

JFormDesigner 8.2 Documentation

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1 Introduction

JFormDesigner is a professional **GUI designer** for Java Swing user interfaces. Its outstanding support for **MigLayout**, **JGoodies FormLayout**, **GroupLayout (Free Design)**, **TableLayout** and **GridBagLayout** makes it easy to **create professional looking forms**.

Why use JFormDesigner?

JFormDesigner makes Swing GUI design a real pleasure. It **decreases the time** you spend on **hand coding** forms, giving you **more time** to focus on the **real tasks**. You'll find that JFormDesigner **quickly pays back its cost** in improved **GUI quality** and increased **developer productivity**. Even non-programmers can use it, which makes it also ideal for **prototyping**.

Editions

JFormDesigner is available in four editions: as **stand-alone** application and as IDE plug-ins for **Eclipse**, **IntelliJ IDEA** and **NetBeans**. This documentation covers all editions.

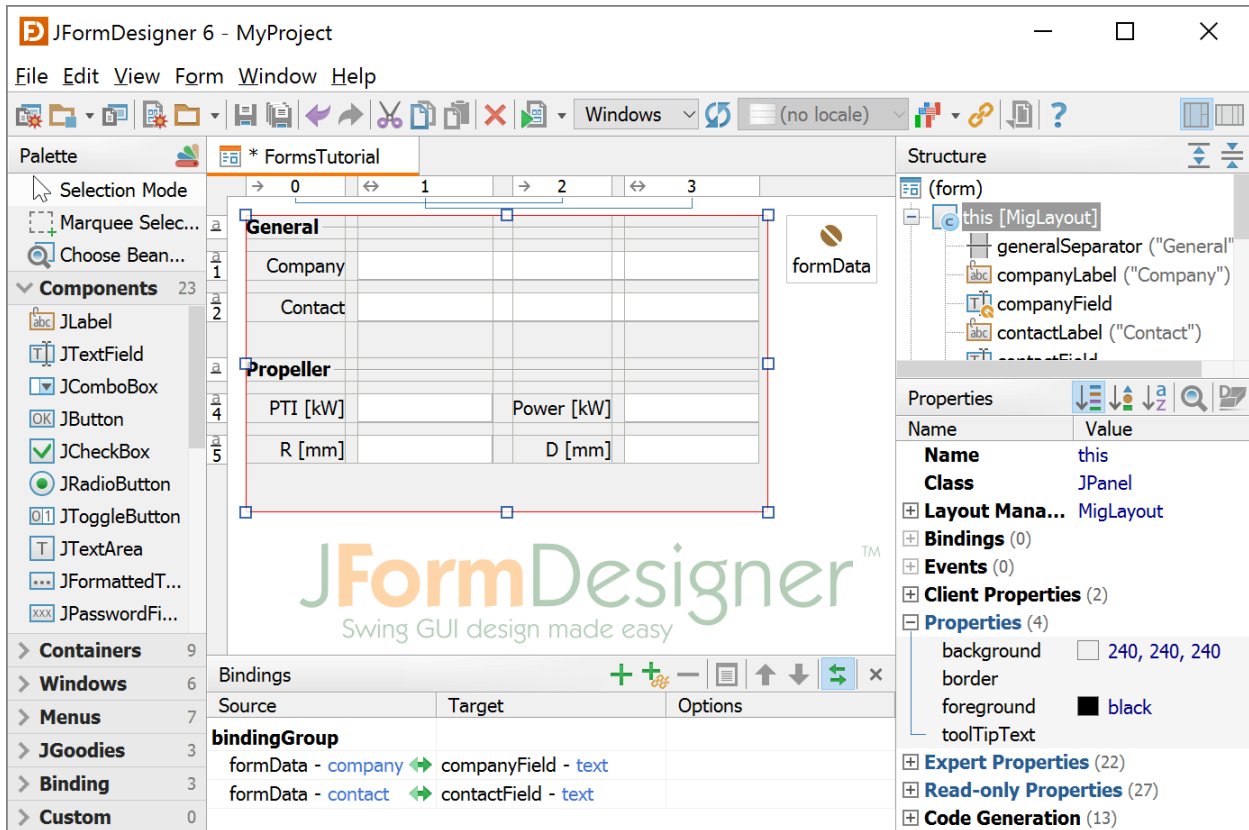
If there are functional differences between the editions, then they are marked with: **Stand-alone**, **Eclipse plug-in**, **IntelliJ IDEA plug-in**, **NetBeans plug-in** or **IDE plug-ins**.

Key features

- Easy and intuitive to use, powerful and productive
- IDE plug-ins and stand-alone application
- [MigLayout](#) support
- [GroupLayout](#) (Free Design) support
- [JGoodies FormLayout](#) and [TableLayout](#) support
- Advanced [GridBagLayout](#) support
- Column and row [headers](#)
- [Localization](#) support
- [Beans Binding](#) (JSR 295) support
- [BeanInfo Annotations](#)
- [Java code generator](#) or [runtime library](#)
- Generation of [nested classes](#)

2 User Interface

This is the main window of JFormDesigner **stand-alone** edition:



The main window consists of the following areas:

- **Main Menu:** Located at the top of the window.
- **Toolbar:** Located below the main menu.
- **Palette:** Located at the left side of the window.
- **Design View:** Located at the center of the window.
- **Structure View:** Located at the upper right of the window.
- **Properties View:** Located at the lower right of the window.
- **Bindings View:** Located below the Design view. This view is not visible by default. Click the **Show Bindings View** button (🔗) in the toolbar to make it visible.
- **Error Log View:** Located below the Design view. This view is not visible in the above screenshot.

2.1 Menus










You can invoke most commands from the main menu (at the top of the main frame) and the various context (right-click) menus.

Main Menu







The main menu is displayed at the top of the JFormDesigner main window of the **stand-alone** edition.

File Edit View Form Window Help




File menu

 New Project	Creates a new project.
 Open Project	Opens an existing project.
Reopen Project	Displays a submenu of previously opened projects. Select a project to open it.
 Project Properties	Displays the project properties.
Close Project	Closes the active project.
 New Form	Creates a new form.
 Open Form	Opens an existing form.
Reopen Form	Displays a submenu of previously opened forms. Select a form to open it.
Close	Closes the active form.
Close All	Closes all open forms.
 Save	Saves the active form and generates the Java source code for the form (if Java Code Generation is enabled in the Preferences).
 Save As	Saves the active form under another file name or location and generates the Java source code for the form (if Java Code Generation is enabled in the Preferences).
 Save All	Saves all open forms and generates the Java source code for the forms (if Java Code Generation is enabled in the Preferences).
 Import	Imports NetBeans or IntelliJ IDEA form files and creates new JFormDesigner forms. Use File > Save to save the new form in the same folder as the original form file. This also updates the .java file.
Exit	Exits JFormDesigner. <i>Mac</i> : this item is in the JFormDesigner application menu.








Edit menu

 Undo	Reverses your most recent editing action.
 Redo	Re-applies the editing action that has most recently been reversed by the Undo action.
 Cut	Cuts the selected components to the clipboard.
 Copy	Copies the selected components to the clipboard.
 Paste	Pastes the components in the clipboard to the selected container of the active form.
Rename	Renames the selected component.
 Delete	Deletes the selected components.






View menu

 Refresh Designer	Refresh the Design view of the active form. Reloads all classes used by the form and recreates the form preview shown in the Design view. You can use this command, if you changed the code of a component used in the form to reload the component classes. But usually this is not necessary because JFormDesigner automatically reloads component classes.
 Classic Layout	Shows Properties view below Structure view.
 Wide Layout	Shows Properties and Structure views side by side.


Form menu

 Test Form	Tests the active form. Creates live instances of the form in a new window. You can close that window by pressing the Esc key when the window has the focus. If your form contains more than one top-level component, use the drop-down menu in the toolbar to test another component.
 Localize	Edit localization settings, resource bundle strings, create new locales or delete locales.
 New Locale	Creates a new locale.
 Delete Locale	Deletes an existing locale.
 Externalize Strings	Moves strings to a resource bundle for localization. Use this command to start localizing existing forms.
 Internalize Strings	Moves strings from a resource bundle into the form and remove the strings from the resource bundle.
 Generate Java Code	Generates the Java code for the active form. Usually it's not necessary to use this command because when you save a form, the Java code will be also generated.

Window menu

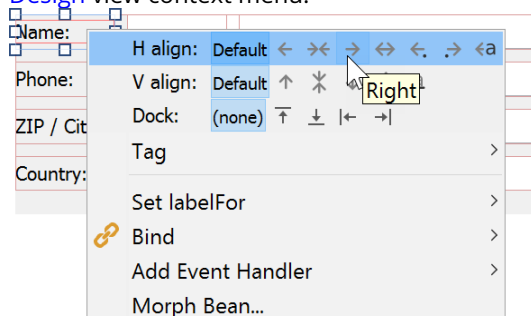
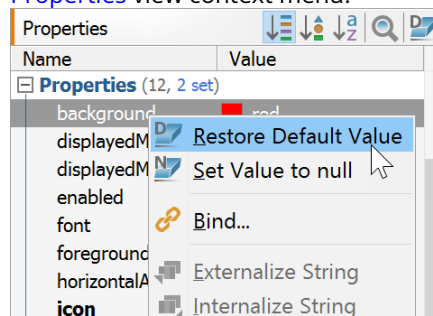
 Activate Designer	Activates the Design view.
 Activate Structure	Activates the Structure view.
 Activate Properties	Activates the Properties view.
 Activate Bindings	Activates the Bindings view. By default, the Bindings view is not visible.
 Activate Error Log	Activates the Error Log view. By default, the Error Log view is not visible. It automatically appears if an error occurs.
Next Form	Activates the next form.
Previous Form	Activates the previous form.
Preferences	Opens the Preferences dialog. <i>Mac</i> : this item is in the JFormDesigner application menu.

Help menu

 Help Contents	Displays help topics.
Tip of the Day	Displays a list of interesting productivity features.
Register	Activates your license.
License	Displays information about your license.
Check for Updates	Checks whether a newer version of JFormDesigner is available.
About	Displays information about JFormDesigner and the system properties. <i>Mac</i> : this item is in the JFormDesigner application menu.

Context menus

Context menus appear when you're right-click on a particular component or control.

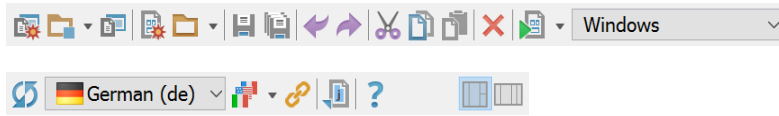
Design view context menu:**Properties view context menu:**

2.2 Toolbars

Toolbars provide shortcuts to often used commands.

Main Toolbar

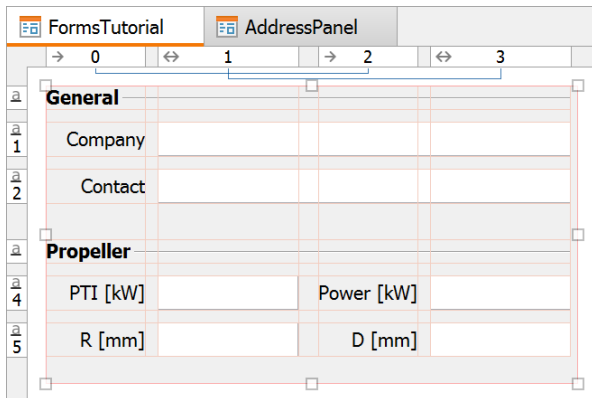
This is the toolbar of JFormDesigner **stand-alone** edition. Many of the commands are also used in the toolbars of the **IDE plug-ins**.




