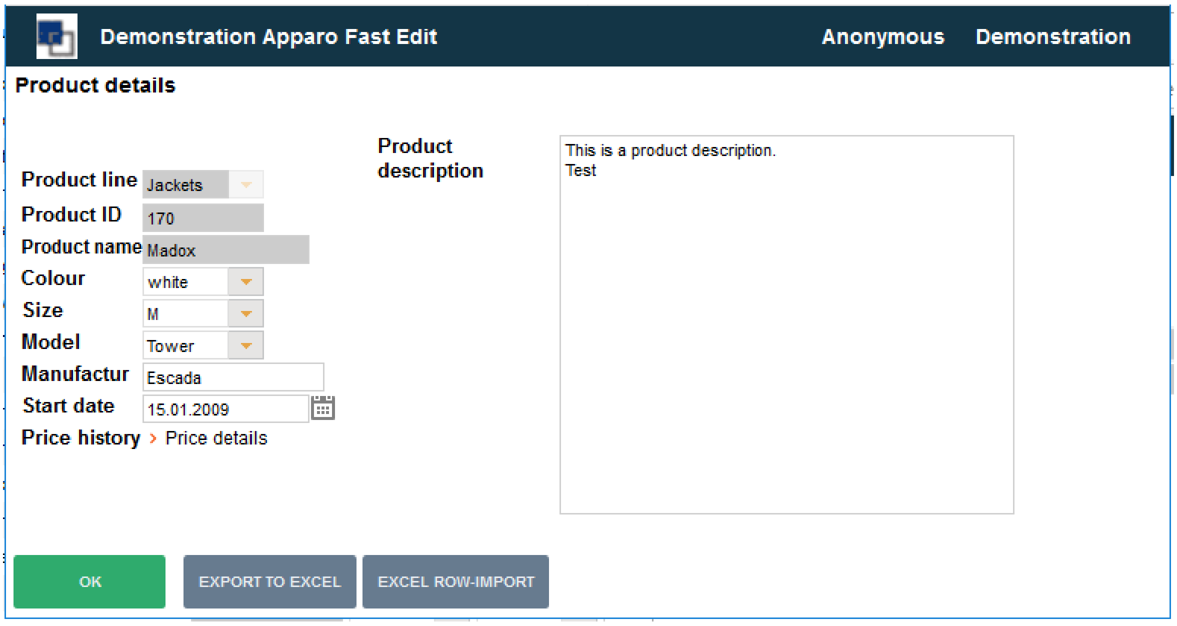
This text can describe the widget and can be helpful for the user. You can add a more detail description text for each installed language.
The user is seeing this text if he is pointing to the label of this widget.

Hint text

The hint text is displayed only if the widget has no value.
Is displayed in the input area in gray text, e.g. 'Enter date in the format: dd.MM.yy'

6 Single Business Cases (SBC)

A single business case (SBC) is used to represent a single data set (database row). A typical application is a data entry screen or a detailed view.
The functions and settings of the SBC are substantially identical to those of Table business cases.
This chapter focuses on the features and the settings that apply only to the single business case.



Product details

Product line	Jackets
Product ID	170
Product name	Madox
Colour	white
Size	M
Model	Tower
Manufactur	Escada
Start date	15.01.2009
Price history	› Price details

Product description

This is a product description.
Test

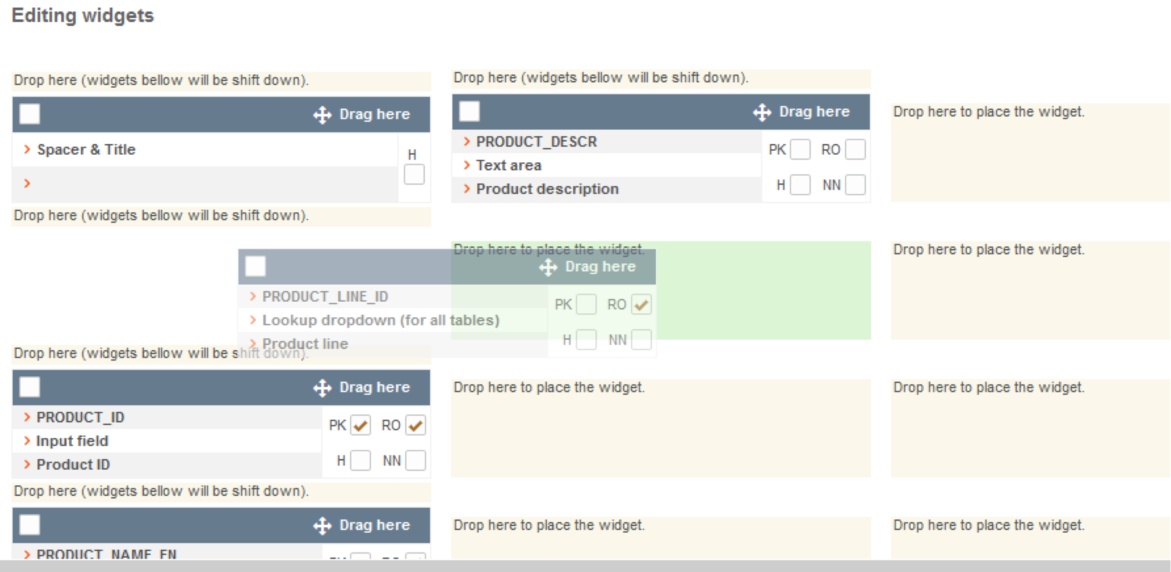
User view of a SBC, the widgets are visually divided into 2 columns.

6.1 Structure of the SBC

- **Header area** - with the title and description
- **Data area** - where the widgets are arranged in columns
- **Navigation pane** - used to navigate between records and the switch button for the data input mode
- **Button area** - contains the default and user-defined buttons
- Optional **footer area** - for info and graphics

6.2 Arrangement of the widgets in the SBC

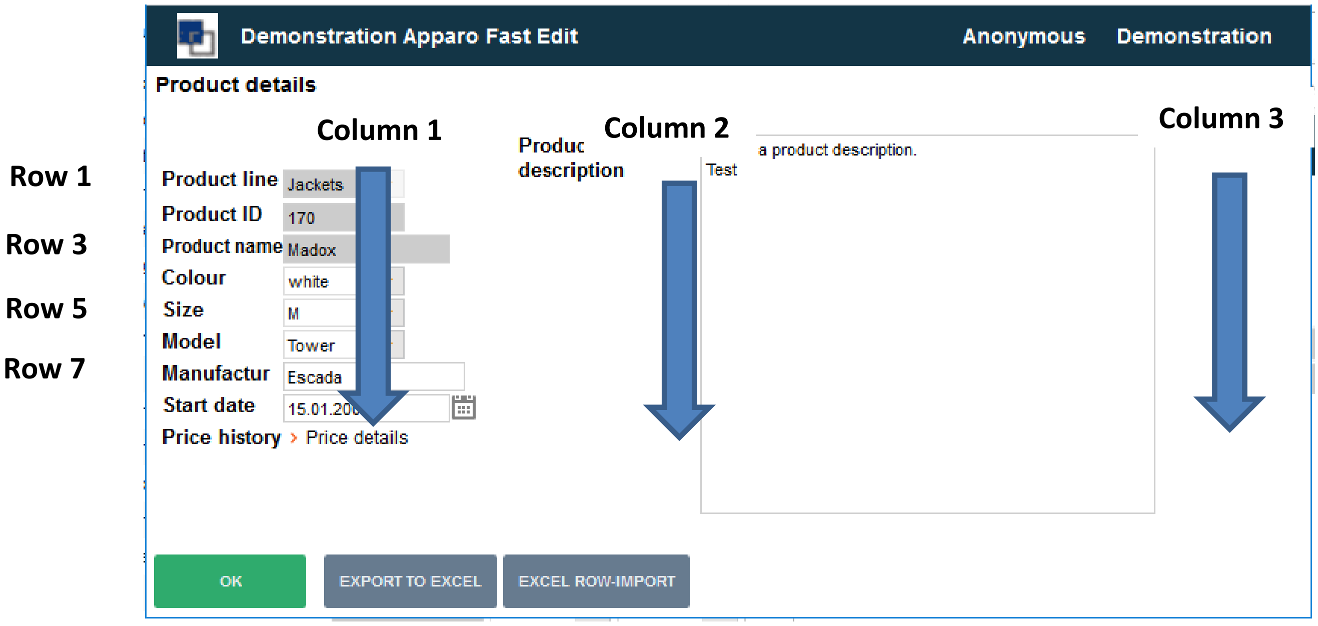
The widgets in the SBC can be output with multiple columns.


Editing widgets
Drop here (widgets bellow will be shift down).
Drag here
Spacer & Title
H
Drop here (widgets bellow will be shift down).
PRODUCT_DESCR
Text area
Product description
PK
RO
H
NN
Drop here to place the widget.
Drag here
PRODUCT_LINE_ID
Lookup dropdown (for all tables)
Product line
PK
RO ✓
H
NN
Drop here to place the widget.
Drop here (widgets bellow will be shift down).
Drag here
PRODUCT_ID
Input field
Product ID
PK ✓
RO ✓
H
NN
Drop here to place the widget.
Drop here (widgets bellow will be shift down).
Drag here
PRODUCT_NAME_EN
Drop here to place the widget.

Designer view: The arrangement of the widget by columns and rows

Widgets can be placed easily by drag and drop.

6.2.1 Columns - a users view



Product details

Product line Jackets
Product ID 170
Product name Madox
Colour white
Size M
Model Tower
Manufactur Escada
Start date 15.01.20
Price history › Price details

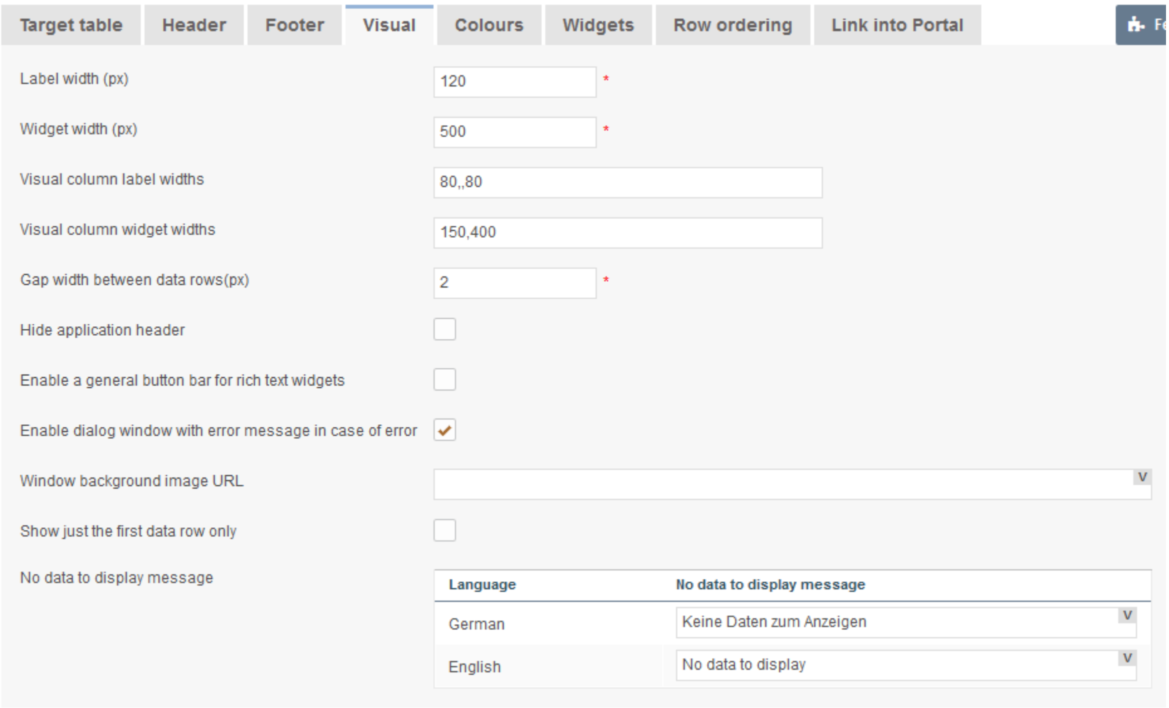
Produc description
a product description.
Test

User view: Column 2 contains only one text area widget

The terms ‘column’ and ‘line’ refer only to the visual presentation and may not be consistent with database columns or rows.

6.3 Visual

Here you define the general optical settings for the single business case.
These settings are different from those in Table Business Case



Label width (px)	120 *
Widget width (px)	500 *
Visual column label widths	80,,80
Visual column widget widths	150,400
Gap width between data rows(px)	2 *
Hide application header	□
Enable a general button bar for rich text widgets	□
Enable dialog window with error message in case of error	☑
Window background image URL	
Show just the first data row only	□
No data to display message	

Language	No data to display message
German	Keine Daten zum Anzeigen
English	No data to display

Options

Label width (px)

Width of the label in pixels

Widget width (px) *

Width of the input area of the widget

Visual column label widths

Defines the visual column label widths. If no value is defined for visual column label width then 'Label Width' property is used as default value; e.g.

100,150,200	3 visual columns with label widths 100 (px), 150 (px) and 200 (px)
100,,200	3 visual columns with label widths 100 (px), 'Label Width' (px) and 200 (px)
,,200	3 visual columns with label widths 'Label Width' (px), 'Label Width' (px) and 200 (px)

IMPORTANT: Negative numbers are not valid.

Visual column widget widths

Defines the visual column widget widths. If no value is defined for visual column widget width then 'Widget Width' property is used as default value; e.g.

100,150,200	3 visual columns with widget widths 100 (px), 150 (px) and 200 (px)
100,,200	3 visual columns with widget widths 100 (px), 'Widget Width' (px) and 200 (px)
,,200	3 visual columns with widget widths 'Widget Width' (px), 'Widget Width' (px) and 200 (px)

IMPORTANT: Negative numbers are not valid

Gap width between data rows(px)

The optical gap between data rows in pixels, default is 2

Hide application header

Hides the header with application name, BC name and user name

Enable a general button bar for rich text widgets

If this feature is enabled then the user is seeing only one button bar with bold, italic, underline etc. buttons for changing the text style in rich text widgets.
This button bar is necessary if widgets of type text area with rich text functionality are used
(using bold, italic, underline, different colours). The general button bar is visible like in Microsoft Word.
If disabled then each text area with rich text feature has an own button bar.

Enable dialog window with error message in case of error

If this setting is enabled than a pop-up dialog window will be displayed after each error.

Window background image URL

It is possible to use own background picture using an URL.

Show just the first data row only

When enabled only first data row will be displayed; otherwise additional buttons "<<" and ">>" will be displayed to show previous respectively next data row.

No data to display message

Message presented to user when there are no data to display

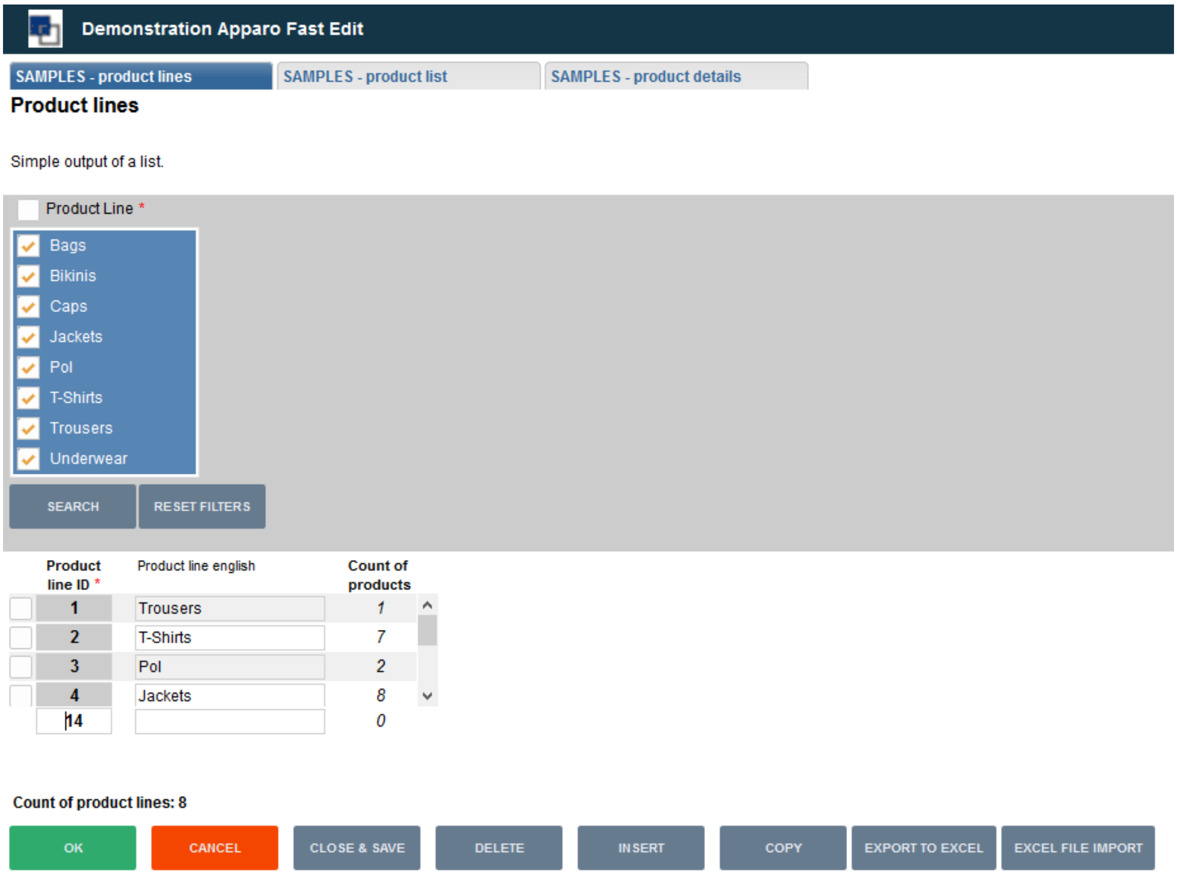
7 Combining Business Case

There are two main ways to combine Business Cases.

- As Business Case Set
- As master-detail relationship

7.1 Business Case Set

Table and Single Business Cases can be combined in a **Business Case Set**. Single or Table Cases are displayed together so that navigating is made easier. The Business Cases are not inherently connected.



Product lines

Simple output of a list.

□ Product Line *

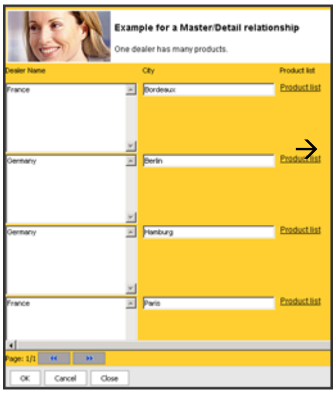
- ☑ Bags
- ☑ Bikinis
- ☑ Caps
- ☑ Jackets
- ☑ Pol
- ☑ T-Shirts
- ☑ Trousers
- ☑ Underwear

	Product line ID *	Product line english	Count of products
□	1	Trousers	1
□	2	T-Shirts	7
□	3	Pol	2
□	4	Jackets	8
	14		0

Count of product lines: 8

7.2 Master-detail relationship

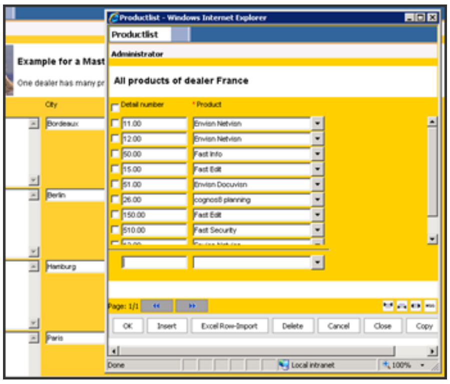
Business Cases can also be combined in a **master-detail relationship**. In this case, the contents of two tables are handled together. The database transactions are performed on both tables at the same time.



Example for a Master/Detail relationship

One dealer has many products.

Dealer Name	City	Product list
France	Bordeaux	Product list
Germany	Berlin	Product list
Germany	Hamburg	Product list
France	Paris	Product list



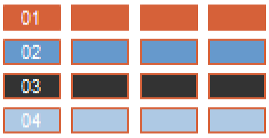
All products of dealer France

	Detail number	* Product
□	11.00	Envisn Netvisn
□	12.00	Envisn Netvisn
□	50.00	Fast Info
□	15.00	Fast Edit
□	51.00	Envisn Docuvisn
□	26.00	cognos8 planning
□	150.00	Fast Edit
□	510.00	Fast Security

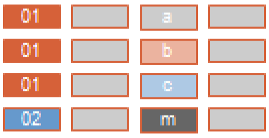
Both combinations are explained more detailed later in this tutorial.

7.3 Primary Keys

- A primary key identifies a unique row in a table.
  A typical example is a unique product ID:



- It can either be a single primary key (one attribute) or a compound key consisting of several primary keys (more than one attribute).
  An example for a compound key would be a supplier-product relationship. Each supplier offers one or more products, so the supplier ID alone is not enough to identify the row:



- When creating a Business Case, the number of primary keys has to be set to the minimum necessary to identify every unique row.

- The primary keys in a Fast Edit Business Case do not depend on the underlying database table design.
  However, the primary keys of the table are usually also used for the Business Cases.

Each column (also many columns at the same time) can be used as the primary key(s).
In Fast Edit you can define a completely different primary key than in the underlying table (the same applies to any null/not null-definitions). In the Insert and Update cases, only the primary key definition from Fast Edit will be taken into consideration.
However, in about 90% of the Business Cases, the same primary keys as in the underlying table are used.

The primary key of the database table column is important for:

- The definition of a lookup table for the **Lookup Multi-select** widget (field “Lookup table key column“).
- The widget **Business Case Link**, with which the two tables of the two Business Cases can be edited in one database transaction.

8 Creating database table and columns with the Designer

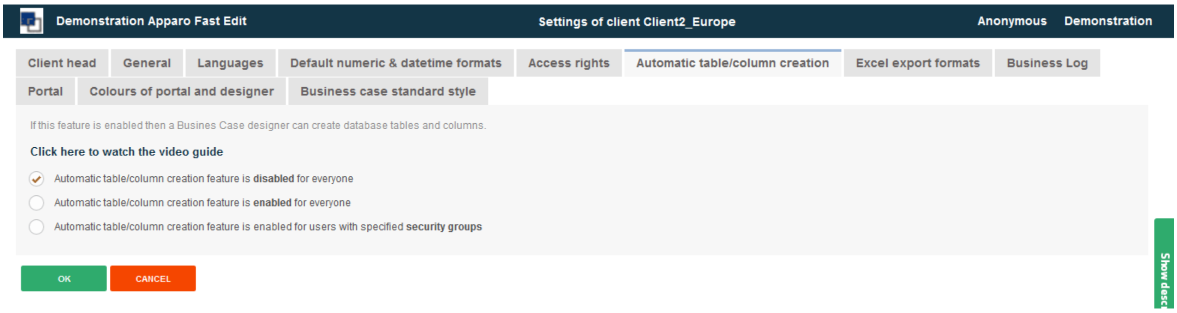
You can allow your users Designer to create new database tables with the designer or to add columns to existing tables.

This function allows only simple database tables and the following basic data types:

- Number
- Text
- Date

8.1 Activation of the feature in the client settings

This feature is disabled by default and must be enabled in the client.
Optionally, you can restrict this function to certain security groups.



Demonstration Apparo Fast Edit
Settings of client Client2_Europe
Anonymous
Demonstration
Client head
General
Languages
Default numeric & datetime formats
Access rights
Automatic table/column creation
Excel export formats
Business Log
Portal
Colours of portal and designer
Business case standard style
OK
CANCEL
Show desc

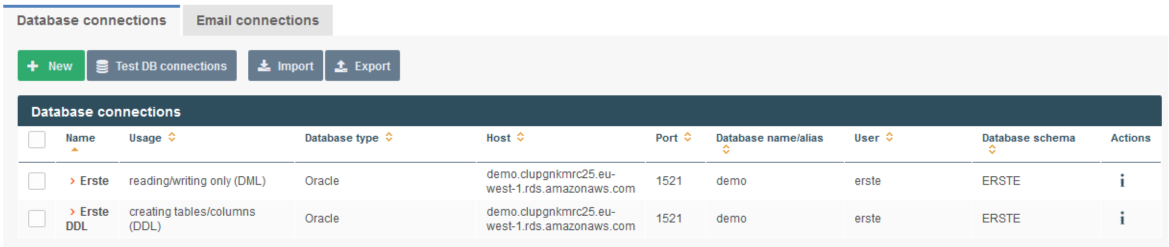
If this feature is enabled then a Busines Case designer can create database tables and columns.

Click here to watch the video guide

- ☑ Automatic table/column creation feature is **disabled** for everyone
- ○ Automatic table/column creation feature is **enabled** for everyone
- ○ Automatic table/column creation feature is enabled for users with specified **security groups**

8.2 Create the required database connections

As mentioned in Chapter,Clients', you will need two different database connections.



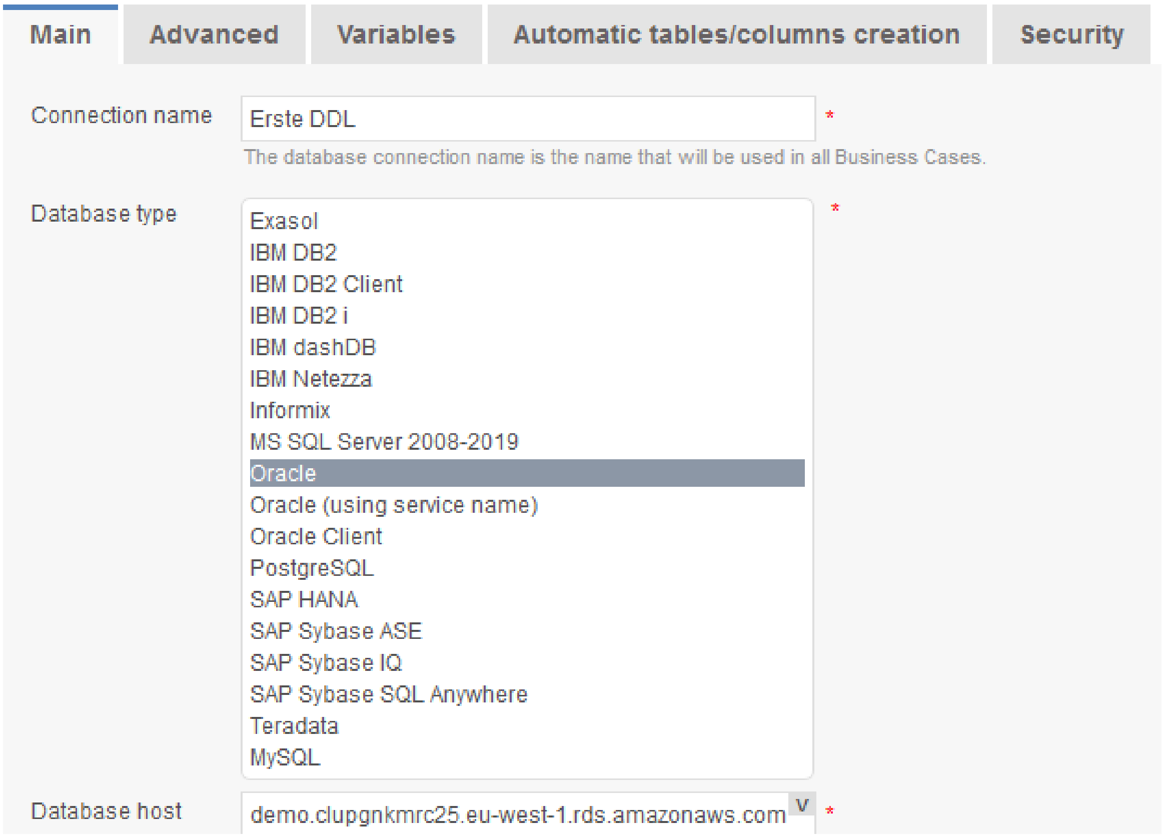
Database connections

□	Name	Usage	Database type	Host	Port	Database name/alias	User	Database schema	Actions
□	› Erste	reading/writing only (DML)	Oracle	demo.clupgnkmrc25.eu-west-1.rds.amazonaws.com	1521	demo	erste	ERSTE	i
□	› Erste DDL	creating tables/columns (DDL)	Oracle	demo.clupgnkmrc25.eu-west-1.rds.amazonaws.com	1521	demo	erste	ERSTE	i

8.3 Create a database connection to create tables / columns (DDL)

This database connection type also requires, in addition to read and write, the right to create tables.

First enter the required connection data:



Connection name: Erste DDL *

The database connection name is the name that will be used in all Business Cases.

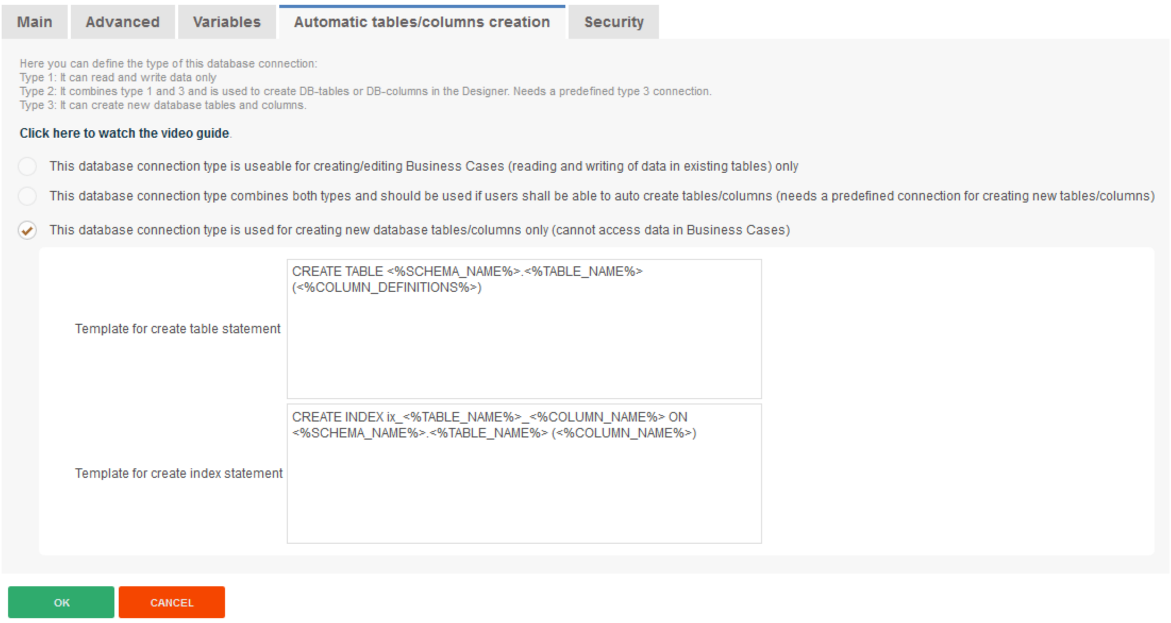
Database type: *

- Exasol
- IBM DB2
- IBM DB2 Client
- IBM DB2 i
- IBM dashDB
- IBM Netezza
- Informix
- MS SQL Server 2008-2019
- Oracle
- Oracle (using service name)
- Oracle Client
- PostgreSQL
- SAP HANA
- SAP Sybase ASE
- SAP Sybase IQ
- SAP Sybase SQL Anywhere
- Teradata
- MySQL

Database host: demo.clupgnkmrc25.eu-west-1.rds.amazonaws.com *

Then select in the tab‚Automatic table / column creation' the third radio button:

This database connection type is used for creating new database tables/columns only (cannot access data in Business Cases)



Here you can define the type of this database connection:
Type 1: It can read and write data only
Type 2: It combines type 1 and 3 and is used to create DB-tables or DB-columns in the Designer. Needs a predefined type 3 connection.
Type 3: It can create new database tables and columns.

Click here to watch the video guide.

○ This database connection type is useable for creating/editing Business Cases (reading and writing of data in existing tables) only

○ This database connection type combines both types and should be used if users shall be able to auto create tables/columns (needs a predefined connection for creating new tables/columns)

● This database connection type is used for creating new database tables/columns only (cannot access data in Business Cases)

Template for create table statement

```
CREATE TABLE <%SCHEMA_NAME%>.<%TABLE_NAME%>
(<%COLUMN_DEFINITIONS%>)
```

Template for create index statement

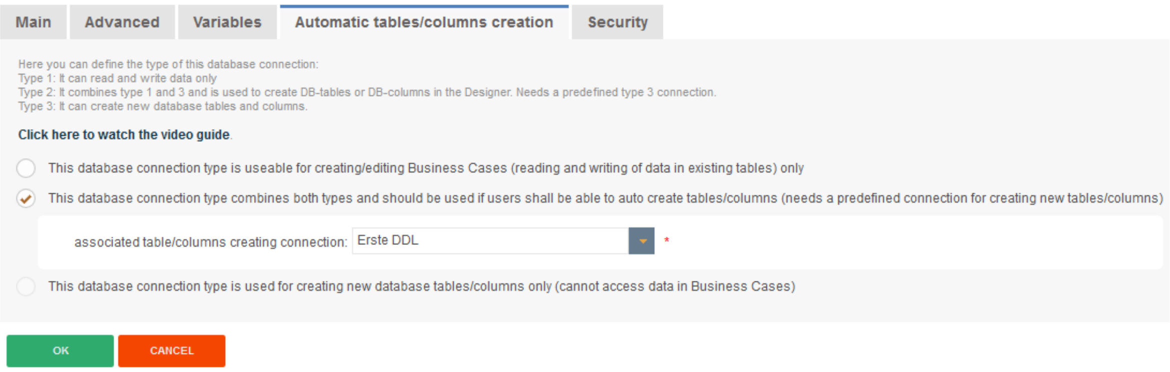
```
CREATE INDEX ix_<%TABLE_NAME%>_<%COLUMN_NAME%> ON
<%SCHEMA_NAME%>.<%TABLE_NAME%> (<%COLUMN_NAME%>)
```

It is not possible to create with this DB connection Business Cases.

8.4 Creating and linking the DB connection type ‚read / write only (DML) '

After you have added the necessary connection information, select the in tab ‚Automatic table / column creation‘ the option ‚This database connection type combines both types and should be used if users shall be able to auto create tables/columns (needs a predefined connection for creating new tables/columns)‘

Then, assign the previously created DDL connection here.



Here you can define the type of this database connection:
Type 1: It can read and write data only
Type 2: It combines type 1 and 3 and is used to create DB-tables or DB-columns in the Designer. Needs a predefined type 3 connection.
Type 3: It can create new database tables and columns.

Click here to watch the video guide.

○ This database connection type is useable for creating/editing Business Cases (reading and writing of data in existing tables) only

☑ This database connection type combines both types and should be used if users shall be able to auto create tables/columns (needs a predefined connection for creating new tables/columns)

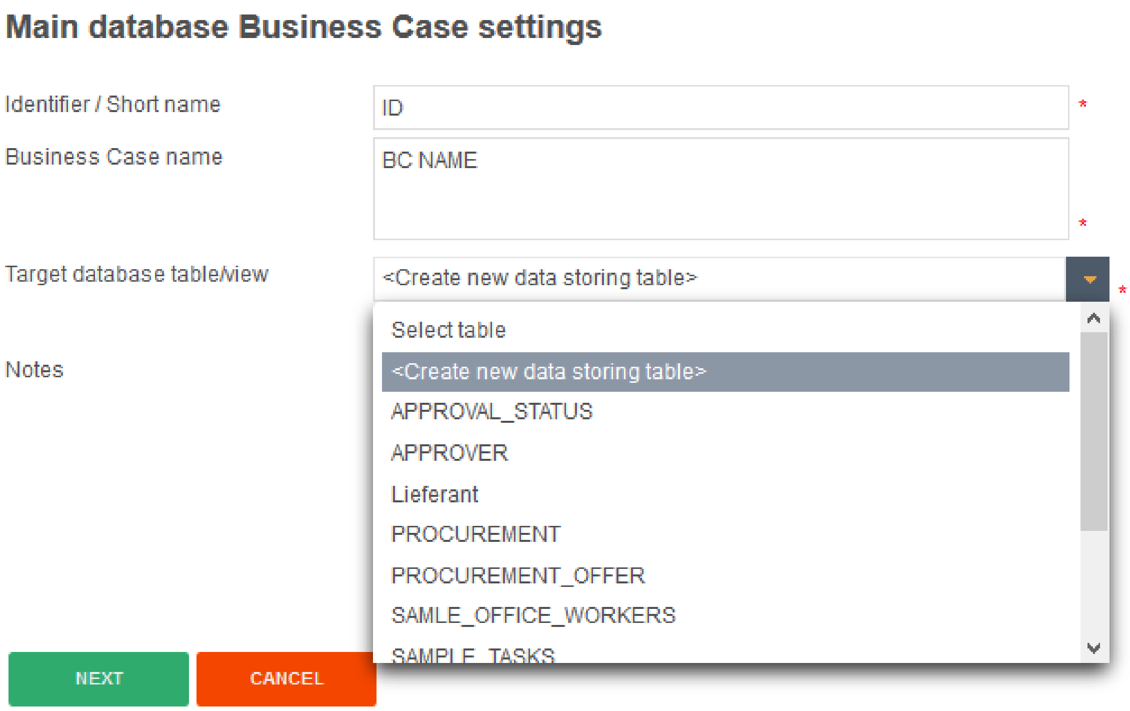
associated table/columns creating connection: Erste DDL *

○ This database connection type is used for creating new database tables/columns only (cannot access data in Business Cases)

This completes the setup of the database connection.

8.5 Automatically create a database table when creating new Business Cases

To create a new table when creating a new Business Case, select <Create new data storing table> in the setting ‚Target database table/view‘



Main database Business Case settings

Identifier / Short name: ID *

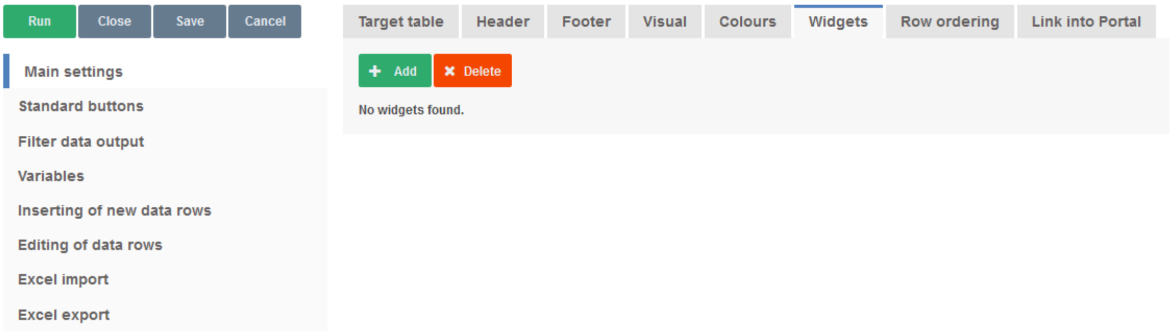
Business Case name: BC NAME *

Target database table/view: <Create new data storing table> *

Notes

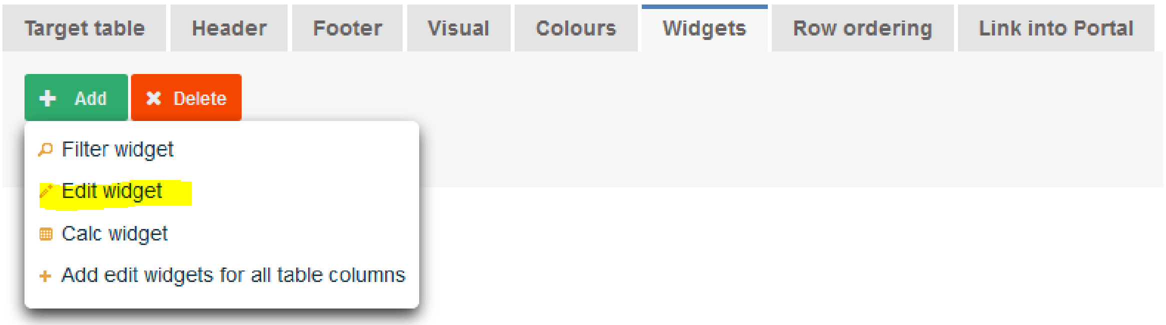
Afterwards please click on NEXT.

Then you will see a blank widget overview page.

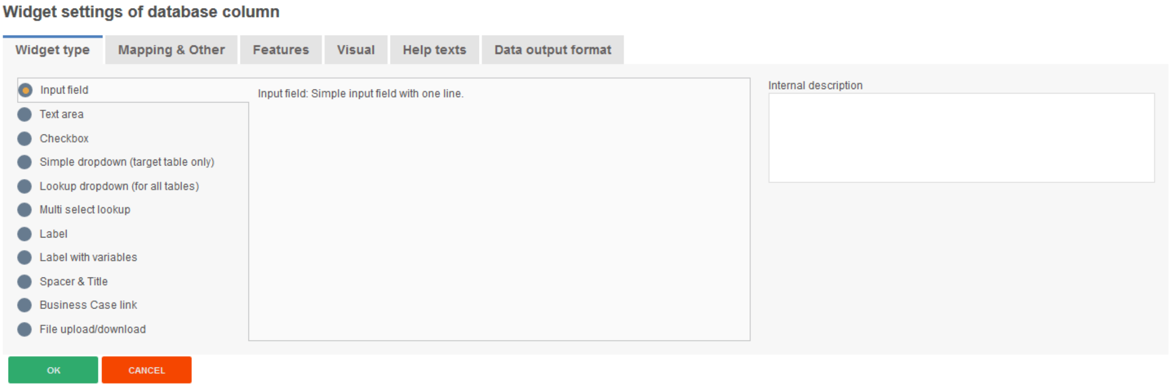


No widgets found.

The table will not appear until you create the first Edit widget



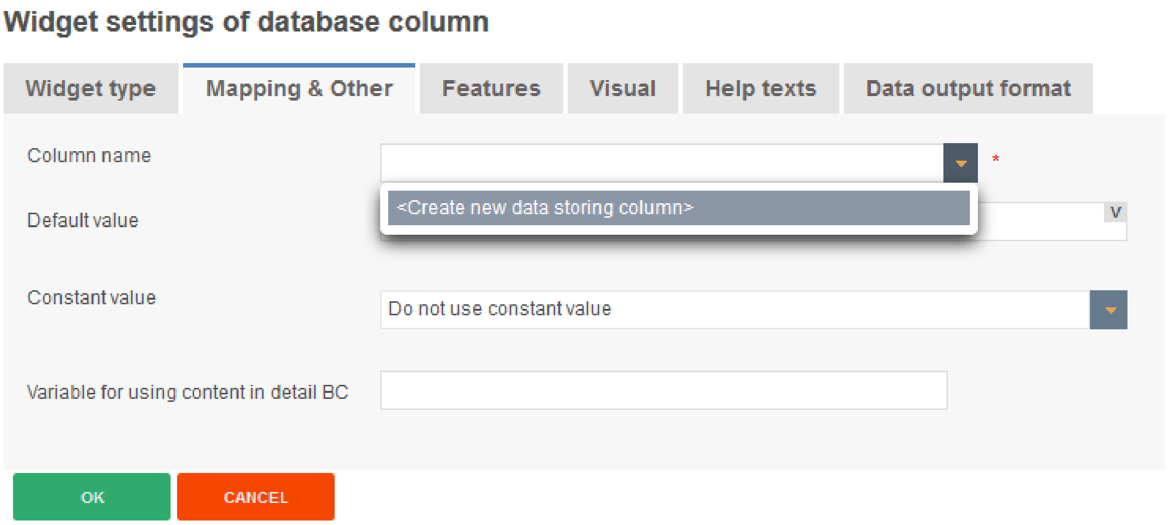
First, select the widget type



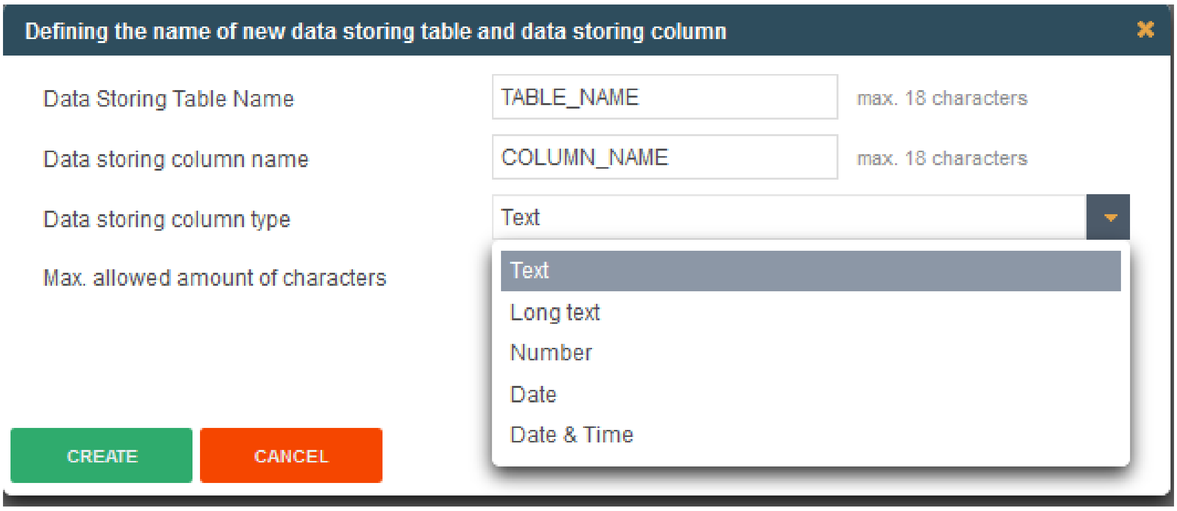
● Input field
○ Text area
○ Checkbox
○ Simple dropdown (target table only)
○ Lookup dropdown (for all tables)
○ Multi select lookup
○ Label
○ Label with variables
○ Spacer & Title
○ Business Case link
○ File upload/download

Input field: Simple input field with one line.

And then open the tab ‚Mapping and Other' and select in the setting column name '<Create new data storing column>'


Widget settings of database column
Widget type
Mapping & Other
Features
Visual
Help texts
Data output format
Column name
Default value
Constant value
Variable for using content in detail BC
<Create new data storing column>
Do not use constant value
OK
CANCEL

Then a window will appear, in which you specify the table name and the column names and types.



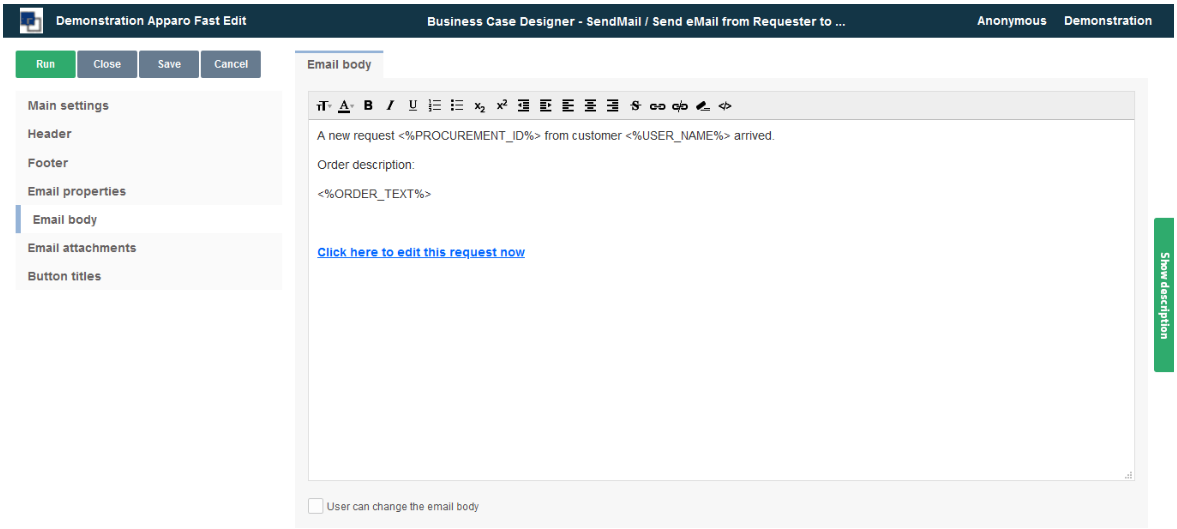
When creating further edit widgets then you will only be asked for the name and type for the new database column.

9 E-mail Business Cases (EBC)

An e-mail business case is used to send e-mails.

It contains the definitions, such as subject and body.
Content, recipient, etc. can be made dynamic with variables.
An e-mail business case is called usually by button from Single or Table business cases.

An e-mail business case can access all the widget reference variables of the current line.
All other variables can also be used.



Email body

A new request <%PROCUREMENT_ID%> from customer <%USER_NAME%> arrived.

Order description:

<%ORDER_TEXT%>

Click here to edit this request now

□ User can change the email body

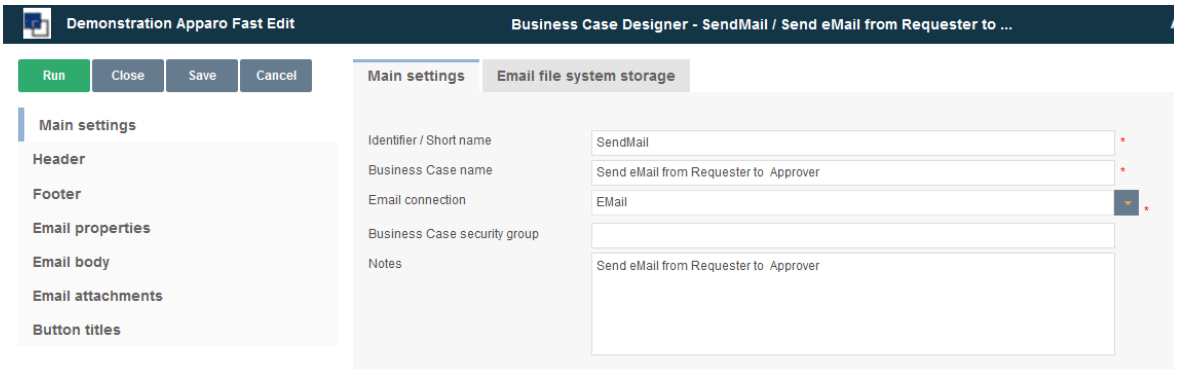
EBC with backlink to a Business Case

9.1 Creating an EBC

When you create an e-mail business cases you have to fill first, like all other types of business case, the general settings.

The email connection is used only to send and can also be used in other e-mail business cases.

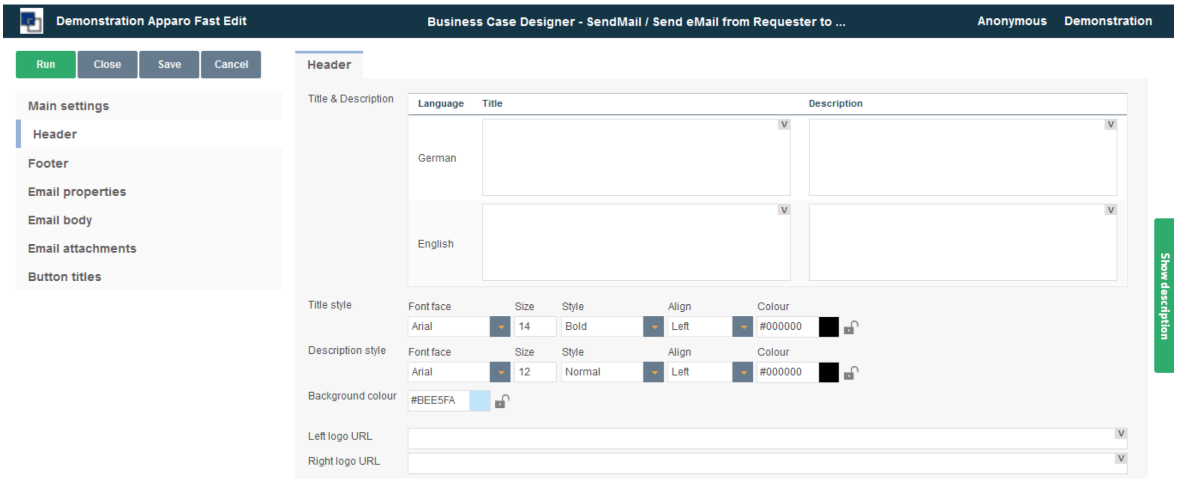
The optional security group ensures that only authorized users can send e-mails.
A number of security groups are to be entered separated by a comma.


Demonstration Apparo Fast Edit
Business Case Designer - SendMail / Send eMail from Requester to ...
Run
Close
Save
Cancel
Main settings
Header
Footer
Email properties
Email body
Email attachments
Button titles
Main settings
Email file system storage

Identifier / Short name	SendMail *
Business Case name	Send eMail from Requester to Approver *
Email connection	EMail *
Business Case security group	
Notes	Send eMail from Requester to Approver

9.2 Header and Footer

In the header or footer, you can define captions and descriptions, specify fonts and styles and insert logos. In the title, the description and the logo URL variables can be used.



Title & Description

Language	Title	Description
German		
English		

	Font face	Size	Style	Align	Colour
Title style	Arial	14	Bold	Left	#000000
Description style	Arial	12	Normal	Left	#000000

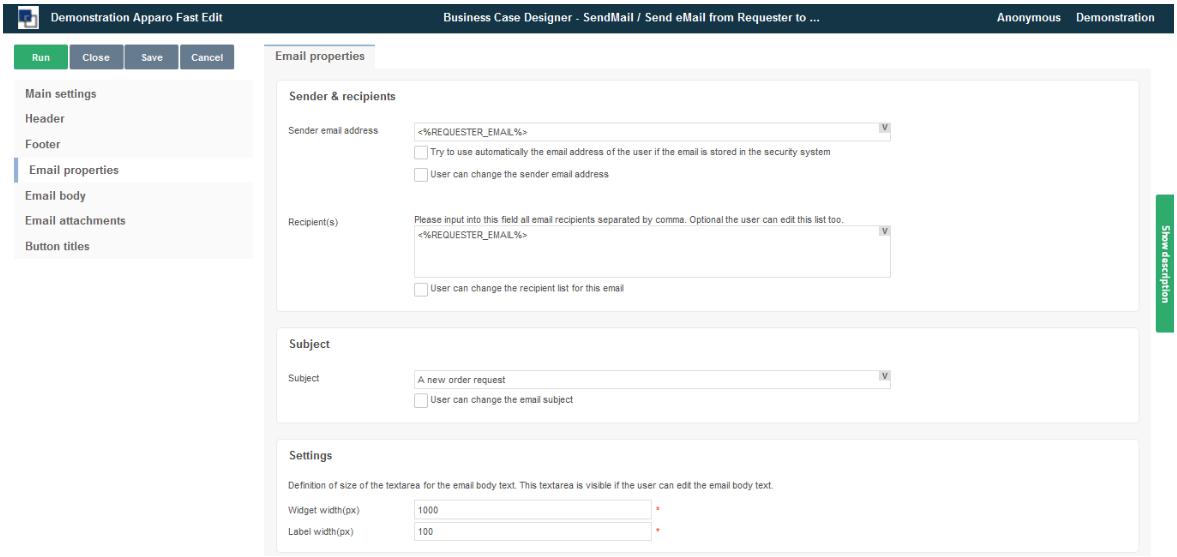
Background colour #BEE5FA

Left logo URL

Right logo URL

9.3 E-mail properties

Here you can define the sender e-mail, the recipient list and their settings.



Email properties

Sender & recipients

Sender email address: <%REQUESTER_EMAIL%>

□ Try to use automatically the email address of the user if the email is stored in the security system

□ User can change the sender email address

Recipient(s): Please input into this field all email recipients separated by comma. Optional the user can edit this list too.

<%REQUESTER_EMAIL%>

□ User can change the recipient list for this email

Subject

Subject: A new order request

□ User can change the email subject

Settings

Definition of size of the textarea for the email body text. This textarea is visible if the user can edit the email body text.

Widget width(px): 1000 *

Label width(px): 100 *

Sender & Recipients

Sender email address

Does the indicated in the e-mail sender address this need not match the e-mail sender from the e-mail link. Variables can be used.

Options:

- Try to use automatically the email address of the user if the email is stored in the security system
- Users can change the sender address

Recipient(s)
Contains all recipients, separated by commas.
Variables can be used.

Optionally, the user can modify the list.

Subject

Contains the subject of the e-mail, variables can be used.
Optional user may change the subject.

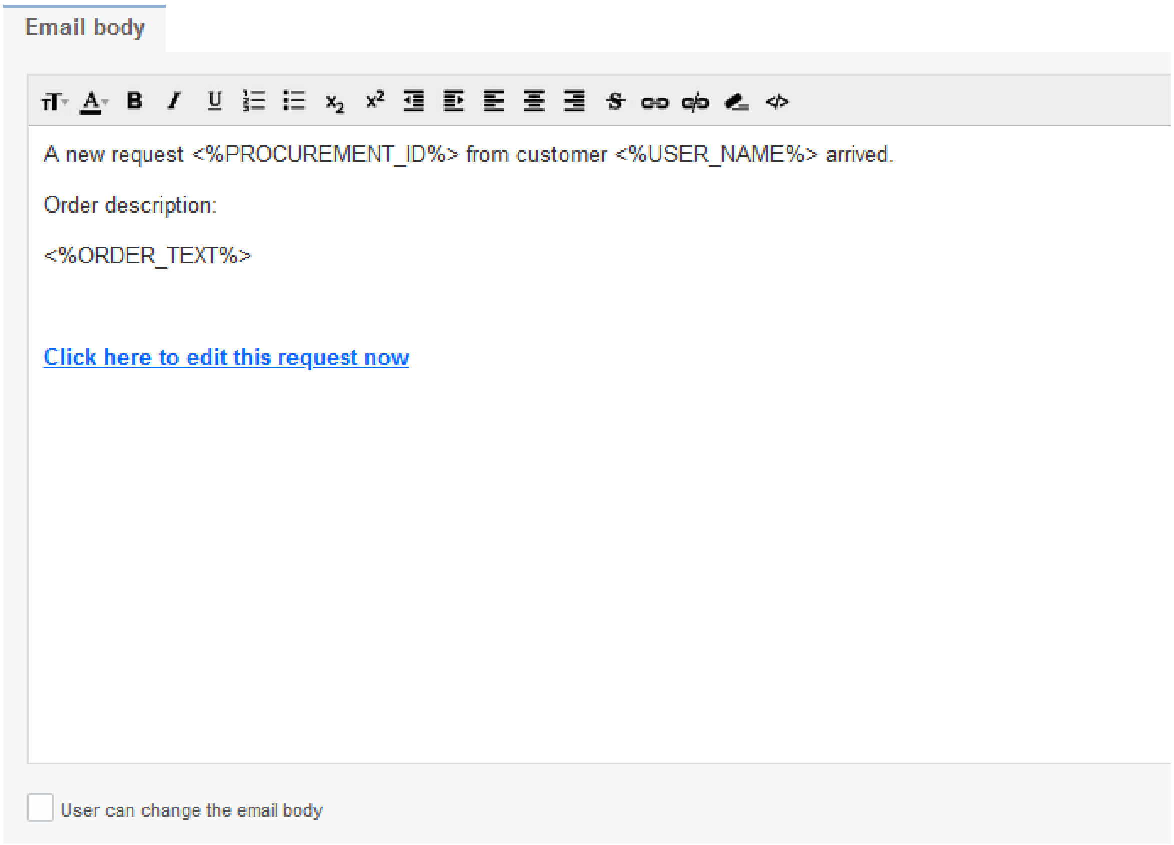
Settings

Defines the size of the text area for the e-mail text (visible if the user is allowed to change the e-mail text.

- Widget Width (px)
- Label Width (px)

9.4 E-Mail body

Contains the 'E-mail Body', also known as e-mail text.
If you use formatted text, the email HTML format is used.
You can use all the variables of the calling business cases.



A new request <%PROCUREMENT_ID%> from customer <%USER_NAME%> arrived.

Order description:

<%ORDER_TEXT%>

Click here to edit this request now

□ User can change the email body

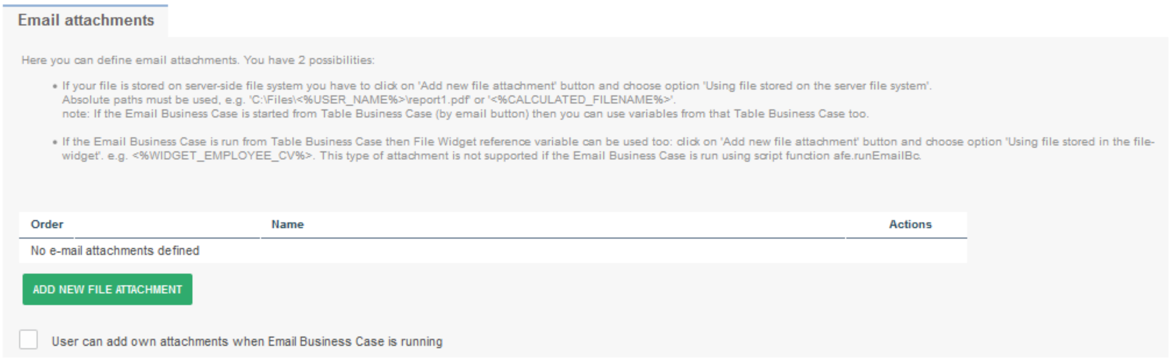
9.5 E-mail attachments

Here you can define email attachments. You have 3 possibilities:

If your file is stored on server-side file system you have to click on 'Add new file attachment' button and choose option 'Using file stored on the server file system'.
Absolute paths must be used, e.g. 'C:\Files\<%USER_NAME%>\report1.pdf' or '<%CALCULATED_FILENAME%>'.
Note: If the Email Business Case is started from Table Business Case (by email button) then you can use variables from that Table Business Case too.

If the Email Business Case is run from Table Business Case then File Widget reference variable can be used too: click on 'Add new file attachment' button and choose option 'Using file stored in the file-widget'. e.g. <%WIDGET_EMPLOYEE_CV%>. This type of attachment is not supported if the Email Business Case is run using script function afe.runEmailBc.

By option, the user can attach any file.



Email attachments

Here you can define email attachments. You have 2 possibilities:

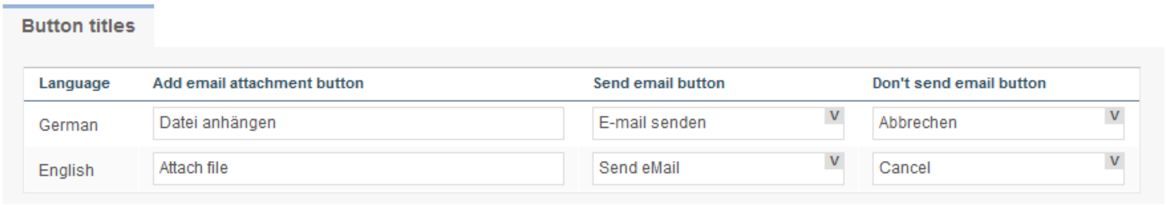
- If your file is stored on server-side file system you have to click on 'Add new file attachment' button and choose option 'Using file stored on the server file system'.
  Absolute paths must be used, e.g. 'C:\Files\<%USER_NAME%>\report1.pdf' or '<%CALCULATED_FILENAME%>'.
  note: If the Email Business Case is started from Table Business Case (by email button) then you can use variables from that Table Business Case too.
- If the Email Business Case is run from Table Business Case then File Widget reference variable can be used too: click on 'Add new file attachment' button and choose option 'Using file stored in the file-widget'. e.g. <%WIDGET_EMPLOYEE_CV%>. This type of attachment is not supported if the Email Business Case is run using script function afe.runEmailBc.

Order	Name	Actions
No e-mail attachments defined		

□ User can add own attachments when Email Business Case is running

9.6 Button titles

Contains the label of the buttons in all installed languages



Button titles

Language	Add email attachment button	Send email button	Don't send email button
German	Datei anhängen	E-mail senden	Abbrechen
English	Attach file	Send eMail	Cancel

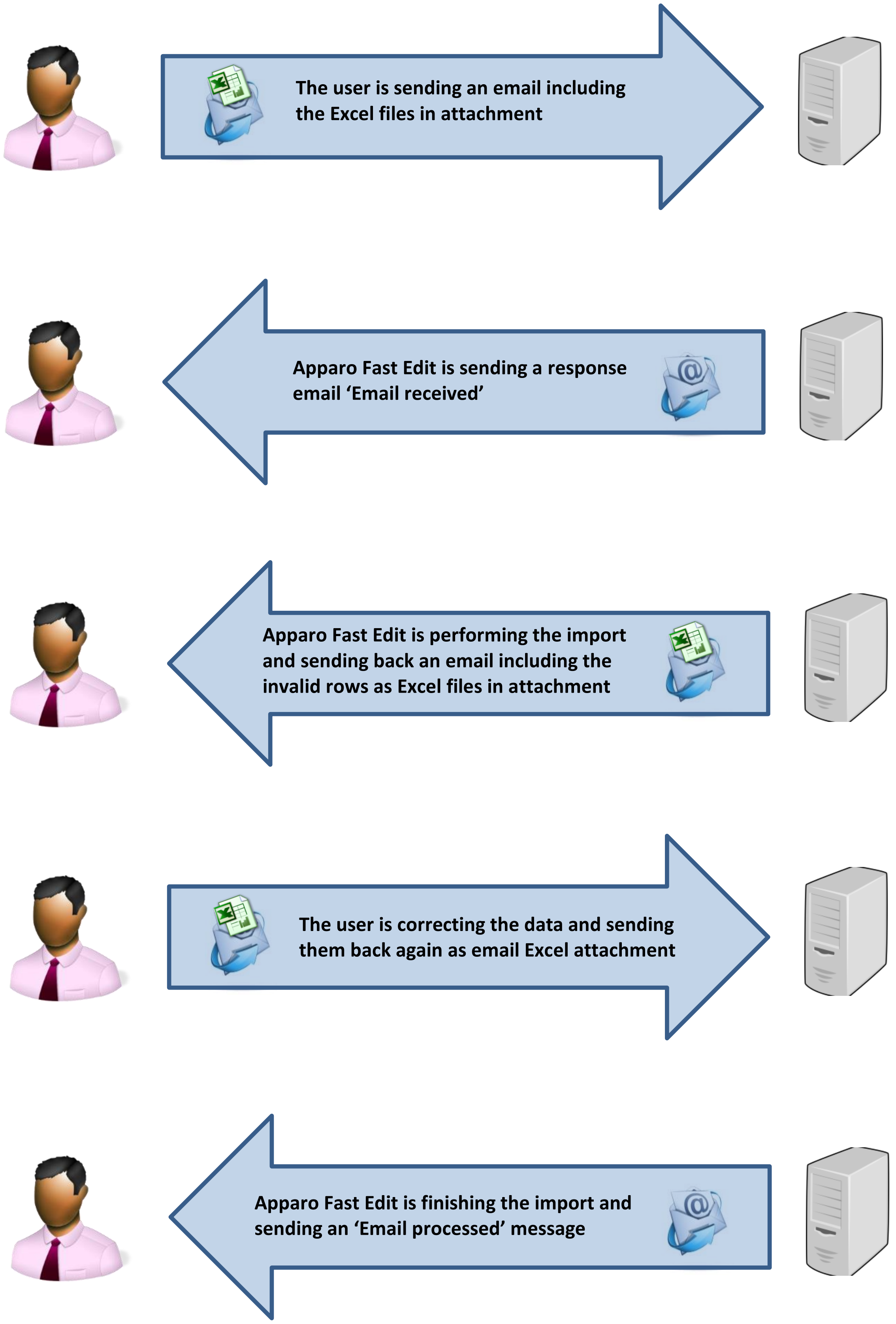
10 E-Mail Import Business Case (EIBC)

The Excel Email Import feature enables you to import data that is stored in Excel files (CSV, XLS and XLSX) from email attachments.

That means the user can send an email with **Excel files in attachment and the data of these Excel files will be imported automatically in your relational databases**.

The user is getting automatically answer-emails that are informing the user about the progress or data quality issues.

All activities can be logged in database table, the emails and attachments can be stored physically on the server.



The user is sending an email including the Excel files in attachment

Apparo Fast Edit is sending a response email ‘Email received’

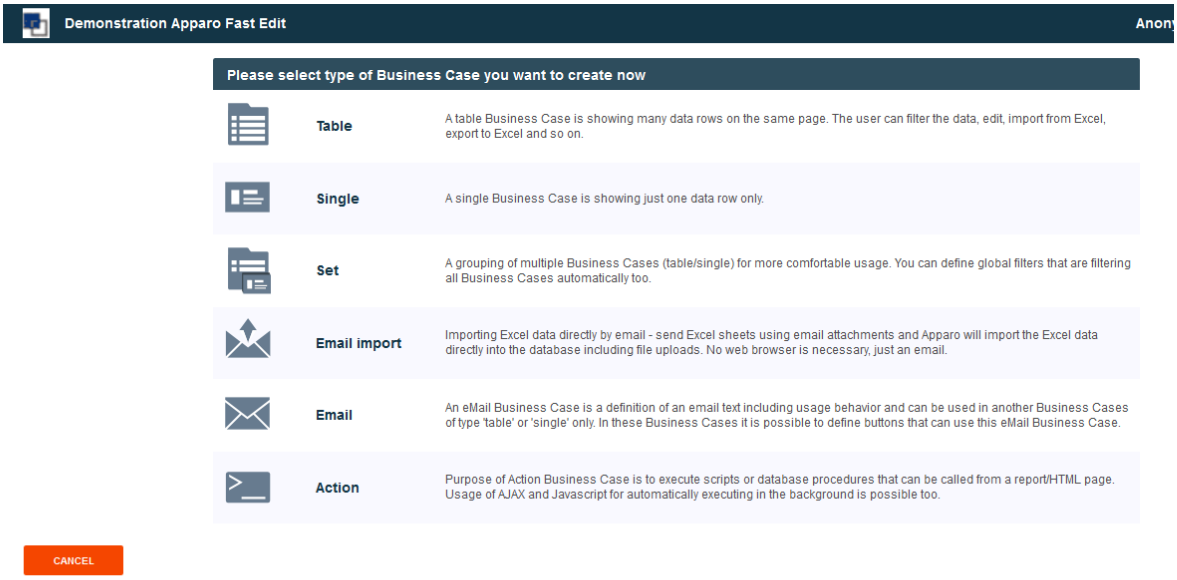
Apparo Fast Edit is performing the import and sending back an email including the invalid rows as Excel files in attachment

The user is correcting the data and sending them back again as email Excel attachment

Apparo Fast Edit is finishing the import and sending an ‘Email processed’ message

10.1 Creating a new Business Case of Type 'Email Import'

When clicking on New Business Case in the Business Case list the following selection list will appear:



Please select type of Business Case you want to create now

Table	A table Business Case is showing many data rows on the same page. The user can filter the data, edit, import from Excel, export to Excel and so on.
Single	A single Business Case is showing just one data row only.
Set	A grouping of multiple Business Cases (table/single) for more comfortable usage. You can define global filters that are filtering all Business Cases automatically too.
Email import	Importing Excel data directly by email - send Excel sheets using email attachments and Apparo will import the Excel data directly into the database including file uploads. No web browser is necessary, just an email.
Email	An eMail Business Case is a definition of an email text including usage behavior and can be used in another Business Cases of type 'table' or 'single' only. In these Business Cases it is possible to define buttons that can use this eMail Business Case.
Action	Purpose of Action Business Case is to execute scripts or database procedures that can be called from a report/HTML page. Usage of AJAX and Javascript for automatically executing in the background is possible too.

Click on Email Import to create a new 'Email Import Business Case'

For the setup we will need a pre-defined email connection and at least one database connection, used for the Business Case that will perform the import.

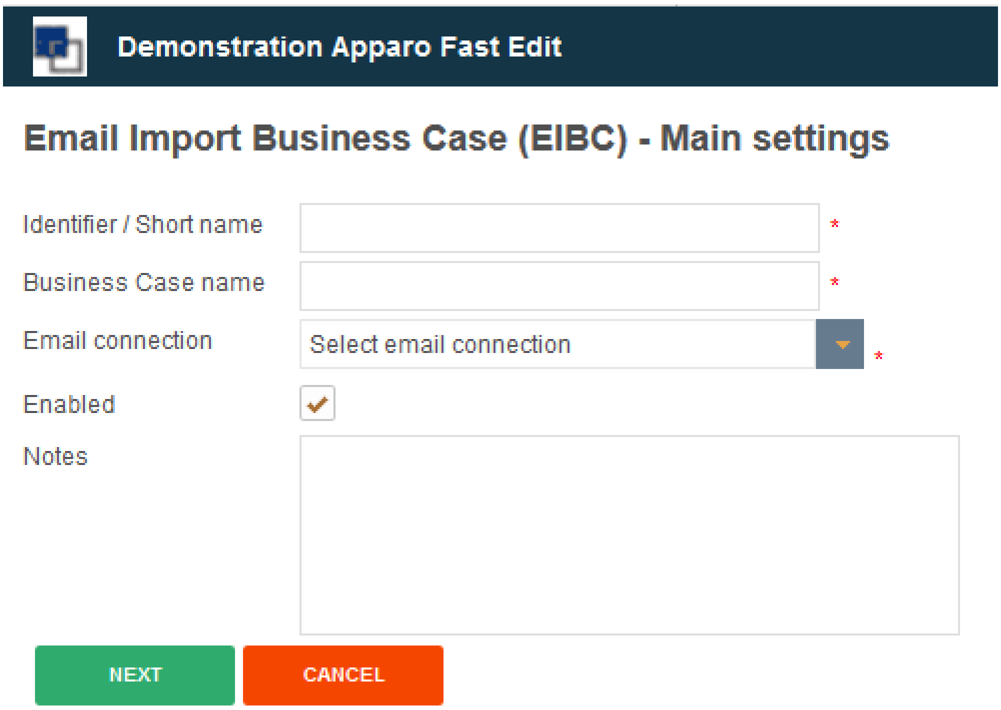
These Business Cases are also containing all definitions for securing the data quality.

The Business Cases must have activated the Excel file import feature.

10.1.1 New Business Case - Main Settings

The main settings require the following settings:

- **Identifier:** The short name of the Business Case (must be unique)
- **Business Case Name:** This name will appear as name when we link the Business Case to the portal
- **Email connection:** The email connection for sending and receiving emails
- **Internal description:** Optional. For documentation purposes only.



Demonstration Apparo Fast Edit

Email Import Business Case (EIBC) - Main settings

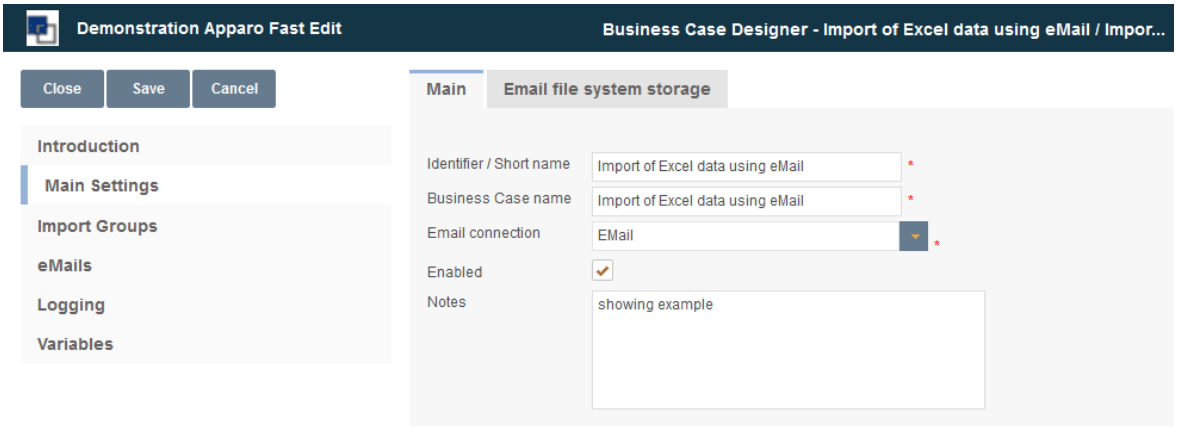
Identifier / Short name	*
Business Case name	*
Email connection	Select email connection *
Enabled	☑
Notes	

Fill all necessary fields and click ‘Next’ to create the Business Case

10.2 Overview of all possible settings

Once the Business Case is created we will see the following overview.
Here you can save and close the Business Case and click though the tabs of the settings:

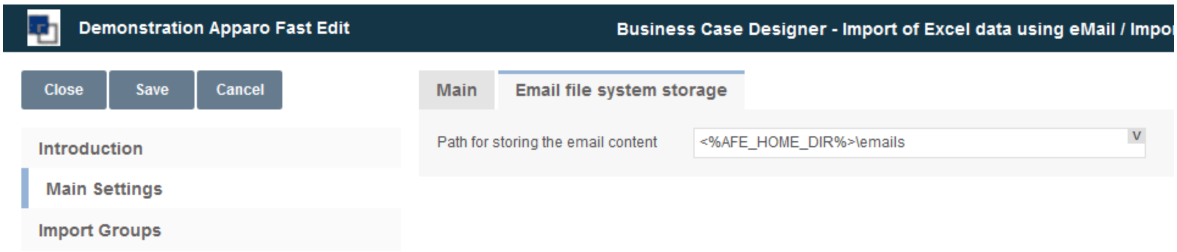
- **Introduction:** Contains usage examples and explanations
- **Main Settings:** Contains the main settings and the server path for storing emails and attachments
- **Importing Groups:** Contains the import groups, the detailed settings how shall be imported
- **eMails:** Here you can define the text of a failure email, for the case that no import group is matching
- **Logging:** Contains the logging settings, details like user name can be mapped here to a database column
- **Variables:** Contains predefined variables and you can create own JavaScript variables


Demonstration Apparo Fast Edit
Business Case Designer - Import of Excel data using eMail / Impor...
Close
Save
Cancel
Introduction
Main Settings
Import Groups
eMails
Logging
Variables
Main
Email file system storage

Identifier / Short name: Import of Excel data using eMail *
Business Case name: Import of Excel data using eMail *
Email connection: EMail *
Enabled: ☑
Notes: showing example

10.3 Main Settings

This tab contains, beside from the main settings, the path for storing emails and attachments physically on the server.

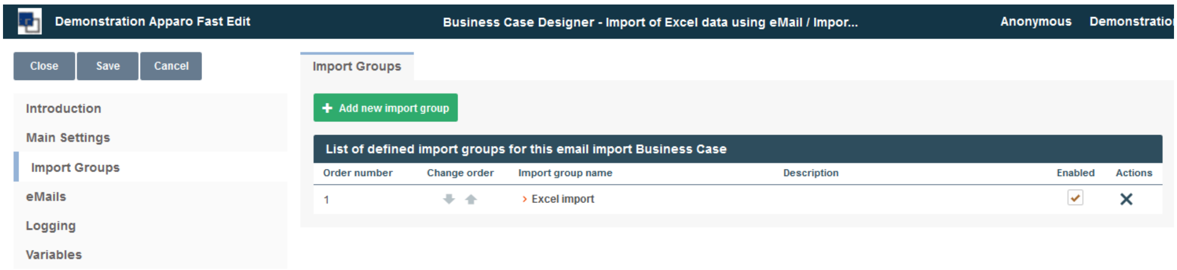

Demonstration Apparo Fast Edit
Business Case Designer - Import of Excel data using eMail / Impo
Close
Save
Cancel
Introduction
Main Settings
Import Groups
Main
Email file system storage

Path for storing the email content: <%AFE_HOME_DIR%>\emails

email file system storage

10.4 Importing Groups

An import group contains the definitions what attachments are expected and what Business Case shall perform the import. It also contains the security settings, log settings and the response email texts.



List of defined import groups for this email import Business Case

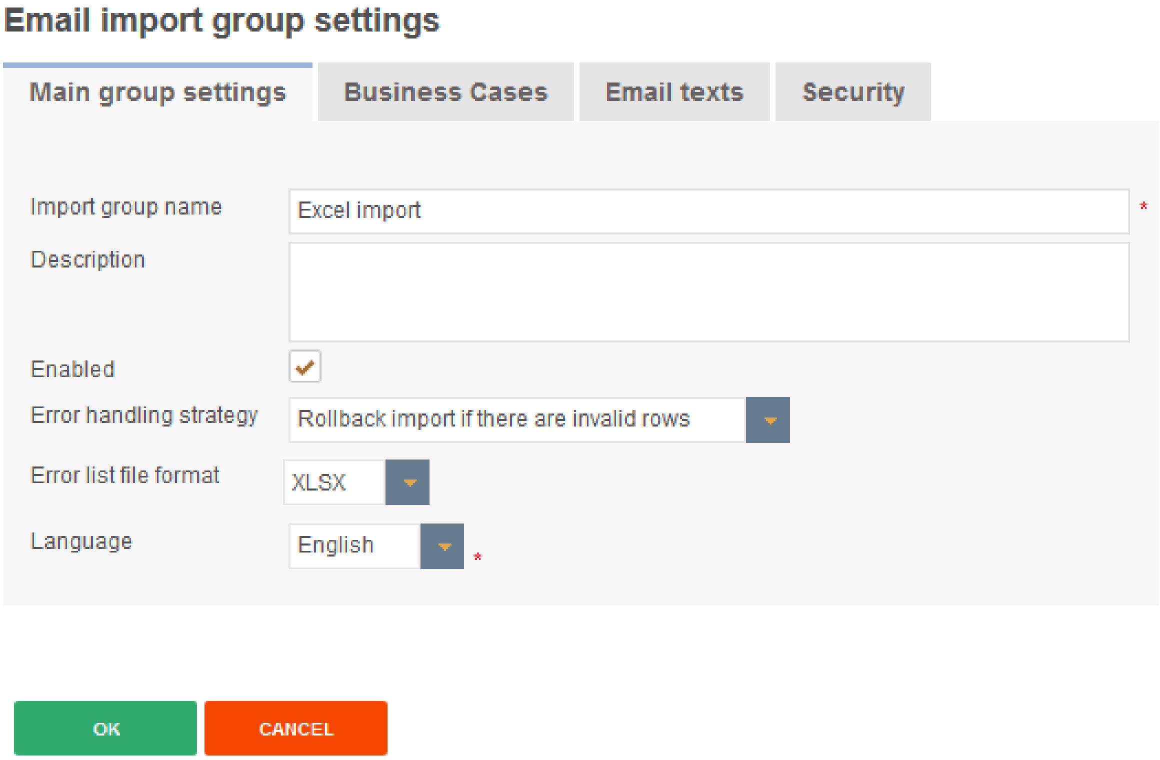
Order number	Change order	Import group name	Description	Enabled	Actions
1		› Excel import		✓	✕

Adding a new import group

10.5 Importing group settings

10.5.1 Main group settings

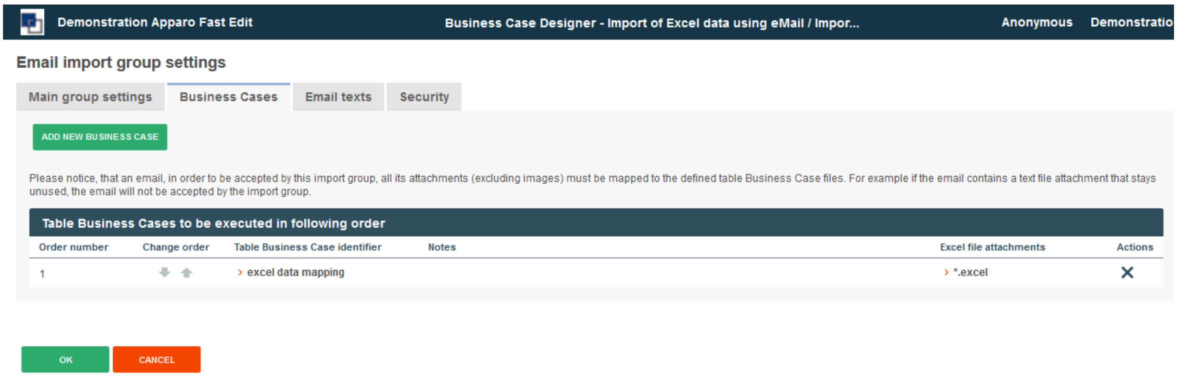
It contains the import group name (unique) and an optional description text.
You can enable or disable the import group here.