	New Project	Creates a new project.
	Open Project	Opens an existing project.
	Project Properties	Displays the project properties.
	New Form	Creates a new form.
	Open Form	Opens an existing form.
	Save	Saves the active form and generates the Java source code for the form (if Java Code Generation is enabled in the Preferences).
	Save All	Saves all open forms and generates the Java source code for the forms (if Java Code Generation is enabled in the Preferences).
	Undo	Reverses your most recent editing action.
	Redo	Re-applies the editing action that has most recently been reversed by the Undo action.
	Cut	Cuts the selected components to the clipboard.
	Copy	Copies the selected components to the clipboard.
	Paste	Pastes the components in the clipboard to the selected container of the active form.
	Delete	Deletes the selected components.
	Test Form	Tests the active form. Creates live instances of the form in a new window. You can close that window by pressing the Esc key when the window has the focus. If your form contains more than one top-level component, use the drop-down menu to test another component.
	Windows	Allows you to change the look and feel of the components in the Design view.
	Refresh Designer	Refresh the Design view of the active form. Reloads all classes used by the form and recreates the form preview shown in the Design view. You can use this command, if you changed the code of a component used in the form to reload the component classes. But usually this is not necessary because JFormDesigner automatically reloads component classes.
	German (de)	Allows you to change the locale of the form in the Design view. "(no locale)" is show if the form is not localized. Use Form > Externalize Strings to start localizing a form.
	Localize	Edit localization settings, resource bundle strings, create new locales or delete locales.
	Show Bindings View	Shows the Bindings view.
	Generate Java Code	Generates the Java code for the active form. Usually it's not necessary to use this command because when you save a form, the Java code will be also generated.
	Help Contents	Displays help topics.
	Classic Layout	Shows Properties view below Structure view.
	Wide Layout	Shows Properties and Structure views side by side.

2.3 Design View

This view is the central part of JFormDesigner. It displays the opened forms and lets you edit forms.



Stand-alone: At top of the view, tabs are displayed for each open form. Click on a tab to activate a form. To close a form, click the  symbol that appears on the right side of a tab if the mouse is over it. An asterisk (*) in front of the form name indicates that the form has been changed.

IDE plug-ins: The Design view is integrated into the IDEs, which have its own tabs.

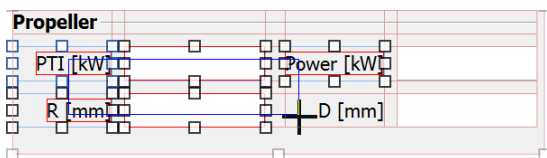
On the top and left sides of the view, you can see the column and row **headers**. These are important controls for grid-based layout managers. Use them to insert, delete or move columns/rows and change column/row properties.

In the center is the design area. It displays the form, grids and handles. You can drag and drop components, resize, rename, delete components or in-place-edit labels.

Selecting components

To select a single component, click on it. To select multiple components, hold down the **Ctrl** (*Mac*: **Command**) or **Shift** key and click on the components. To select the parent of a selected component, hold down the **Alt** (*Mac*: **Option**) key and click on the selected component.

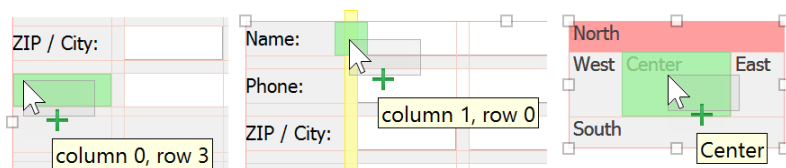
To select components in a rectangular area, select **Marquee Selection** in the **Palette** and click-and-drag a rectangular selection area in the Design view. Or click-and-drag on the free area in the Design view. All components that lie partially within the selection rectangle are selected.



The selection in the Design view and in the **Structure** view is synchronized both ways.

Drag feedback





JFormDesigner provides four types of drag feedback.



The **gray** figure shows the outline of the dragged components. It always follows the mouse location. The **green** figure indicates the drop location, the **yellow** figure indicates a new column/row and **red** figures indicate occupied areas.

Cursor feedback

JFormDesigner uses various cursors while dragging components:

-  The dragged components will be moved to the new location.
-  Either add a new component to the form or copy existing components.
-  Add multiple components of the same type to the form.
-  It is not possible to drop the component at this location.

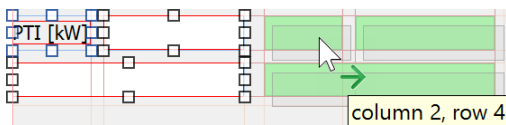
Add components

To add components, choose a component from the [Palette](#) and drop it to the location where you want to add it.

To add multiple instances of a component, hold down the [Ctrl](#) key (*Mac*: [Command](#) key) while clicking on the Design view.

Move or copy components

To move components simply drag them to the new location. You will get reasonable visual feedback during the drag operation.

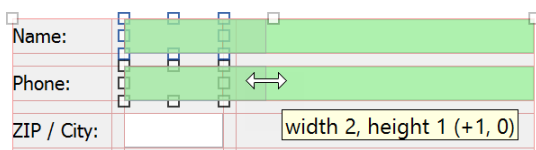


To copy components, proceed just as moving components, but hold down the [Ctrl](#) key (*Mac*: [Option](#) key) before dropping the components.

You can cancel all drag operations using the [Esc](#) key.

Resize components

Use the selection handles to resize components. Click on a handle and drag it.



The green feedback figure indicates the new size of the component. The tool tip provides additional information about location, size and differences.

Whether a component is resizable or not depends on the used [layout manager](#).

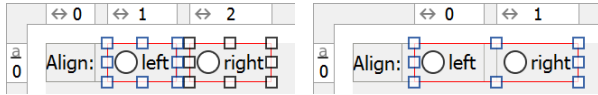
Morph components

The "Morph Bean" command allows you to change the class of existing components without losing properties, events or layout information. Right-click on a component in the [Design](#) or [Structure](#) view and select **Morph Bean** from the popup menu.

Nest in Container

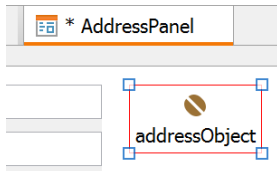
The "Nest in Container" command allows you to nest selected components in a new container (usually a JPanel). Right-click on a component in the [Design](#) or [Structure](#) view and select **Nest in JPanel** from the popup menu. The

new container gets the same [layout manager](#) as the old container and is placed at the same location where the selected components were located. For grid-based layout managers, the new container gets columns and rows and the [layout constraints](#) of the selected components are preserved.



Non-visual beans

To add a non-visual bean to a form, select it in the [Palette](#) (or use **Choose Bean**) and drop it into the free area of the Design view. Non-visual beans are shown in the Design view using proxy components.



Red beans

If a bean could not be instantiated (class not found, exception in constructor, etc), a **red bean** will be shown in the designer view as placeholder.



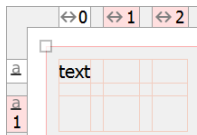
To fix such problems, take a look at the [Error Log](#) view and if necessary add required jars to the [classpath](#) of your project.

2.3.1 Headers

The column and row headers (for grid-based layout managers) show the structure of the layout. This includes column/row indices, alignment, growing and grouping.



Use them to insert, delete or move columns/rows and change column/row properties. Right-clicking on a column/row displays a popup menu. Double-clicking shows a dialog that allows you to edit the column/row properties.



If a column width or row height is zero, which is the case if a column/row is empty, then JFormDesigner uses a minimum column width and row height. Columns/rows having a minimum size are marked with a light-red background in the column/row header.

Selecting columns/rows

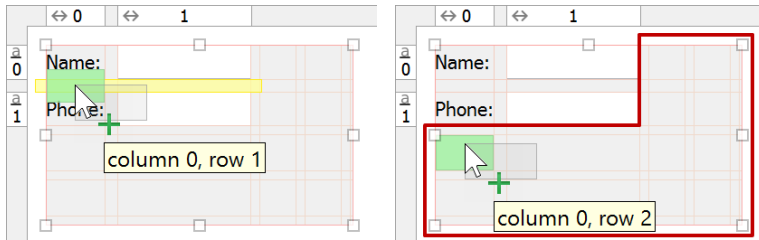
You can select more than one column/row. Hold down the [Ctrl](#) key (*Mac*: [Command](#) key) and click on another column/row to add it to the selection. Hold down the [Shift](#) key to select the columns/rows between the last selected and the clicked column/row.

Insert column/row

Right-click on the column/row where you want to insert a new one and select **Insert Column / Insert Row** from the popup menu. The new column/row will be inserted before the right-clicked column/row. To add a column/row after the last one, right-click on the area behind the last column/row.

If the layout manager is [FormLayout](#), an additional gap column/row will be added. Hold down the [Shift](#) key before selecting the command from the popup menu to avoid this.

Besides using the popup menu, you can insert new columns/row when dropping components on column/row gaps or outside of the existing grid. In the first figure, a new row will be inserted between existing rows. In the second figure, a virtual grid is shown below/right to the existing grid and a new row will be added.



Delete columns/rows

Right-click on the column/row that you want delete and select **Delete Column / Delete Row** from the popup menu.

If the layout manager is [FormLayout](#), an existing gap column/row beside the removed column/row will also be removed. Hold down the [Shift](#) key before selecting the command from the popup menu to avoid this.

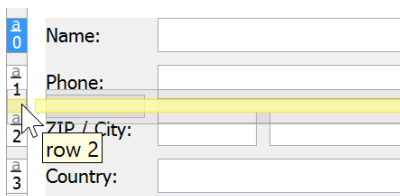
Split columns/rows

Right-click on the column/row that you want split and select **Split Column / Split Row** from the popup menu.

If the layout manager is [FormLayout](#), an additional gap column/row will be added. Hold down the [Shift](#) key before selecting the command from the popup menu to avoid this.

Move columns/rows

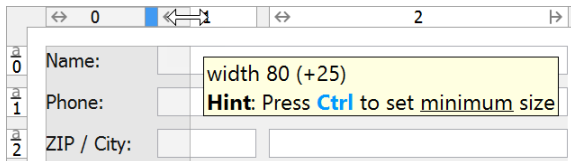
The headers allow you to drag and drop columns/rows (incl. contained components and gaps). This allows you to swap columns or move rows in seconds. Click on a column or row and drag it to the new location. JFormDesigner updates the column/row specification and the locations of the moved components.



If the layout manager is [FormLayout](#), then existing gap columns/rows are also moved. Hold down the [Shift](#) key before dropping a column/row to avoid this.

Resize columns/rows

To change the (minimum) size of a column/row, click near the right edge of a column/row and drag it.



[FormLayout](#) supports minimum and constant column/row sizes. Hold down the [Ctrl](#) key to change the minimum size. [TableLayout](#) supports only constant sizes and [GridBagLayout](#) supports only minimum sizes.

Header symbols

Following symbols are used in the headers:

Column Header

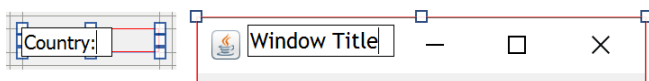
←	Left aligns components in the column.
↔	Center components in the column.
→	Right aligns components in the column.
↔	Fill (expand) components into the column.
↔	Left or right aligns components in the column depending on container's orientation (left-to-right or right-to-left).
↔	Right or left aligns components in the column depending on container's orientation (left-to-right or right-to-left).
↔a	Aligns components (usually labels) to left, center or right depending on platform style guide. E.g. right align on Mac and left align on other platforms.
↳	Grow column width.

Row Header

↑	Top aligns components in the row.
*	Center components in the row.
↓	Bottom aligns components in the row.
↕	Fill (expand) components into the row.
⌵	Baseline aligns components in the row.
⌵	Aligns components above baseline in the row.
⌵	Aligns components below baseline in the row.
↕	Grow row height.

2.3.2 In-place-editing

In-place-editing allows you to edit the text of labels and other components directly in the [Design](#) view. Simply select a component and start typing. JFormDesigner automatically displays a text field that allows you to edit the text.

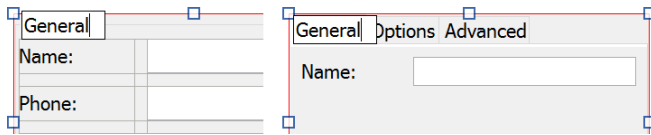


You can also use the [Space](#) key or double-click on a component to start in-place-editing. Confirm your changes using the [Enter](#) key, or cancel editing using the [Esc](#) key.

[Ctrl+double-click](#) opens dialog to edit text property.

In-place-editing is available for all components, which support one of the properties `textWithMnemonic`, `text` or `title`.

In-place-editing is also supported for the title of `TitledBorder` and the tab titles of `JTabbedPane`.



TitledBorder: double-click on the title of the `TitledBorder`; or select the component with the `TitledBorder` and start in-place-editing as usual.

JTabbedPane: double-click on the tab title; or single-click on the tab, whose title you want to edit and start in-place-editing as usual.