Import group name	Excel import *
Description	
Enabled	☑
Error handling strategy	Rollback import if there are invalid rows
Error list file format	XLSX
Language	English *

10.5.2 Business Cases

Contains the mapping to all Business Cases that are defined to perform the import. When an email from a valid sender arrives, Apparo Fast Edit automatically analyses the structure of the attachments and comparing the structure with the defined import groups.



Demonstration Apparo Fast Edit
Business Case Designer - Import of Excel data using eMail / Impor...
Anonymous
Demonstratio

Email import group settings

Main group settings
Business Cases
Email texts
Security
ADD NEW BUSINESS CASE

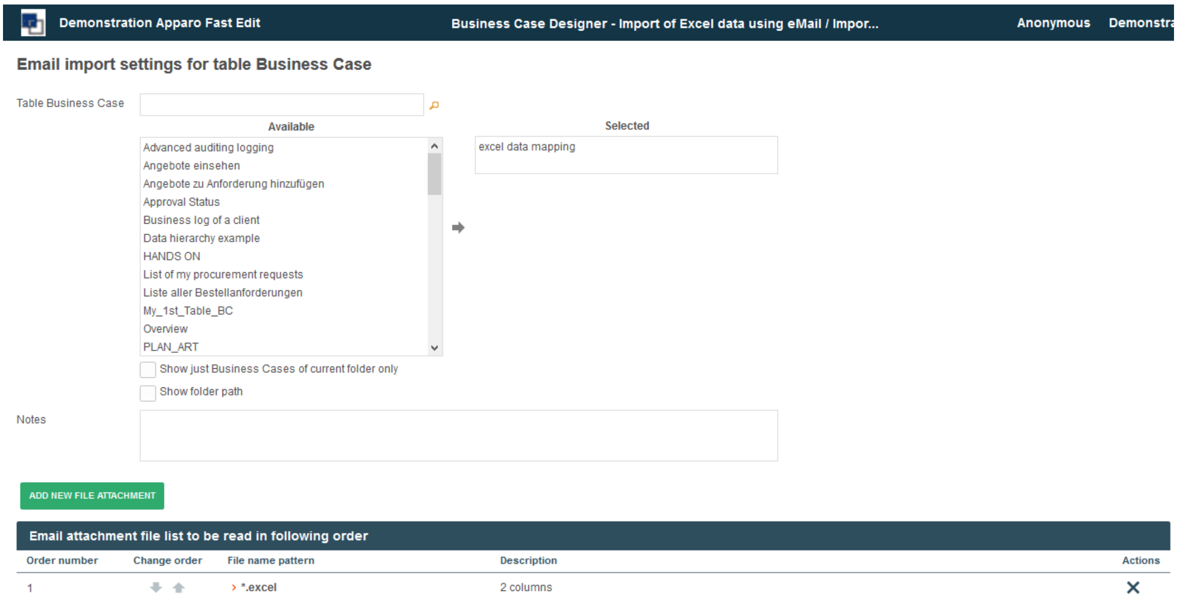
Please notice, that an email, in order to be accepted by this import group, all its attachments (excluding images) must be mapped to the defined table Business Case files. For example if the email contains a text file attachment that stays unused, the email will not be accepted by the import group.

Table Business Cases to be executed in following order

Order number	Change order	Table Business Case identifier	Notes	Excel file attachments	Actions
1	⬇ ⬆	› excel data mapping		› *.excel	✕

10.5.3 Add new attachment

You need to define at least one email attachment for every defined importing Business Case.



Demonstration Apparo Fast Edit
Business Case Designer - Import of Excel data using eMail / Impor...
Anonymous
Demonstra

Email import settings for table Business Case

Table Business Case

Available:
Advanced auditing logging
Angebote einsehen
Angebote zu Anforderung hinzufügen
Approval Status
Business log of a client
Data hierarchy example
HANDS ON
List of my procurement requests
Liste aller Bestellanforderungen
My_1st_Table_BC
Overview
PLAN_ART

Selected:
excel data mapping

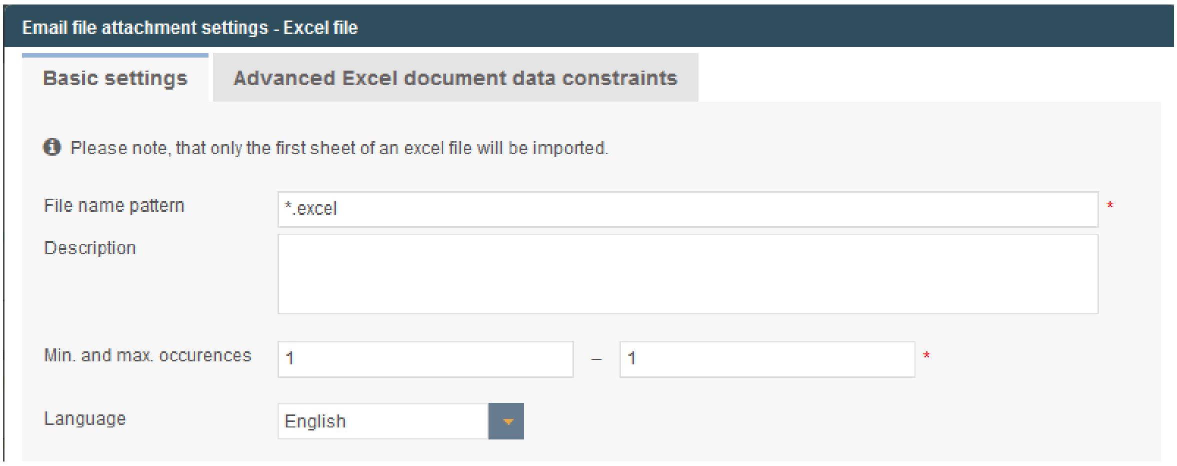
□ Show just Business Cases of current folder only
□ Show folder path

Notes

Email attachment file list to be read in following order

Order number	Change order	File name pattern	Description	Actions
1	⬇ ⬆	› *.excel	2 columns	✕

Creating a new file attachment



Email file attachment settings - Excel file

Basic settings | Advanced Excel document data constraints

Please note, that only the first sheet of an excel file will be imported.

File name pattern: *.excel *

Description:

Min. and max. occurences: 1 – 1 *

Language: English

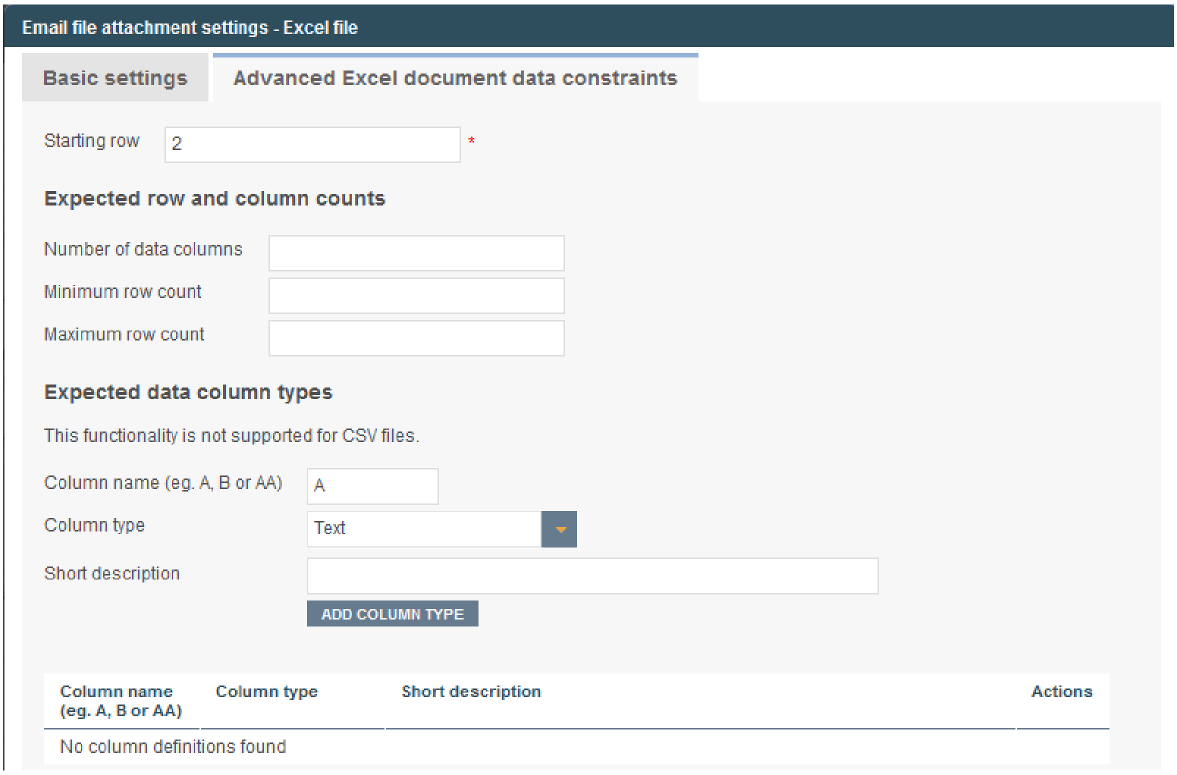
The following properties are expected:

- **File name pattern:** Defines the allowed file extension (*.excel allows all Excel files: .xls, .xlsx, .csv)
- **Description:** For the internal documentation
- **Starting row:** For the case the contains a header in row 1, we start the import in row 2
- **Min and Max occurrences:** The minimum should be at least 1 – the user gets an error email if the attachment contains less attachments than expected
- **Language:** Important for language sensitive data types e.g. date

10.5.4 Advanced Excel document data constraints

This feature is optional:

Here you can define the expected data column types, this feature allows Apparo Fast Edit to better distinguish similar Excel file attachments.



Email file attachment settings - Excel file

Basic settings | Advanced Excel document data constraints

Starting row: 2 *

Expected row and column counts

Number of data columns:

Minimum row count:

Maximum row count:

Expected data column types

This functionality is not supported for CSV files.

Column name (eg. A, B or AA): A

Column type: Text

Short description:

Column name (eg. A, B or AA)	Column type	Short description	Actions
No column definitions found			

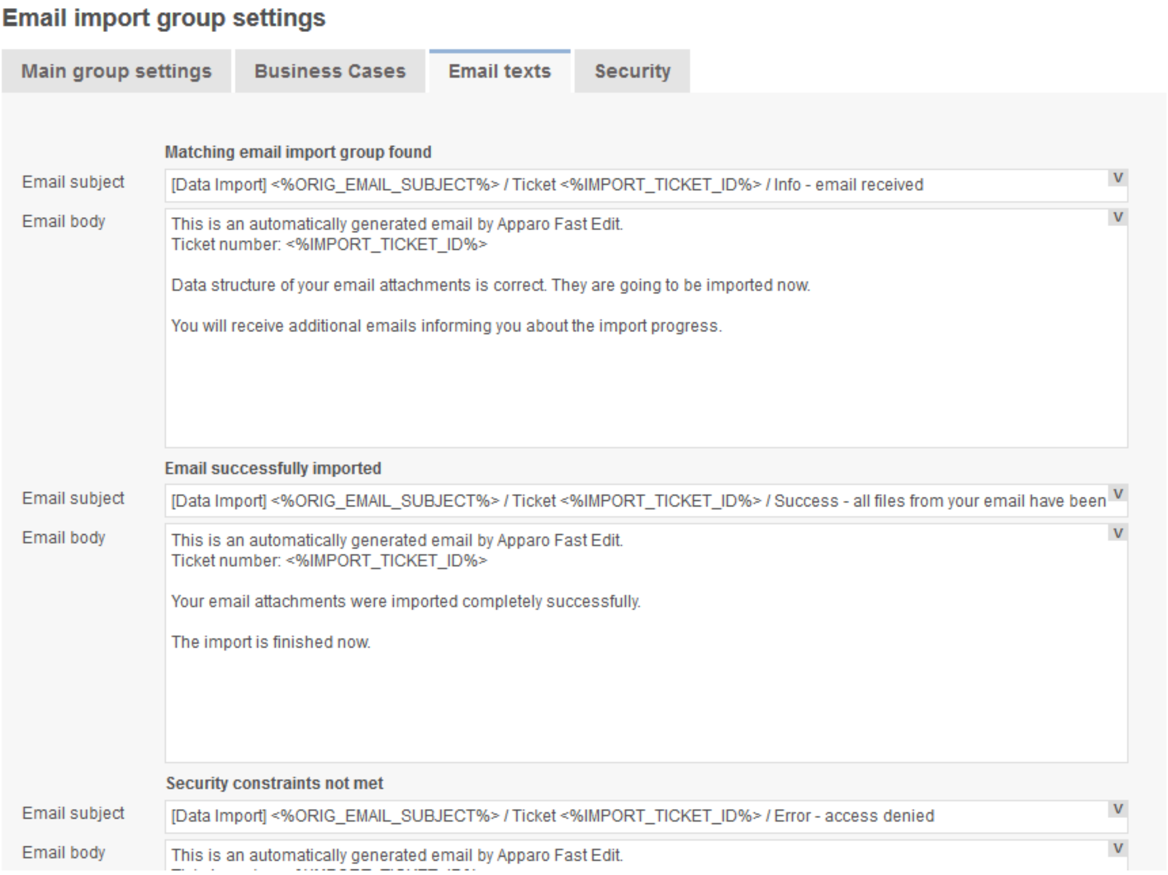
Expected data column types

10.5.5 Email texts

Contain the bodies of different auto response emails.
Optional. When empty, no email will be sent.

There different kinds of response emails:

- **‘Matching email import group found’:** Sent when email received
- **‘Confirmation email’:** Sent when confirmation by user is necessary
- **‘Security constraints not met’:** Sender does have the required rights for the import
- **‘Email processing cancelled because of error‘:** Sent in case of data errors and the import is set to ’Cancel the import in case of errors’
- **‘Errors occurred, but import was performed’:** Sent when the import is finished with errors
- **‘Email successfully imported’**
- **‘Limited access prevented email processing’:** The feature ‘limited access’ is activated and prevents the import
- **‘Error list’:** Email with file attachment containing all erroneous rows



Email import group settings

Matching email import group found

Email subject: [Data Import] <%ORIG_EMAIL_SUBJECT%> / Ticket <%IMPORT_TICKET_ID%> / Info - email received

Email body:
This is an automatically generated email by Apparo Fast Edit.
Ticket number: <%IMPORT_TICKET_ID%>

Data structure of your email attachments is correct. They are going to be imported now.

You will receive additional emails informing you about the import progress.

Email successfully imported

Email subject: [Data Import] <%ORIG_EMAIL_SUBJECT%> / Ticket <%IMPORT_TICKET_ID%> / Success - all files from your email have been

Email body:
This is an automatically generated email by Apparo Fast Edit.
Ticket number: <%IMPORT_TICKET_ID%>

Your email attachments were imported completely successfully.

The import is finished now.

Security constraints not met

Email subject: [Data Import] <%ORIG_EMAIL_SUBJECT%> / Ticket <%IMPORT_TICKET_ID%> / Error - access denied

Email body:
This is an automatically generated email by Apparo Fast Edit.

Auto response email texts

10.5.6 Security

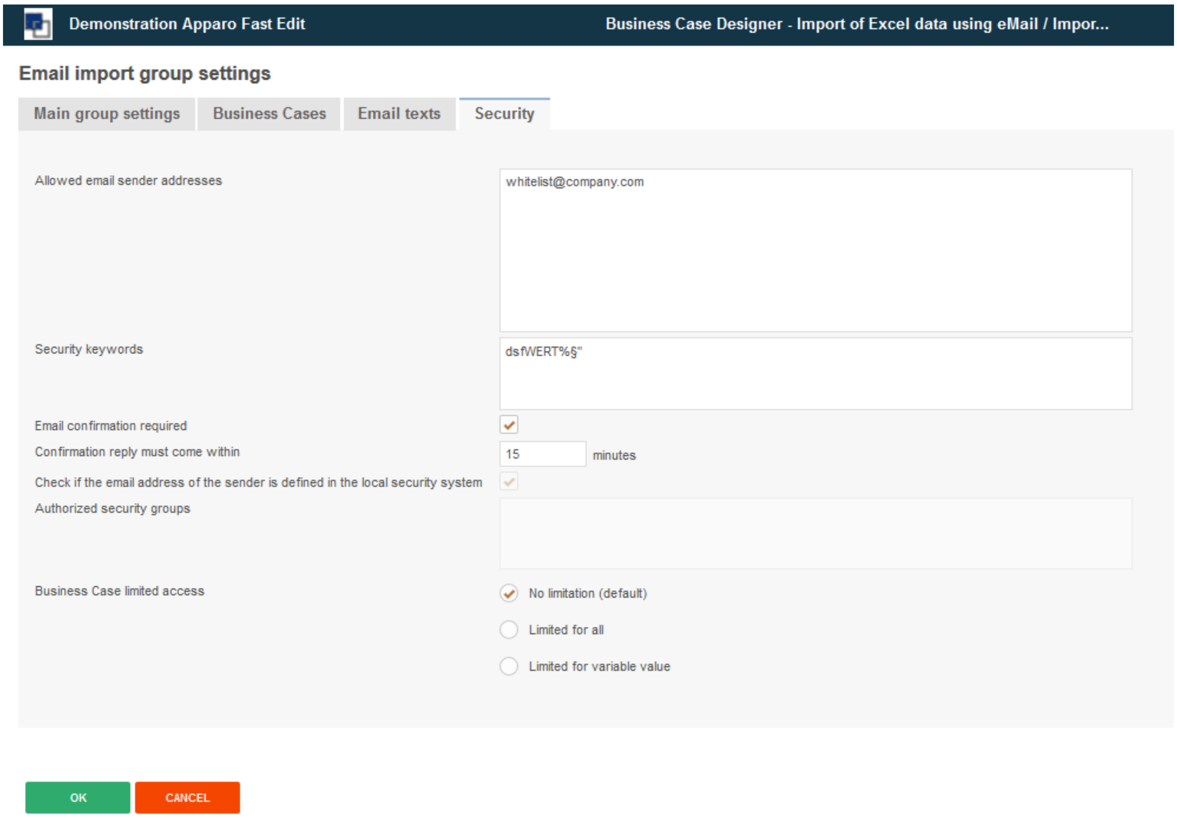
The email import can be secured:

- by limiting the allowed email senders (as list of email addresses)
- by limiting the email senders based on a security group:
  - the user account including email address must be stored in an MS Active Directory system
- by using a text keyword that must be delivered in the subject or body of the email
- by enabling a confirmation email (an automated email is returned to the sender, which has to be confirmed within a defined timeframe)
- by a list of trusted email servers (only emails of listed servers are accepted)

  All emails can be encrypted using SSL

The general access can be restricted by using the limited access feature in the tab 'Security':

- **No limitations:** Default value, no restrictions
- **Limited for all:** Nobody can use this import group
- **Limited for variable value:** Not useable if a variable return 'true' – e.g. a variable returns true during the time period when the database is performing maintenance tasks


Demonstration Apparo Fast Edit
Business Case Designer - Import of Excel data using eMail / Impor...

Email import group settings

Main group settings
Business Cases
Email texts
Security

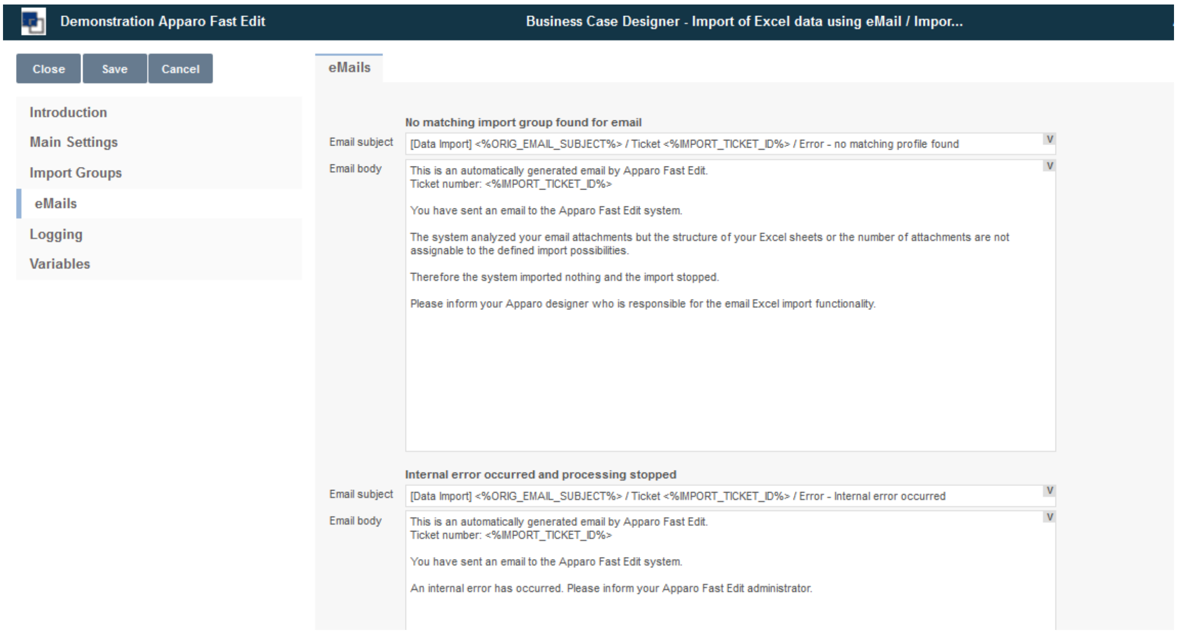
Allowed email sender addresses	whitelist@company.com
Security keywords	dsfWERT%§"
Email confirmation required	☑
Confirmation reply must come within	15 minutes
Check if the email address of the sender is defined in the local security system	☑
Authorized security groups	
Business Case limited access	● No limitation (default) ○ Limited for all ○ Limited for variable value

10.6 eMails

It contains the general error message for the case that no matching import group could be found to perform the import.

This can have different causes:

- Erroneous setup of import groups
- Erroneous attachments (e.g. file does not match the file import template)
- The import group can be temporary disabled by the administrator
- disabled by a variable (e.g. a time controlled variable to avoid issues during a maintenance period)


Demonstration Apparo Fast Edit
Business Case Designer - Import of Excel data using eMail / Impor...
Close
Save
Cancel
Introduction
Main Settings
Import Groups
eMails
Logging
Variables
eMails

No matching import group found for email

Email subject: [Data Import] <%ORIG_EMAIL_SUBJECT%> / Ticket <%IMPORT_TICKET_ID%> / Error - no matching profile found

Email body:

This is an automatically generated email by Apparo Fast Edit.
Ticket number: <%IMPORT_TICKET_ID%>

You have sent an email to the Apparo Fast Edit system.

The system analyzed your email attachments but the structure of your Excel sheets or the number of attachments are not assignable to the defined import possibilities.

Therefore the system imported nothing and the import stopped.

Please inform your Apparo designer who is responsible for the email Excel import functionality.

Internal error occurred and processing stopped

Email subject: [Data Import] <%ORIG_EMAIL_SUBJECT%> / Ticket <%IMPORT_TICKET_ID%> / Error - Internal error occurred

Email body:

This is an automatically generated email by Apparo Fast Edit.
Ticket number: <%IMPORT_TICKET_ID%>

You have sent an email to the Apparo Fast Edit system.

An internal error has occurred. Please inform your Apparo Fast Edit administrator.

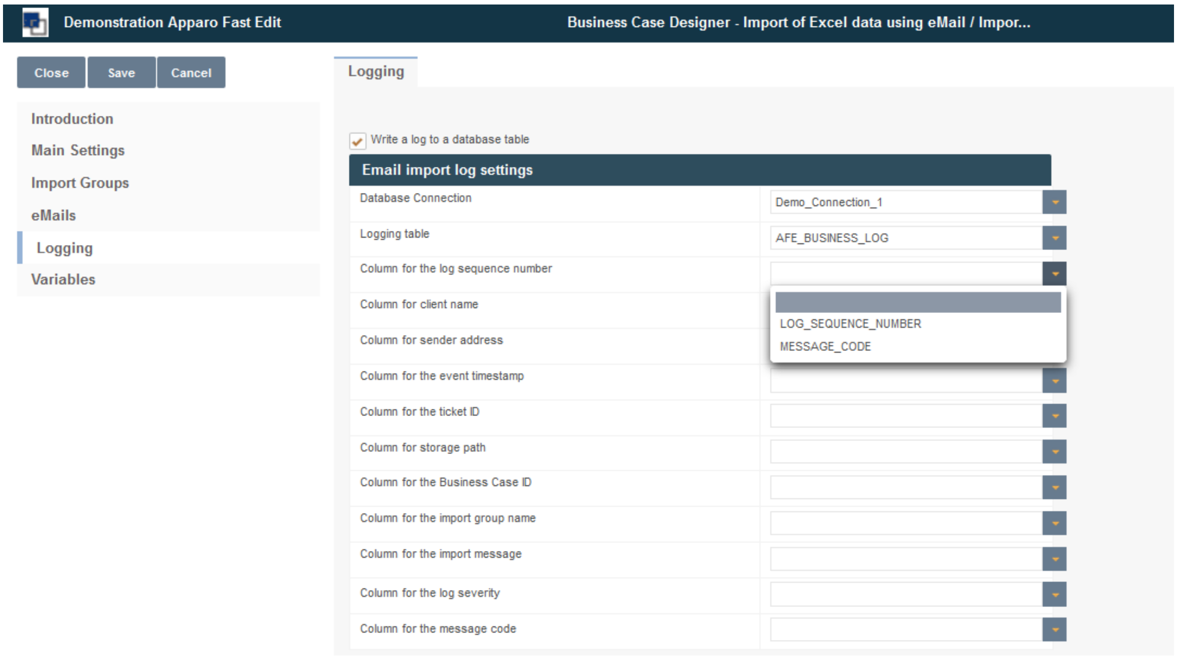
General error messages

10.7 Logging

All events can be logged into an own database table.

In order to log all possible values the table will need the following columns:

- **Column for client name:** What client was used for the import
- **Column for sender address:** What sender address tried to import
- **Column for event timestamp:** Timestamp
- **Column for ticket ID:** Ticket ID, unique ID for the import event
- **Column for storage path:** Where is the email and attachment stored
- **Column for Business Case ID:** What Business Case performed the import
- **Column for importing group name:** What import group performed the import
- **Column for the import message:** Plain text with error message
- **Column for the log severity:** Can be warning, error, info or debug
- **Column for the message code:** A number representing the message



☑ Write a log to a database table

Email import log settings

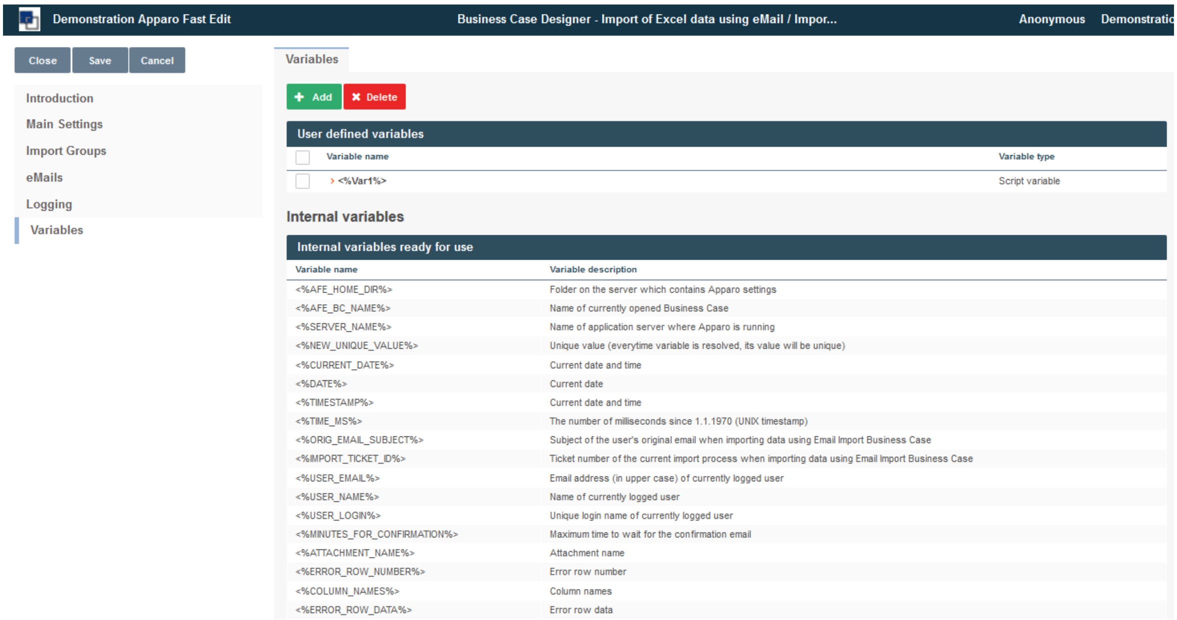
Database Connection	Demo_Connection_1
Logging table	AFE_BUSINESS_LOG
Column for the log sequence number	
Column for client name	
Column for sender address	
Column for the event timestamp	
Column for the ticket ID	
Column for storage path	
Column for the Business Case ID	
Column for the import group name	
Column for the import message	
Column for the log severity	
Column for the message code	

Mapping of the database table based log

10.8 Variables

Allows to create own JavaScript variables.
Hint: JavaScript variables can perform SQL too.

There is a list with pre-defined variables, ready to use.



User defined variables

□	Variable name	Variable type
□	› <%Var1%>	Script variable

Internal variables

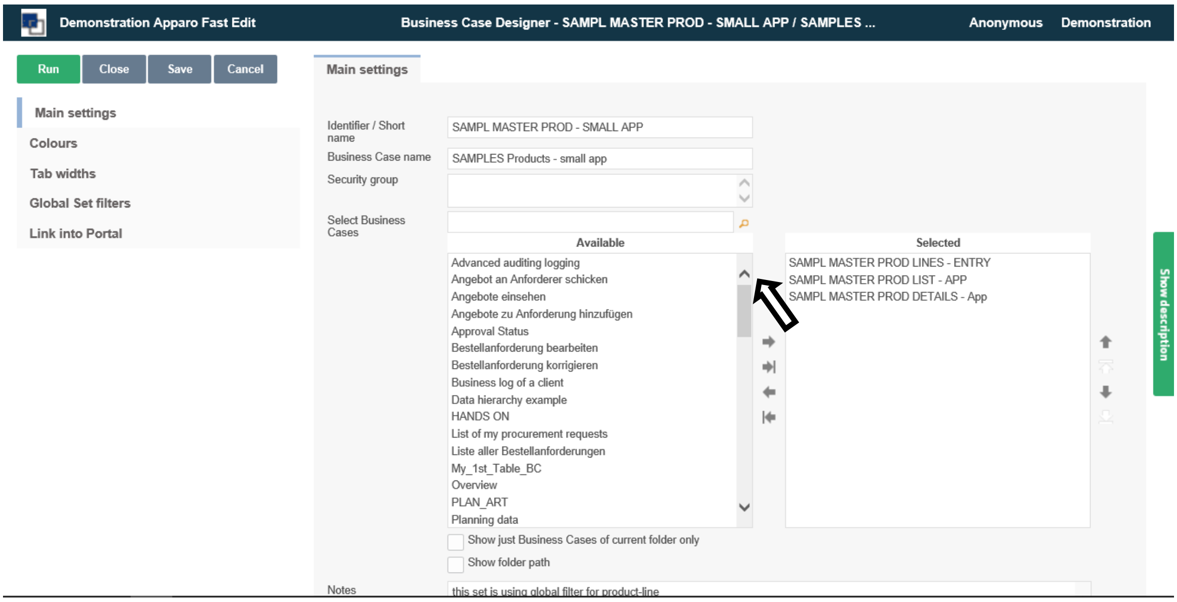
Internal variables ready for use

Variable name	Variable description
<%AFE_HOME_DIR%>	Folder on the server which contains Apparo settings
<%AFE_BC_NAME%>	Name of currently opened Business Case
<%SERVER_NAME%>	Name of application server where Apparo is running
<%NEW_UNIQUE_VALUE%>	Unique value (everytime variable is resolved, its value will be unique)
<%CURRENT_DATE%>	Current date and time
<%DATE%>	Current date
<%TIMESTAMP%>	Current date and time
<%TIME_MS%>	The number of milliseconds since 1.1.1970 (UNIX timestamp)
<%ORIG_EMAIL_SUBJECT%>	Subject of the user's original email when importing data using Email Import Business Case
<%IMPORT_TICKET_ID%>	Ticket number of the current import process when importing data using Email Import Business Case
<%USER_EMAIL%>	Email address (in upper case) of currently logged user
<%USER_NAME%>	Name of currently logged user
<%USER_LOGIN%>	Unique login name of currently logged user
<%MINUTES_FOR_CONFIRMATION%>	Maximum time to wait for the confirmation email
<%ATTACHMENT_NAME%>	Attachment name
<%ERROR_ROW_NUMBER%>	Error row number
<%COLUMN_NAMES%>	Column names
<%ERROR_ROW_DATA%>	Error row data

11 Business Case Sets (Set)

Sets group multiple business cases in a tab view. The business cases can be accessed with tabs and edited comfortable.

11.1 Selection and positioning of business cases in the set (Set)



Identifier / Short name: SAMPL MASTER PROD - SMALL APP

Business Case name: SAMPLES Products - small app

Security group:

Select Business Cases:

Available	Selected
Advanced auditing logging	SAMPL MASTER PROD LINES - ENTRY
Angebot an Anforderer schicken	SAMPL MASTER PROD LIST - APP
Angebote einsehen	SAMPL MASTER PROD DETAILS - App
Angebote zu Anforderung hinzufügen	
Approval Status	
Bestellanforderung bearbeiten	
Bestellanforderung korrigieren	
Business log of a client	
Data hierarchy example	
HANDS ON	
List of my procurement requests	
Liste aller Bestellanforderungen	
My_1st_Table_BC	
Overview	
PLAN_ART	
Planning data	

□ Show just Business Cases of current folder only

□ Show folder path

Notes: this set is using global filter for product-line

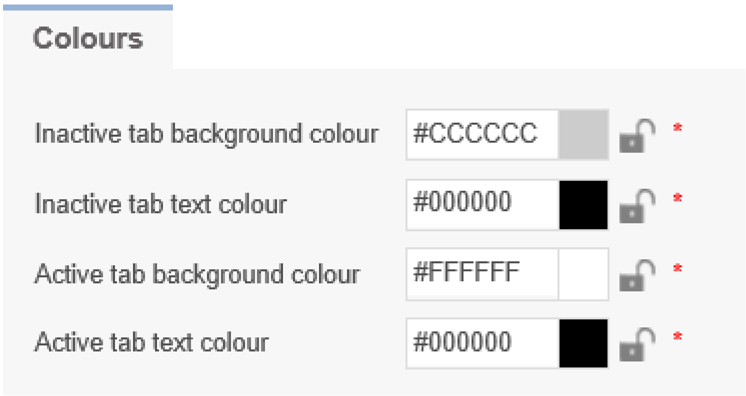
In ‚Available' you find all existing business cases.
By double-clicking or using the arrow keys, these are assigned to the set.

The positioning within the set is also done via arrow keys or the mouse.

By holding down the Ctrl key you select multiple business cases and move it to the desired position.

11.2 Colors

In colors you can set the color of the tabs (tab):

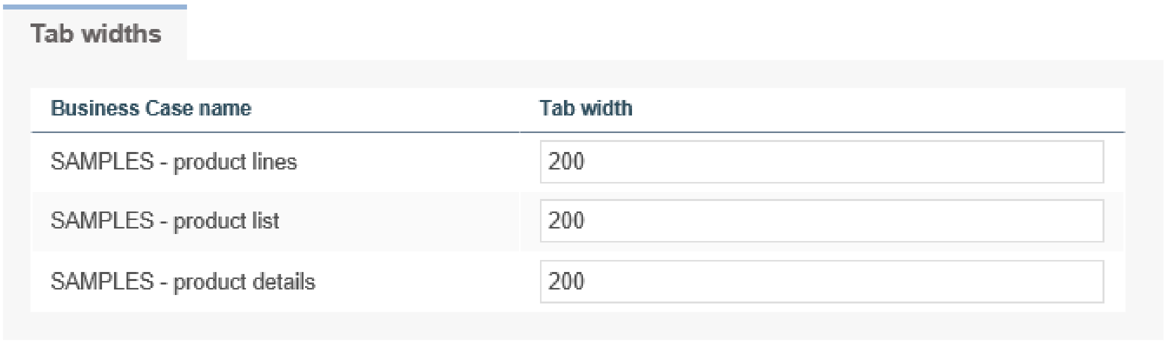


Colours

Inactive tab background colour	#CCCCCC *
Inactive tab text colour	#000000 *
Active tab background colour	#FFFFFF *
Active tab text colour	#000000 *

11.3 Tab Widths

In Table width you define the width of the tabs



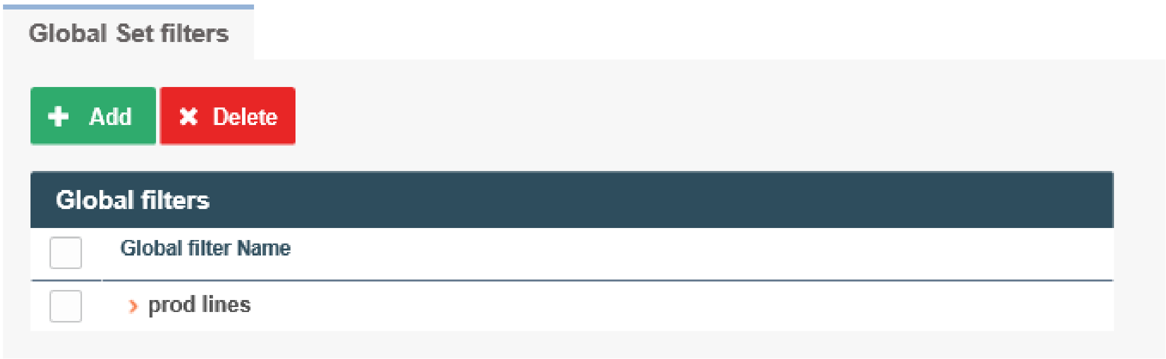
Tab widths

Business Case name	Tab width
SAMPLES - product lines	200
SAMPLES - product list	200
SAMPLES - product details	200

11.4 Global Set filters

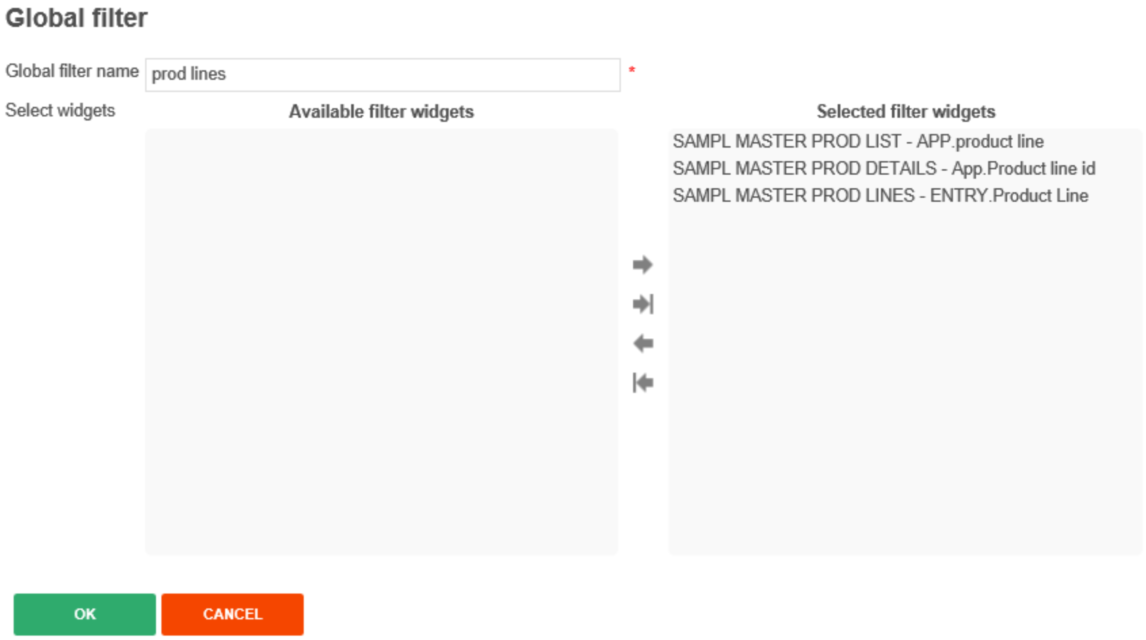
A global filter is a connection between different filter widgets of different Business Cases of a Business Case Set. That is helpful if some Business Cases of this Set must be filtered in the same way when if the user is jumping to another Business Case.

Example: All Business Cases must filter for the same product and the user is selecting the product just once. It is possible to use many different global filters parallel, e.g. for product and for product-line.



□	Global filter Name
□	› prod lines

All existing filter widgets of the Business Cases in the Set are listed here.
To create a global Set filter, move all related filters to ‚Selected filter widgets‘ and hit OK.

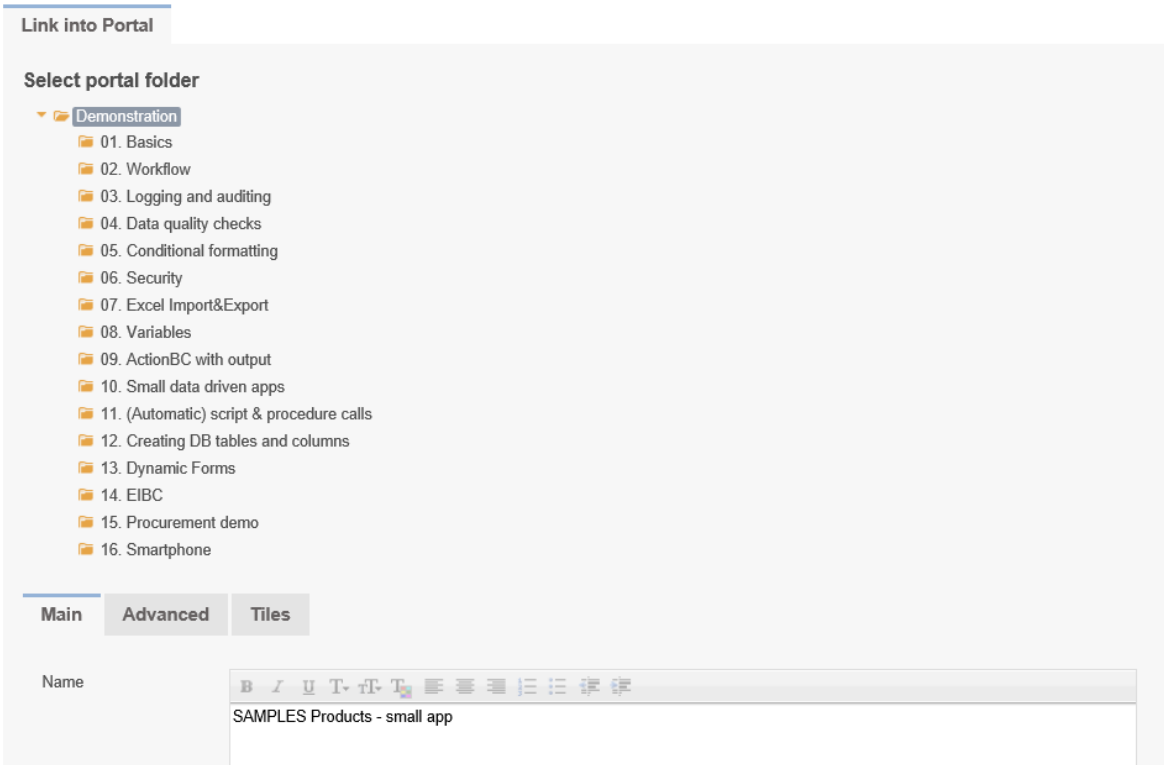


Global filter name: prod lines *

SAMPL MASTER PROD LIST - APP.product line
SAMPL MASTER PROD DETAILS - App.Product line id
SAMPL MASTER PROD LINES - ENTRY.Product Line

11.5 Link into Portal (Standalone version only)

Pick the folder and click OK



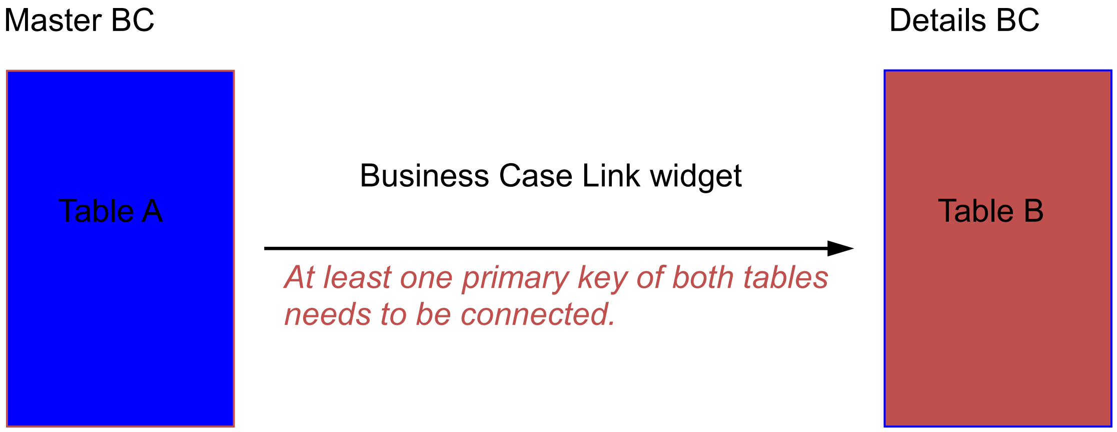
Name: SAMPLES Products - small app

12 Linking BC as Master-Detail connection

In the context of relational databases, a master-detail relationship is the same construction as using a foreign key. (See also the Wikipedia entry http://en.wikipedia.org/wiki/Foreign_key.)

12.1 Master-Detail basics

- Usually, each Business Case refers to one table/view.
- The master-detail-relationship is a way to combine the tables of the Business Cases. It uses the “foreign key” concept of relational databases.
- All user changes in the connected Business Cases are transmitted in one database transaction.


Master BC
Details BC
Table A
Business Case Link widget
Table B
At least one primary key of both tables needs to be connected.

Example:

- The referenced master table includes an invoice header with a unique **InvoiceNumber**.
- The referencing detail table includes each **InvoicePosition** (including the referred *InvoiceNumber* as foreign key).

Invoice (**InvoiceNumber**, Date…)

InvoicePositions (**PositionNumber**, *InvoiceNumber*, …)

The advantage of using a master-detail relationship in Fast Edit as compared to normal database programming is that the logic behind the connection is handled by Fast Edit. You don’t have to deal with the construction within the detail table itself, as the mapping is all the information necessary for Fast Edit.

A master table may have many referencing detail tables. However, in the context of Fast Edit, a new Business Case must be created for each master-detail relationship.

The general procedure is as follows:

- The master Business Case needs a **Business Case Link** widget. This widget is the connection to the detail Business Case, by mapping the primary key(s). Note that usually only one of the primary keys needs to be mapped, as this is enough to connect the two Business Cases.
- The detail Business Case needs no special widget. It is only connected to the master Business Case by the mapping.

Once the two Business Cases are connected, entering data in the detail table results in one database transaction for master and detail table.

It is recommended that for the connected column(s), you assign the same column names in both tables. You can only map to widgets with “primary key” tag in the linked Business Case.

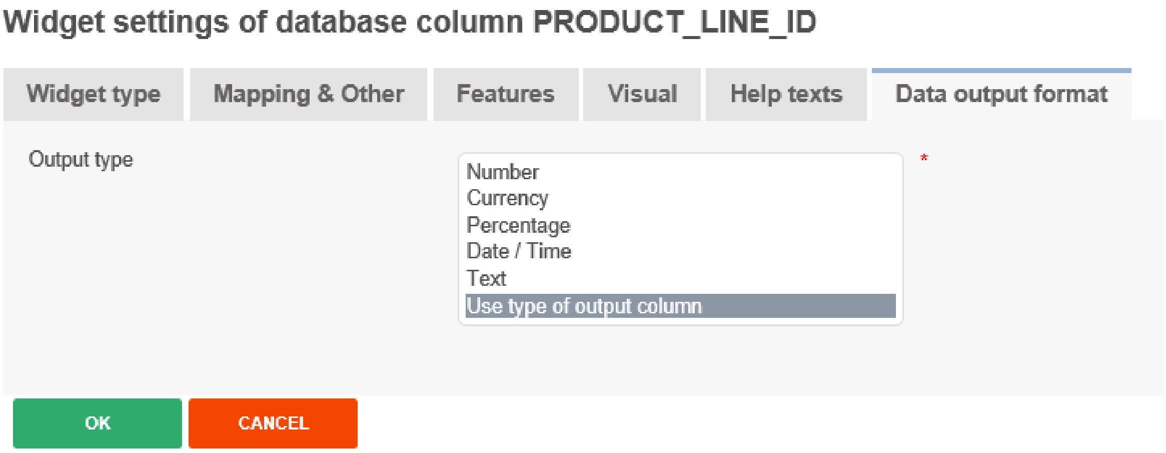
The optical appearance and title text of the Business Case link is defined on the “Visual” register of the widget.

13 Optimizing Business Cases

13.1 Securing data quality

13.1.1 Data output format

Under data output format you will find several options for testing the validity of the data.
The default setting ‚Use type of output column data' and provides no further adjustments.
With this option, the definition in the database of the associated database column determines which data type is used.



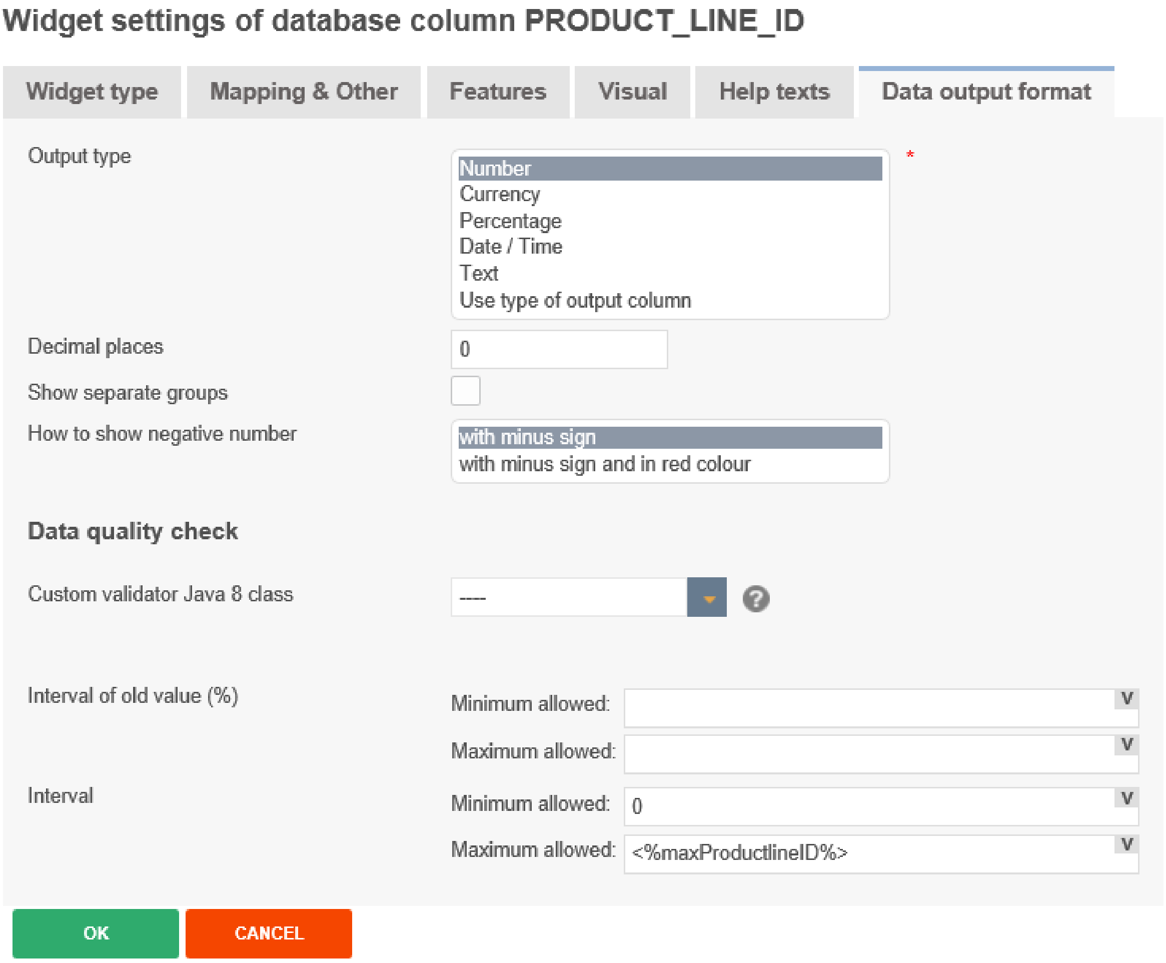
Widget settings of database column PRODUCT_LINE_ID

Output type *

- Number
- Currency
- Percentage
- Date / Time
- Text
- Use type of output column (selected)

Output types:

- **Number** - Requires a number
- **Currency** - Shows number values with currency symbol
- **Percentage** - Percentages, e.g. 12,34%
- **Date / Time** **-** Requires a date / time
- **Text** **-** To enter text, as a special validation option, there are regular expressions


Widget settings of database column PRODUCT_LINE_ID

Output type: Number (selected) | Currency | Percentage | Date / Time | Text | Use type of output column *

Decimal places: 0

Show separate groups: □

How to show negative number: with minus sign (selected) | with minus sign and in red colour

Data quality check

Custom validator Java 8 class: ----

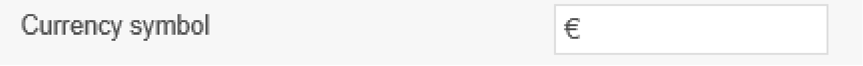
Interval of old value (%)
Minimum allowed:
Maximum allowed:

Interval
Minimum allowed: 0
Maximum allowed: <%maxProductlineID%>

Decimal places	- You can set the number of decimal places displayed
Show separate groups	- Serves for better readability of large numbers e.g. 1,000,000,000
How to show negative number	- Negative numbers can only be viewed by a minus or colored red

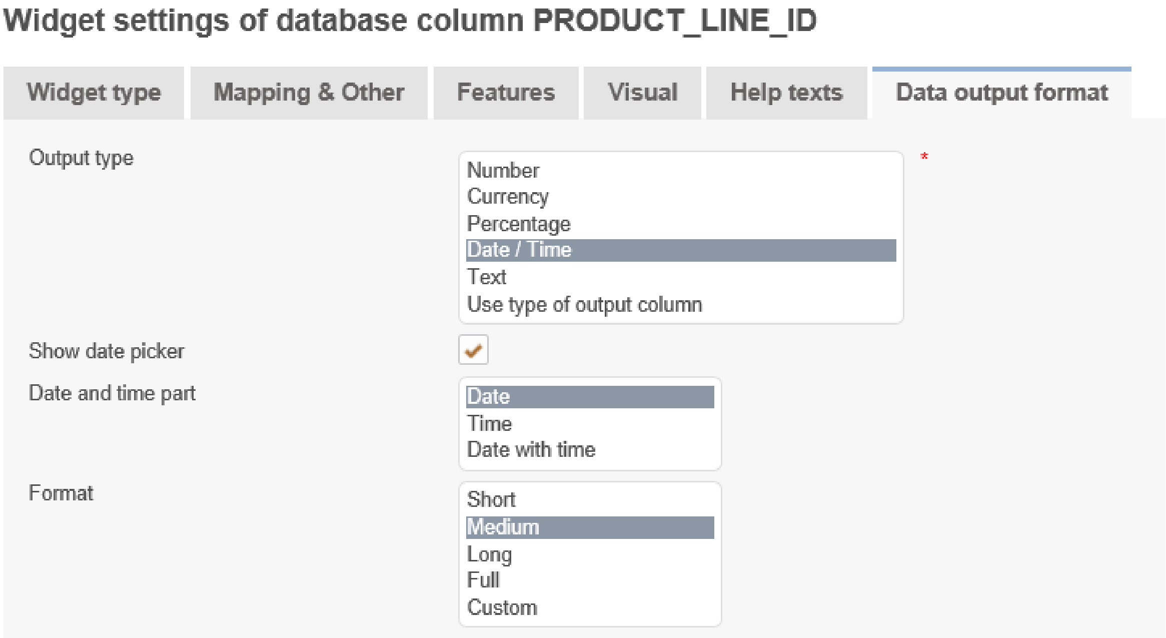
Output type ‚Currency‘

Is identical to the output type ‚number', but contains as a further option the setting for a currency symbol



Currency symbol €

Output type ‚Date and Time‘



Widget settings of database column PRODUCT_LINE_ID

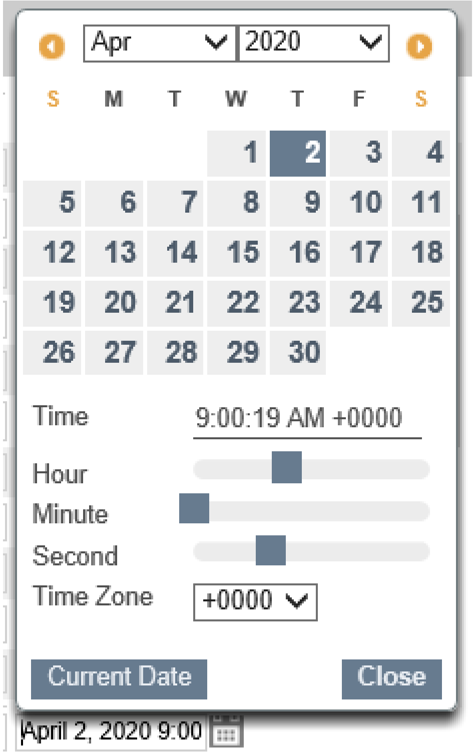
Output type *: Number / Currency / Percentage / **Date / Time** / Text / Use type of output column

Show date picker ☑

Date and time part: **Date** / Time / Date with time

Format: Short / **Medium** / Long / Full / Custom

With ‚Show date picker‘ (default) users can easily pick a date



Apr 2020

S	M	T	W	T	F	S
			1	**2**	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Time 9:00:19 AM +0000

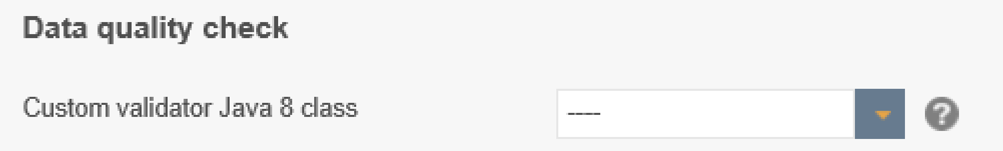
Time Zone +0000

April 2, 2020 9:00

The date pickers prevents entry mistakes

13.1.2 Data Quality check

Custom validator Java 8 class

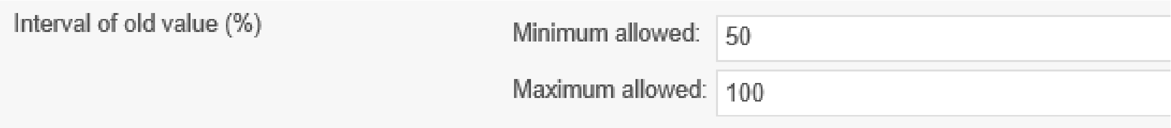


Data quality check

Custom validator Java 8 class: ----

Optional. A Java 8 class that is testing the input value. The file directory of this file is defined in the Apparo Configuration Manager. This class is called automatically before Apparo Fast Edit is updating or inserting this row.

Interval of old value (%)



Interval of old value (%)

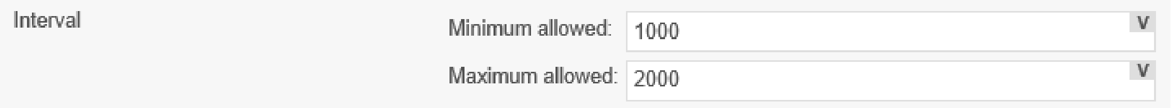
Minimum allowed: 50

Maximum allowed: 100

Hereby you limit the validity of the entered values based on the existing values.

Example: In the widget, the value is 100. In this case, users may only enter values between 50% and 100% of the original value, so values between 50 and 100. Otherwise, the user receives an error message.

Interval



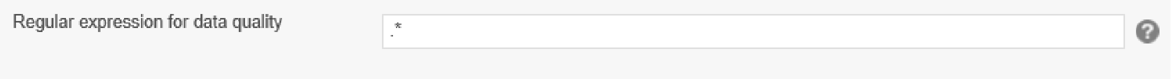
Interval

Minimum allowed: 1000

Maximum allowed: 2000

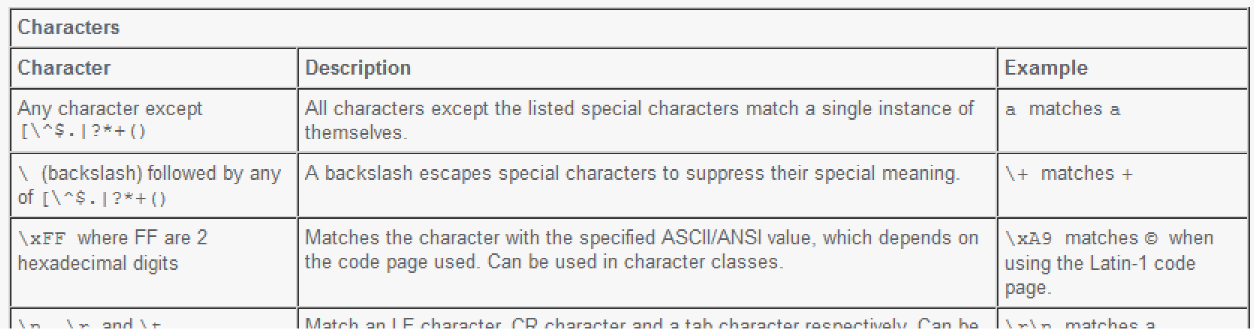
Limits the validity of entries based on an absolute interval. Permissible are values only from 1000 to 2000. Interval limits can be set dynamically with variables.

Regular Expression (Only for type ‚Text‘)



Regular expression for data quality: .*

Using a regular expression is helpful to define more complex input rules. For example you can define that the first character must be an 'A' and then just numbers are allowed. Click the '?' icon to see the detail instructions.



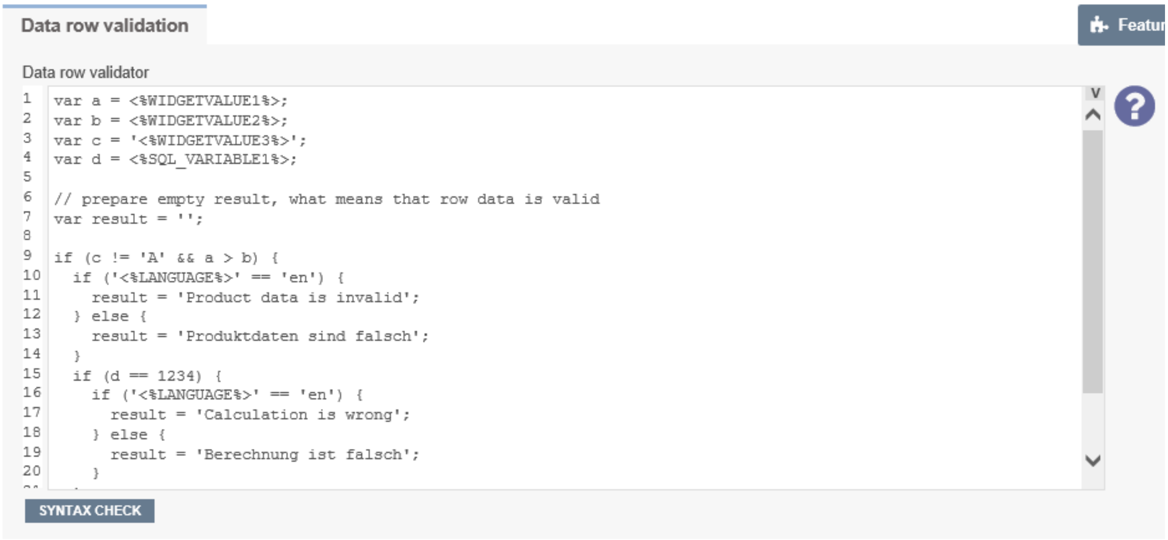
Characters		
Character	**Description**	**Example**
Any character except `[\^$.|?*+()`	All characters except the listed special characters match a single instance of themselves.	`a` matches `a`
`\` (backslash) followed by any of `[\^$.|?*+()`	A backslash escapes special characters to suppress their special meaning.	`\+` matches `+`
`\xFF` where FF are 2 hexadecimal digits	Matches the character with the specified ASCII/ANSI value, which depends on the code page used. Can be used in character classes.	`\xA9` matches © when using the Latin-1 code page.
`\n`, `\r` and `\t`	Match an LF character, CR character and a tab character respectively. Can be	`\r\n` matches a

13.1.3 Data row validation

Enables validation of input when inserting or updating data

You can:

- Access all widget content via widget reference variables
- Use SQL variables
- Define own error texts, which are output automatically



```
var a = <%WIDGETVALUE1%>;
var b = <%WIDGETVALUE2%>;
var c = '<%WIDGETVALUE3%>';
var d = <%SQL_VARIABLE1%>;

// prepare empty result, what means that row data is valid
var result = '';

if (c != 'A' && a > b) {
  if ('<%LANGUAGE%>' == 'en') {
    result = 'Product data is invalid';
  } else {
    result = 'Produktdaten sind falsch';
  }
  if (d == 1234) {
    if ('<%LANGUAGE%>' == 'en') {
      result = 'Calculation is wrong';
    } else {
      result = 'Berechnung ist falsch';
    }
```

Technical:

You define a JavaScript routine that can access widget reference variables or SQL variables.
An example can be obtained by clicking the question mark icon.
If the data row contains an error, an appropriate error message can be defined and the user is seeing exactly this error message.

13.2 Tracking of data changes

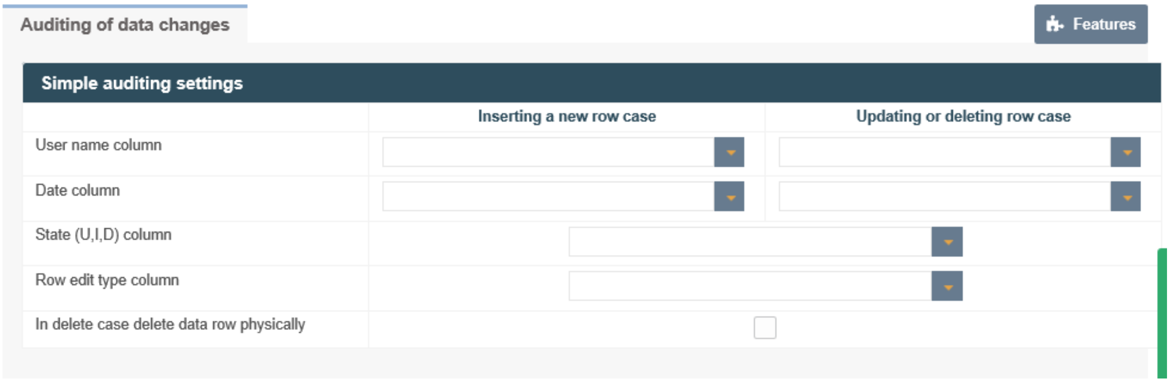
13.2.1 Auditing of data changes

The audit function you can use to document all data changes.

There are 2 different types of audit:

13.2.1.1 Simple Auditing

To save the audit information into the target table.



Auditing of data changes

Features

Simple auditing settings

	Inserting a new row case	Updating or deleting row case
User name column		
Date column		
State (U,I,D) column		
Row edit type column		
In delete case delete data row physically	□	

It is possible to save the user name, date and time and the type of change for each row in the target table.

There are 2 different types of changes possible:

- The user adds a new row
- The user deletes or modifies a row.

The following states are possible: U = Update, I = Insert (paste), D = Delete (Delete).

Options

User name column
Stores the name of the user

Date column
Date column for storing update or insert date and time

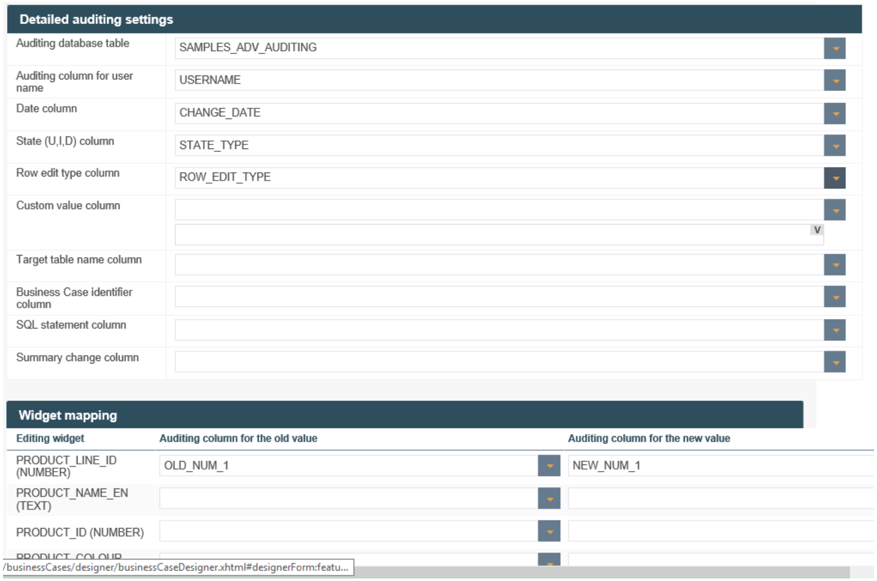
State (U, I, D) column
The database column in that the state(U=Update,I=Insert,D=Delete) will be stored.

Row edit type column
In this auditing column the row edit type can be stored. The row edit type (type of string) is describing the way of editing.

In delete case delete data row physically
Physically delete row(s) with 'D' flag from table. If disabled then all deleted rows get the state 'D' and are not physically deleted.

13.2.1.2 Detailed Auditing

Storing detailed audit information in a separate audit database table helpful if every small change (eg a column) with name, timestamp, etc. should be documented.



Detailed auditing settings

Auditing database table	SAMPLES_ADV_AUDITING
Auditing column for user name	USERNAME
Date column	CHANGE_DATE
State (U,I,D) column	STATE_TYPE
Row edit type column	ROW_EDIT_TYPE
Custom value column	
Target table name column	
Business Case identifier column	
SQL statement column	
Summary change column	

Widget mapping

Editing widget	Auditing column for the old value	Auditing column for the new value
PRODUCT_LINE_ID (NUMBER)	OLD_NUM_1	NEW_NUM_1
PRODUCT_NAME_EN (TEXT)		
PRODUCT_ID (NUMBER)		
PRODUCT_COLOUR		

/businessCases/designer/businessCaseDesigner.xhtml#designerForm:featu...

Options

Database schema
The database schema in that the auditing table is already stored.

Auditing database table
The database table for the auditing data.

Auditing column for user name
The database column of the auditing table in that the user name who has changed data will be stored.

Date column
The auditing column for storing the date/time of the data change.

State (U, I, D) column
The auditing table column in that the state must be stored (U=update, I=insert, D=delete).

Row edit type column
In this auditing column the row edit type can be stored.

Custom value column
In this auditing column a custom value with variables can be stored that is stored in the auditing table only.

Target table name column
In this auditing column the name of the target table of this Business Case can be stored.

Business Case identifier column
In this auditing column the Business Case ID (short name) can be stored.

SQL statement column
In this auditing column the SQL statement can be stored. Be sure that this column can store a long text.

Summary change column
This text contains all data changes in one string like oldValue=1, newValue=2,..The column names are defined in the widget list beneath.

13.2.2 Data History

Apparo Fast Edit can historicize a record (slowly changing dimension type 1 and 2).
Information about "**Slowly changing dimension**", see:

http://en.wikipedia.org/wiki/Slowly_Changing_Dimensions

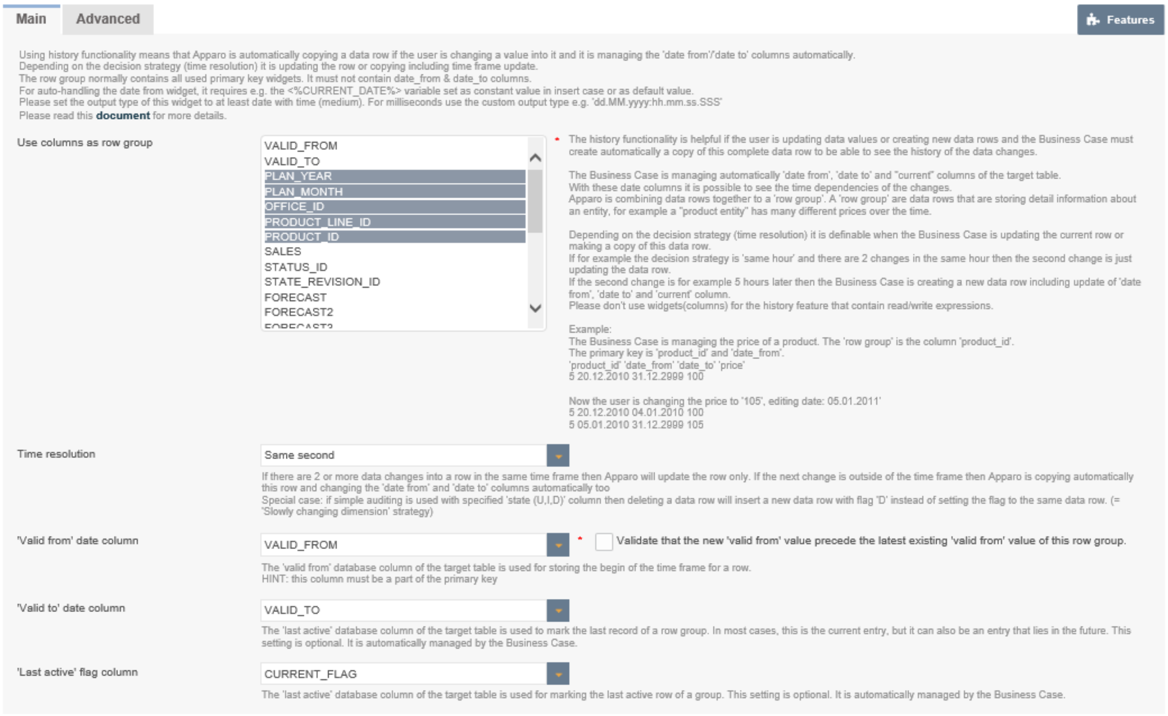
Note: For a historicizing the database must be able to perform "save points".

Since the Sybase / Informix / Teradata JDBC driver does not support this feature, the historicization of records within a Sybase or Informix or Teradata database is not possible.

This function automatically copies data rows when they are modified.
It automatically manages the current record and makes it possible to either overwrite or historicize records within time frame definitions.

The user usually sees only the current line and not the data changes or deletions (if only virtually), the new rows are simply copies of the original lines.

13.2.2.1 Tab Main



Using history functionality means that Apparo is automatically copying a data row if the user is changing a value into it and it is managing the 'date from'/'date to' columns automatically.
Depending on the decision strategy (time resolution) it is updating the row or copying including time frame update.
The row group normally contains all used primary key widgets. It must not contain date_from & date_to columns.
For auto-handling the date from widget, it requires e.g. the <%CURRENT_DATE%> variable set as constant value in insert case or as default value.
Please set the output type of this widget to at least date with time (medium). For milliseconds use the custom output type e.g. 'dd.MM.yyyy:hh.mm.ss.SSS'
Please read this **document** for more details.

Use columns as row group: VALID_FROM, VALID_TO, PLAN_YEAR, PLAN_MONTH, OFFICE_ID, PRODUCT_LINE_ID, PRODUCT_ID, SALES, STATUS_ID, STATE_REVISION_ID, FORECAST, FORECAST2, FORECAST3 (selected: PLAN_YEAR, PLAN_MONTH, OFFICE_ID, PRODUCT_LINE_ID, PRODUCT_ID)

* The history functionality is helpful if the user is updating data values or creating new data rows and the Business Case must create automatically a copy of this complete data row to be able to see the history of the data changes.

The Business Case is managing automatically 'date from', 'date to' and "current" columns of the target table.
With these date columns it is possible to see the time dependencies of the changes.
Apparo is combining data rows together to a 'row group'. A 'row group' are data rows that are storing detail information about an entity, for example a "product entity" has many different prices over the time.

Depending on the decision strategy (time resolution) it is definable when the Business Case is updating the current row or making a copy of this data row.
If for example the decision strategy is 'same hour' and there are 2 changes in the same hour then the second change is just updating the data row.
If the second change is for example 5 hours later then the Business Case is creating a new data row including update of 'date from', 'date to' and 'current' column.
Please don't use widgets(columns) for the history feature that contain read/write expressions.

Example:
The Business Case is managing the price of a product. The 'row group' is the column 'product_id'.
The primary key is 'product_id' and 'date_from'.
'product_id' 'date_from' 'date_to' 'price'
5 20.12.2010 31.12.2999 100

Now the user is changing the price to '105', editing date: 05.01.2011'
5 20.12.2010 04.01.2010 100
5 05.01.2010 31.12.2999 105

Time resolution: Same second
If there are 2 or more data changes into a row in the same time frame then Apparo will update the row only. If the next change is outside of the time frame then Apparo is copying automatically this row and changing the 'date from' and 'date to' columns automatically too
Special case: if simple auditing is used with specified 'state (U,I,D)' column then deleting a data row will insert a new data row with flag 'D' instead of setting the flag to the same data row. (= 'Slowly changing dimension' strategy)

'Valid from' date column: VALID_FROM * □ Validate that the new 'valid from' value precede the latest existing 'valid from' value of this row group.
The 'valid from' database column of the target table is used for storing the begin of the time frame for a row.
HINT: this column must be a part of the primary key

'Valid to' date column: VALID_TO
The 'last active' database column of the target table is used to mark the last record of a row group. In most cases, this is the current entry, but it can also be an entry that lies in the future. This setting is optional. It is automatically managed by the Business Case.

'Last active' flag column: CURRENT_FLAG
The 'last active' database column of the target table is used for marking the last active row of a group. This setting is optional. It is automatically managed by the Business Case.

The Business Case is managing automatically 'date from', 'date to' and "current" columns of the target table.
With these date columns it is possible to see the time dependencies of the changes.

Background

Apparo Fast Edit is combining data rows together to a 'row group'. A 'row group' are data rows that are storing detail information about an entity, for example a "product entity" has many different prices over the time.

Please don't use widgets (columns) for the history feature that contain read/write expressions.
Time resolution

If there are 2 or more data changes into a row in the same time frame then Apparo Fast Edit will update the row only. If the next change is outside of the time frame then Apparo Fast Edit is copying automatically this row and changing the 'date from' and 'date to' columns automatically too.

'Valid from' date column

The 'valid from' database column of the target table is used for storing the begin of the time frame for a row.

Validate that the new 'valid from' value precede the latest existing 'valid from' value of this row group.

Useful for manually entered valid from values
HINT: this column must be a part of the primary key

'Valid to' date column

The 'valid to' database column of the target table is used for storing the end of the time frame for a row. This setting is optional. It is automatically managed by the Business Case.

Use for current flag

The 'current' database column of the target table is used for marking the current row of a group. This setting is optional. It is automatically managed by the Business Case.