2.3.3 Keyboard Navigation

Keyboard navigation allows you to change the selection in the designer view using the keyboard. This allows you for example to edit a bunch of labels using [in-place-editing](#) without having to use the mouse. You can use the following keys:

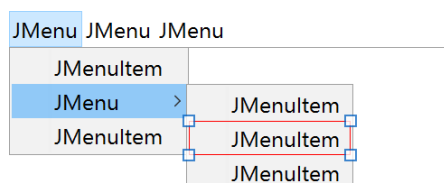
Key	Description
Up	move the selection up
Down	move the selection down
Left	move the selection left
Right	move the selection right
Home	select the first component
End	select the last component

Note: Keyboard navigation is currently limited to one container. You cannot move the selection to another container using the keyboard.

2.3.4 Menu Designer

The menu designer makes it easy to create and modify menu bars and popup menus. It supports in-place-editing menu texts and drag-and-drop menu items.

Menu bar structure



This figure shows the structure of a menu bar. The horizontal bar on top of the image is a `JMenuBar` that contains `JMenu` components. The `JMenu` contains `JMenuItem`, `JCheckBoxMenuItem`, `JRadioButtonMenuItem` or Menu Separator components. To create a sub-menu, put a `JMenu` into a `JMenu`.

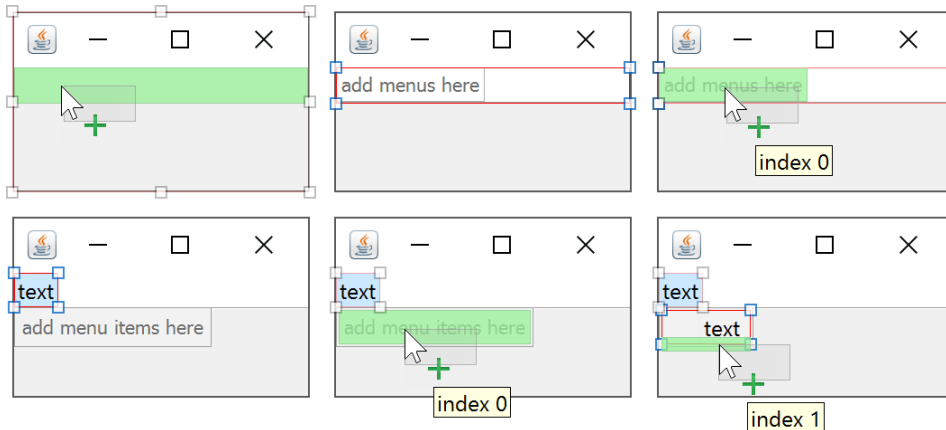
The component [palette](#) provides a category "Menus" that contains all components necessary to create menus.

Creating menu bars

To create a menu bar:

1. add a `JMenuBar` to a `JFrame`
2. add `JMenu` to the `JMenuBar` and
3. add `JMenuItems` to the `JMenu`

Select the necessary components in the [Palette](#) and drop them to the [Design](#) view.

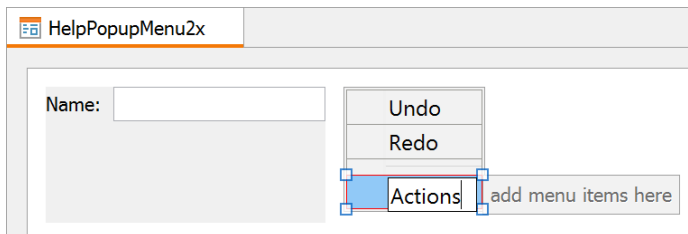


You can freely drag and drop the various menu components to rearrange them.

Creating popup menus

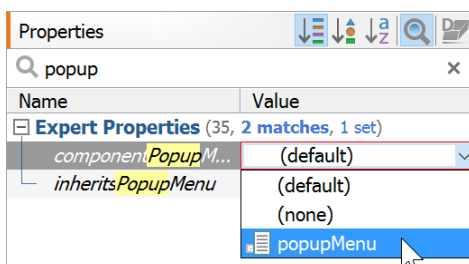
To create a popup menu:

1. add a `JPopupMenu` to the free area in the [Design](#) view and
2. add `JMenuItems` to the `JPopupMenu`



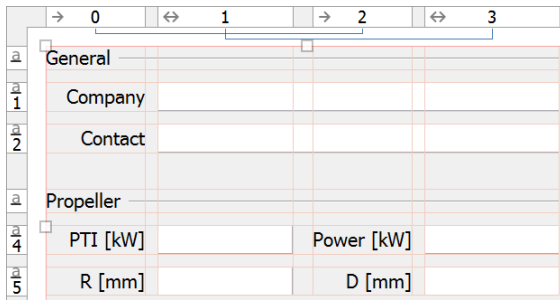
Assign popup menus to components

You can assign a popup menu to a component in the properties view using the "componentPopupMenu" property. Select the component to which you want attach the popup menu and assign it in the [Properties](#) view. Note that you must expand the **Expert Properties** category to see the property. Or use search as in the screenshot below.



2.3.5 Column/Row Groups

Column and row groups ([MigLayout](#) and [FormLayout](#) only) are used to specify that a set of columns or rows will get the same width or height. This is an essential feature for symmetric, and more generally, balanced design.

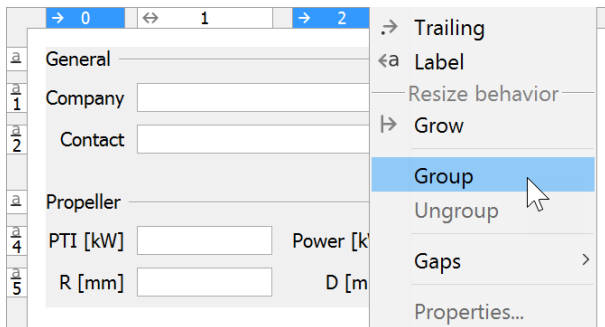


In the above example, columns [0 and 2] and columns [1 and 3] have the same width.

To visualize the grouping, JFormDesigner displays lines connecting the grouped columns/rows near to the column and row [headers](#).

Group columns/rows

To create a new group, [select](#) the columns/rows you want to group in the [header](#), right-click on a selected column /row in the header and select **Group** from the popup menu.



Note that selected gap columns/rows will be ignored when grouping ([FormLayout](#) only).

You can extend existing groups by selecting at least one column/row of the existing group and the columns/rows that you want to add to that group, then right-click on a selected column/row and select **Group** from the popup menu.

Ungroup columns/lines

To remove a group, [select](#) all columns/rows of the group, right-click on a selected column/row and select **Ungroup** from the popup menu.

To remove a single column/row from a group, right-click on it and select **Ungroup** from the popup menu.

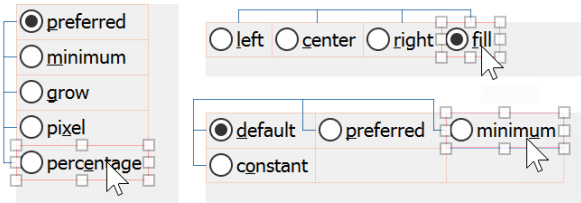
Group IDs

A unique group ID identifies each group. When using the header context menu to group/ungroup, you don't have to care about those IDs. JFormDesigner manages the group IDs automatically.

However, it is possible to edit the group ID in the [MigLayout](#) or [FormLayout](#) Column/row properties dialog.

2.3.6 Button Groups

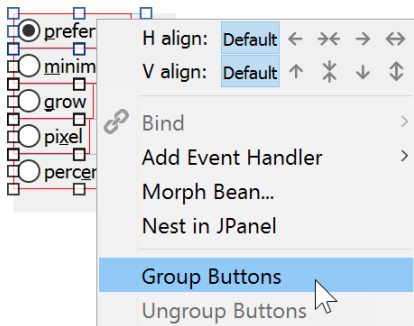
Button groups (`javax.swing.ButtonGroup`) are used in combination with radio buttons to ensure that only one radio button in a group of radio buttons is selected.



To visualize the grouping, JFormDesigner displays lines connecting the grouped buttons.

Group Buttons

To create a new button group, select the buttons you want to group, right-click on a selected button and select **Group Buttons** from the popup menu.



You can extend existing button groups by selecting at least one button of the existing group and the buttons that you want to add to that group, then right-click on a selected button and select **Group Buttons** from the popup menu.

Note that the **Group Buttons** and **Ungroup Buttons** commands are only available in the context menu if the selection contains only components that are derived from `JToggleButton` (`JRadioButton` and `JCheckBox`).

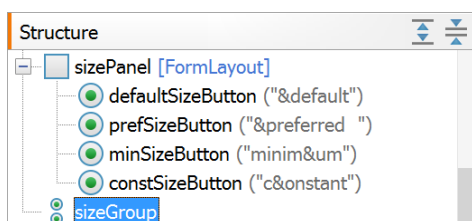
Ungroup Buttons

To remove a button group, select all buttons of the group, right-click on a selected button and select **Ungroup Buttons** from the popup menu.

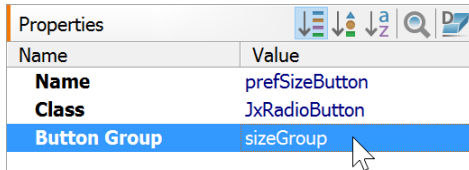
To remove a button from a group, right-click on it and select **Ungroup Buttons** from the popup menu.

ButtonGroup object

Button groups are **non-visual beans**. They appear at the bottom of the **Structure** view and in the **Design** view. JFormDesigner automatically creates and removes those objects. You can rename button group objects.



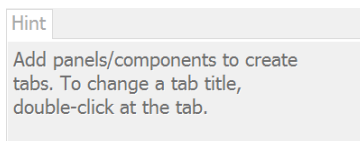
If a grouped button is selected, you can see the association to the button group in the [Properties](#) view.



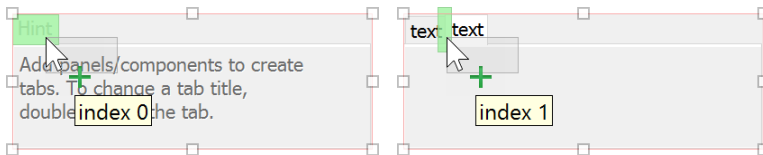
2.3.7 JTabbedPane

JTabbedPane is a container component that lets the user switch between pages by clicking on a tab.

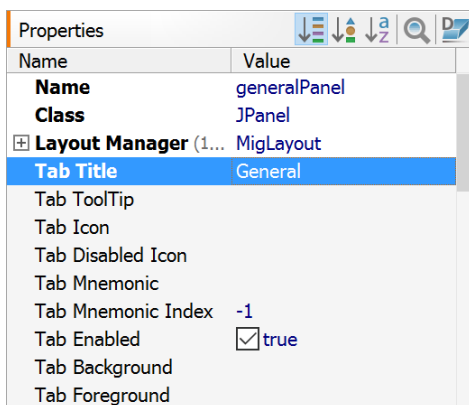
After adding a JTabbedPane to your form, it looks like this one:



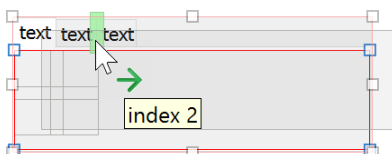
To add pages, select an appropriate component (e.g. JPanel) in the palette, move the cursor over the tabs area of the JTabbedPane and click to add it.



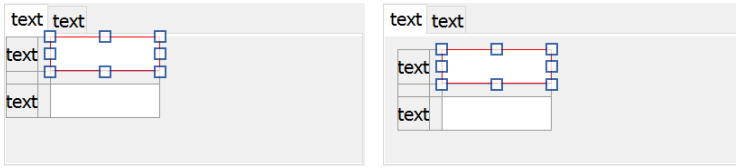
You can see only the components of the active tab. Click on a tab to switch to another page. To change a tab title, double-click on a tab to [in-place-edit](#) it. You can edit other tab properties (tool tip text, icon, ...) in the [Properties](#) view. Select a page component (e.g. JPanel) to see its tab properties.



To change the tab order, select a page component (e.g. JPanel) and drag it over the tabs to a new place. You can also drag and drop page components in the [Structure](#) view to change its order.

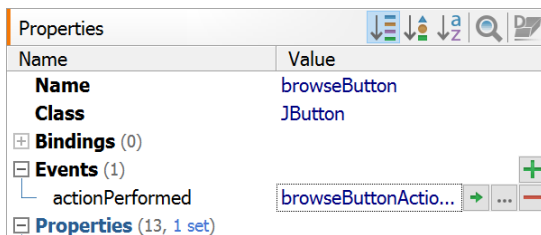


Use an empty border to separate the page contents from the JTabbedPane border. If you are using MigLayout, it's recommended to use [Layout Insets](#). For JGoodies Forms use border `TABBED_DIALOG`. Otherwise, use an `EmptyBorder`.