Advanced settings for the history feature:

Date for infinity

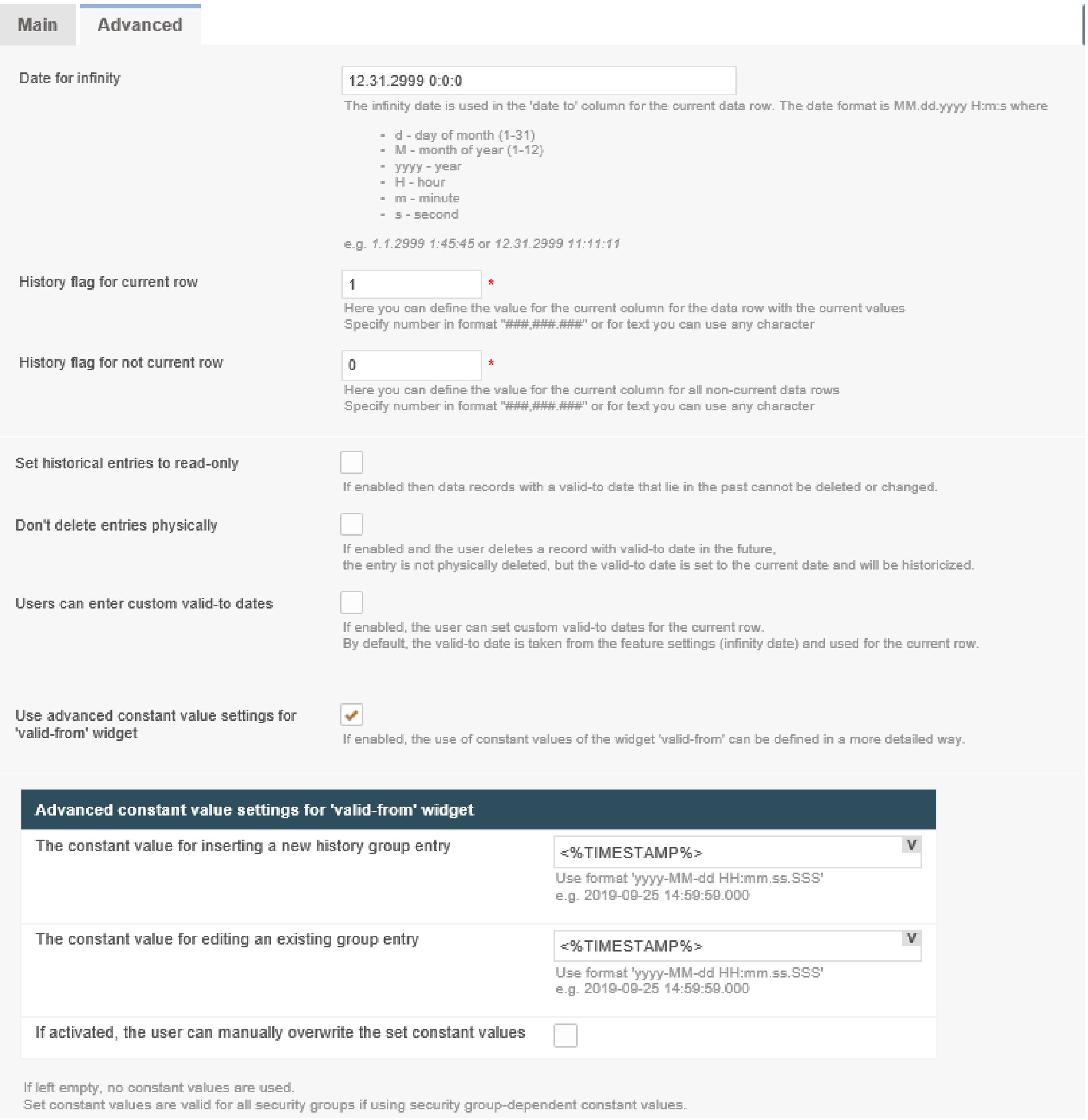
The infinity date is used in the 'date to' column for the current data row.
The current row is usually valid to this date.

Value for ‚is current' lines

Value for current line (for example, 1)
Value of non-current line (for example, 0)

13.2.2.2 Tab Advanced

It contains the settings for the infinity date, the current flag and other settings.



Date for infinity: 12.31.2999 0:0:0

The infinity date is used in the 'date to' column for the current data row. The date format is MM.dd.yyyy H:m:s where

- d - day of month (1-31)
- M - month of year (1-12)
- yyyy - year
- H - hour
- m - minute
- s - second

e.g. *1.1.2999 1:45:45* or *12.31.2999 11:11:11*

History flag for current row: 1 *

Here you can define the value for the current column for the data row with the current values
Specify number in format "###,###.###" or for text you can use any character

History flag for not current row: 0 *

Here you can define the value for the current column for all non-current data rows
Specify number in format "###,###.###" or for text you can use any character

Set historical entries to read-only ☐

If enabled then data records with a valid-to date that lie in the past cannot be deleted or changed.

Don't delete entries physically ☐

If enabled and the user deletes a record with valid-to date in the future,
the entry is not physically deleted, but the valid-to date is set to the current date and will be historicized.

Users can enter custom valid-to dates ☐

If enabled, the user can set custom valid-to dates for the current row.
By default, the valid-to date is taken from the feature settings (infinity date) and used for the current row.

Use advanced constant value settings for 'valid-from' widget ☑

If enabled, the use of constant values of the widget 'valid-from' can be defined in a more detailed way.

Advanced constant value settings for 'valid-from' widget

The constant value for inserting a new history group entry	<%TIMESTAMP%> Use format 'yyyy-MM-dd HH:mm.ss.SSS' e.g. 2019-09-25 14:59:59.000
The constant value for editing an existing group entry	<%TIMESTAMP%> Use format 'yyyy-MM-dd HH:mm.ss.SSS' e.g. 2019-09-25 14:59:59.000
If activated, the user can manually overwrite the set constant values	☐

If left empty, no constant values are used.
Set constant values are valid for all security groups if using security group-dependent constant values.

13.2.2.2.1 Date for infinity

The infinity date is used in the 'date to' column for the current data row.
The date format is: MM.dd.yyyy H:m:s
Where

- d - day of month (1-31)
- M - month of year (1-12)
- yyyy - year
- H - hour
- m - minute
- s - second

e.g. 1.1.2999 1:45:45 or 12.31.2999 11:11:11

13.2.2.2.2 History flag for current row

Here you can define the value for the current column for the data row with the current values
Specify number in format "###,###.###" or for text you can use any character.

In most cases the value ‘1’ is used here.

13.2.2.2.3 History flag for not current row

Here you can define the value for the current column for all non-current data rows
Specify number in format "###,###.###" or for text you can use any character

In most cases the value ‘0’ is used here.

13.2.2.2.4 Set historical entries to read-only

If enabled then data records with a valid-to date that lie in the past turns to read-only and cannot be deleted or changed.

13.2.2.2.5 Don't delete entries physically

If enabled and the user deletes a record with valid-to date in the future,
the entry is not physically deleted. In this case the valid-to date is set to the current date instead and will be historicized.

13.2.2.2.6 Users can enter custom valid-to dates

If enabled, the user can set manually custom valid-to dates for the current row.
By default is the valid-to date taken from the feature settings (infinity date) and used for the current row automatically.

13.2.2.2.7 Use advanced constant value settings for 'valid-from' widget

If enabled, the use of constant values of the widget 'valid-from' can be defined in a more detailed way.
If this feature is activated, but the constant values for inserting and/or editing were left empty, then no constant values are used.
Set constant values are valid for all security groups if using security group-dependent constant values.

The advanced constant value settings for 'valid-from' widget offers three options:

1. *The constant value for inserting a new history group entry*

You can use custom or predefined variables here (e.g. <%TIMESTAMP%> or <%CURRENT_DATE%>) or a fix date value with the format 'yyyy-MM-dd HH:mm.ss.SSS'
e.g. 2019-09-25 14:59:59.000

2. *The constant value for editing an existing group entry*

You can use custom or predefined variables here (e.g. <%TIMESTAMP%> or <%CURRENT_DATE%>) or a fix date value with the format 'yyyy-MM-dd HH:mm.ss.SSS'
e.g. 2019-09-25 14:59:59.000

3. *If activated, the user can manually overwrite the set constant values*

Users can enter manually custom values instead of using the given constant values.

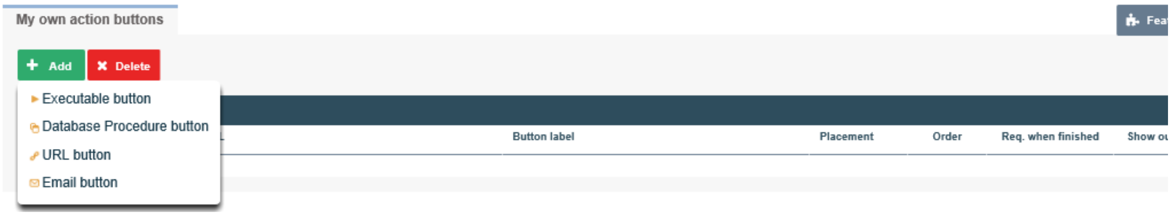
Hint: Further details can be taken from the History document (https://doc.apparo.solutions**)**

14 Calling external scripts / procedures / functions

14.1 Own action buttons

Action buttons can call executables files or scripts, database procedures, URLs and eMail Business Cases.

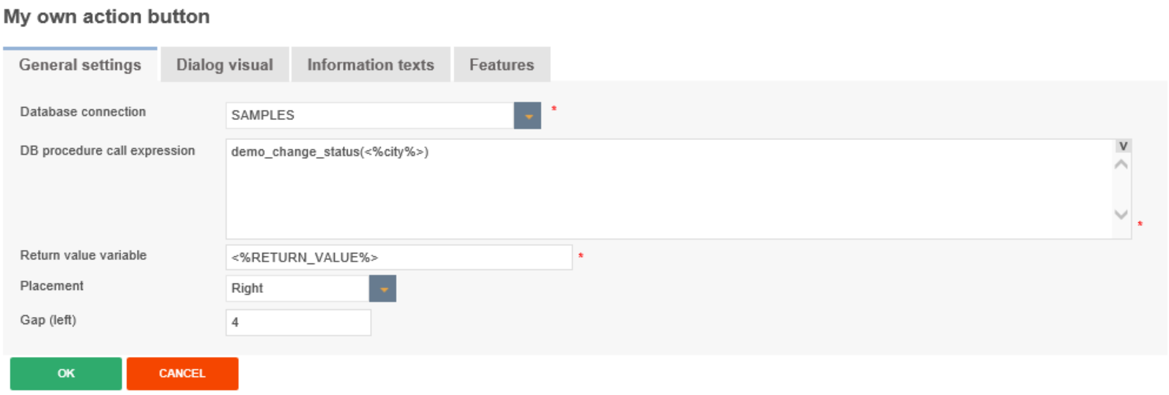
It is possible to specify different behavior patterns. For example, single call or a call for each selected row of data, etc.



14.2 Executable button

With Apparo Fast Edit you have several options for further processing of the data. With "Executable Button" you can add a button for processing (like.bat, .cmd, .sh, .sql). All files that are to be called up must be stored in the script file directory which was defined in the Apparo Configuration Manager.
Using the Apparo Configuration Manager it is possible to change the used file directory.

14.2.1 General Settings



Database connection	SAMPLES
DB procedure call expression	demo_change_status(<%city%>)
Return value variable	<%RETURN_VALUE%>
Placement	Right
Gap (left)	4

Executable filename
Here you can select the batch processing file or sql file, which will be executed by this button.

Arguments
Optional you can use arguments (variables are allowed too) that will be delivered to the script or database procedure.

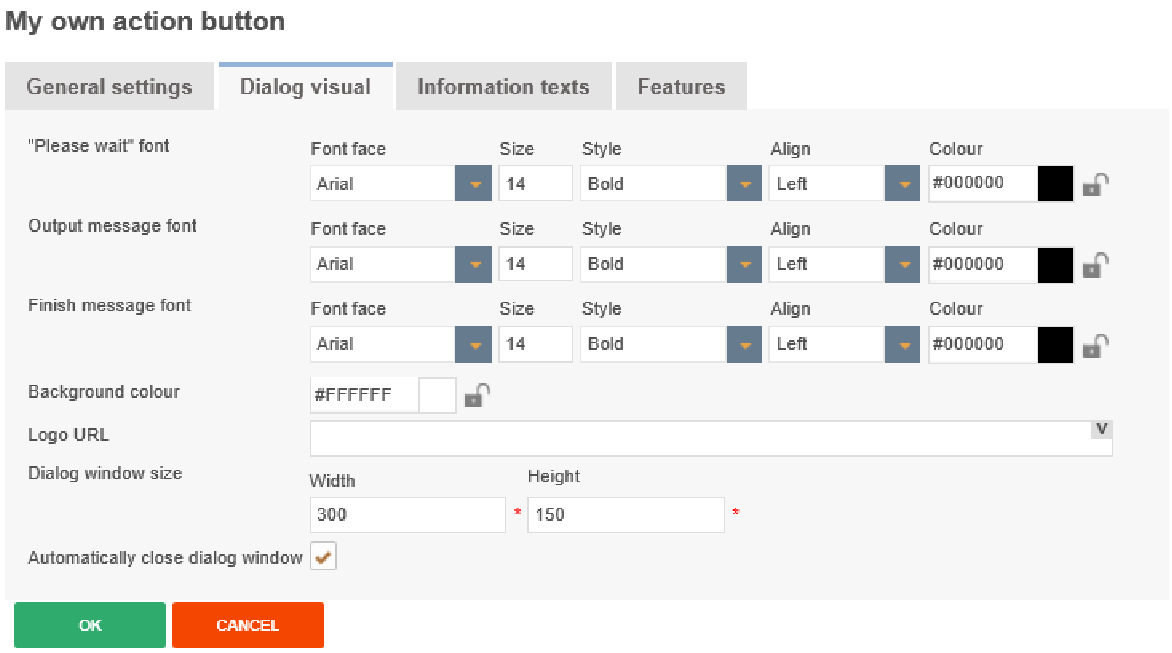
Return value variable
In this variable is the return value of the function/script stored.

Placement
Arrangement of buttons on the screen.

Gap
Space to the next button in pixel

14.2.2 Dialog visual

Here you will find settings for the layout and behavior of the message window.



My own action button

	Font face	Size	Style	Align	Colour
"Please wait" font	Arial	14	Bold	Left	#000000
Output message font	Arial	14	Bold	Left	#000000
Finish message font	Arial	14	Bold	Left	#000000

Background colour #FFFFFF

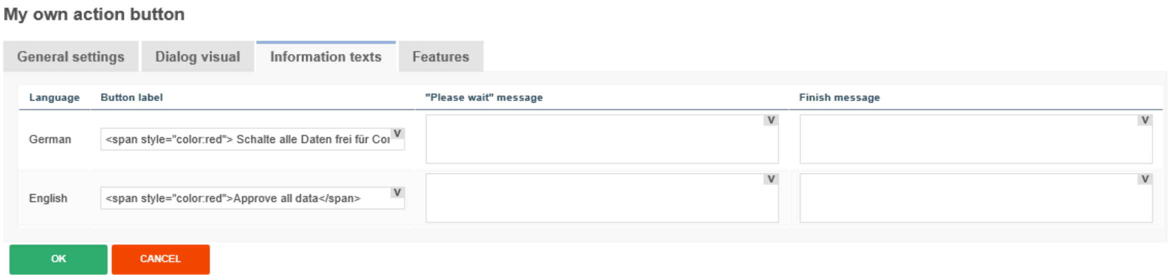
Logo URL

Dialog window size Width 300 * Height 150 *

Automatically close dialog window ☑

14.2.3 Information texts

At this point you can define a label for your button and individual texts for waiting and finishing.

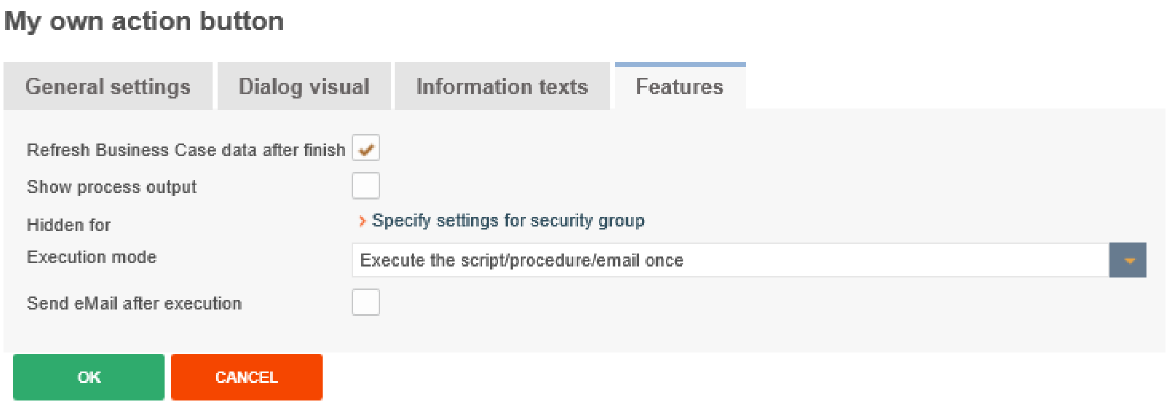


My own action button

Language	Button label	"Please wait" message	Finish message
German	<span style="color:red"> Schalte alle Daten frei für Coı		
English	<span style="color:red">Approve all data</span>		

14.2.4 Features

Here you can define the behavior of the button.



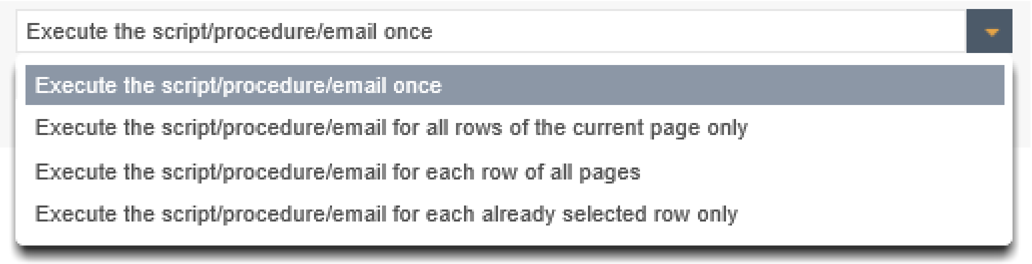
My own action button

Refresh Business Case data after finish ☑
Show process output □
Hidden for › Specify settings for security group
Execution mode: Execute the script/procedure/email once
Send eMail after execution □

Refresh Business Case data after finish
If enabled, the Business Case is reloading the database data again after execution of the script/procedure. This is helpful if your script/procedure is changing data that must be displayed in the Business Case too.

Show process output
If enabled, the user will see the script output in a small window.

Execution mode
Execute the script/procedure/email once
Here you can define the exact behavior of this button. Your script/procedure can be called for each row, selected row or just once.

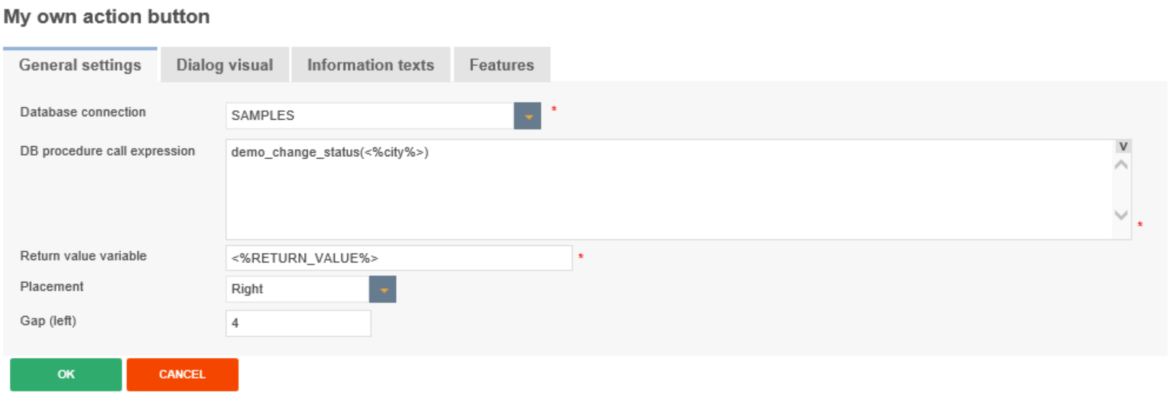


Execute the script/procedure/email once

Execute the script/procedure/email once
Execute the script/procedure/email for all rows of the current page only
Execute the script/procedure/email for each row of all pages
Execute the script/procedure/email for each already selected row only

Send eMail after execution
After execution of a script or database procedure it is possible to send automatically an eMail. This eMail Business Case has access to all widget values of this Business Case.
That means that the eMail body can contain values of this current Business Case.

14.3 Database procedure button


My own action button

Database connection	SAMPLES *
DB procedure call expression	demo_change_status(<%city%>) *
Return value variable	<%RETURN_VALUE%> *
Placement	Right
Gap (left)	4

Database connection
Here you can select the database connection on which the button will be proceeded.

DB procedure call expression
How to call a database function or procedure:

[Calling convention] procedure/function_name (argument1, argument2, ..., argumentN)

Please use same character cases for schema and procedure/function like defined in your database.

If the database connection of this procedure/function is same as the one for Business Case than the procedure/function is executed within the same database transaction.

The procedure must not commit or rollback the existing transaction, but is allowed to start its own inner (named) transaction (if supported by database) or use savepoint's.

For character or string argument use ' character to enclose argument.
Use at least one space between [Calling convention] and procedure name.

Your parameters may contain Apparo Fast Edit variables, for example: <%USER_NAME%>
Do not enclose Apparo Fast Edit variables with apostrophes or quotes.

Oracle or IBM DB2 database:
return - For calling a stored function that returns a value

MS SQL Server database:
Calling functions on SQL Server is not supported. It is possible to have a return value from procedure but [Calling convention] must be empty in this case.
Please use in your SQL Server procedure at the begin "SET NOCOUNT ON;" Then it is possible to use SQL commands in your procedure without having impact to the return value.

Sybase database:
select - For calling a stored function that returns a value

Teradata database:
return macro - For calling a Teradata macro that returns a value
macro - For calling Teradata macro that does not return a value
return - For calling a stored functions that returns a value

Return value variable
In this variable is the return of the function/script stored.

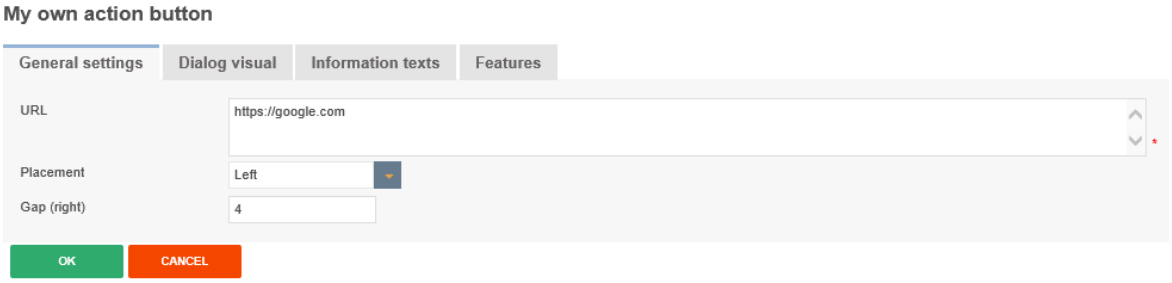
Placement
Here you can decide about the arrangement of buttons on the screen.

Gap
Space to the next button in pixel

14.4 URL buttons

With these buttons you can call any URL:

- Web Sites & Portals
- Reports & Dashboards
- Business Cases


My own action button

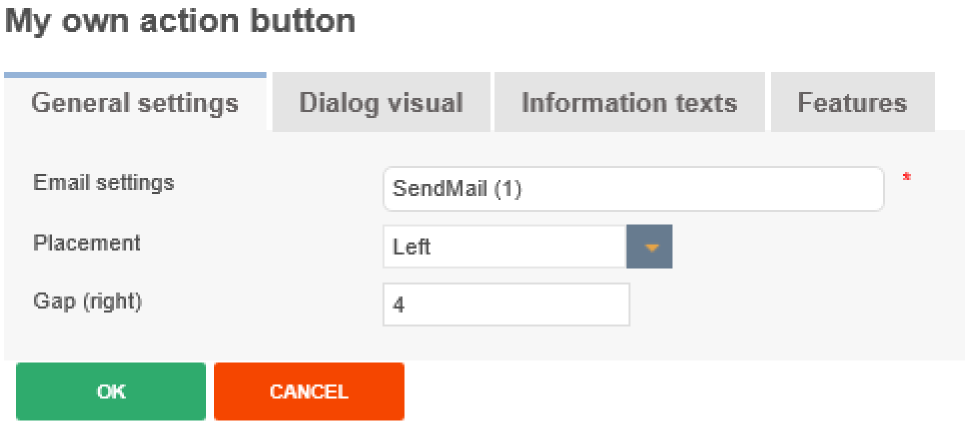
URL: https://google.com *

Placement: Left

Gap (right): 4

14.5 E-mail Buttons

With these buttons you can send e-mails.


My own action button

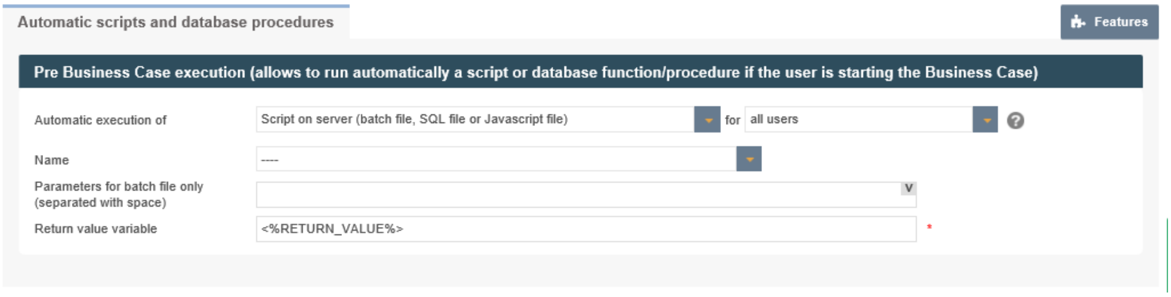
Email settings: SendMail (1) *

Placement: Left

Gap (right): 4

The settings for the e-mail you make in the selected e-mail business case.
All variables of the calling business case can be used.

14.6 Pre/Post execution



Automatic scripts and database procedures

Pre Business Case execution (allows to run automatically a script or database function/procedure if the user is starting the Business Case)

Automatic execution of	Script on server (batch file, SQL file or Javascript file) for all users
Name	----
Parameters for batch file only (separated with space)	
Return value variable	<%RETURN_VALUE%> *

With Pre/Post-Execution it is possible to run automatically a script or a database procedure/function at certain moments.

It is possible to start a shell-script, database function/procedure or SQL-script before Business Case/server side file import starts, and/or after it is finished before forced Excel row import starts, and/or after it is finished after the user has inserted or updated data row

This behavior can be defined for all or for users that are members of a specified group.
If the current user is member of a specified group then just the shell-script, database function/procedure, SQL-script of this group is executed only.

In all other cases the default script/function/procedure is called only.
For now Apparo Fast Edit is supporting Oracle, Microsoft SQL Server, IBM DB/2, Sybase ASE/IQ (chained mode only) and Teradata databases.

A SQL-script is a text file with file name extension .sql that contains SQL-statements like INSERT, UPDATE, DELETE.
The commands are executed using the same database session like the Business Case and are separated by a semicolon.

Pre Business Case execution
(allows to run automatically a script or database function/procedure if the user is starting the Business Case)

Post Business Case execution in success case
(allows to run automatically a script or database function/procedure after the user has closed tue Business Case with 'Ok' or 'Close' button)

Post Business Case execution in failure case
(allows to run automatically a script or database function/procedure after the user has closed the Business Case with ‚CANCEL‘ or ‚X‘ button)
Fast Edit is checking the browser state by default every 180 seconds, it may take up to 3 minutes after closing the BC with ‚X‘ before the script/procedure is executed.

Post insert execution

(allows to run automatically a script or database function/procedure after a new row was inserted)

This insert can be done:

- From inserting area (Table Business Case)
- From insert mode (Single Business Case)
- From Excel file import
- From Excel row import using copy and paste
- From automatic server import
- From automatic import of email data-file attachments
- By copying row/s in the same window

The procedure or script will **NOT be executed after modifying a row in edit area.**

Post update execution

(allows to run automatically a script or database function/procedure after a row was updated)

This update can be done:

- From inserting area (Table Business Case)
- From insert mode (Single Business Case)
- From Excel file import
- From Excel row import using copy and paste
- From automatic server import
- From automatic import of email data-file attachments
- By copying row/s in the same window
- After modifying a row in edit area

Optionally, a query window to activate that appears when the user updates a row of data from the input area.

Post Excel import execution

(allows to run automatically a script or database function/procedure after any kind of Excel import has finished)

All Apparo Fast Edit variables can be used here, including:

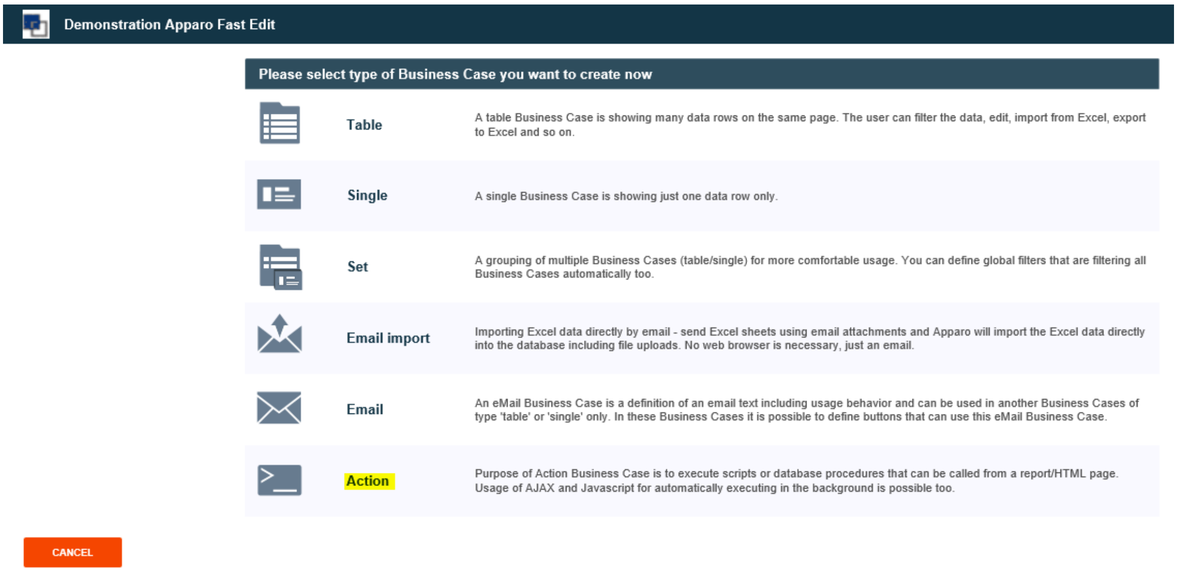
- <%IMPORTED_ROWS%> count of imported rows
- <%INSERTED_ROWS%> count of inserted rows
- <%UPDATED_ROWS%> count of updated rows
- <%IMPORTED_FILE_NAME%> file name of the imported file (if applicable)
- <%EXCEL_IMPORT_ID%> An unique ID of type string

15 Action Business Cases (ABC)

Action BC is helpful for adding database action like changing data, calling scripts server side without user interactivity. It is possible to call an Action BC using AJAX.

An Action BC can contain own web output too, even buttons like yes/no are possible.

An Action BC cann call database procedures or scripts automatically.



Demonstration Apparo Fast Edit

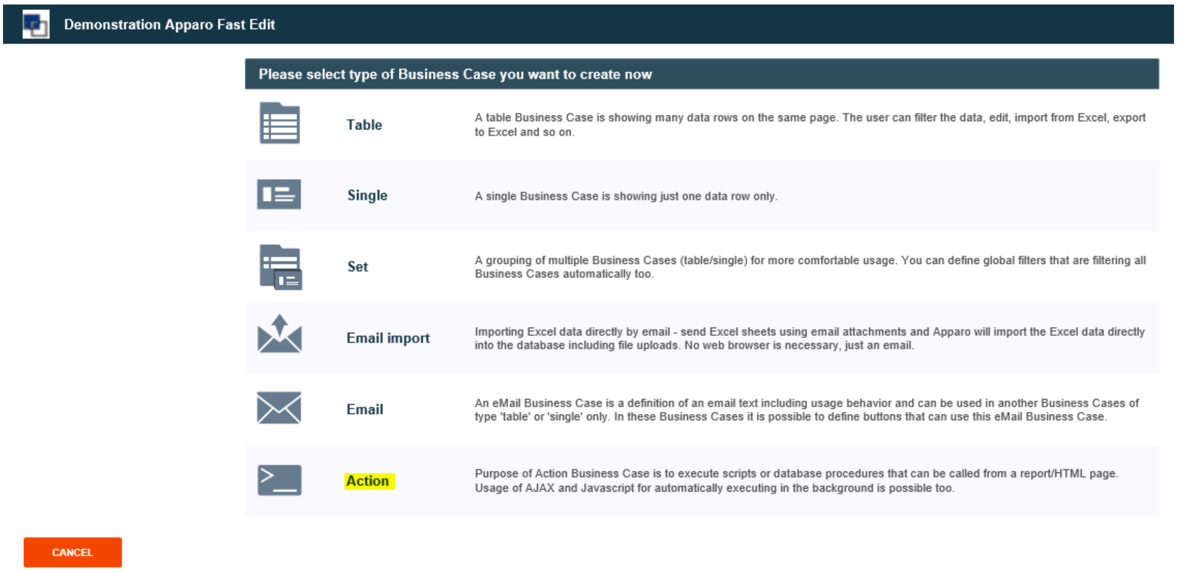
Please select type of Business Case you want to create now

Table	A table Business Case is showing many data rows on the same page. The user can filter the data, edit, import from Excel, export to Excel and so on.
Single	A single Business Case is showing just one data row only.
Set	A grouping of multiple Business Cases (table/single) for more comfortable usage. You can define global filters that are filtering all Business Cases automatically too.
Email import	Importing Excel data directly by email - send Excel sheets using email attachments and Apparo will import the Excel data directly into the database including file uploads. No web browser is necessary, just an email.
Email	An eMail Business Case is a definition of an email text including usage behavior and can be used in another Business Cases of type 'table' or 'single' only. In these Business Cases it is possible to define buttons that can use this eMail Business Case.
Action	Purpose of Action Business Case is to execute scripts or database procedures that can be called from a report/HTML page. Usage of AJAX and Javascript for automatically executing in the background is possible too.

You can find an execution example for AJAX and HTML in tab “Calling Business Case using http/Ajax” in the detail description. This example is using jquery as framework on the client side.

15.1 Example for calling a database function using AJAX

15.1.1 Create a new Action Business Case



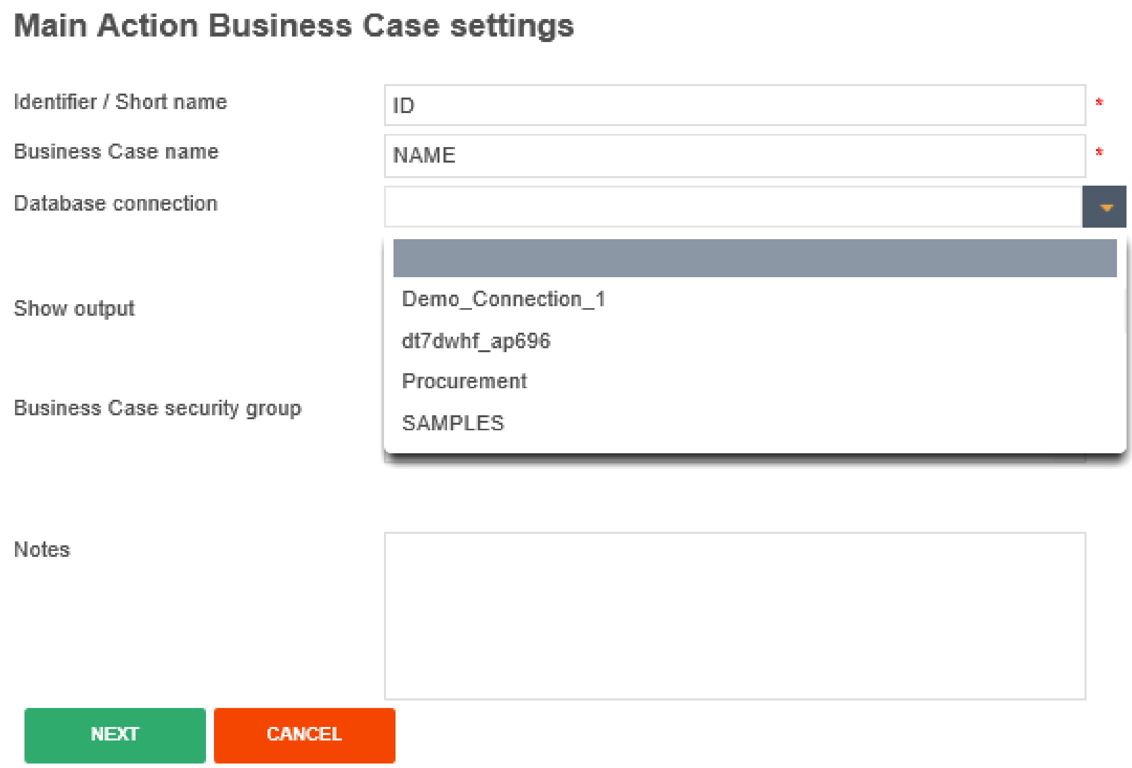
Demonstration Apparo Fast Edit

Please select type of Business Case you want to create now

Table	A table Business Case is showing many data rows on the same page. The user can filter the data, edit, import from Excel, export to Excel and so on.
Single	A single Business Case is showing just one data row only.
Set	A grouping of multiple Business Cases (table/single) for more comfortable usage. You can define global filters that are filtering all Business Cases automatically too.
Email import	Importing Excel data directly by email - send Excel sheets using email attachments and Apparo will import the Excel data directly into the database including file uploads. No web browser is necessary, just an email.
Email	An eMail Business Case is a definition of an email text including usage behavior and can be used in another Business Cases of type 'table' or 'single' only. In these Business Cases it is possible to define buttons that can use this eMail Business Case.
Action	Purpose of Action Business Case is to execute scripts or database procedures that can be called from a report/HTML page. Usage of AJAX and Javascript for automatically executing in the background is possible too.

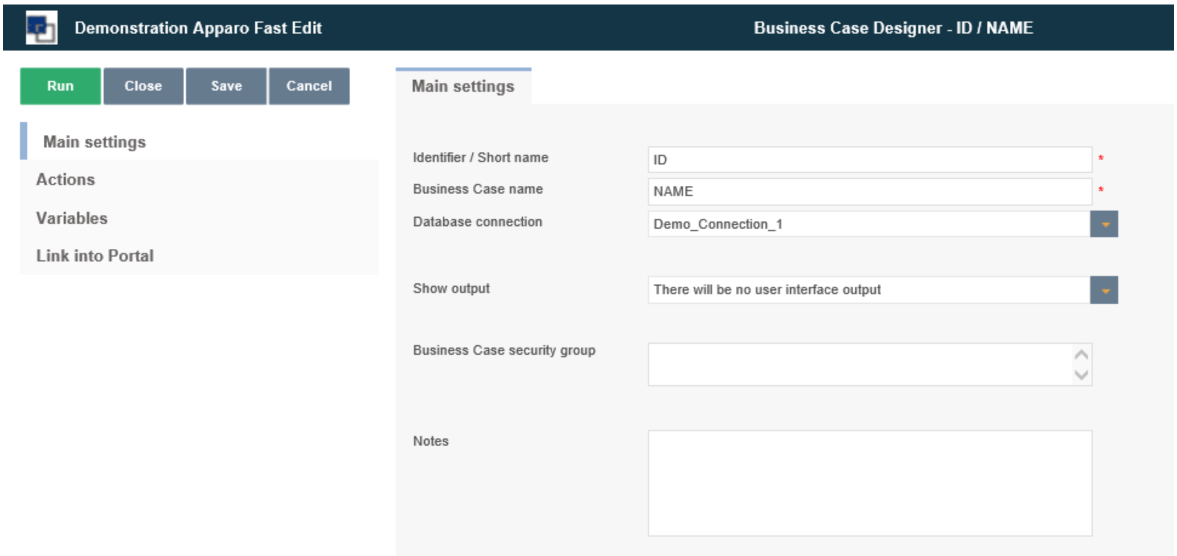
Select “Action” and define the main settings:

Please use a database connection too because later it is necessary to define a database procedure that must be called automatically.



Main Action Business Case settings

Identifier / Short name	ID *
Business Case name	NAME *
Database connection	
Show output	
Business Case security group	
Notes	



Identifier / Short name: ID *

Business Case name: NAME *

Database connection: Demo_Connection_1

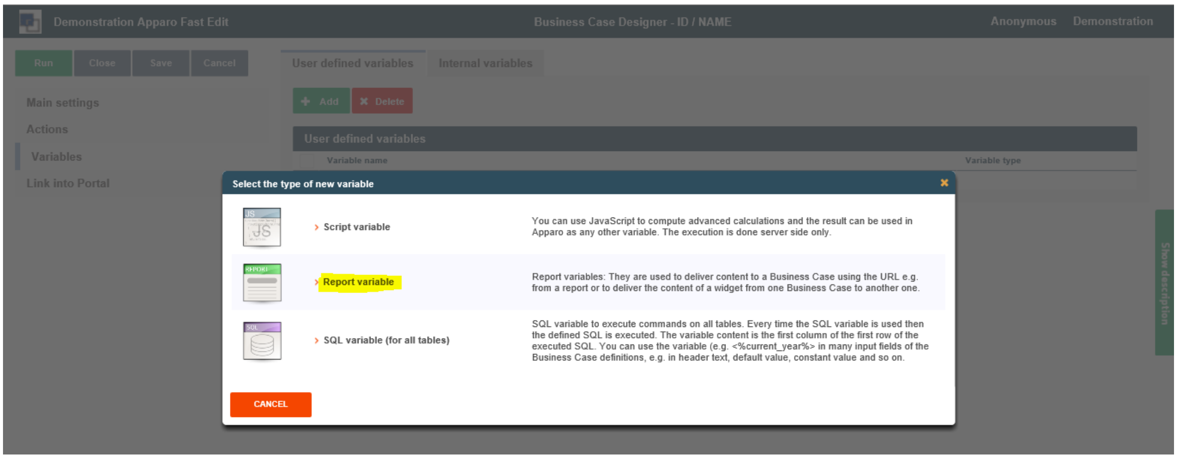
Show output: There will be no user interface output

Business Case security group:

Notes:

15.1.2 Define a report variable

Please click to tab “Variables” and add a new variable.

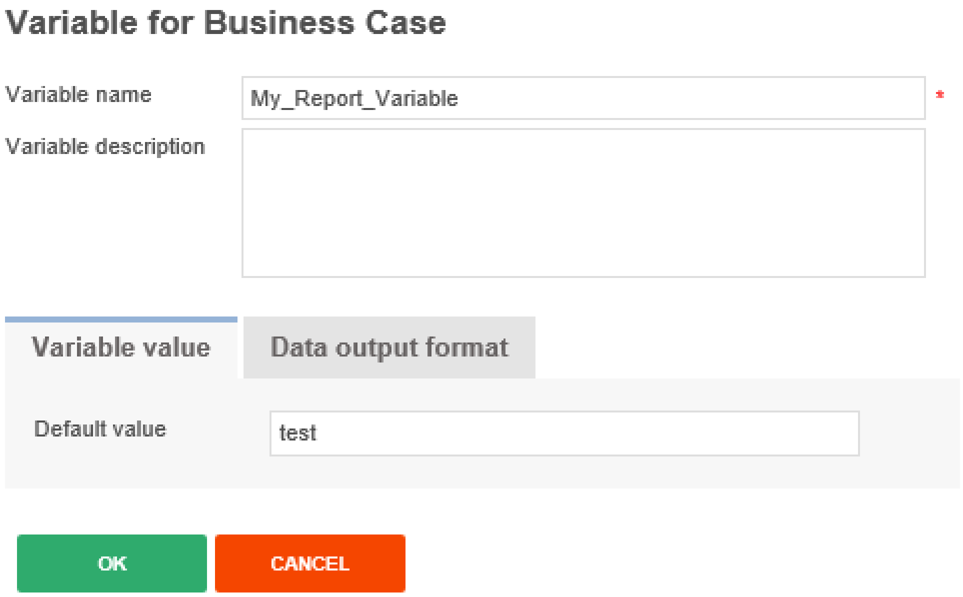


› Script variable	You can use JavaScript to compute advanced calculations and the result can be used in Apparo as any other variable. The execution is done server side only.
› Report variable	Report variables: They are used to deliver content to a Business Case using the URL e.g. from a report or to deliver the content of a widget from one Business Case to another one.
› SQL variable (for all tables)	SQL variable to execute commands on all tables. Every time the SQL variable is used then the defined SQL is executed. The variable content is the first column of the first row of the executed SQL. You can use the variable (e.g. <%current_year%> in many input fields of the Business Case definitions, e.g. in header text, default value, constant value and so on.

Select “Report variable”.

The report variable is helpful for delivering a value from a HTML page to this Action BC.
It will be used later as a parameter in the call of the database function.

Now the name and output settings:



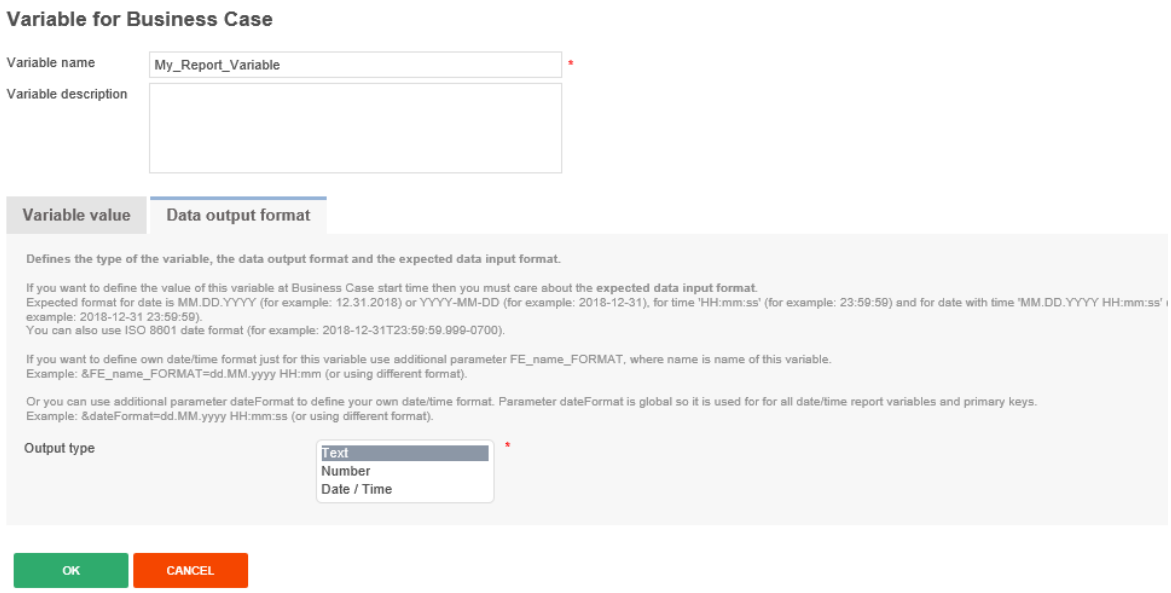
Variable for Business Case

Variable name: My_Report_Variable *

Variable description:

Default value: test

Change the output format to numeric:



Variable for Business Case

Variable name: My_Report_Variable *

Variable description:

Defines the type of the variable, the data output format and the expected data input format.

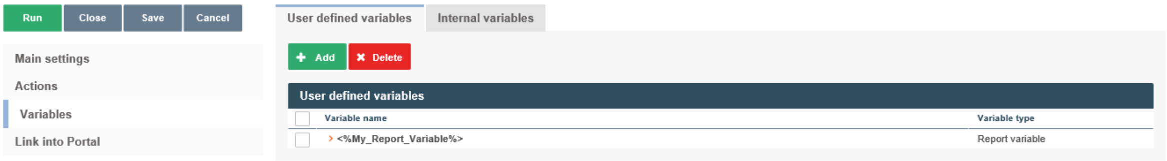
If you want to define the value of this variable at Business Case start time then you must care about the **expected data input format**.
Expected format for date is MM.DD.YYYY (for example: 12.31.2018) or YYYY-MM-DD (for example: 2018-12-31), for time 'HH:mm:ss' (for example: 23:59:59) and for date with time 'MM.DD.YYYY HH:mm:ss' (
example: 2018-12-31 23:59:59).
You can also use ISO 8601 date format (for example: 2018-12-31T23:59:59.999-0700).

If you want to define own date/time format just for this variable use additional parameter FE_name_FORMAT, where name is name of this variable.
Example: &FE_name_FORMAT=dd.MM.yyyy HH:mm (or using different format).

Or you can use additional parameter dateFormat to define your own date/time format. Parameter dateFormat is global so it is used for for all date/time report variables and primary keys.
Example: &dateFormat=dd.MM.yyyy HH:mm:ss (or using different format).

Output type: Text *

Now the report variable is defined:



User defined variables

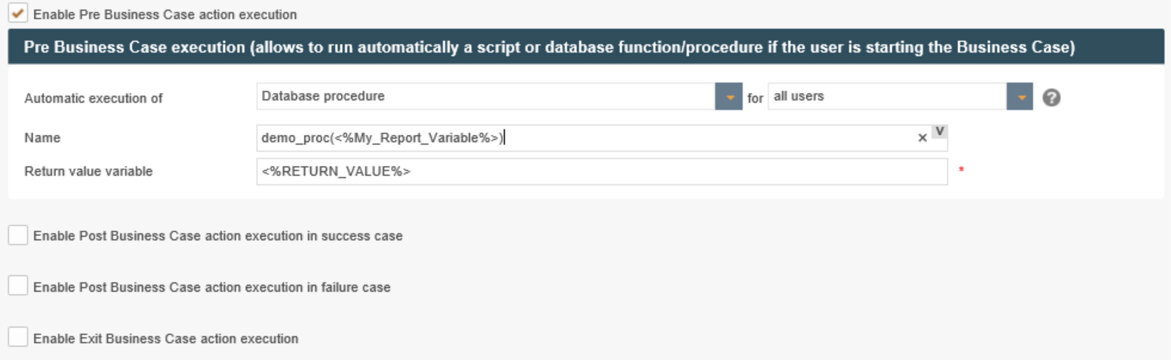
□	Variable name	Variable type
□	<%My_Report_Variable%>	Report variable

15.1.3 Define the actions

In the „Actions“ tab you can define the business logic that must be called if the Action BC is running.

In this example it must call the Oracle function oracle_function with parameter <%My_Report_Variable%>.

Please be sure that you use right character case of the function/procedure name.



☑ Enable Pre Business Case action execution

Pre Business Case execution (allows to run automatically a script or database function/procedure if the user is starting the Business Case)

Automatic execution of: Database procedure for all users

Name: demo_proc(<%My_Report_Variable%>)

Return value variable: <%RETURN_VALUE%> *

□ Enable Post Business Case action execution in success case

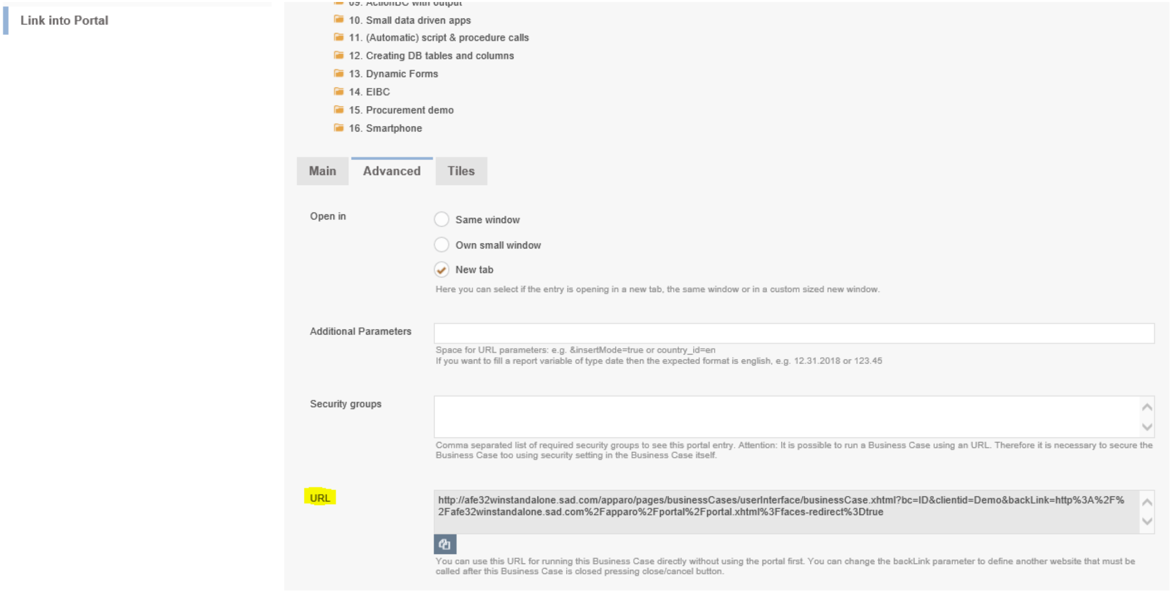
□ Enable Post Business Case action execution in failure case

□ Enable Exit Business Case action execution

15.1.4 Calling the Action BC

There are several ways to call the Action BC.
The easiest way is symply by calling the URL.

In the standalone version you will find it under Advanced in Link into Portal



Open in
○ Same window
○ Own small window
● New tab
Here you can select if the entry is opening in a new tab, the same window or in a custom sized new window.

Additional Parameters
Space for URL parameters: e.g. &insertMode=true or country_id=en
If you want to fill a report variable of type date then the expected format is english, e.g. 12.31.2018 or 123.45

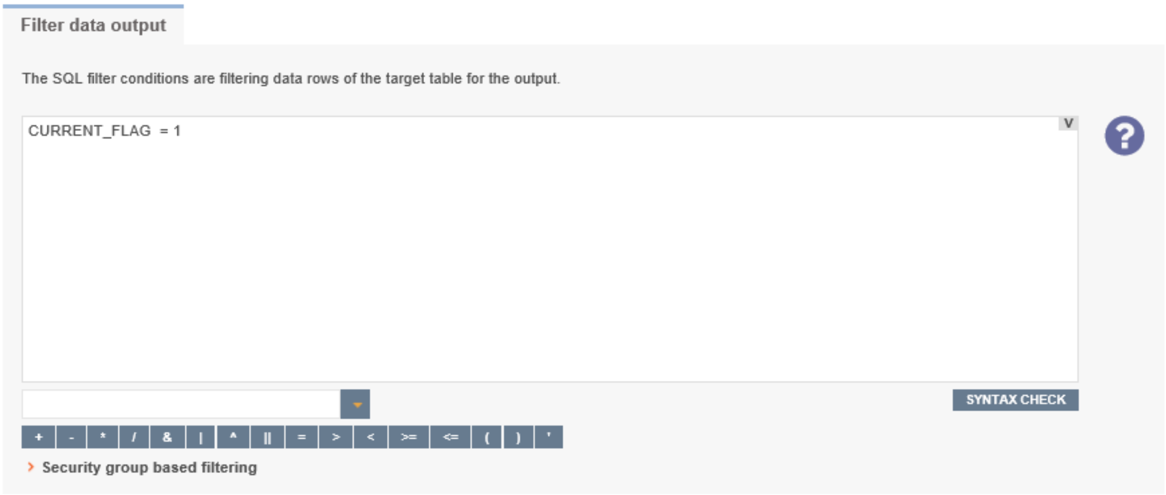
Security groups
Comma separated list of required security groups to see this portal entry. Attention: It is possible to run a Business Case using an URL. Therefore it is necessary to secure the Business Case too using security setting in the Business Case itself.

URL
http://afe32winstandalone.sad.com/apparo/pages/businessCases/userInterface/businessCase.xhtml?bc=ID&clientid=Demo&backLink=http%3A%2F%2Fafe32winstandalone.sad.com%2Fapparo%2Fportal%2Fportal.xhtml%3Ffaces-redirect%3Dtrue
You can use this URL for running this Business Case directly without using the portal first. You can change the backLink parameter to define another website that must be called after this Business Case is closed pressing close/cancel button.

Other ways, like calling via Ajax can be found in the user guide.

16 Filter data output

The function filter data output represents the global filter of the business case.
Additional filters can be added through filter widgets.



Filter data output

The SQL filter conditions are filtering data rows of the target table for the output.

```
CURRENT_FLAG  = 1
```

You can create different filters for different security groups. If a user is a member of the security group, only the security groups based filter is used instead of the global BC filter.

Variables are allowed.

Syntax

In the filter, you can use native SQL. It represents the Where clause of the SQL query and filters the output of the target table.

Example

SELECT * FROM target table WHERE **[=data output filter]**

16.1 Filter widgets

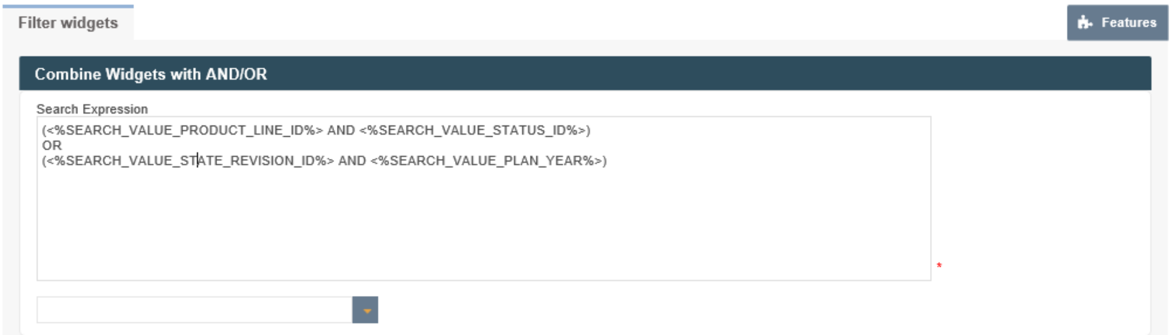
Contains the optical settings for the additional filter page and the settings for combining filter widgets

16.2 Filtering prompt page settings

You can add a filter page that is displayed before the user can see the data page for editing, inserting etc. The filter page will be used automatically if you add a filtering widget that is placed in the filter page. On this page you can define the title, description and other optical definitions of this filter page.

16.3 Combine Widgets with AND/OR

The function extends the filtering possibilities with filter widgets.



Search Expression

```
(<%SEARCH_VALUE_PRODUCT_LINE_ID%> AND <%SEARCH_VALUE_STATUS_ID%>)
OR
(<%SEARCH_VALUE_STATE_REVISION_ID%> AND <%SEARCH_VALUE_PLAN_YEAR%>)
```

Standard type of searching is combining all used searching widgets with logical 'AND' operator.
If you want to combine them differently then you must use 'Advanced Type Of Searching'.In 'Search Expression' you can define your own combination of searching widgets.
You can combine them with operators 'AND' and 'OR' and you can also use brackets '(' and ')'

Each searching widget must be used exacly once in the search expression.

The following examples contain combinations of these four filters widgets

Examples

One of the set criteria is met:
<%SEARCH_VALUE_PRODUCT_ID%> or <%SEARCH_VALUE_PRODUCT_COLOUR%> or <%SEARCH_VALUE_PRODUCT_SIZE%> or <%SEARCH_VALUE_PRODUCT_LINE_ID%>

The product line and ONE of the other filter criteria is met:
<%SEARCH_VALUE_PRODUCT_LINE_ID%> and (<%SEARCH_VALUE_PRODUCT_ID%> or <%SEARCH_VALUE_PRODUCT_COLOUR%> or <%SEARCH_VALUE_PRODUCT_SIZE%>)

The product line or the combination of ALL other filter criteria are met:
<%SEARCH_VALUE_PRODUCT_LINE_ID%> or (<%SEARCH_VALUE_PRODUCT_ID%> and <%SEARCH_VALUE_PRODUCT_COLOUR%> and <%SEARCH_VALUE_PRODUCT_SIZE%>)

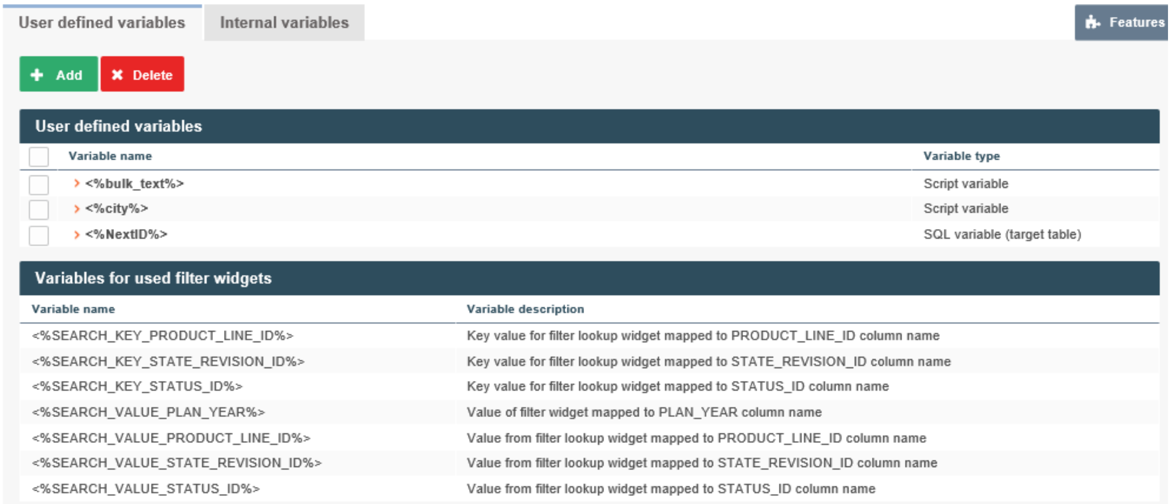
17 Variables

17.1 Definition

Variables are placeholders, they return one or more values. They can contain fixed values or perform calculations and queries dynamically.
At run time, i.e. when running the Business Case, the value of the variable is calculated and returned to the variables location.

Syntax: <%Variable_name%>

Variable names are case-sensitive.



User defined variables

□	Variable name	Variable type
□	› <%bulk_text%>	Script variable
□	› <%city%>	Script variable
□	› <%NextID%>	SQL variable (target table)

Variables for used filter widgets

Variable name	Variable description
<%SEARCH_KEY_PRODUCT_LINE_ID%>	Key value for filter lookup widget mapped to PRODUCT_LINE_ID column name
<%SEARCH_KEY_STATE_REVISION_ID%>	Key value for filter lookup widget mapped to STATE_REVISION_ID column name
<%SEARCH_KEY_STATUS_ID%>	Key value for filter lookup widget mapped to STATUS_ID column name
<%SEARCH_VALUE_PLAN_YEAR%>	Value of filter widget mapped to PLAN_YEAR column name
<%SEARCH_VALUE_PRODUCT_LINE_ID%>	Value from filter lookup widget mapped to PRODUCT_LINE_ID column name
<%SEARCH_VALUE_STATE_REVISION_ID%>	Value from filter lookup widget mapped to STATE_REVISION_ID column name
<%SEARCH_VALUE_STATUS_ID%>	Value from filter lookup widget mapped to STATUS_ID column name

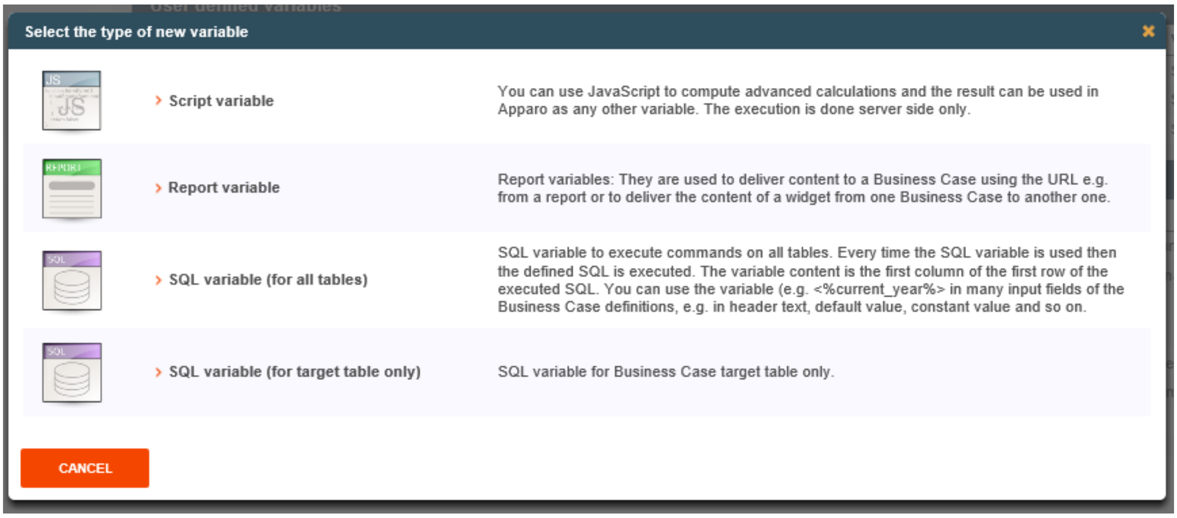
Basically, there are user-defined variables and internal variables.

Apparo Fast Edit supports 6 different types of variables:

- Internal pre-defined variables
- Operating system environment variables
- Script variables
- SQL variables
- Report variables
- Widget reference variables

Variables can be used in practically all settings and other variables

In Business Cases, you can create these types of variables:



Select the type of new variable

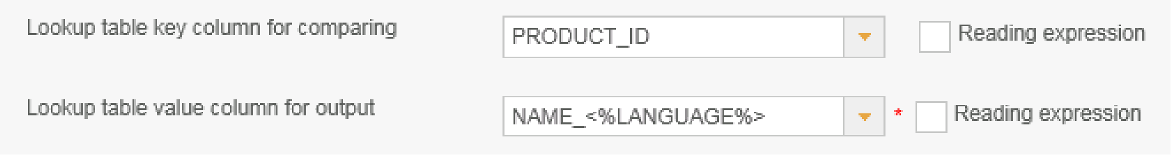
› Script variable	You can use JavaScript to compute advanced calculations and the result can be used in Apparo as any other variable. The execution is done server side only.
› Report variable	Report variables: They are used to deliver content to a Business Case using the URL e.g. from a report or to deliver the content of a widget from one Business Case to another one.
› SQL variable (for all tables)	SQL variable to execute commands on all tables. Every time the SQL variable is used then the defined SQL is executed. The variable content is the first column of the first row of the executed SQL. You can use the variable (e.g. <%current_year%> in many input fields of the Business Case definitions, e.g. in header text, default value, constant value and so on.
› SQL variable (for target table only)	SQL variable for Business Case target table only.

17.2 Use of variables in the Designer

Many widget settings can be made dynamic with variables.

Examples:

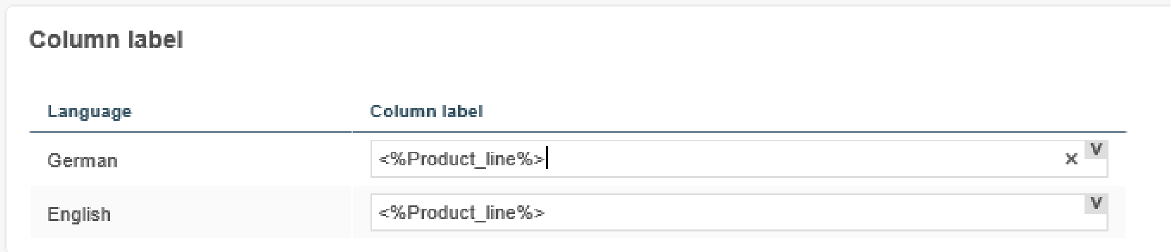
17.2.1 Variables in lookup definitions



Lookup table key column for comparing	PRODUCT_ID	□ Reading expression
Lookup table value column for output	NAME_<%LANGUAGE%> *	□ Reading expression

The associated database column is composed of, Name_ 'and the return value of the language used. German users are assigned to the column NAME_DE and English users to the NAME_EN column

17.2.2 Variables in labels, hint texts, the header and footer

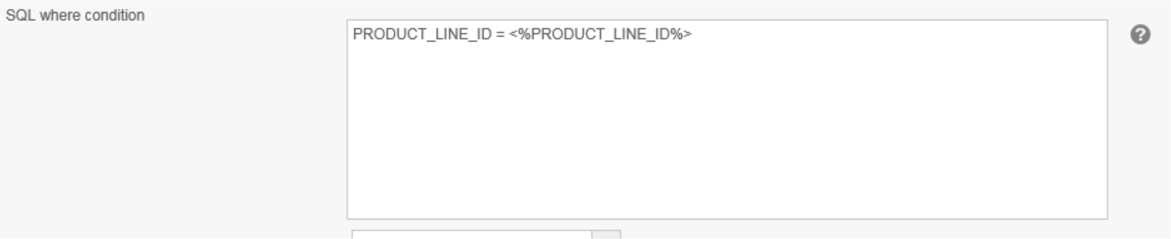


Column label

Language	Column label
German	<%Product_line%>
English	<%Product_line%>

In this example, the heading of the column is output by variables

17.2.3 Variables in filter definitions:



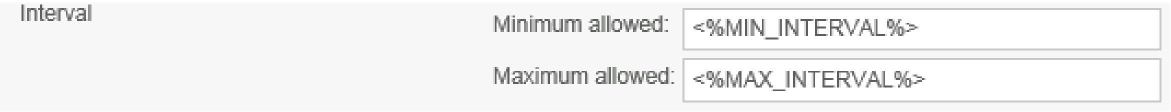
SQL where condition: PRODUCT_LINE_ID = <%PRODUCT_LINE_ID%>

Dynamic SQL filter

17.2.4 Variables used in data validations

Example for the use of dynamic variables as interval:

In a widget of type "input field", the permissible range of values is restricted:



Interval

Minimum allowed: <%MIN_INTERVAL%>

Maximum allowed: <%MAX_INTERVAL%>

Example of dynamic intervals that restrict the values input by calculations.

Dynamic values are realized via variable:

Our SQL variable is of type SQL variable (target table only). This has the advantage that automatically all user-group-dependent filters are used.

The current line is identified by the value in the widget PRODUCT_ID. That PRODUCT_ID is a primary key.

The following sample SQL for SQL variable would be possible:

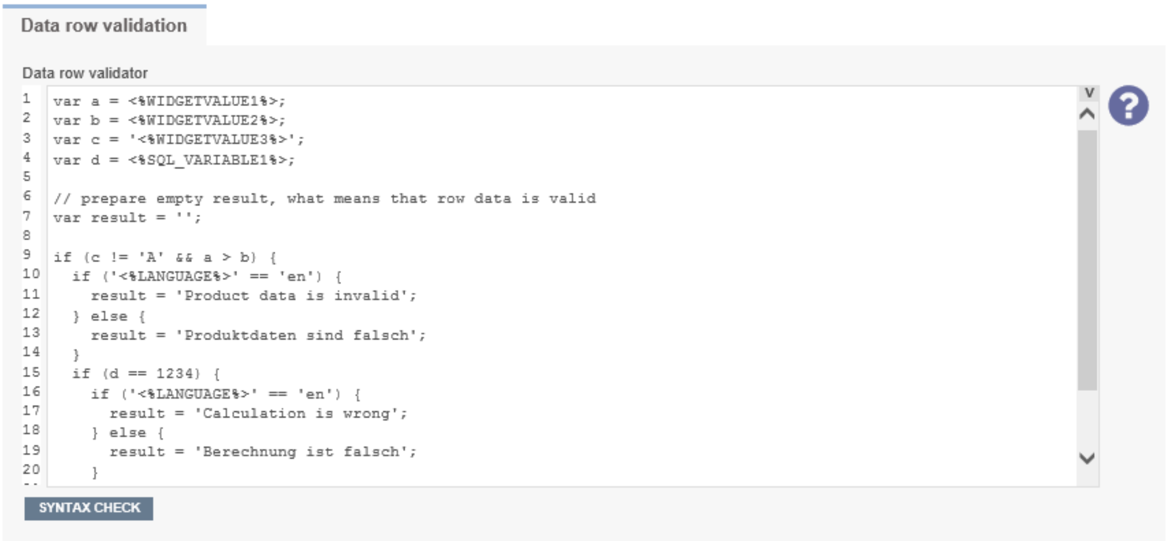
SELECT min_value FROM target_table WHERE product_id = <%PRODUCT_ID%>

In this case, <%PRODUCT_ID%> refers to the widget PRODUCT_ID in the Business Case and returns the current value.

The SELECT returns the value min_value of the current line and stores it in the new SQL variable "VAR_MIN_CALC ".

The SQL is executed every time when accessing the variable "VAR_MIN_CALC".

Example for the use of variables in the data row validation:



Data row validation

Data row validator

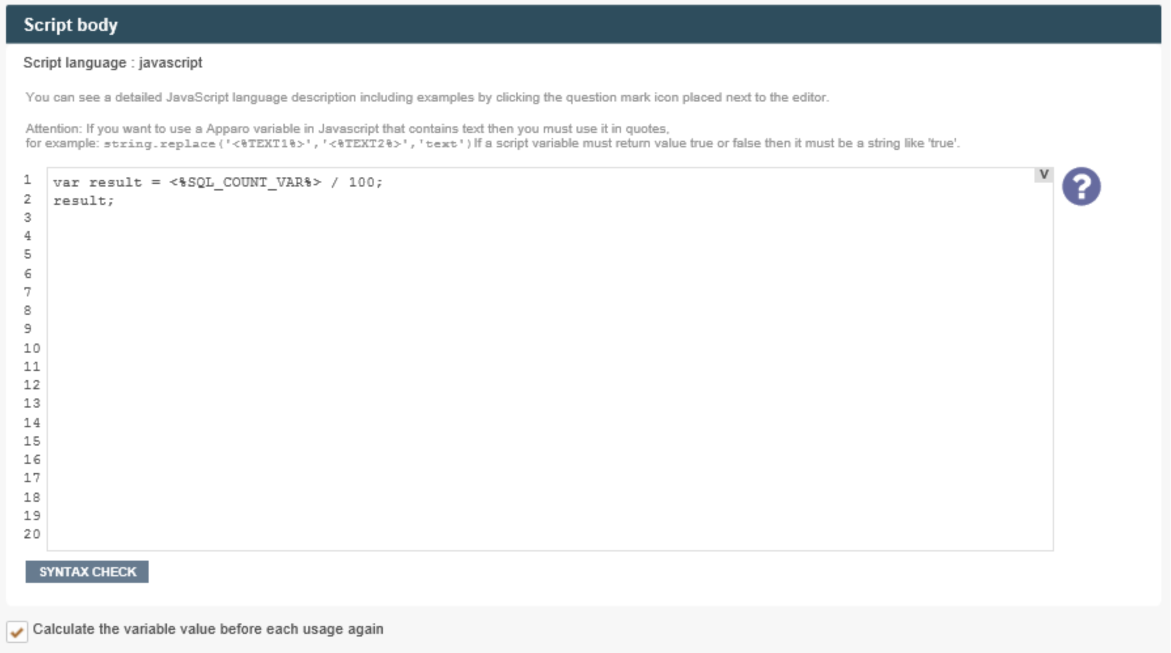
```
var a = <%WIDGETVALUE1%>;
var b = <%WIDGETVALUE2%>;
var c = '<%WIDGETVALUE3%>';
var d = <%SQL_VARIABLE1%>;

// prepare empty result, what means that row data is valid
var result = '';

if (c != 'A' && a > b) {
  if ('<%LANGUAGE%>' == 'en') {
    result = 'Product data is invalid';
  } else {
    result = 'Produktdaten sind falsch';
  }
  if (d == 1234) {
    if ('<%LANGUAGE%>' == 'en') {
      result = 'Calculation is wrong';
    } else {
      result = 'Berechnung ist falsch';
    }
```

In this example widget reference variables, SQL variables and internal variables have been used

17.2.5 Variables in variables

Examples for the use in variables

Script variable:



Script body

Script language : javascript

You can see a detailed JavaScript language description including examples by clicking the question mark icon placed next to the editor.

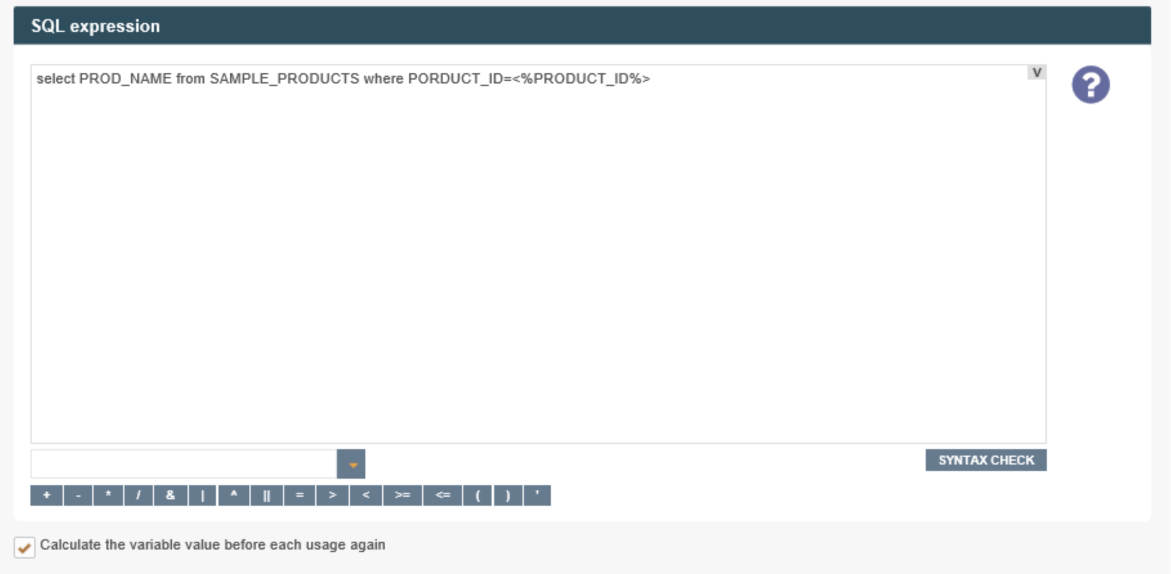
Attention: If you want to use a Apparo variable in Javascript that contains text then you must use it in quotes,
for example: `string.replace('<%TEXT1%>','<%TEXT2%>','text')` If a script variable must return value true or false then it must be a string like 'true'.

```
var result = <%SQL_COUNT_VAR%> / 100;
result;
```

☑ Calculate the variable value before each usage again

In this example, an internal variable is used within a JavaScript variable

SQL variable:



SQL expression

```
select PROD_NAME from SAMPLE_PRODUCTS where PORDUCT_ID=<%PRODUCT_ID%>
```

☑ Calculate the variable value before each usage again

SQL variable: Widget reference variables are often used in SQL variables. JavaScript variables are also possible.

17.3 Internal Variables

The following variables are predefined and can be used immediately:

Variable name	Variable description
<%AFE_HOME_DIR%>	Folder on the server which contains AFE settings
<%AFE_BC_NAME%>	Name of currently opened Business Case
<%AFE_BC_ID%>	ID of the Business Case
<%AFE_CLIENT_ID%>	ID of the used client
<%SERVER_NAME%>	Name of server where Apparo Fast Edit is running
<%USER_NAME%>	Name of currently logged user
<%USER_LOGIN%>	Unique login name of currently logged user
<%LANGUAGE%>	Identifier of language in which user interface is displayed
<%CURRENT_DATE%>	Current date and time
<%DATE%>	Current date
<%TIMESTAMP%>	Current date and time
<%TIME_MS%>	The number of milliseconds since 1.1.1970 (UNIX timestamp)
<%PRIMARY_KEY%>	The primary key of current row
<%PRIMARY_KEYS%>	Comma delimited list of the used primary keys
<%ROW_EDIT_TYPE%>	Type of data modification. Output is of type string
<%SELECTED_ROWS_COUNT%>	This variable is helpful for output e.g. "Are you sure you want to delete X rows?"
<%ROWS%>	Count of current visible rows
<%BULK_UPDATED_ROWS%>	Count of all updated rows
<%INSERTED_ROWS%>	Count of all inserted rows during Excel import
<%UPDATED_ROWS%>	Count of all updated rows during Excel import
<%IMPORTED_ROWS%>	Count of all imported rows during Excel import
<%IMPORTED_FILE_NAME%>	Name of the currently imported Excel file
<%EXCEL_IMPORT_ID%>	Universally unique identifier (UUID) of type String of each Excel import
<%EXPECTED_COLUMNS%>	List of expected columns for Excel import
<%LINE%>	This variable is helpful for display error during import e.g. "Import error in line X:"
<%SAME_PK_ROWS%>	It is helpful for display error message like "There is already a row with the same primary key value(s). Counting <%SAME_PK_ROWS%>"
<%UPLOADED_FILE_NAME%>	Name of the uploaded file (file upload/download widget)
<%DELETED_FILE_NAME%>	Name of the deleted file (file upload/download widget)
<%RETURN_VALUE%>	In this variable the return code of the function/script is stored.

If the Business Case uses search fields, e.g. a filter lookup, then the matching variables are automatically defined for each search widget:

<%SEARCH_KEY_COLOR%>	Key-Value of the Lookup widget, mapped to column 'COLOR'
<%SEARCH_VALUE_COLOR%>	Value of the Lookup widgets, mapped to column 'COLOR'

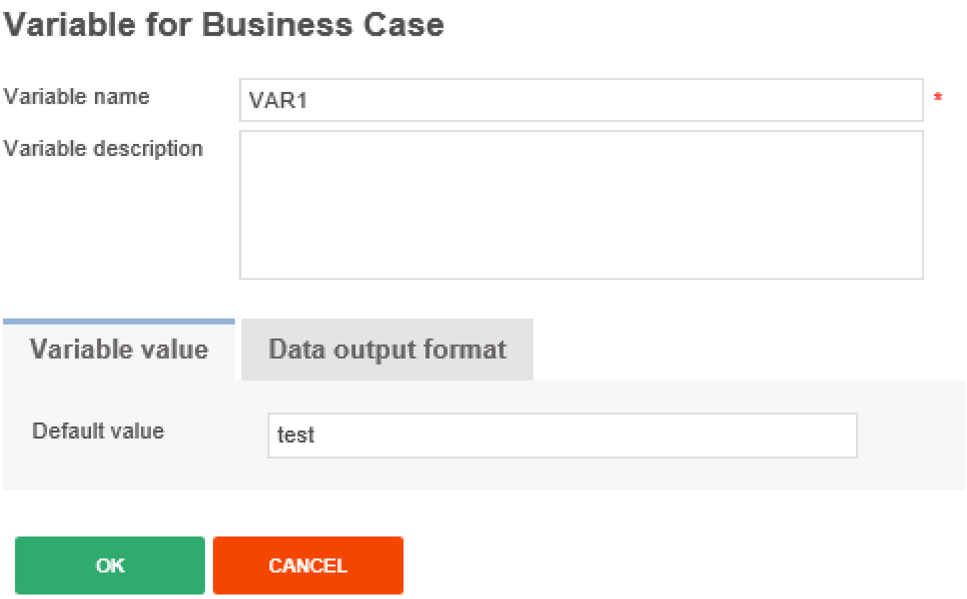
17.4 Report Variables

They are used to deliver content to a Business Case using the URL e.g. from a report or to deliver the content of a widget from one Business Case to another one.