2.3.8 Events

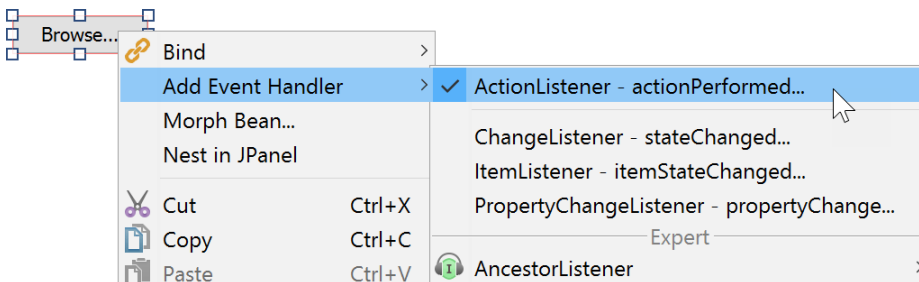
Components can provide events to signal when activity occurs (e.g. button pressed or mouse moved). JFormDesigner shows events in the **Events** category in the [Properties](#) view.



IDE plug-ins: Click on the **Go to Method** button (➔) to go to the event handler method in the Java editor of the IDE.

Add Event Handlers

To add an event handler to a component, right-click on the component in the [Design](#) or [Structure](#) view and select **Add Event Handler** from the popup menu. Or click the **Add Event** button (⊕) in the [Properties](#) view. The events popup menu lists all available event listeners for the selected components and is divided into three sections: preferred, normal and expert event listeners.



The icon in the popup menu indicates that the listener interface will be implemented (e.g. javax.swing.ChangeListener). The icon indicates that the listener adapter class will be used (e.g. java.awt.event.FocusAdapter for java.awt.event.FocusListener). The icons and are used when the listener is already implemented.

After selecting an event listener from the popup menu, you can specify the name of the handler method and whether listener methods should be passed to the handler method in following dialog.

If you add a `PropertyChangeListener`, you can also specify a property name (field is not visible in screenshot). Then the listener is added using the method

```
addPropertyChangeListener(String
propertyName, PropertyChangeListener
listener) .
```

The "Go to handler method in Java editor" check box is only available in the **IDE plug-ins**.

Stand-alone: After saving the form, go to your favorite IDE and implement the body of the generated event handler method.

If you use the [Runtime Library](#) and the Java code generator is disabled, you must implement the handler method yourself in the target class. See documentation of method `FormCreator.setTarget()` in the JFormDesigner Loader API for details.

Remove Event Handlers

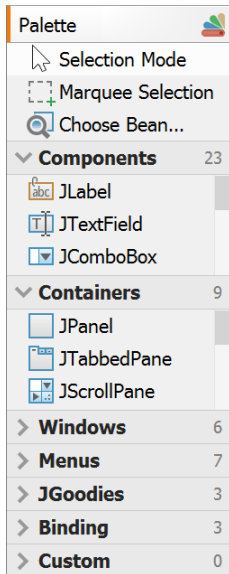
To remove an event handler, click the **Remove Event** button (🗑️). Or right-click on the event and select **Remove Event** from the popup menu.

Change Handler Method Name

You can either edit the method name directly in the property table or click the ellipsis button (⋮) to open the **Edit Event Handler** dialog where you can edit all event options.

2.4 Palette

The component palette provides quick access to commonly used components ([JavaBeans](#)) available for adding to forms.



The components are organized in categories. Click on a category header to expand or collapse a category.

You can add a new component to the form in following ways:

- Select a component in the palette, move the cursor to the [Design](#) or [Structure](#) view and click where you want to add the component.
- Select **Choose Bean**, enter the class name of the component in the [Choose Bean](#) dialog, click OK, move the cursor to the [Design](#) or [Structure](#) view and click where you want to add the component.

To add multiple instances of a component, hold down the [Ctrl](#) key (*Mac*: [Command](#) key) while clicking on the [Design](#) or [Structure](#) view.

The component palette is fully customizable. Right-click on the palette to add, edit, remove or reorder components and categories. Or use the [Palette Manager](#).

Toolbar commands

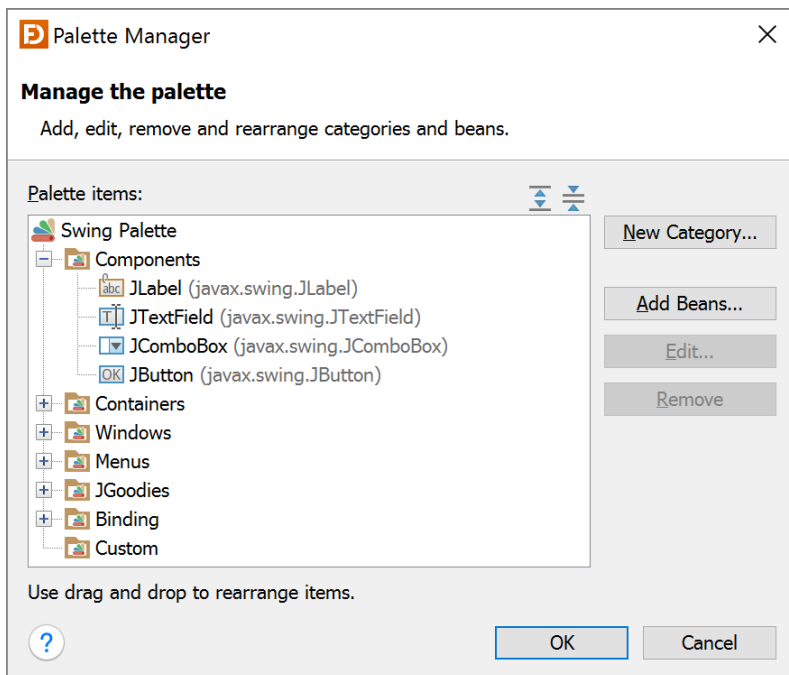


Palette Manager

Opens the [Palette Manager](#) dialog to customize the palette.

Palette Manager

This dialog allows you to fully customize the component palette. You can add, edit, remove or reorder components and categories.



Choose Bean

You can use any component that follows the [JavaBean](#) specification in JFormDesigner. Select **Choose Bean** in the palette to open the Choose Bean dialog.

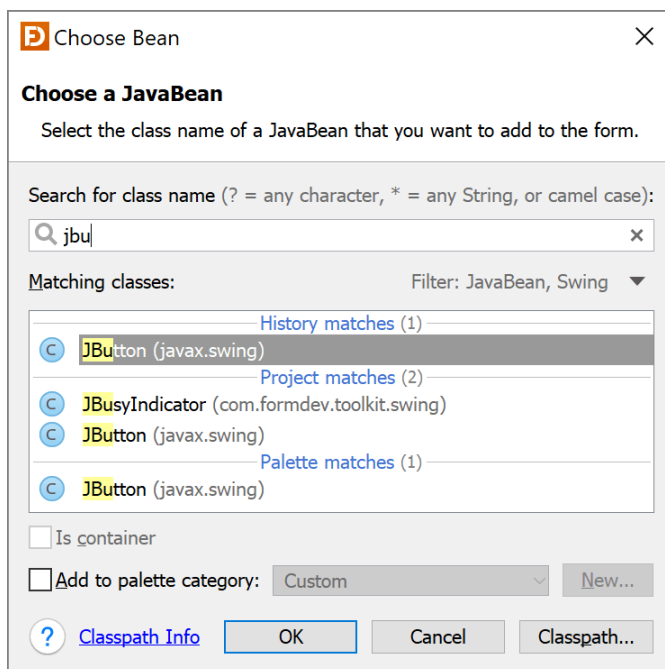
Here you can search for classes. Enter the first few characters of the class you want to choose until it appears in the matching classes list. Then select it in the list and click OK.

Following pattern kinds are supported:

- Wildcards: "*" for any string; "?" for any character; terminating "<" or " " (space) prevents implicit trailing "*"
 - Camel case: "JB" for classes containing "J" and "B" as upper-case letters in camel-case notation, e.g. `JButton` or `JideButton`; "DaPi" for classes containing "Da" and "Pi" as parts in camel-case notation, e.g. `DatePicker`

The matching classes list displays all classes that match. It is separated into up to three sections:

- History matches: classes found in the history of last used classes. If the search field is empty, the complete history is displayed. To delete a class from the history, select it and press the [Delete](#) key or right-click on it and select **Delete** from the popup menu.
- Project matches: classes found in the Classpath specified in the current [Project](#).
- Palette matches: classes found in the palette.



Filter Menu Options

Use Filter	Classes are hidden if they do not match the filter. E.g. if the JavaBean filter is active and the class is not public or does not have a public constructor.
Show Interfaces	Includes interfaces in the list of matching classes.

The **Is Container** check box allows you to specify whether a bean is a container or not.

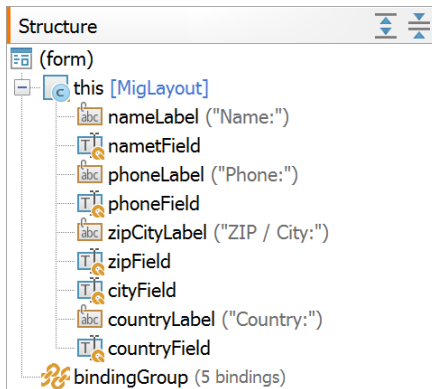
If you select **Add to palette category**, the component will be added to the palette category specified in the following field. Click the **New** button to create a new category for your components if necessary.

Stand-alone: Use the **Classpath** button to specify the location of your component classes. Add your JAR files or class folders.

IDE plug-ins: The classpath specified in the IDE project is used to locate component classes.

2.5 Structure View

This view displays the hierarchical structure of the components in a form.



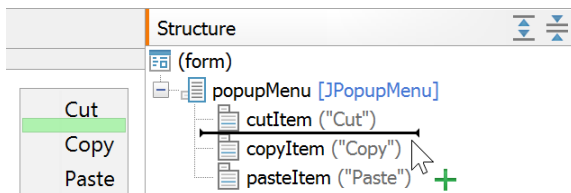
Each component is shown in the tree with an icon, its name and additional information like layout manager class or the text of a label or button. The name must be unique within the form and is used as variable name in the generated Java code.

You can edit the name of the selected component in the tree by pressing the **F2** key. Right-click on a component to invoke commands from the context menu.










The selection in the Structure view and in the [Design](#) view is synchronized both ways.

The tree supports multiple selection. Use the **Ctrl** key (*Mac*: **Command** key) to add individual selections. Use the **Shift** key to add contiguous selections.



The tree supports drag and drop to rearrange components. You can also add new components from the [palette](#) to the Structure view. Besides the feedback indicator in the structure tree, JFormDesigner also displays a green feedback figure in the [Design](#) view to show the new location.



Various overlay icons are used in the tree to indicate additional information:

-  The component is bound to a Java class. Each component can have its own (nested) class. See [Nested Classes](#) for details.
-  The component has [bindings](#) assigned to it. The bindings are shown in [Bindings](#) view and in the **Bindings** category in the [Properties](#) view.
-  The component has [events](#) assigned to it. The events are shown in the **Events** category in the [Properties](#) view.
-  The component has custom code assigned to it. See [Code Generation](#) properties.
-  The variable modifier of the component is set to **public**. See [Code Generation](#) properties.
 -  The variable modifier of the component is set to **default**.
 -  The variable modifier of the component is set to **protected**.
 -  The variable modifier of the component is set to **private**.
-  A property (e.g. `JLabel.labelFor`) of the component has a reference to a non-existing component. This can happen if you e.g. remove a referenced `JTextField`. In the above screenshot, the component `phoneLabel` has an invalid reference.

Toolbar commands

	Expand All	Expand all nodes in the structure tree.
	Collapse All	Collapse all nodes in the structure tree.

2.6 Properties View

The Properties view displays and lets you edit the properties of the selected component(s). Select one or more components in the [Design](#) or [Structure](#) view to see its properties. If more than one component is selected, only properties that are available in all selected components are shown.

The properties table displays the component name, component class, layout [manager](#) and [constraints](#) properties, [bindings](#), [events](#), [client properties](#), component properties and [code generation](#) properties. The list of component properties comes from introspection of the component class (JavaBeans).

Properties	
Name	Value
Name	nameField
Class	JTextField
> Layout Constr...	cell 1 0
> Bindings (1)	
editable	← checkBox - selec...
> Events (1)	
focusLost	nameFieldFocusLost
> Client Properties (2)	
> Properties (9, 1 set)	
background	<input type="checkbox"/> #f2f2f2
columns	20
→ editable	<input type="checkbox"/> false
enabled	<input checked="" type="checkbox"/> true
font	Segoe UI 12
foreground	<input checked="" type="checkbox"/> black
horizontalAlig...	LEADING
text	
toolTipText	
> Expert Properties (35)	
> Read-only Properties (39)	
> Code Generation (13)	

Properties are organized in categories, which you can expand/collapse by clicking on the category name or on the small arrow icons. The number of properties in a category and the number of set properties is displayed near the category name.

The category names of component property categories (Properties, Expert Properties, etc) are displayed in blue color.

Different font styles are used for the property names. Bold style is used for preferred (often used) properties, plain style for normal properties and italic style for expert properties. Read-only properties are shown using a gray font color.

The white background indicates unset properties. The shown values are the default values of the component. The light green background indicates set properties. Java code will be generated for set properties only. Use **Restore Default Value** (↶) to unset a property. Use **Set Value to null** from the popup menu to set a property explicitly to `null`.

A small arrow (→) near the property name indicates that the property is [bound](#).

Use **Group by Category** (↵) to organize component properties into three predefined categories (normal, expert and read-only) and [custom categories](#) (defined in [BeanInfo](#)). **Group by Defining Type** (↵) organizes component properties into defining types (e.g. JTextField, JTextComponent, JComponent, Container, Component). **Alphabetical** (↵) shows all component properties in one category.

Changing property values

The left column displays the property names, the right column the property values. Click on a property value to edit it.

labelFor	
text	Name: <input type="text"/>
toolTipText	

You can either edit a value directly in the property table or use a custom property editor by clicking on the ellipsis button (...) on the right side or pressing the **F3** key. The custom editor pops up in a new dialog. The flag button (🚩), which is only available for localized forms and string properties, allows you to choose existing strings from the resource bundle of the form.

The type of the editor depends on the data type of the property. JFormDesigner has built-in [property editors](#) for all standard data types.

For numbers, a spinner editor makes it easier to increase or decrease the value using the arrow buttons or [Up](#) and [Down](#) keys. Press the [Enter](#) key to confirm the change; or the [Esc](#) key to cancel it.

background	<input type="text" value="240, 240, 240"/>
columns	<input type="text" value="20"/>
→ editable	<input type="checkbox"/> false

Search for property names

To filter the list of shown properties, select the **Show Filter** (🔍) toolbar button. This shows a text field below the toolbar, where you can enter your filter criteria. Use space, comma or semicolon as separator for multiple property names.

Name	Value
Properties (9, 2 matches)	
columns	0
editable	<input checked="" type="checkbox"/> true
Expert Properties (35, 4 matches)	
caretColor	black
disabledTextColor	109, 109, 109

Common properties and categories

Property/Category	Description
Name	The name of the component. Must be unique within the form. Used as variable name in the generated Java code. It is also possible to specify a different variable name in the Code Generation category.
Class	The class name of the component. The tooltip displays the full class name and the class hierarchy. Click on the value to morph the component class to another class (e.g. <code>TextField</code> to <code>TextArea</code>).
Button Group	The name of the button group assigned to the component. This property is only visible for components derived from <code>JToggleButton</code> (e.g. <code>JRadioButton</code> and <code>JCheckBox</code>).
Layout Manager	Layout manager properties of the container component. The list of layout properties depends on the used layout manager. This property is only visible for container components. Click on the value to change the layout manager .
Layout Constraints	Layout constraints properties of the component. The list of constraints properties depends on the layout manager of the parent component. This property is only visible if the layout manager of the parent component uses constraints.
Bindings	Bindings of the component.
Events	Events of the component.
Client Properties	Client properties of the component. This property is only visible if there are client properties defined in the Client Properties preferences.
Code Generation	Code Generation properties of the component.

"(form)" properties

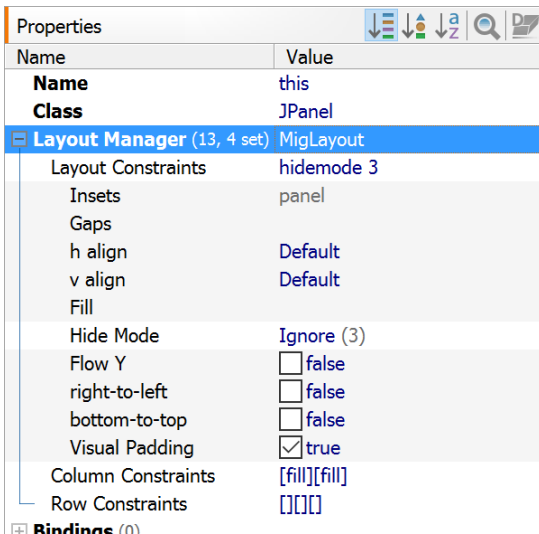
Select the "(form)" node in the [Structure](#) view to modify special form properties:

Property Name	Description
Form file format	The format used to persist the form. See also "Form file format" option in General preferences.
Set Component Names	If <code>true</code> , invokes <code>java.awt.Component.setName()</code> on all components of the form.

2.6.1 Layout Manager Properties

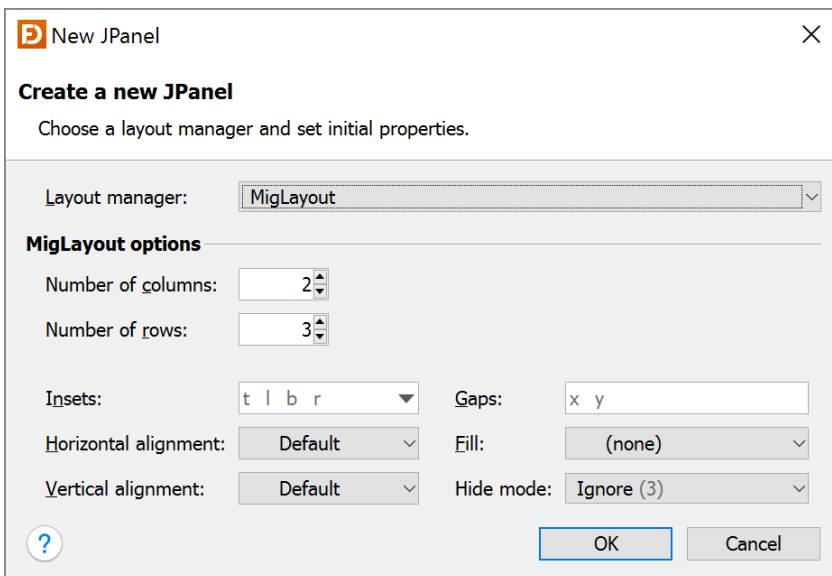
Each container component that has a [layout manager](#) has layout properties. The list of layout properties depends on the used layout manager.

Select a **container component** in the [Design](#) or [Structure](#) view to see its layout properties in the [Properties](#) view.



This screenshot shows layout manager properties of a container that has a MigLayout.

When you add a container component to a form, following dialog appears and you can choose the layout manager for the new container. You can also set the layout properties in this dialog.

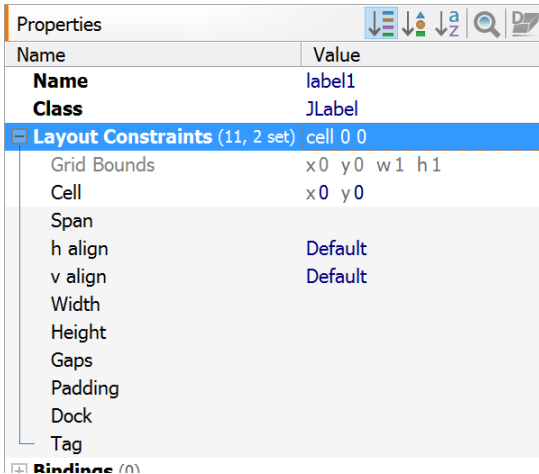


2.6.2 Layout Constraints Properties

Layout Constraints properties are related to layout managers. Some layout managers (MigLayout, FormLayout, TableLayout, GridBagLayout, ...) use constraints to associate layout information (e.g. grid x/y) to the **child components** of a container.

The list of constraints properties depends on the layout manager of the parent component.

Select a component in the [Design](#) or [Structure](#) view to see its constraints properties in the [Properties](#) view.



This screenshot shows constraints properties of a component in a MigLayout.

2.6.3 Client Properties

What is a client property?

Swings base class for all components, `javax.swing.JComponent`, provides following methods that allows you to set and get user-defined properties:

```
public final Object getClientProperty(Object key);
public final void putClientProperty(Object key, Object value);
```

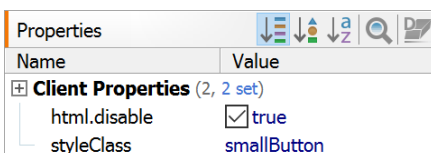
Some Swing components use client properties to change their behavior. E.g. for JLabel you can disable HTML display with `label.putClientProperty("html.disable", Boolean.TRUE)`; You can use client properties to store any information in components. Visit [Finally... Client Properties You Can Use](#) on Ben Galbraith's Blog for a use case.

Define client properties

You can define client properties on the [Client Properties](#) page in the [Preferences](#) dialog.

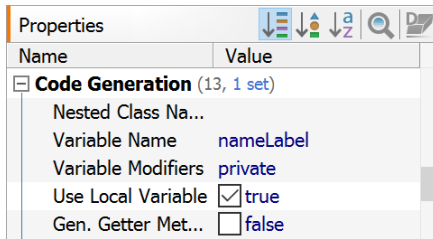
Edit client properties

If you've defined client properties, JFormDesigner shows them in the [Properties](#) view, where you can set the values of the client properties.



2.6.4 Code Generation Properties

This category contains properties related to the Java code generator.



Component

Property Name	Description
Nested Class Name	The name of the generated nested Java class. See Nested Classes for details.
Variable Name	The variable name of the component used in the generated Java code. By default, it is equal to the component name.
Variable Modifiers	The modifiers of the variable generated for the component. Allowed modifiers: <code>public</code> , <code>default</code> , <code>protected</code> , <code>private</code> , <code>static</code> and <code>transient</code> . Default is <code>private</code> .
Use Local Variable	If <code>true</code> , the variable is declared as local in the initialization method. Otherwise, at class level. Default is <code>false</code> .
Gen. Getter Method	If <code>true</code> , generate a public getter method for the component. Default is <code>false</code> .
Variable Annotations	Annotations of component variable.
Type Parameters	Parameters of component type. E.g. <code>MyTypedBean<String></code> .
Custom Create	If <code>true</code> , create component in <code>createUIComponents()</code> method. Useful if you want use component factories for or non-default constructors. JFormDesigner generates the <code>createUIComponents()</code> method, but no component instantiation code. It is your responsibility to add code to <code>createUIComponents()</code> .
Custom Creation Code	Custom code for creation of the component.
Pre-Creation Code	Code included before creation of the component.
Post-Creation Code	Code included after creation of the component.
Pre-Initialization Code	Code included before initialization of the component.
Post-Initialization Code	Code included after initialization of the component.

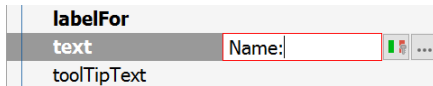
"(form)" properties

Select the "(form)" node in the [Structure](#) view to modify special form properties:

Property Name	Description
Generate Java Source Code	If true, generate Java source code for the form. Defaults to "Generate Java source code" option in the Java Code Generator preferences.
Default Variable Modifiers	The default modifiers of the variables generated for components. Allowed modifiers: <code>public</code> , <code>default</code> , <code>protected</code> , <code>private</code> , <code>static</code> and <code>transient</code> . Default is <code>private</code> .
Default Use Local Variable	If <code>true</code> , the component variables are declared as local in the initialization method. Otherwise, at class level. Default is <code>false</code> .
Default Gen. Getter Method	If <code>true</code> , generate public getter methods for components. Default is <code>false</code> .
Default Event Handler Modifiers	The default modifiers used when generating event handler methods. Allowed modifiers: <code>public</code> , <code>default</code> , <code>protected</code> , <code>private</code> , <code>final</code> and <code>static</code> . Default is <code>private</code> .
Member Variable Prefix	Prefix used for component member variables. E.g. "m_".
Use 'this' for member variables	If enabled, the code generator inserts 'this.' before all member variables. E.g. <code>this.nameLabel.setText("Name:");</code>
I18n Initialization Method	If enabled, the code generator puts the code to initialize the localized texts into a method <code> initComponentsI18n()</code> . You can invoke this method from your code to switch the locale of a form at runtime.
I18n 'getBundle' Template	Template used by code generator for getting a resource bundle. Default is <code>ResourceBundle.getBundle(\${bundleName})</code>
I18n 'getString' Template	Template used by code generator for getting a string from a resource bundle. Default is <code>\${bundle}.getString(\${key})</code>
I18n 'translate' Template	Template used by code generator to translate a string into another locale (e.g. <code>i18n.tr(\${value})</code> for Gettext Commons library).
I18n Key Constants Class	The name of a class that contains constants for resource keys.
Binding Initialization Method	If enabled, the code generator puts the code to create bindings into a method <code> initComponentsBindings()</code> .
MigLayout: API Constraints	If enabled, then MigLayout API is used to create constraints. Otherwise, strings are used.