Using a hyperlink in the report, the value can be transported to the connected Business Case.

A report variable in reports has the syntax FE_name.

Here you can define the "name".



Variable for Business Case

Variable name: VAR1 *

Variable description:

Default value: test

The default value is used only if the report does not provide a value for this variable.

Example of calling a Business Case from a Cognos report (URL):

/cognos8/cgi-bin/cognos.cgi?b_action=xts.run&amp;m=portal/bridge.xts&amp;c_env=/portal/env.xml&amp;c_mode=post&amp;c_cmd=/KFE/pages/userInterface.jsf?bc=BCNAME**&FE_Var1=1234**&backLink=%2Fcontent%2Ffolder%5B%40name%3D%27Apparo+Fast+Edit+Demonstration%27%5D

In the URL has the report variable Var1 the value 1234

In reality report variables are often used to transport e.g. the values of prompts to the Business Case.

17.5 SQL Variables

There are 2 different types of SQL variables:

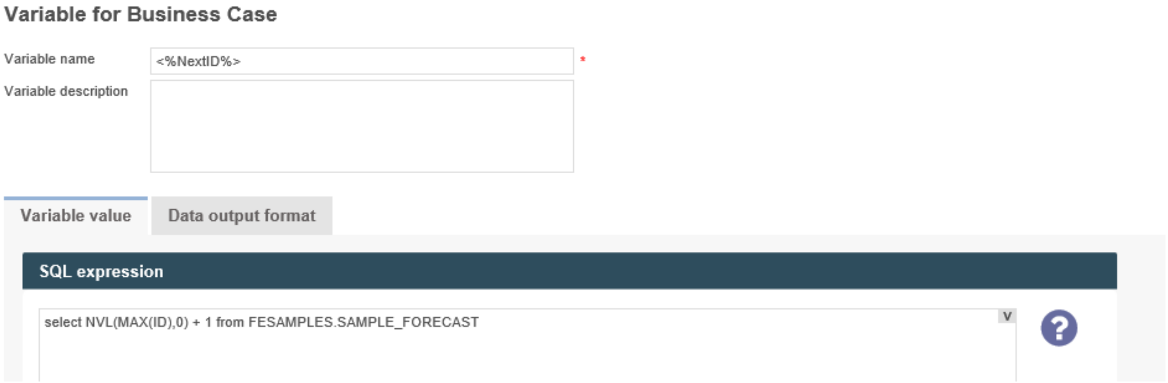
• SQL variable (for all tables)

SQL variable for executing selects in all tables. Each time you use the variable the associated SQL is executed. This variable contains the content of the first row, first column (depending on the SQL command)

• SQL variable (for target table only)

SQL variable for the Business Case target table. All filters of the Business Case are considered.

Example:



Variable for Business Case

Variable name: <%NextID%> *

Variable description:

SQL expression

```
select NVL(MAX(ID),0) + 1 from FESAMPLES.SAMPLE_FORECAST
```

The main difference is that a **SQL-variable (for target table only)** automatic uses:

- The filter of the Business Case
- All security-dependent filters
- All Widget dependent filters

Therefore, the SQL of the variable must also use the target table so that the filter will also find the same column names.

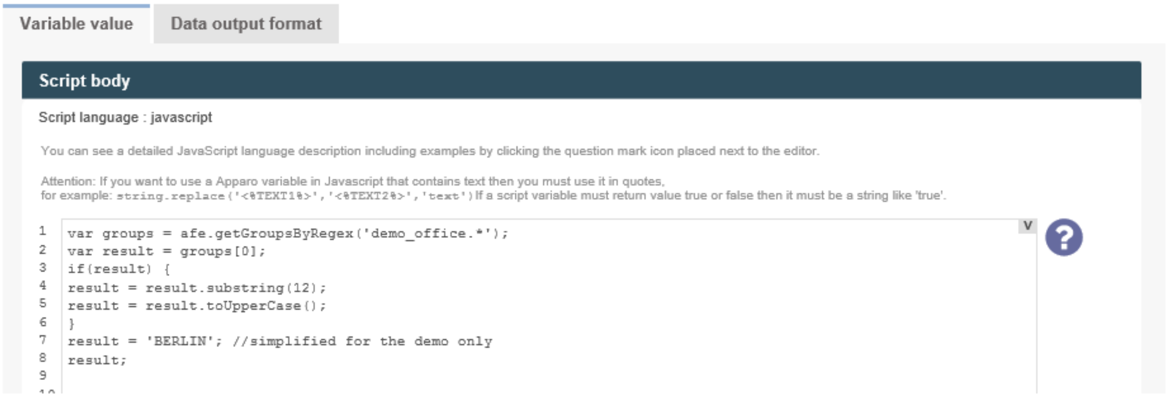
SQL variables (for target table only) are very useful for calculations that relate to the target table - e.g. sum of all sales, as all the used filters are considered automatically.

Since the output changes when using filter widgets, usually this dynamic filter restriction must also be considered.
In a **SQL variable (for target table only)** this is done automatically, in opposite to a SQL variable (for all tables).

An SQL variable is always executed when it is used.
As result, the first result value is used.

17.6 Script Variables

A script variable is a routine that returns a value. It is not connected to a database session.



Script language : javascript

You can see a detailed JavaScript language description including examples by clicking the question mark icon placed next to the editor.

Attention: If you want to use a Apparo variable in Javascript that contains text then you must use it in quotes,
for example: `string.replace('<%TEXT1%>','<%TEXT2%>','text')` If a script variable must return value true or false then it must be a string like 'true'.

```
var groups = afe.getGroupsByRegex('demo_office.*');
var result = groups[0];
if(result) {
result = result.substring(12);
result = result.toUpperCase();
}
result = 'BERLIN'; //simplified for the demo only
result;
```

The calculated value is returned by ‚result'

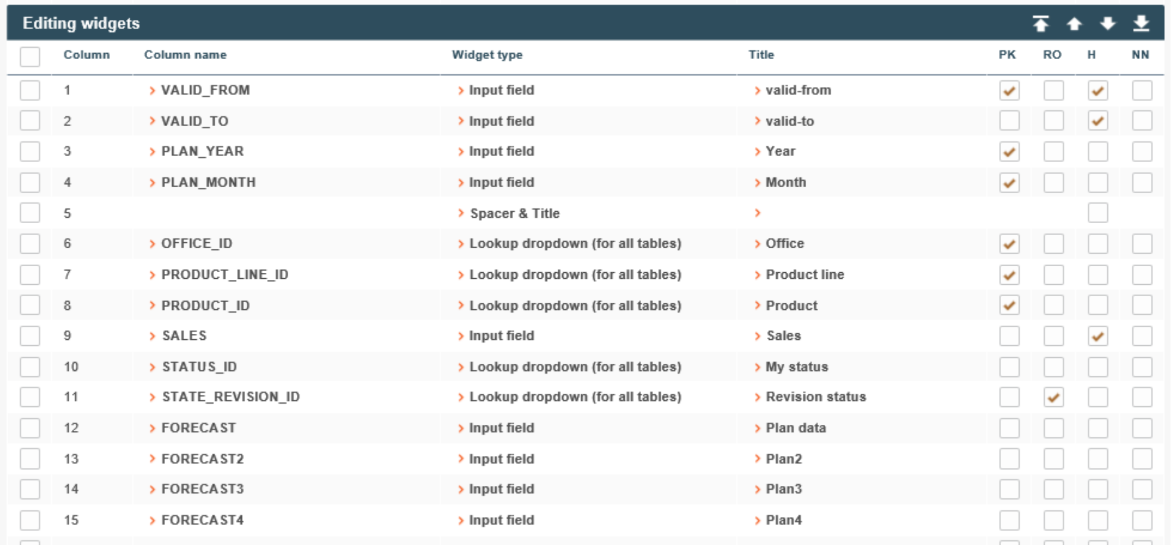
You can use in the JavaScript routine SQL variables, reference variables and internal variables too.
The Logic is defined by **JavaScript** and can be combined with SQL-Queries.

You can use scrip variables within database connection settings, but connection pooling will be disabled then.

17.7 Widget reference variables

They include the value of a widget in the corresponding row.
Due the row reference these variables can be used only where a row reference is applicable.
They cannot be used e.g.: in the calculation area or in the header and footer.

Syntax: <%COLUMN_NAME%>



Editing widgets

☐	Column	Column name	Widget type	Title	PK	RO	H	NN
☐	1	› VALID_FROM	› Input field	› valid-from	☑	☐	☑	☐
☐	2	› VALID_TO	› Input field	› valid-to	☐	☐	☑	☐
☐	3	› PLAN_YEAR	› Input field	› Year	☑	☐	☐	☐
☐	4	› PLAN_MONTH	› Input field	› Month	☑	☐	☐	☐
☐	5		› Spacer & Title	›			☐	
☐	6	› OFFICE_ID	› Lookup dropdown (for all tables)	› Office	☑	☐	☐	☐
☐	7	› PRODUCT_LINE_ID	› Lookup dropdown (for all tables)	› Product line	☑	☐	☐	☐
☐	8	› PRODUCT_ID	› Lookup dropdown (for all tables)	› Product	☑	☐	☐	☐
☐	9	› SALES	› Input field	› Sales	☐	☐	☑	☐
☐	10	› STATUS_ID	› Lookup dropdown (for all tables)	› My status	☐	☐	☐	☐
☐	11	› STATE_REVISION_ID	› Lookup dropdown (for all tables)	› Revision status	☐	☑	☐	☐
☐	12	› FORECAST	› Input field	› Plan data	☐	☐	☐	☐
☐	13	› FORECAST2	› Input field	› Plan2	☐	☐	☐	☐
☐	14	› FORECAST3	› Input field	› Plan3	☐	☐	☐	☐
☐	15	› FORECAST4	› Input field	› Plan4	☐	☐	☐	☐

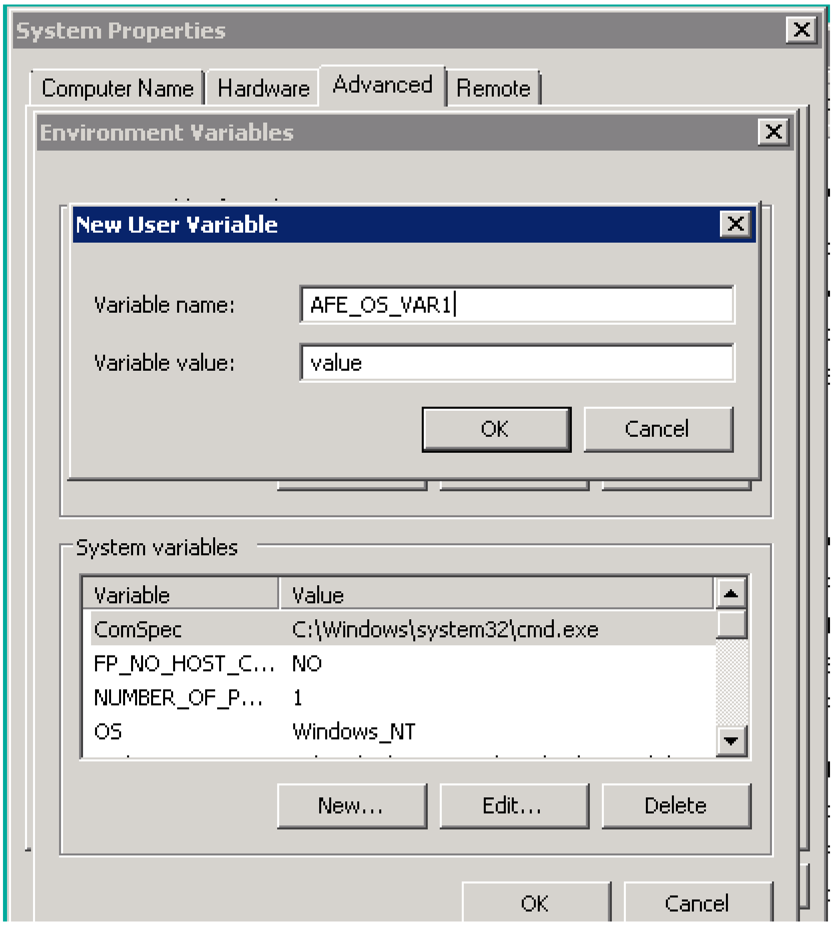
Example of a widget reference variables: <%OFFICE_ID%>

17.8 Environmental variables

These variables are defined in the operating system and can be used in all Business Cases.

Syntax: <%AFE_VARIABLE%>

Example of the definition in Windows:



Variable name: AFE_OS_VAR1

Variable value: value

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
FP_NO_HOST_C...	NO
NUMBER_OF_P...	1
OS	Windows_NT

To be recognized by Fast Edit the variable must start with 'AFE_'

17.9 Debugging variables

In the use of script and SQL variables with increasing complexity occur more frequently logical and/or syntactical errors. This chapter gives you an insight on how to recognize or find the errors.

17.9.1 Definition

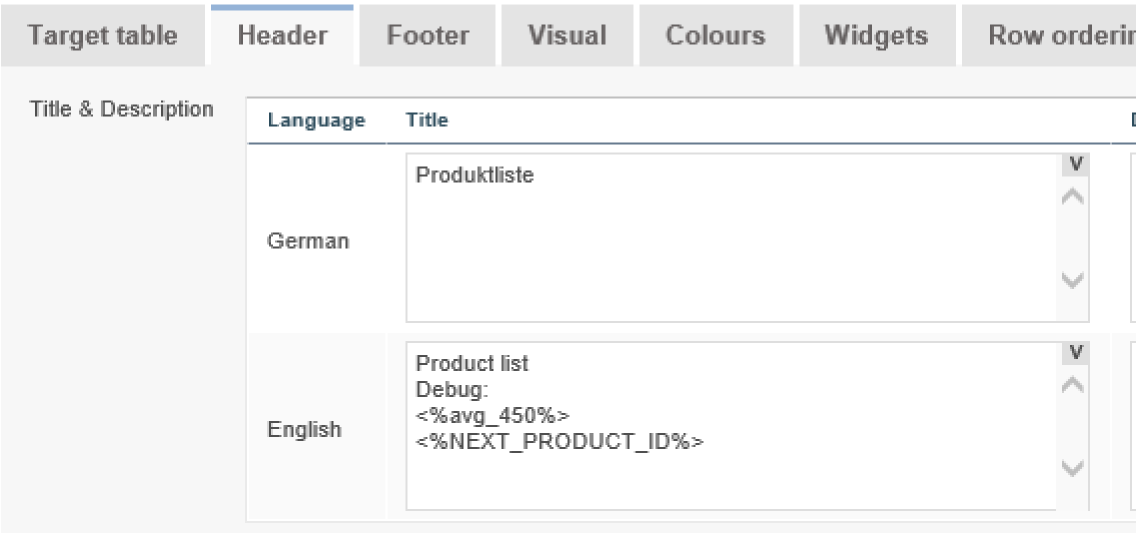
With debugging the search and elimination of errors is called in computer science.

17.9.2 Variable output for debugging purposes

If variables are not shown on the Business Case, e.g. when they are used in other variables or used for passing parameters in script or DB procedure calls, it is often difficult to detect errors.
It is therefore advisable to output these variables directly in the Business Case, at least during the development phase.

Variable output in the head area

Variables without row reference can be output directly in the head area.



Language	Title
German	Produktliste
English	Product list Debug: <%avg_450%> <%NEXT_PRODUCT_ID%>

Variable output in the edit area

Variables with row reference, that are generally widget reference variables or script- and SQL variables, containing widget reference variables, cannot be output in the header for debugging purposes because widget reference variables always contain the content of the widget, in the row they are used.

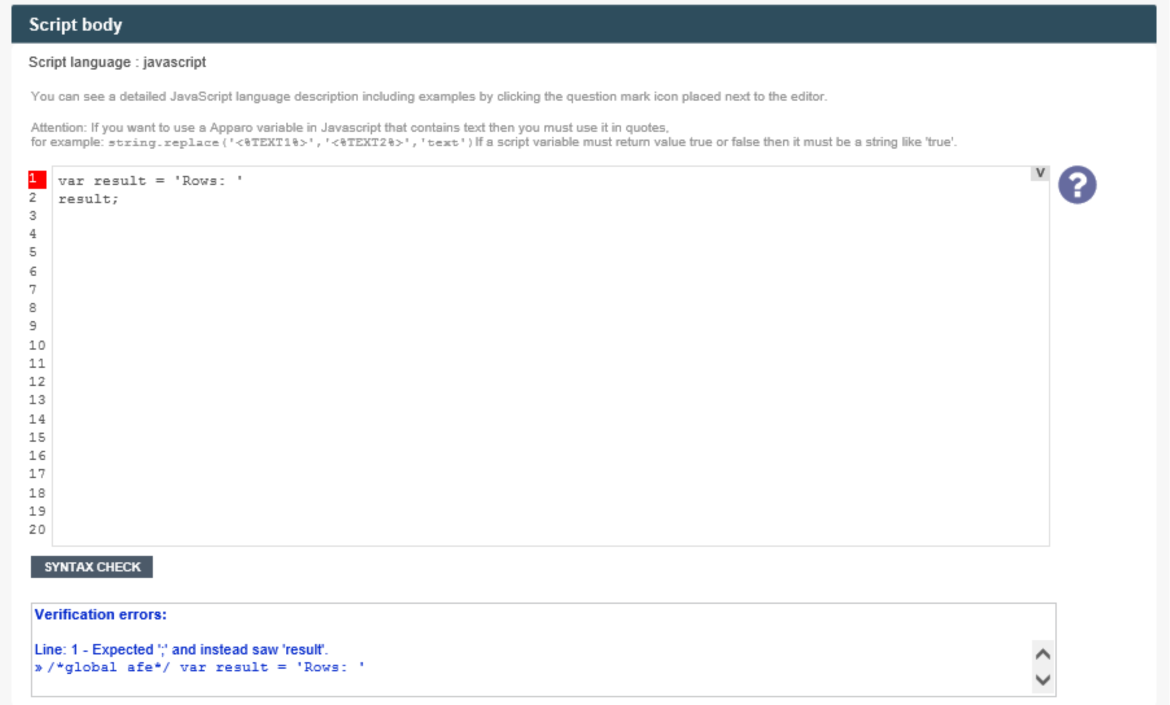
17.9.3 Debugging script variables

In addition to the substantive examination by outputting in the head area, there are other ways to check for errors:

Syntax check for script variables

JavaScript variables make it possible to check the included JavaScript commands for syntax errors. If errors occur, the corresponding line is highlighted and a description of the error is displayed below the script area.

In the following example, the semicolon at the end of the first line is missing:



Script body

Script language : javascript

You can see a detailed JavaScript language description including examples by clicking the question mark icon placed next to the editor.

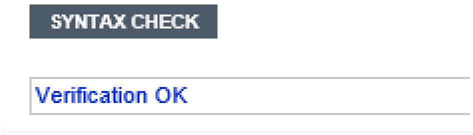
Attention: If you want to use a Apparo variable in Javascript that contains text then you must use it in quotes,
for example: `string.replace('<%TEXT1%>','<%TEXT2%>','text')` If a script variable must return value true or false then it must be a string like 'true'.

```
var result = 'Rows: '
result;
```

Verification errors:

Line: 1 - Expected ';' and instead saw 'result'.
» /*global afe*/ var result = 'Rows: '

If the syntax is without errors, the error check displays an appropriate message:



Verification OK

Error output in the log

Errors in JavaScript variables are always output in the AFE Log.
You can find the file "afe.log" in the folder [Apparo-HOME]/FastEdit/logs/

When using our example variable in the header area you would find the following error in the log:

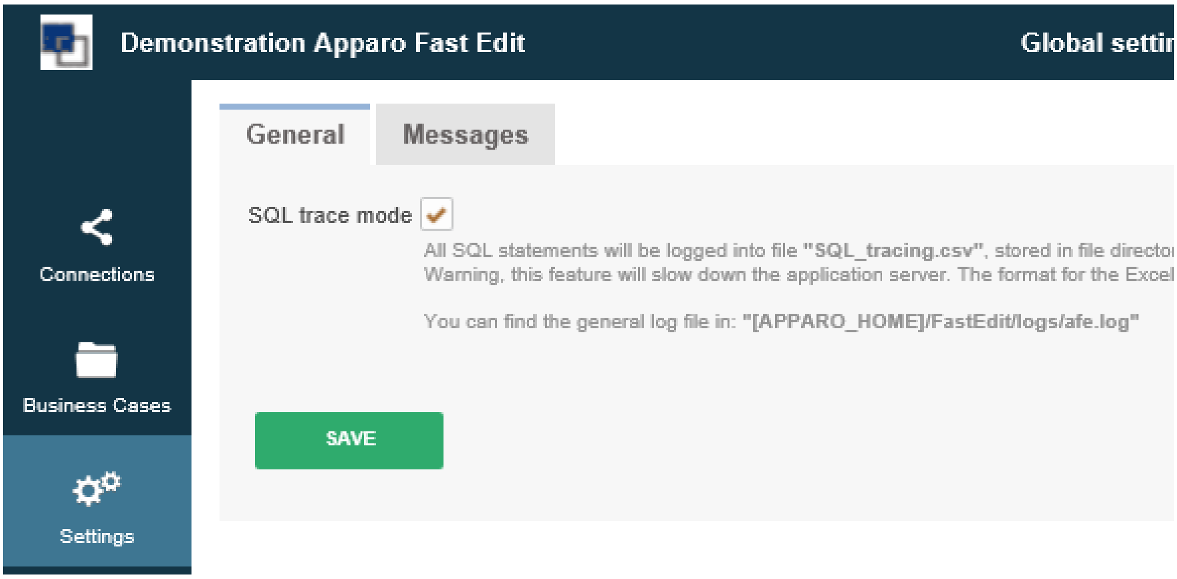
```
2015-05-07 14:02:03,547 [ajp-apr-9800-exec-8] WARN  ScriptVariableResolver - The exception is: sun.org.mozilla.javascript.internal.EvaluatorException: syntax error (<Unknown source>#1) in <Unknown source> at line number 1
2015-05-07 14:02:03,547 [ajp-apr-9800-exec-8] WARN  ScriptVariableResolver - Error in script variable named '100'
2015-05-07 14:02:03,547 [ajp-apr-9800-exec-8] WARN  ScriptVariableResolver - The script body is:
var x = * 100;
//Rückgabegabe des berechneten Wertes
x;
```

The widget reference variable here was not resolved because of the missing row reference and was producing an erroneous formula.

17.9.4 Debugging SQL variables

Error in SQL variables are displayed in the output in the header or edit area, and in the file afe.log.

A better way to identify problems with SQL variables provides the SQL Trace log, which must be activated in the designer:



SQL trace mode ☑

All SQL statements will be logged into file "SQL_tracing.csv", stored in file directo
Warning, this feature will slow down the application server. The format for the Excel

You can find the general log file in: "[APPARO_HOME]/FastEdit/logs/afe.log"

You can find the file **"afeSQL.csv"** in the folder **[Apparo-HOME] / FastEdit / logs /**

In the trace log all SQL queries are stored in tabular form with the following information:

Timestamp, client, business case, user name, execution time, SQL command

07.05.2015 15:26	T3	sb_variable_sql_TBC1	de	0:00:00.000	Select count(SALES_ID) from TESTING.SAMPLE_SALES

Typical error outputs are:

Select count (SALES_ID) from TESTING.SAMPLE_SALES ORA-00904: "CUONT": invalid identifier

Or

Select SALES_DESCR from ''.SAMPLE_SALES where SALES_ID = '' ORA-00903: invalid table name

18 Data hierarchies

For the presentation of hierarchical data are lookup widgets ideal.
The easiest way is to explain this with an example.
For our example, we select geographical data. The top level are the continents, subordinated therein are countries and therein regions.

18.1 What do we need?

For the illustration of this hierarchy we need four database tables.

1. The target table, which stores the actual records
2. Three lookup tables containing the IDs of the data set, the real name and the ID of the parent element.

The assignment to the parents are done via the ID of the predecessor, for example, each country has additionally added the ID of the continent on which it is located.

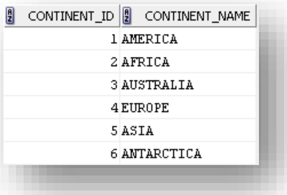
To practice it, the scripts of each table:

Target table:

```
CREATE TABLE SAMPLE_LOOKUP
  (        "LOOKUP_ID" NUMBER,
           "LOOKUP_CONTINENT" NUMBER,
           "LOOKUP_COUNTRY" NUMBER,
           "LOOKUP_REGION" NUMBER )
```

Lookup table continent:

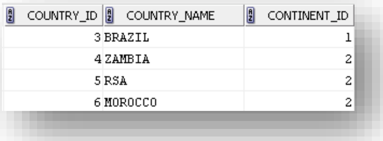
```
  CREATE TABLE SAMPLE_LOOKUP_CONTINENT
  (        "CONTINENT_ID" NUMBER,
           "CONTINENT_NAME" VARCHAR2(100 BYTE)  )
```



CONTINENT_ID	CONTINENT_NAME
1	AMERICA
2	AFRICA
3	AUSTRALIA
4	EUROPE
5	ASIA
6	ANTARCTICA

Lookup table country:

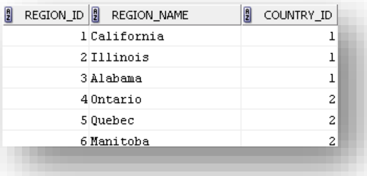
```
CREATE TABLE "TESTING"."SAMPLE_LOOKUP_COUNTRY"
  (        "COUNTRY_ID" NUMBER,
           "COUNTRY_NAME" VARCHAR2(100 BYTE),
           "CONTINENT_ID" NUMBER  )
```



COUNTRY_ID	COUNTRY_NAME	CONTINENT_ID
3	BRAZIL	1
4	ZAMBIA	2
5	RSA	2
6	MOROCCO	2

Lookup table region:

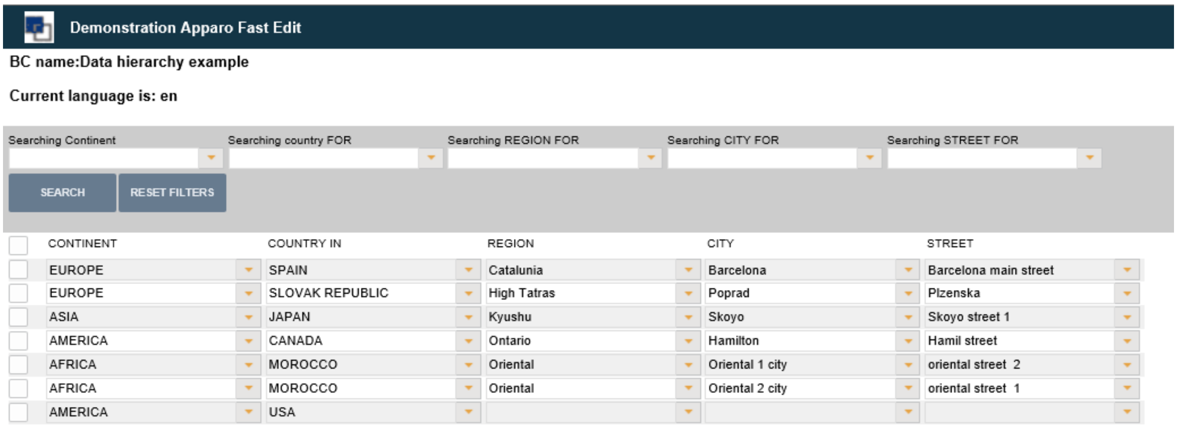
```
CREATE TABLE "TESTING"."SAMPLE_LOOKUP_REGION"
  (        "REGION_ID" NUMBER,
           "REGION_NAME" VARCHAR2(100 BYTE),
           "COUNTRY_ID" NUMBER  )
```



REGION_ID	REGION_NAME	COUNTRY_ID
1	California	1
2	Illinois	1
3	Alabama	1
4	Ontario	2
5	Quebec	2
6	Manitoba	2

18.2 Expected result

At the end we want a Business Case, in which the selection of a country is depending of the previously selected continent. The selectable countries shown are on the selected continent. If we choose the country, then the only selectable regions in the final lookup widget, are laying in the previously selected country. For the filter widgets used this should also apply.



Demonstration Apparo Fast Edit

BC name:Data hierarchy example

Current language is: en

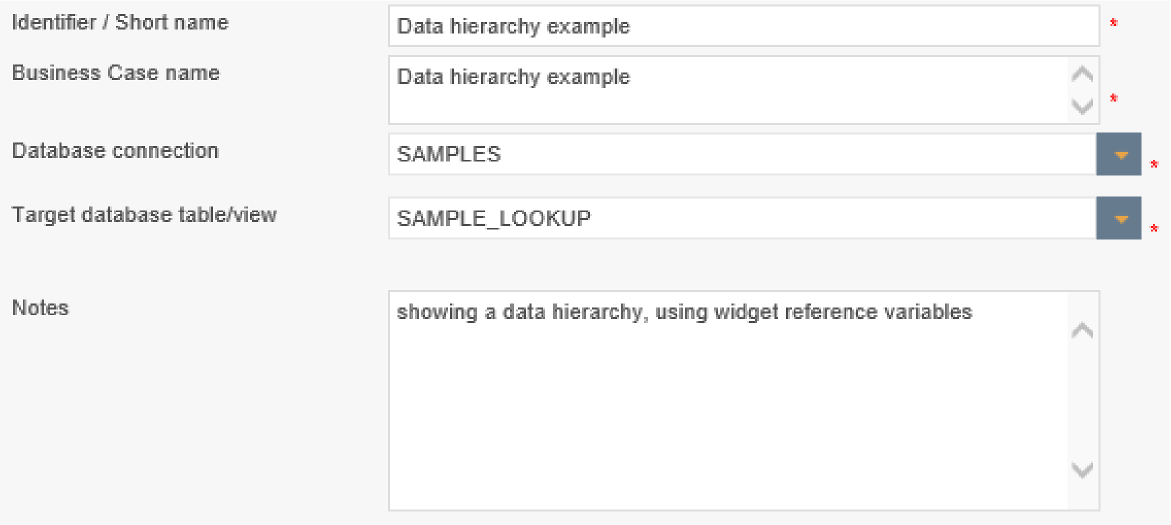
Searching Continent | Searching country FOR | Searching REGION FOR | Searching CITY FOR | Searching STREET FOR

	CONTINENT	COUNTRY IN	REGION	CITY	STREET
□	EUROPE	SPAIN	Catalunia	Barcelona	Barcelona main street
□	EUROPE	SLOVAK REPUBLIC	High Tatras	Poprad	Plzenska
□	ASIA	JAPAN	Kyushu	Skoyo	Skoyo street 1
□	AMERICA	CANADA	Ontario	Hamilton	Hamil street
□	AFRICA	MOROCCO	Oriental	Oriental 1 city	oriental street 2
□	AFRICA	MOROCCO	Oriental	Oriental 2 city	oriental street 1
□	AMERICA	USA			

18.3 Implementation

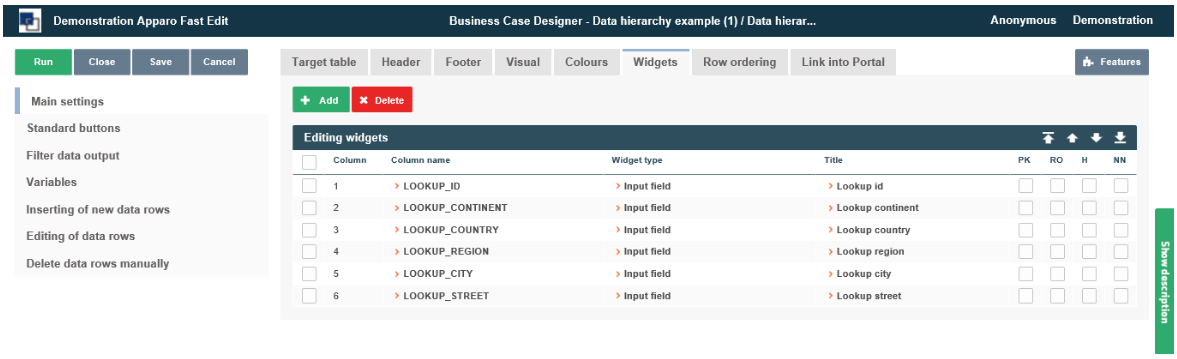
18.3.1 Creation of the Business Cases

First, we need a Business Case, which is assigned to the target table.



Identifier / Short name	Data hierarchy example *
Business Case name	Data hierarchy example *
Database connection	SAMPLES *
Target database table/view	SAMPLE_LOOKUP *
Notes	showing a data hierarchy, using widget reference variables

First, our Business Case looks like this:

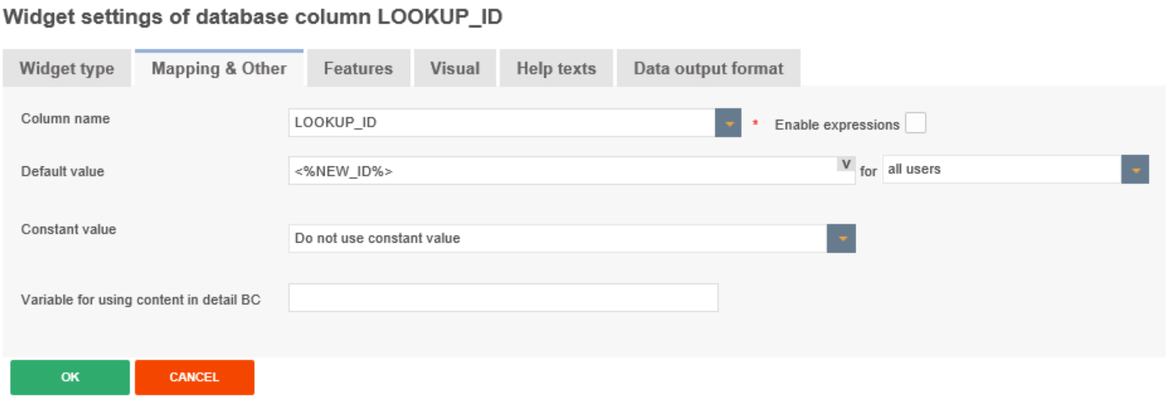


Editing widgets

□	Column	Column name	Widget type	Title	PK	RO	H	NN
□	1	› LOOKUP_ID	› Input field	› Lookup id	□	□	□	□
□	2	› LOOKUP_CONTINENT	› Input field	› Lookup continent	□	□	□	□
□	3	› LOOKUP_COUNTRY	› Input field	› Lookup country	□	□	□	□
□	4	› LOOKUP_REGION	› Input field	› Lookup region	□	□	□	□
□	5	› LOOKUP_CITY	› Input field	› Lookup city	□	□	□	□
□	6	› LOOKUP_STREET	› Input field	› Lookup street	□	□	□	□

18.3.2 Customizing of the Business Case

We set the widget ID as the primary key and hide the widget. We produce the consecutive numbering either by DB trigger or an SQL variable, which we set as a constant in the widget.



Widget settings of database column LOOKUP_ID

Column name: LOOKUP_ID * Enable expressions □

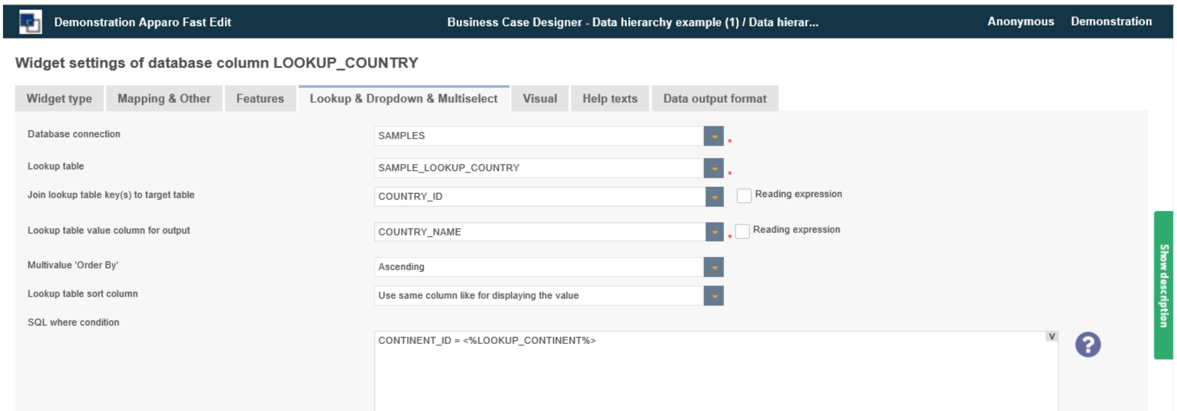
Default value: <%NEW_ID%> for all users

Constant value: Do not use constant value

Variable for using content in detail BC:

In the next step we will modify the widget types of the remaining widgets to lookup widget (Lookup dropdown (for all tables))

For the child widgets, we add an additional filter in the setting, SQL where condition. Thus, the selection of widget is limited to all elements in the lookup table associated with the previously selected continent. The value for this comes from the widget continent previously selected, and will be handed over with the widget reference variable <% LOOKUP_CONTINENT%>.



Demonstration Apparo Fast Edit
Business Case Designer - Data hierarchy example (1) / Data hierar...
Anonymous
Demonstration

Widget settings of database column LOOKUP_COUNTRY

Widget type
Mapping & Other
Features
Lookup & Dropdown & Multiselect
Visual
Help texts
Data output format
Show description

Database connection: SAMPLES *

Lookup table: SAMPLE_LOOKUP_COUNTRY *

Join lookup table key(s) to target table: COUNTRY_ID □ Reading expression

Lookup table value column for output: COUNTRY_NAME * □ Reading expression

Multivalue 'Order By': Ascending

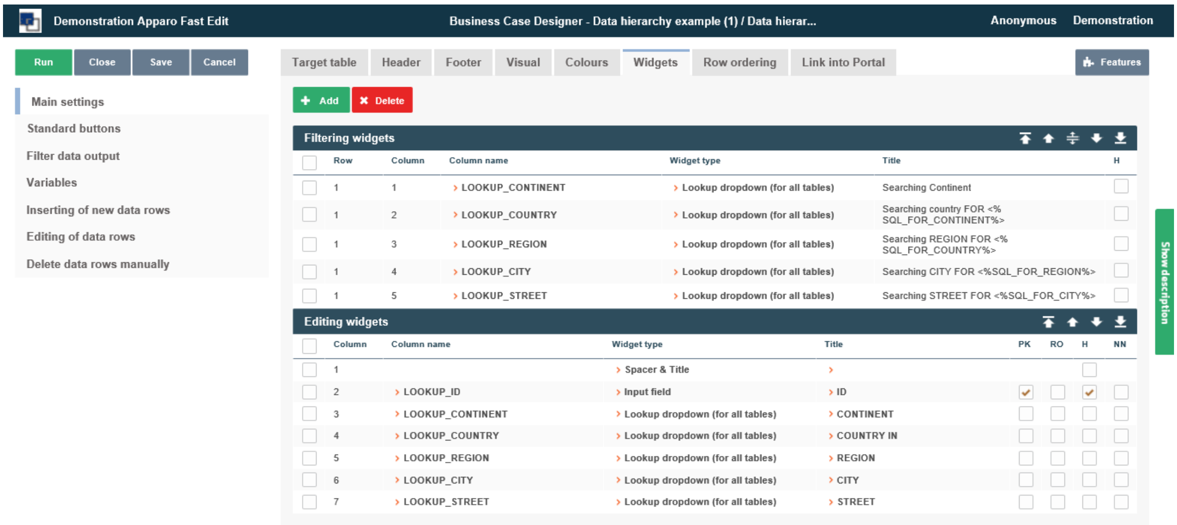
Lookup table sort column: Use same column like for displaying the value

SQL where condition: CONTINENT_ID = <%LOOKUP_CONTINENT%>

This applies accordingly for the to be generated filter widgets, but as the widget reference variable for the previous filter element is here used:

CONTINENT_ID = <%LOOKUP_CONTINENT%>

Then our business case should look like this:



Filtering widgets

□	Row	Column	Column name	Widget type	Title	H
□	1	1	› LOOKUP_CONTINENT	› Lookup dropdown (for all tables)	Searching Continent	□
□	1	2	› LOOKUP_COUNTRY	› Lookup dropdown (for all tables)	Searching country FOR <% SQL_FOR_CONTINENT%>	□
□	1	3	› LOOKUP_REGION	› Lookup dropdown (for all tables)	Searching REGION FOR <% SQL_FOR_COUNTRY%>	□
□	1	4	› LOOKUP_CITY	› Lookup dropdown (for all tables)	Searching CITY FOR <%SQL_FOR_REGION%>	□
□	1	5	› LOOKUP_STREET	› Lookup dropdown (for all tables)	Searching STREET FOR <%SQL_FOR_CITY%>	□

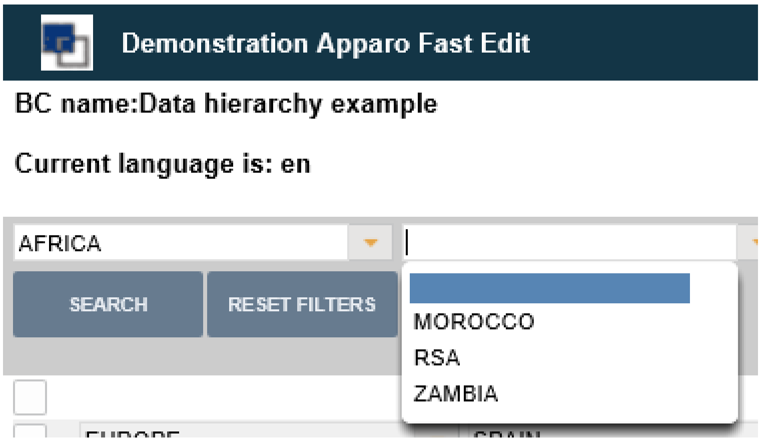
Editing widgets

□	Column	Column name	Widget type	Title	PK	RO	H	NN
□	1		› Spacer & Title	›			□	
□	2	› LOOKUP_ID	› Input field	› ID	☑	□	☑	□
□	3	› LOOKUP_CONTINENT	› Lookup dropdown (for all tables)	› CONTINENT	□	□	□	□
□	4	› LOOKUP_COUNTRY	› Lookup dropdown (for all tables)	› COUNTRY IN	□	□	□	□
□	5	› LOOKUP_REGION	› Lookup dropdown (for all tables)	› REGION	□	□	□	□
□	6	› LOOKUP_CITY	› Lookup dropdown (for all tables)	› CITY	□	□	□	□
□	7	› LOOKUP_STREET	› Lookup dropdown (for all tables)	› STREET	□	□	□	□

In the title of the subordinate filter widgets, we have also added a variable to display the previously selected item.
The SQL variable contains the following Select:

SELECT CONTINENT_NAME FROM TESTING.SAMPLE_LOOKUP_CONTINENT WHERE CONTINENT_ID = <%SEARCH_KEY_LOOKUP_CONTINENT%>

And the result for the user looks like this:



Demonstration Apparo Fast Edit

BC name:Data hierarchy example

Current language is: en

19 Excel Import

Excel is still one of the most powerful data processing programs.
An ideal way to edit and present data in a simple way.

Unfortunately, Excel has disadvantages, the data is locked in a local file.

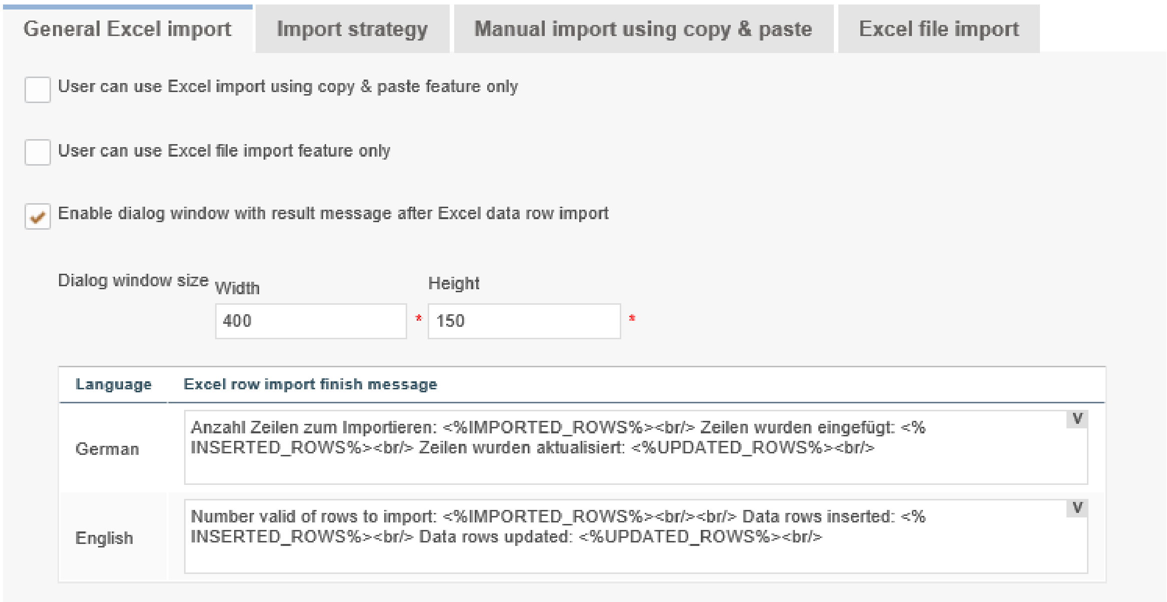
Apparo Fast Edit offers several ways for the Excel import. Thus, the data can be tested auditable for errors and transferred in appropriate media (databases).

Excel import options

- With copy & paste directly from an open Excel file (Manual Import)
- By file import via the browser (File Import)
- Through automatic import from defined directories (Auto Import)
- By importing e-mail attachments (E-Mail Import)

The automatic import and import via e-mail attachment always requires a table business case,
in which the settings for the (manual) import are defined.

19.1 General Excel Import



□ User can use Excel import using copy & paste feature only

□ User can use Excel file import feature only

☑ Enable dialog window with result message after Excel data row import

Dialog window size Width 400 * Height 150 *

Language	Excel row import finish message
German	Anzahl Zeilen zum Importieren: <%IMPORTED_ROWS%><br/> Zeilen wurden eingefügt: <%INSERTED_ROWS%><br/> Zeilen wurden aktualisiert: <%UPDATED_ROWS%><br/>
English	Number valid of rows to import: <%IMPORTED_ROWS%><br/><br/> Data rows inserted: <%INSERTED_ROWS%><br/> Data rows updated: <%UPDATED_ROWS%><br/>

Options

User can use Excel import using copy copy & paste feature only

If enabled then the Business Case has just the Excel import functionality using copy & paste.
This means that then directly after Business Case starts the user is seeing only the Excel row import area so this Business Case is just usable for Excel row import.
If this Business Case is using the same primary key(s) like defined in the database table then it is helpful for improving import performance to disable the feature "Check primary key constrains before storing".

User can use Excel file import feature only

If enabled then the Business Case has just the Excel file import functionality. The user can select an Excel file and import the data.
This means that then directly after Business Case starts the user is seeing only the Excel file import page so this Business Case is usable only for the Excel file import.

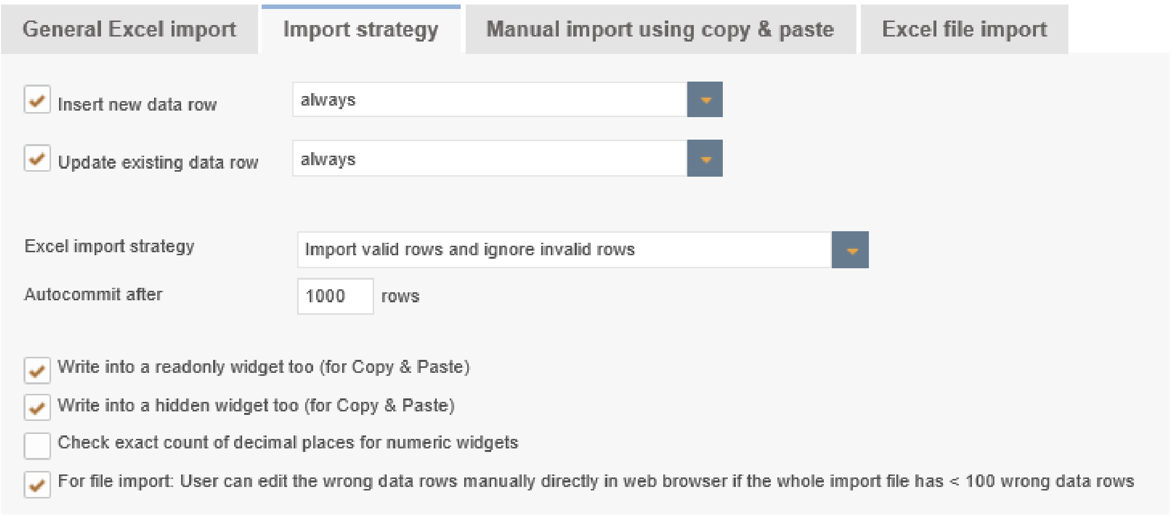
Enable dialog window with result message after Excel data row import

After an Excel import the user can see a small finishing message.
You can alter the text of this message here.

Special Import variables

IMPORTED_ROWS	Count of processed rows
INSERTED_ROWS	Count of inserted rows
UPDATED_ROWS	Count of updated rows

19.2 Import strategy



☑ Insert new data row: always

☑ Update existing data row: always

Excel import strategy: Import valid rows and ignore invalid rows

Autocommit after 1000 rows

☑ Write into a readonly widget too (for Copy & Paste)

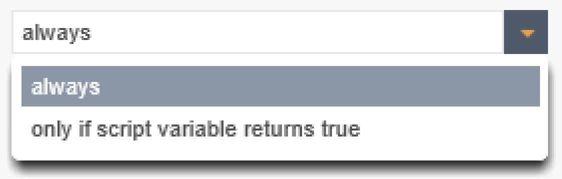
☑ Write into a hidden widget too (for Copy & Paste)

□ Check exact count of decimal places for numeric widgets

☑ For file import: User can edit the wrong data rows manually directly in web browser if the whole import file has < 100 wrong data rows

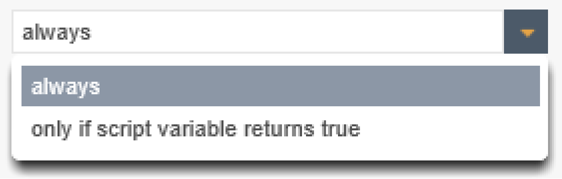
Insert new data row

If enabled then new data rows (the primary key values of this new data row are not found in the target table) are inserted
There are two options, either a new row is always inserted or only with the prior examination (via JavaScript variable)



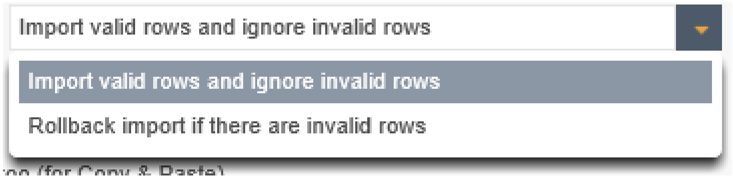
Update existing data row

If this is enabled, existing rows will be overwritten (if the primary key combination is used twice), either always or by variable checking.



Excel Import Strategy

With this feature you can configure the behavior of an Excel import.



Import valid rows and ignore invalid rows

Import valid rows and ignore invalid rows

Rollback import if there are invalid rows

You can select between a complete rollback if there is invalid content (no data will be imported) or whether only valid content will be imported.

Auto-commit after 1000 rows

Apparo Fast Edit will commit the database transaction after defined number of rows has been processed in Excel import.
If value is 0 or no value is defined then this feature is disabled.
If the above setting is set to "rollback import if there are invalid rows" than this feature is disabled.

Write into a readonly widget too

If enabled then Excel import is overwriting the value of an read-only widget too

Write into a hidden widget too

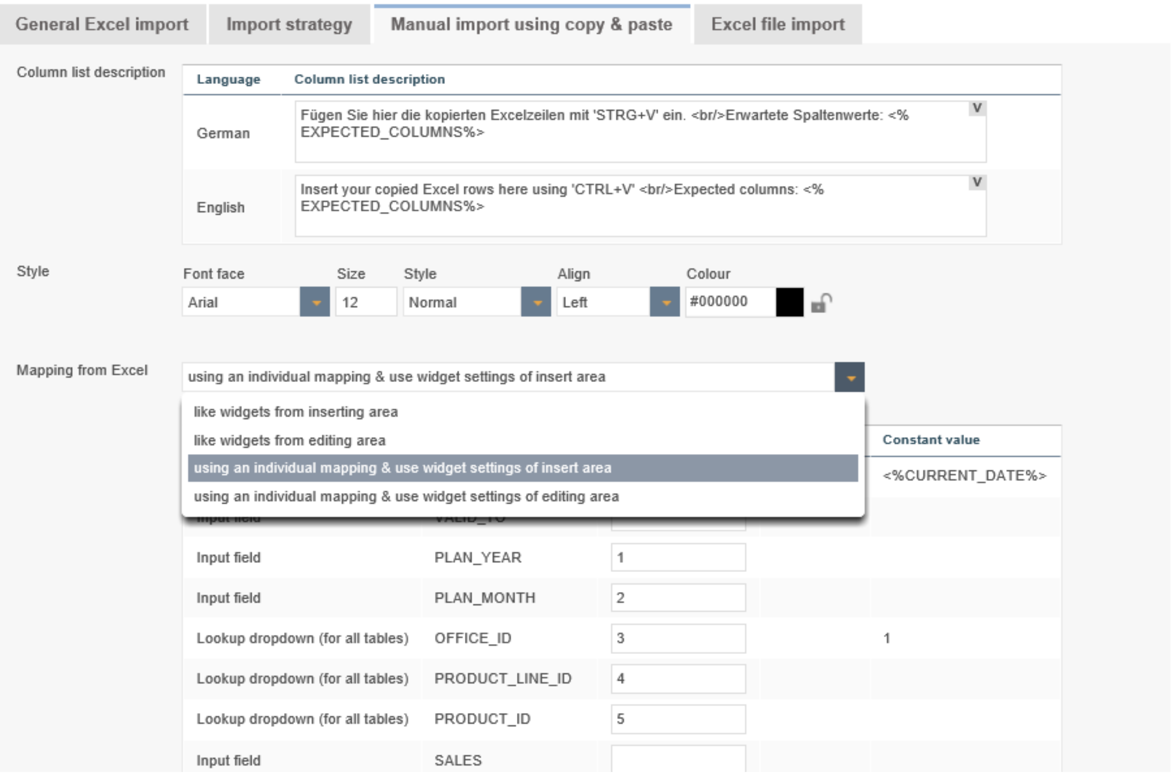
If enabled then Excel import is expecting a value for a hidden widget too

Check exact count of decimal places for numeric widgets

When enabled then numeric values to be imported must exactly match the specified count of decimal places defined in the widget's data output format setting (must be set to ''number'').

19.3 Manual Import using copy & paste

This feature enables a direct import of data rows from Excel using copy and paste into this Business Case. The user can mark many Excel rows (even more than 100.000 rows is possible), press the Excel import button and paste it into the text area. Of course the ordering of the Excel columns must be the same like in the Business Case. Read-only and hidden widgets are not used for mapping but are used if they have a constant value. It is not allowed to import Excel cell values that span over multiple rows, in this case use file import.



Column list description

Language	Column list description
German	Fügen Sie hier die kopierten Excelzeilen mit 'STRG+V' ein. <br/>Erwartete Spaltenwerte: <%EXPECTED_COLUMNS%>
English	Insert your copied Excel rows here using 'CTRL+V' <br/>Expected columns: <%EXPECTED_COLUMNS%>

Style

Font face	Size	Style	Align	Colour
Arial	12	Normal	Left	#000000

Mapping from Excel: using an individual mapping & use widget settings of insert area

like widgets from inserting area
like widgets from editing area
using an individual mapping & use widget settings of insert area
using an individual mapping & use widget settings of editing area

				Constant value
				<%CURRENT_DATE%>
Input field	VALID_TO			
Input field	PLAN_YEAR	1		
Input field	PLAN_MONTH	2		
Lookup dropdown (for all tables)	OFFICE_ID	3		1
Lookup dropdown (for all tables)	PRODUCT_LINE_ID	4		
Lookup dropdown (for all tables)	PRODUCT_ID	5		
Input field	SALES			

Column list description

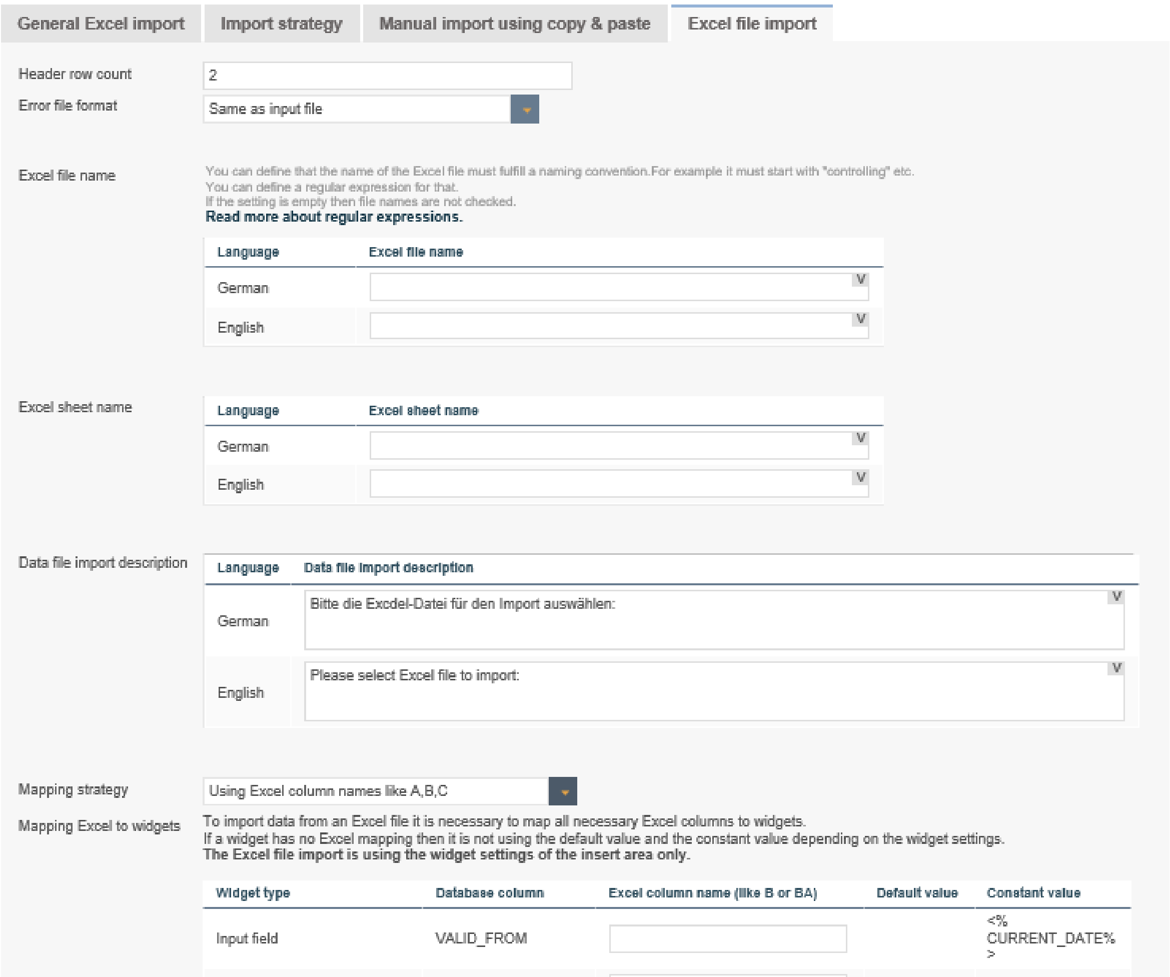
You can define a description text that is helpful for the user to know all expected Excel columns.
All variables are useable and HTML tags are possible too.
You can use the internal variable <%EXPECTED_COLUMNS> that has a list of all expected columns using the widget labels.
All hidden or read-only widgets are expecting no Excel column value but the default/constant values of the hidden/read-only widgets are used automatically

Mapping from Excel

If you want to important into different widgets than of the editing/inserting area then you can define an individual mapping for Excel file import too.

19.4 Excel File Import

This feature enables a manual import of a Excel data file into Apparo Fast Edit. The user can select an Excel file and the Business Case is importing the complete file.
Important: You must define a mapping of Excel columns like A,B,C and the associated widget. Just define the Excel column name in the right widget. You can define the count of header rows that must be ignored in tab "File Import".



Header row count: 2

Error file format: Same as input file

Excel file name

You can define that the name of the Excel file must fulfill a naming convention.For example it must start with "controlling" etc.
You can define a regular expression for that.
If the setting is empty then file names are not checked.
Read more about regular expressions.

Language	Excel file name
German	
English	

Excel sheet name

Language	Excel sheet name
German	
English	

Data file import description

Language	Data file import description
German	Bitte die Excdel-Datei für den Import auswählen:
English	Please select Excel file to import:

Mapping strategy: Using Excel column names like A,B,C

Mapping Excel to widgets

To import data from an Excel file it is necessary to map all necessary Excel columns to widgets.
If a widget has no Excel mapping then it is not using the default value and the constant value depending on the widget settings.
The Excel file import is using the widget settings of the insert area only.

Widget type	Database column	Excel column name (like B or BA)	Default value	Constant value
Input field	VALID_FROM			<% CURRENT_DATE% >

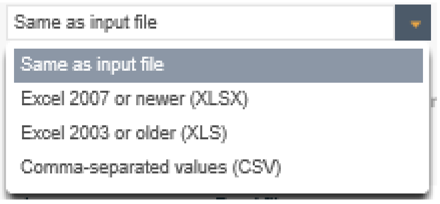
Options

Header row count

This number of rows are ignored during the import

Error file format

Format of a file containing errors and their descriptions, a user can download after an import that finished with errors.


Same as input file
Same as input file
Excel 2007 or newer (XLSX)
Excel 2003 or older (XLS)
Comma-separated values (CSV)

Data file import description

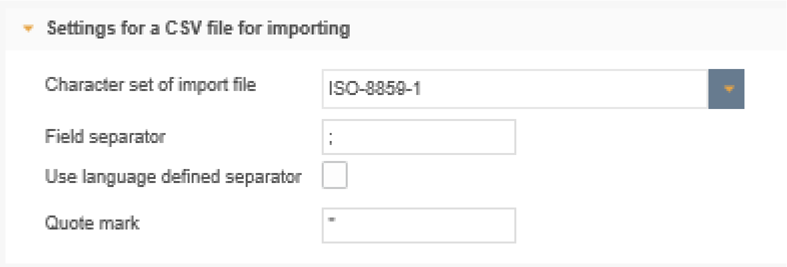
Contains the text of the ‚Choose file‘ dialog

Mapping Excel to widgets

For the import a mapping necessary. This mapping is defining all Excel columns that must imported using this Business Case.
If you input for example Excel column F for the 1. widget then all values of Excel column F will be imported into 1. widget.
If the Excel document has no value in a cell and the mapped widget has a default value defined then Apparo Fast Edit is using automatically the default value.
If a widget has a constant value then this value will be used for import depending on the setting (use constant value in insert case only or in insert/update case).

Settings for a CSV file for importing

When importing CSV files additional settings are required.



Settings for a CSV file for importing

Character set of import file: ISO-8859-1

Field separator: ;

Use language defined separator: □

Quote mark: "

Character set of import file

Enthält eine Liste der verfügbaren Zeichensätze.

Field separator

Definition of the field separator. Using the next setting it is possible to use an own separator for each used language.
Hint: If you need tab character as separator use "\t"

Use language defined separator

When checked then Apparo Fast Edit detects language type from file (for example from filename_en.xlsx as "en") and uses separator defined for detected language from language messages.

Quote mark

Definition of the quote mark - character used to enclose fields containing a separator, usually "

19.5 Automatic Excel file import

It is possible to import files automatically which are accessible by the server (for example Excel files).
In this case Apparo Fast Edit checks whether files according to a specific file mask are available in a file directory of your choice.

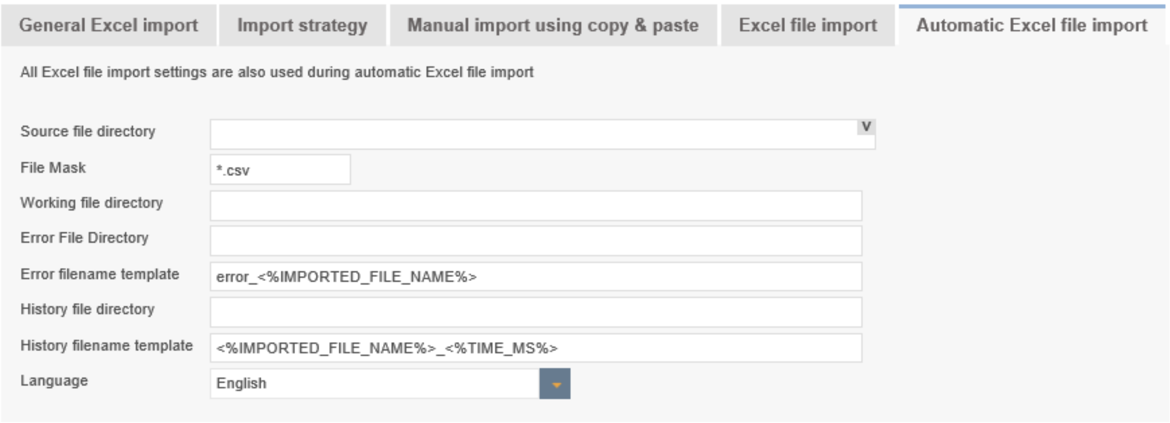
If yes, these files will be imported into the working directory. After the import these files are stored into the history file directory.

The settings "Field Separator" and "Header Row count" are used for manual file import too.

The time interval for looking into the feeding directory is definable in 'Global Settings'
Automatic import means that the business don't needs to be started. After enabling the features the import happens within the entered time period.

If the feeding directory is located on a second server, the Windows user who starts AFE must have the rights to access the directory on this second server.

All Excel file import settings are also used during automatic Excel file import



All Excel file import settings are also used during automatic Excel file import

Source file directory	
File Mask	*.csv
Working file directory	
Error File Directory	
Error filename template	error_<%IMPORTED_FILE_NAME%>
History file directory	
History filename template	<%IMPORTED_FILE_NAME%>_<%TIME_MS%>
Language	English

Options

Source file directory

Defines the file directory in which Apparo Fast Edit looks for files to import. It is looking after each 'n' seconds into this directory.
The path can be: \\servername\folder1\folder2 or x:\folder1\folder2 or <%VARIABLENAME%>\folder or <%VARIABLENAME%>. The variable must deliver a correct path.
If empty then no automatic import will occur on this Business Case.

File Mask

The importable files must have the defined file mask.
File mask can contain wildcards ? and *.
Example: *.xls
Caution: If the filename matches the file mask of multiple Business Cases,
the used Business Case will be random. If empty, no automatic import will occur on this Business Case.

Working file directory

Optionally Apparo Fast Edit is moving the files to the 'Working file directory' first and then the import process is starting.
If empty, working file and directory will be the same as the feed file.

Error File Directory

File directory for error files with the error messages. If empty, no error results will be stored.
Error filename template

Template file name for error files.

The usage of variables is possible, for example:
<%IMPORTED_FILE_NAME%>
name of the imported file (without path)
<%TIME_MS%>
numeric (UNIX) timestamp
If empty, no error results will be stored.

History file directory

After import the files are moved into this file directory. If empty, no history will be stored.

History filename template

Template file name for history files.
Mask can contain placeholders <%PlaceholderName%> where PlaceholderName is one of:

IMPORTED_FILE_NAME	name of the imported file (without path)
TIME_MS	numeric (UNIX) timestamp

If empty, no history will be stored.

Language

Language definition (important for formatting such as formatting of date).

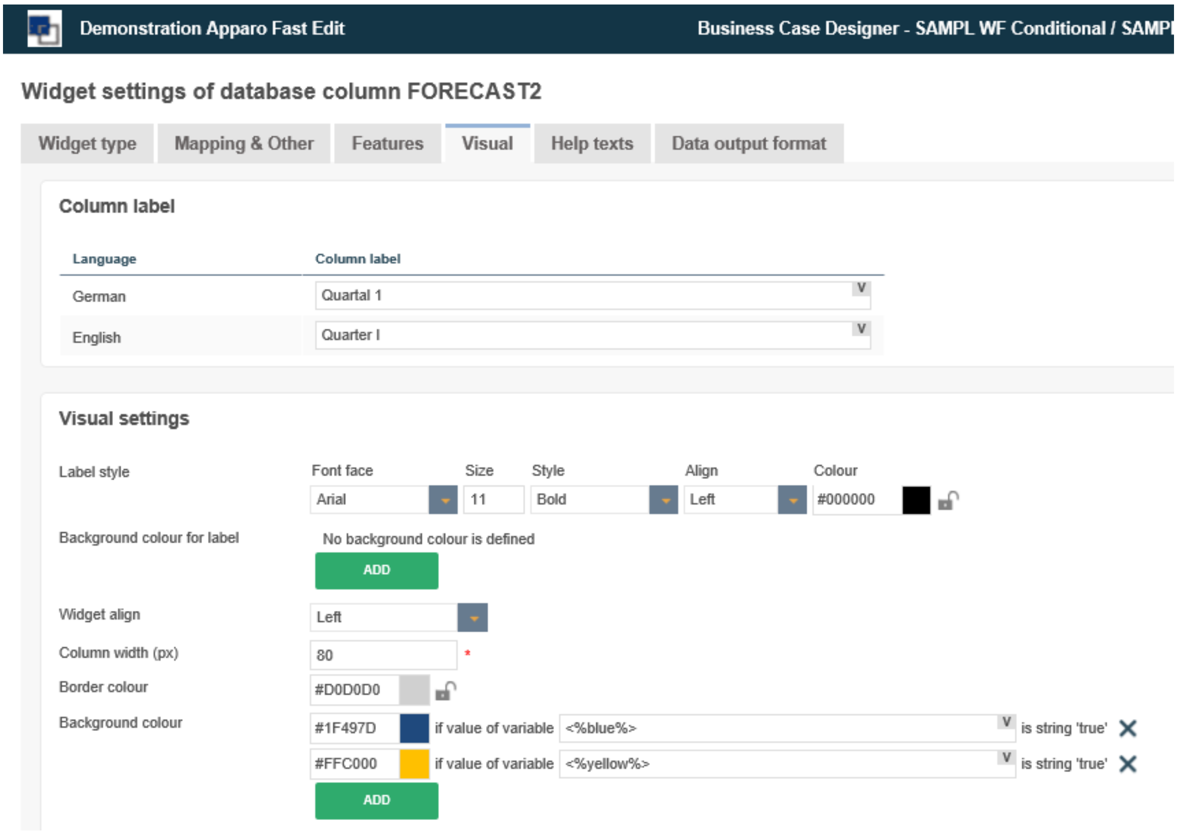
20 Conditional formatting

20.1 Background color

20.1.1 Widget background

You will find the conditional settings for the widget background in the tab ‘Visual’:

Click on add and define the color you want.
In the variable you can calculate anything you want, important is that the variable returns the string ‘true’ if the condition hits.


Demonstration Apparo Fast Edit
Business Case Designer - SAMPL WF Conditional / SAMPI
Widget type
Mapping & Other
Features
Visual
Help texts
Data output format

Widget settings of database column FORECAST2

Column label

Language	Column label
German	Quartal 1
English	Quarter I

Visual settings

Label style	Font face: Arial	Size: 11	Style: Bold	Align: Left	Colour: #000000

Background colour for label: No background colour is defined ADD

Widget align: Left

Column width (px): 80 *

Border colour: #D0D0D0

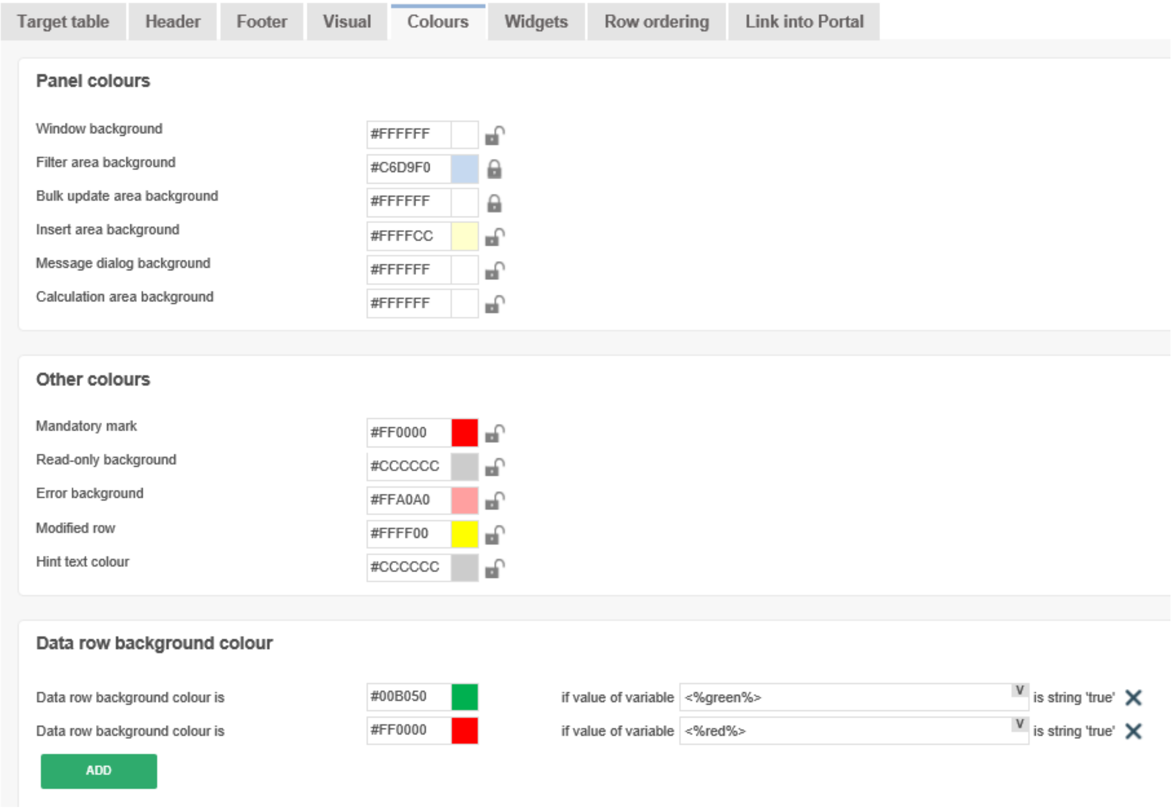
Background colour:
#1F497D if value of variable <%blue%> is string 'true'
#FFC000 if value of variable <%yellow%> is string 'true'
ADD

Example for the blue variable:

```
var z = <%FORECAST%>;
if (z >= 100){var x = 'true';}
else {var x = 'false';}
x;
```

20.2 Row background color

You find this setting in the Business Case edit view, tab Colours:



Panel colours

Window background	#FFFFFF	🔓
Filter area background	#C6D9F0	🔒
Bulk update area background	#FFFFFF	🔒
Insert area background	#FFFFCC	🔓
Message dialog background	#FFFFFF	🔓
Calculation area background	#FFFFFF	🔓

Other colours

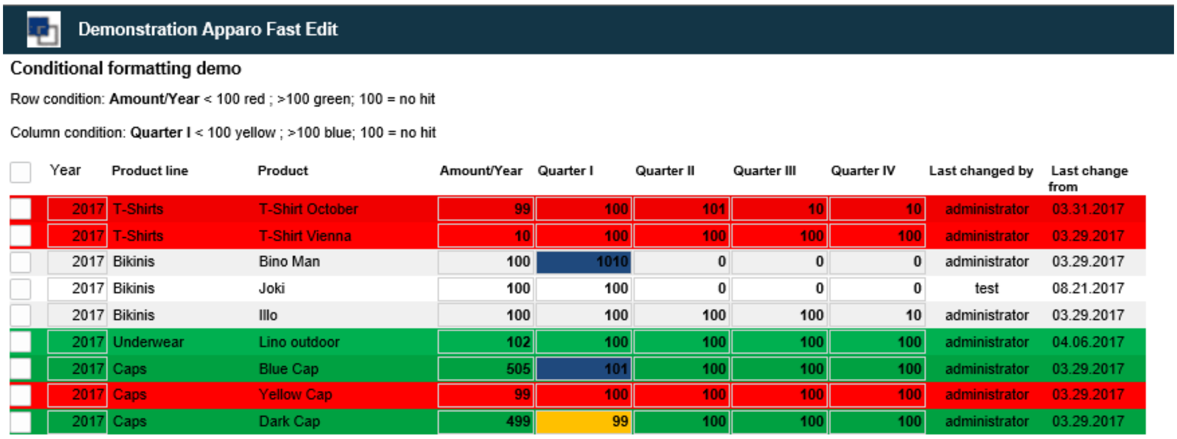
Mandatory mark	#FF0000 🟥	🔓
Read-only background	#CCCCCC	🔓
Error background	#FFA0A0	🔓
Modified row	#FFFF00 🟨	🔓
Hint text colour	#CCCCCC	🔓

Data row background colour

Data row background colour is	#00B050 🟩	if value of variable	<%green%>	is string 'true'	✕
Data row background colour is	#FF0000 🟥	if value of variable	<%red%>	is string 'true'	✕

Click on add and define the color you want.
In the variable you can calculate anything you want, important is that the variable returns the string ‘true’ if the condition hits

Result:



Demonstration Apparo Fast Edit

Conditional formatting demo

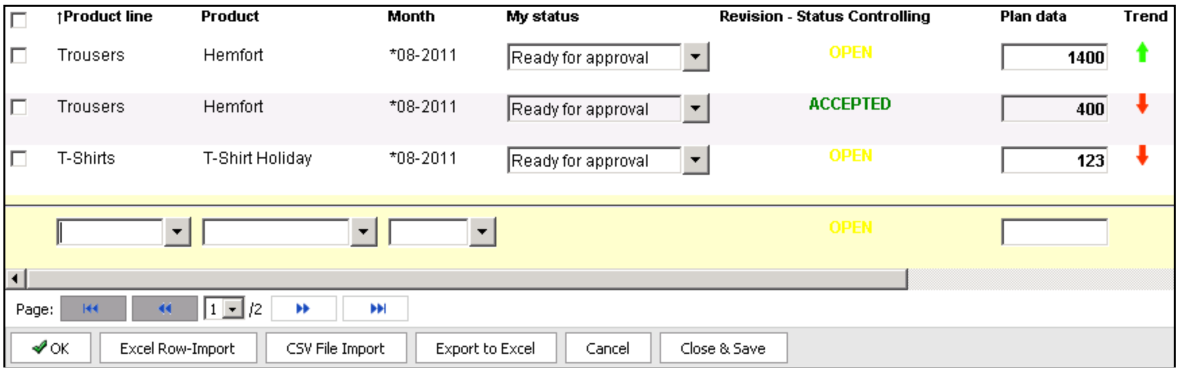
Row condition: **Amount/Year** < 100 red ; >100 green; 100 = no hit

Column condition: **Quarter I** < 100 yellow ; >100 blue; 100 = no hit

□	Year	Product line	Product	Amount/Year	Quarter I	Quarter II	Quarter III	Quarter IV	Last changed by	Last change from
□	2017	T-Shirts	T-Shirt October	99	100	101	10	10	administrator	03.31.2017
□	2017	T-Shirts	T-Shirt Vienna	10	100	100	100	100	administrator	03.29.2017
□	2017	Bikinis	Bino Man	100	1010	0	0	0	administrator	03.29.2017
□	2017	Bikinis	Joki	100	100	0	0	0	test	08.21.2017
□	2017	Bikinis	Illo	100	100	100	100	10	administrator	03.29.2017
□	2017	Underwear	Lino outdoor	102	100	100	100	100	administrator	04.06.2017
□	2017	Caps	Blue Cap	505	101	100	100	100	administrator	03.29.2017
□	2017	Caps	Yellow Cap	99	100	100	100	100	administrator	03.29.2017
□	2017	Caps	Dark Cap	499	99	100	100	100	administrator	03.29.2017

20.3 Conditional formatting using HTML & JavaScript

The goal is to have following output:



□	↑Product line	Product	Month	My status	Revision - Status Controlling	Plan data	Trend
□	Trousers	Hemfort	*08-2011	Ready for approval ▾	OPEN	1400	⬆
□	Trousers	Hemfort	*08-2011	Ready for approval ▾	ACCEPTED	400	⬇
□	T-Shirts	T-Shirt Holiday	*08-2011	Ready for approval ▾	OPEN	123	⬇
	▾	▾	▾		OPEN		

This example shows how we created the colored text for the widget ‚Revision – Status Controlling‘ and the arrows for the widget ‚Trend‘

20.3.1 Colored text for Status Controlling

This is generated by a JavaScript. For the output we are using ‘label with variables’ containing the variable.

```
Variable: <%conditional%>
var z = <%STATE_REVISION_ID%>;
if (z == 3){var x = '<span style="color:red">DECLINED</span>';}
else if (z == 2){var x = '<span style="color:green">ACCEPTED</span>';}
else {var x = '<span style="color:yellow">OPEN</span>';}
x;
```

20.3.2 Arrows for the ‚Trend‘ widget

This is generated by a JavaScript. For the output we are using ‘label with variables’ containing the variable. We inserted the arrow imagines into \Apparo\FastEdit\clients\images

Script-Variable: <%trend%>

```
var trend = <%FORECAST%>;
if (trend > 1000){var x = '<img src="http://aq34/KFE/images/arrow_green.gif">';}
else if (trend < 1000){var x = '<img src="http://aq34/KFE/images/arrow_red.gif">';}
else{var x = '<img src="http://aq34/KFE/images/arrow_dot.gif">';}
x;
```

21 Movies

Please find a collection of Videos about Apparo Fast Edit here

Movies.apparo.solutions

22 Support

If you need support please write an email to:

support@apparo.solutions