2.6.5 Property Editors

Property editors are used in the [Properties](#) view to edit property values.



You can either edit a value directly in the property table or use a custom property editor by clicking on the ellipsis button (...) on the right side. The custom editor pops up in a new dialog.

The type of the editor depends on the data type of the property. JFormDesigner has built-in property editors for all standard data types. Custom JavaBeans can provide their own property editors. Take a look at the API documentation of [java.beans.PropertyEditor](#), [java.beans.PropertyDescriptor](#) and [java.beans.BeanInfo](#) and the [JavaBeans](#) topic for details.

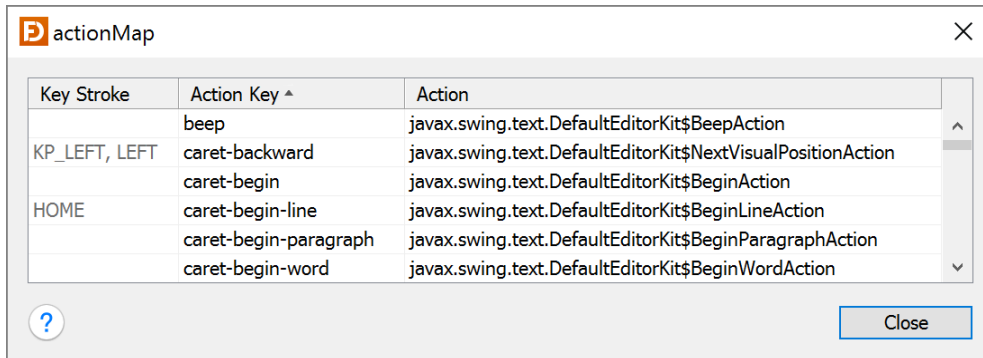
Built-in property editors

JFormDesigner has built-in property editors for following data types:

- [String](#), [String\[\]](#), [boolean](#), [byte](#), [char](#), [double](#), [float](#), [int](#), [long](#), [short](#), [java.lang.Boolean](#), [java.lang.Byte](#), [java.lang.Character](#), [java.lang.Class](#), [java.lang.Double](#), [java.lang.Float](#), [java.lang.Integer](#), [java.lang.Long](#), [java.lang.Short](#), [java.math.BigDecimal](#) and [java.math.BigInteger](#)
- [ActionMap](#) (javax.swing)
- [Border](#) (javax.swing)
- [Color](#) (java.awt)
- [ComboBoxModel](#) (javax.swing)
- [Cursor](#) (java.awt)
- [Dimension](#) (java.awt)
- [Font](#) (java.awt)
- [Icon](#) (javax.swing)
- [Image](#) (java.awt)
- [InputMap](#) (javax.swing)
- [Insets](#) (java.awt)
- [KeyStroke](#) (javax.swing)
- [ListModel](#) (javax.swing)
- [Object](#) (java.lang)
- [Paint](#) (java.awt)
- [Point](#) (java.awt)
- [Rectangle](#) (java.awt)
- [SpinnerModel](#) (javax.swing)
- [TableModel](#) (javax.swing)
- [TreeModel](#) (javax.swing)

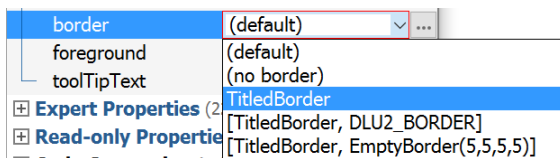
ActionMap (javax.swing)

This (read-only) custom editor allows you to see the actions registered for a component in its action map. The information in the column "Key Stroke" comes from the input map of the component and shows which key strokes are assigned to actions. The JComponent property "actionMap" is read-only. Expand the **Read-only Properties** category in the [Properties](#) view to make it visible.

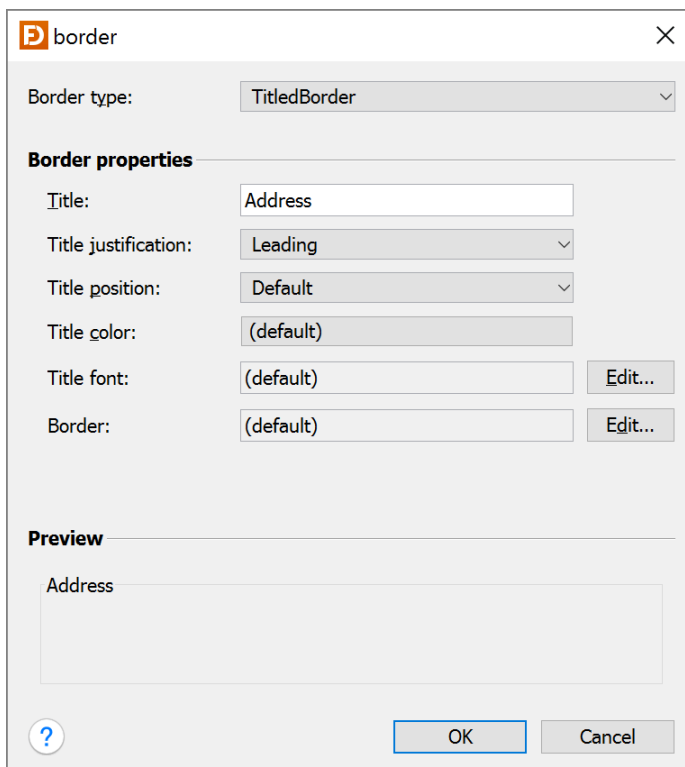


Border (javax.swing)

You can either select a border from the combo box in the properties table or use the custom editor.



In the custom editor you can edit all border properties. Use the combo box at the top of the dialog to choose a border type. In the mid area of the dialog you can edit the border properties. This area is different for each border type. At the bottom, you can see a preview of the border.

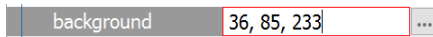


Following border types are supported:

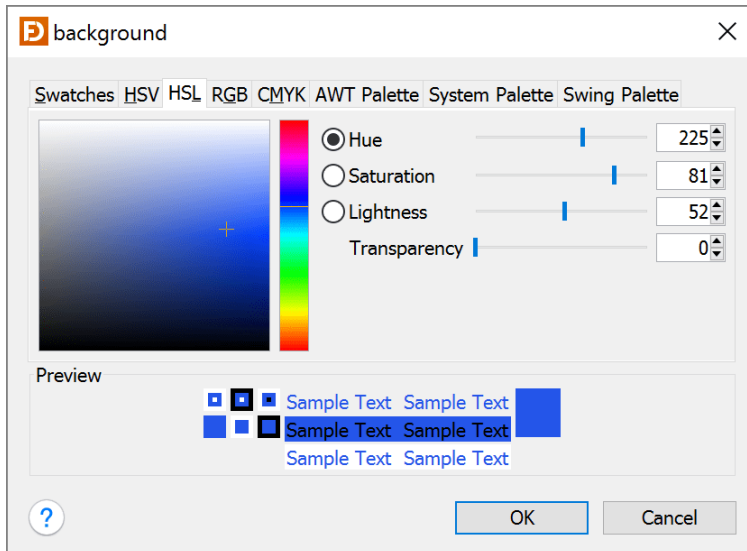
- `BevelBorder`
- `CompoundBorder`
- `DropShadowBorder` (SwingX)
- `EmptyBorder`
- `EmptyBorder` (JGoodies)
- `EtchedBorder`
- `LineBorder`
- `MatteBorder`
- `SoftBevelBorder`
- `TitledBorder`
- Swing look and feel
- custom borders

Color (java.awt)

In the properties table, you can either enter RGB values, color names, system color names or Swing UIManager color names. When using an RGB value, you can also specify the alpha value by adding a fourth number.

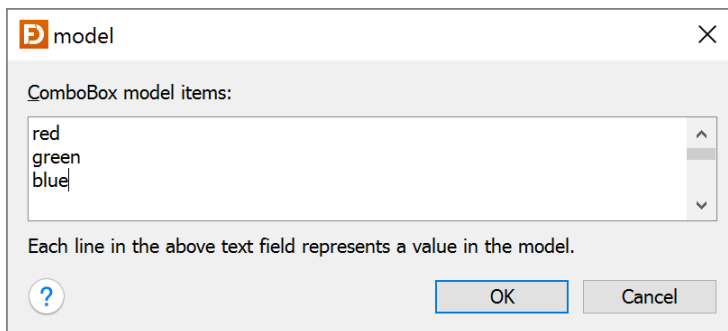


The custom editor supports various ways to specify a color. Besides RGB, you can select a color from the AWT, System or Swing palettes.



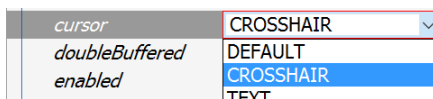
ComboBoxModel (javax.swing)

This custom editor allows you to specify string values for a combo box.



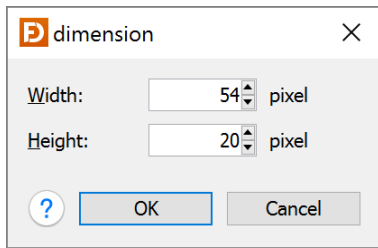
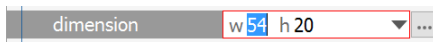
Cursor (java.awt)

This editor allows you to choose a predefined cursor.



Dimension (java.awt)

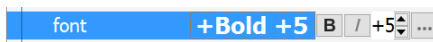
Either edit the dimension in the property table or use the custom editor.



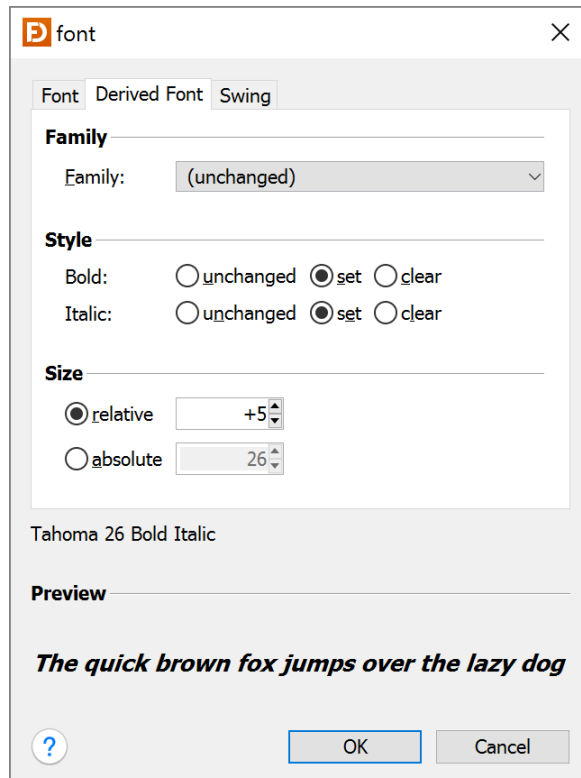
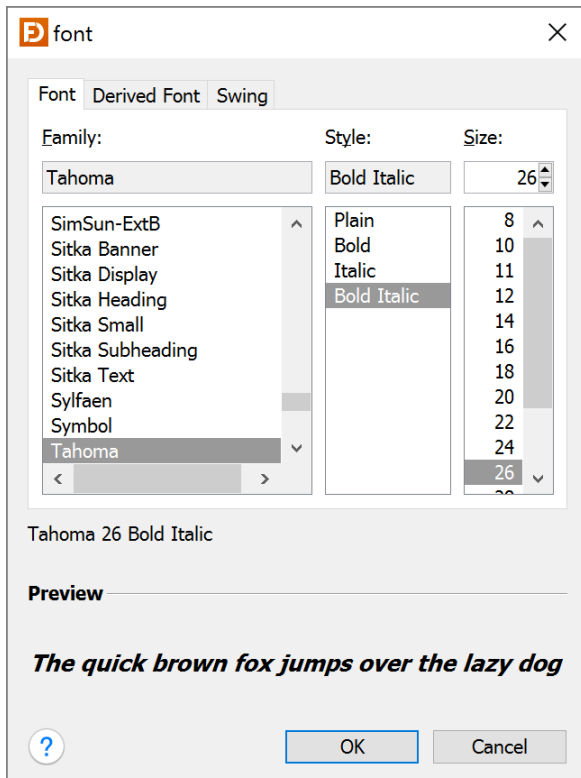
Font (java.awt)

You can either use absolute fonts, derived fonts or predefined fonts of the look and feel. Derived fonts are recommended if you just need a bold/italic or a larger/smaller font (e.g. for titles), because derived fonts are computed based on the current look and feel. If your application runs on several look and feels (e.g. several operating systems), derived fonts ensure that the font family stays consistent.

In the properties table, you can quickly change the style (bold and italic) and the size of the font.

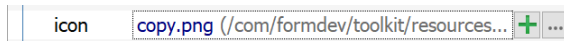


In the custom editor you can choose one of the tabs to specify either absolute fonts, derived fonts or predefined fonts.

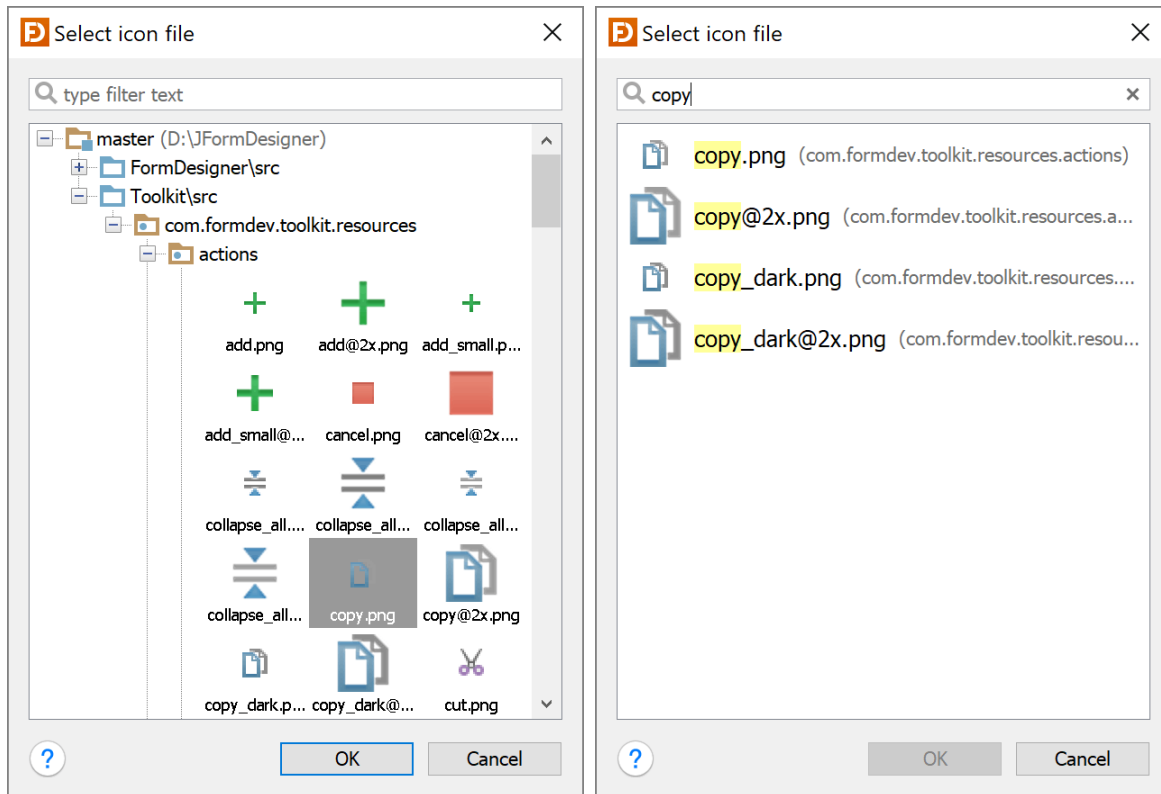


Icon (javax.swing) and Image (java.awt)

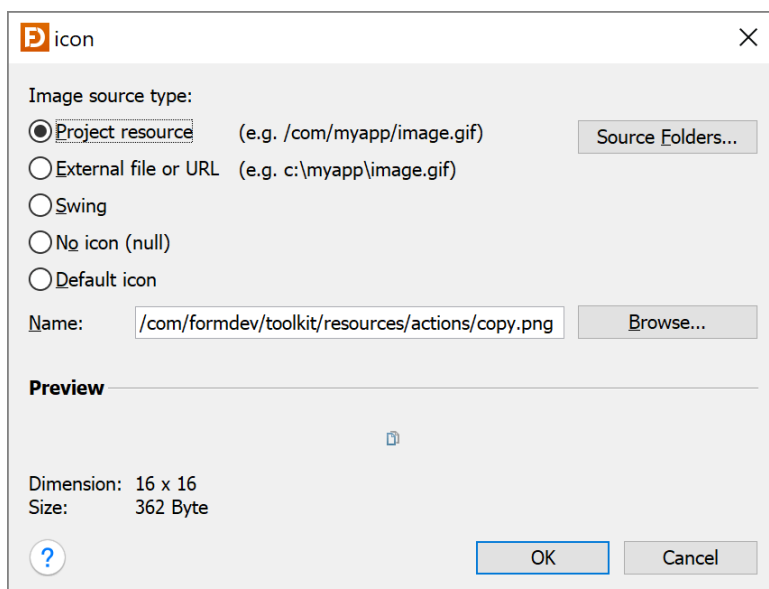
This custom editor allows you to choose an icon. It supports bitmap images (PNG, GIF and JPEG) and vector graphics (SVG). When using SVG, then class `FlatSVGIcon` from `FlatLaf Extras` is required.



Click the plus button in the properties table to open the default custom editor, which allows you to use an icon from the project resources.

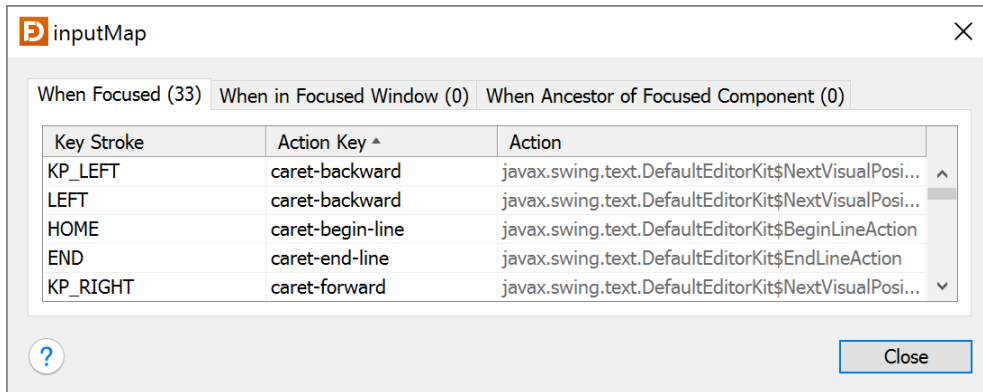


Click the ellipsis button in the properties table to open the extended custom editor, which allows you to use an icon from the project resources, from the file system or from the Swing UIManager (look and feel). It is recommended to use the project resources and embed your icons into your application JAR.



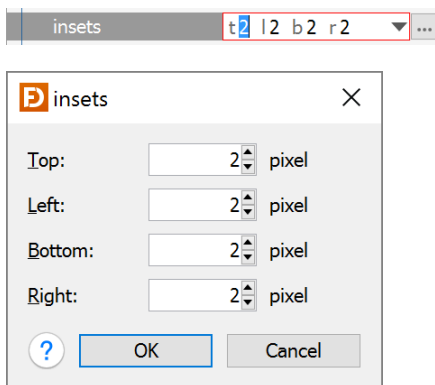
InputMap (javax.swing)

This (read-only) custom editor allows you to see the key strokes registered for a component in its input map. The information in the column "Action" comes from the action map of the component and shows which action classes are assigned to key strokes. The JComponent property "inputMap" is read-only. Expand the **Read-only Properties** category in the [Properties](#) view to make it visible.



Insets (java.awt)

Either edit the insets in the property table or use the custom editor.

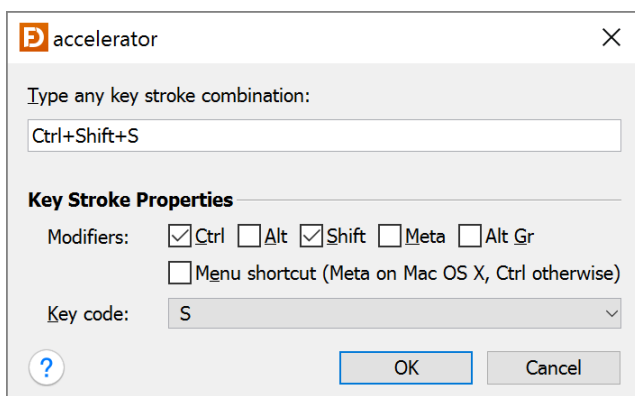


KeyStroke (javax.swing)

In the properties table, you can enter a string representation of the keystroke. E.g. "Ctrl+C" or "Ctrl+Shift+S".

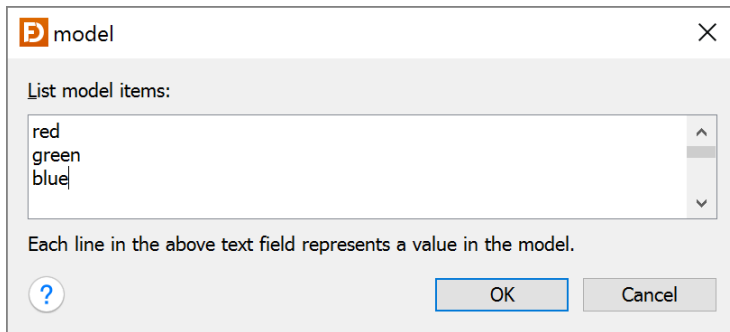
The custom editor supports two ways to specify a keystroke. Either type any key stroke combination if the focus is in the first field or use the controls below.

The KeyStroke editor supports menu shortcut modifier key ([Command](#) key on the Mac, [Ctrl](#) key otherwise).



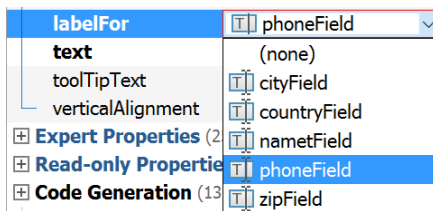
ListModel (javax.swing)

This custom editor allows you to specify string values for a list.



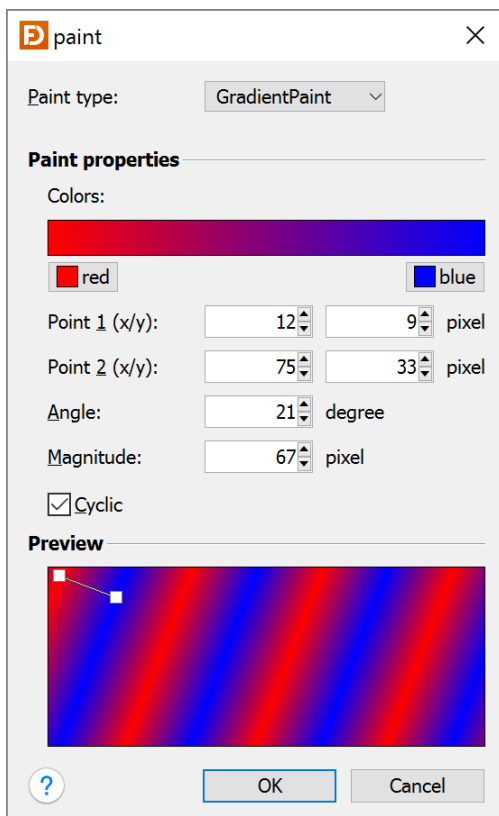
Object (java.lang)

This editor allows you to reference any (non-visual) JavaBean as a property value. Often used for `JLabel.labelFor`.



Paint (java.awt)

This editor allows you to specify a `java.awt.Paint` object (used by `java.awt.Graphics2D`). Use the combo box at the top of the dialog to choose a paint type. In the mid area of the dialog you can edit the paint properties. This area is different for each paint type. At the bottom, you can see a preview of the paint. For `GradientPaint` you can click-and-drag the handles in the preview area to move the points.

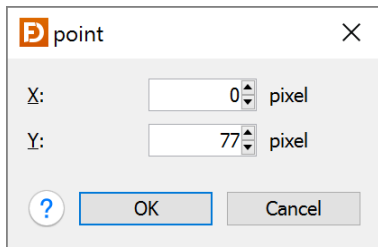


Following paint types are supported:

- `Color`
- `GradientPaint`

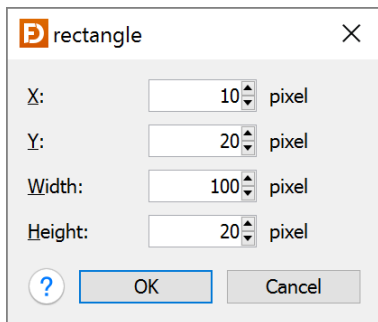
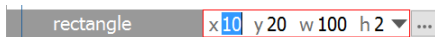
Point (java.awt)

Either edit the point in the property table or use the custom editor.



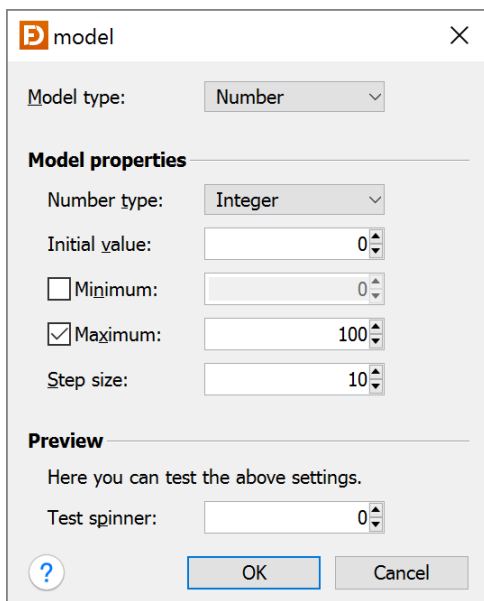
Rectangle (java.awt)

Either edit the rectangle in the property table or use the custom editor.



SpinnerModel (javax.swing)

This custom editor allows you to specify a spinner model (used by `JSpinner`). Use the combo box at the top of the dialog to choose a spinner model type (Number, Date or List). In the mid area of the dialog you can edit the model properties. This area is different for each model type. At the bottom, you can see a test spinner where you can test the spinner model.



String (java.lang)

Either edit the string in the property table or use the custom editor. Switch the "allow new-line" check box on, if you want enter new lines.

String[] (java.lang)

This custom editor allows you to specify string values for a string array.

TableModel (javax.swing)

This custom editor allows you to specify values for a table.

model

Table model items:

A	B	C
John	Smith	<input type="checkbox"/>
Steve	Miller	<input checked="" type="checkbox"/>

Columns

Count: 3

Insert

Delete

Move Left

Move Right

Rows

Count: 2

Insert

Delete

Move Up

Move Down

The above table is editable. Select a cell and start typing. Use RETURN to commit, ESC to cancel and arrow keys to move selection.

Column properties

Here you can edit the properties of the column selected in the above table.

No.: 2 Title: Pref. width: 70

Type: Boolean Values: Edit...

☒ editable ☐ resizable Min. width: 70 Max. width: 70

?

OK Cancel

TreeModel (javax.swing)

This custom editor allows you to specify string values for a tree.

model

Tree model items:

```

colors
  red
  green
    dark
    light
  blue
  
```

Preview:

```

graph TD
  colors --> red
  colors --> green
  colors --> blue
  green --> dark
  green --> light
  
```


Each line in the above text field represents a node in the model. Use tabs to indent a line to deeper levels.

















?

OK Cancel



2.7 Bindings View

The Bindings view displays and lets you edit all [bindings](#) of the form. The bindings and binding groups are shown in the order they will be bound.









This view is not visible by default. It appears at the bottom of the main window when you click the **Show Bindings View** button () in the toolbar.

Bindings			       
Source		Target	Options
bindingGroup			
this - task.title		titleField - text	
this - task.description		descriptionField - text	
this - categories		categoryField - elements	
this - task.category		categoryField - selectedItem	
enablementBindingGroup			
this - \${task != null}		titleField - editable	
titleField - editable		titleLabel - enabled	
descriptionField - editable		descriptionLabel - enabled	
categoryField - enabled		categoryLabel - enabled	

The icon between the source and the target columns indicate the update strategy used by the binding:

	Always sync (read-write)
	Only read from source (read-only)
	Read once from source (read-once)

Toolbar and context menu commands

	Add	Create a new binding.
	Add Group	Create a new binding group.
	Remove	Remove the selected bindings.
	Properties	Displays the properties of the selected binding in the Binding dialog .
	Move Up	Move the selected bindings up.
	Move Down	Move the selected bindings down.
	Link with Designer	Links the bindings selection to the active designer.
	Close	Closes the Bindings view.





Double-click on a binding item to see its details in the [Binding dialog](#).

2.8 Error Log View

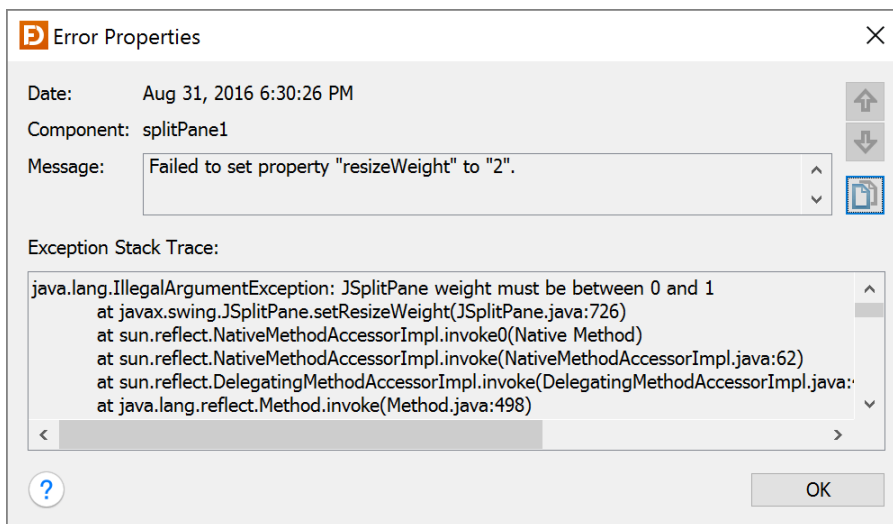
This view appears at the bottom of the main window if an exception is throw by a bean. You can see which bean causes the problem and the stack trace of the exception. This makes it much easier to solve problems when using your own (or 3rd party) beans.

Error Log		
Component	Message	Exception
splitPane1	Failed to set property "resizeWeight" to "2".	IllegalArgumentException: JSplitPane wei...

Toolbar commands


	Copy Log	Copies all log records to the clipboard.
	Clear Log	Clears the log.
	Properties	Displays the properties of the selected log record in a dialog (see below).
	Close	Closes the Error Log view.

Double-click on a log entry to see its details:



How to fix errors

This mainly depends on the error. The problem shown in the above screenshots is easy to fix by setting `resizeWeight` to a value between 0 and 1.

If the problem occurs in your own beans, use the stack trace to locate the problem and fix it in your bean's source code. After compiling your bean, click the **Refresh Designer** button () in the designer toolbar to reload your bean.

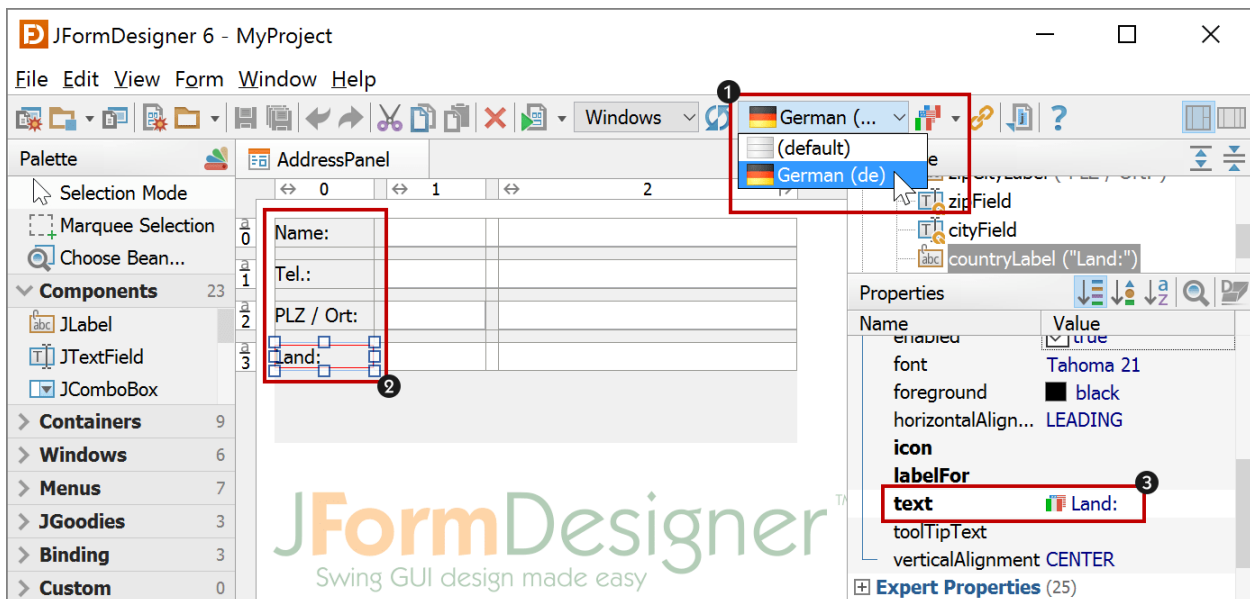
If you are using 3rd party beans, it is possible that you need to add additional libraries to the classpath. You should be able to identify such a problem on the kind of exception. In this case, add the needed libraries to the JFormDesigner classpath of the current [Project](#), and refresh the Design view.

3 Localization

JFormDesigner provides easy-to-use and powerful localization/internationalization support:

- [Externalize](#) and [internalize](#) strings.
- [Edit resource bundle strings](#).
- [Create new locales](#).
- [Delete locales](#).
- Switch locale used in Design view.
- [In-place-editing](#) strings of current locale.
- Auto-externalize strings.
- [Choose existing strings](#).
- Updates resource keys when renaming components.
- Copies resource strings when copying components.
- Removes resource strings when deleting components.
- [Localization preferences](#).
- Use .properties or .xml files.
- Fully integrated in undo/redo.

The locales combo box ❶ in the toolbar allows you to select the locale used in the [Design](#), [Structure](#) and [Properties](#) views. If you [in-place-edit](#) a localized string in the Design view ❷, you change it in the current locale. Small flags ❸ in front of property values in the Properties view indicates that the string is localized (stored in a properties file).



Create a new localized form

When creating a new form, you can specify that JFormDesigner should put all strings into a resource bundle (.properties file). In the **New Form** dialog select the **Store strings in resource bundle** check box, specify a resource bundle name and a prefix for generated keys. If **Auto-externalize strings** is selected, then JFormDesigner automatically puts all new strings into the properties file (auto-externalize). E.g. when you add a `JLabel` to the form and change the "text" and "toolTipText" properties, both strings will be put into the properties file.

To localize existing forms use [Externalize Strings](#).

New Form

Create a new Form
Specify layout and localization options.

Superclass: ☒ JPanel ☐ JDialog ☐ JFrame ☐ other
beans.AbstractPanel

Button bar: ☒ OK / Cancel ☐ OK ☐ none ☐ Help

Content Pane Layout
Layout manager: BorderLayout

BorderLayout options
Horizontal gap: 0 pixel
Vertical gap: 0 pixel
☒ equal gaps

Localization
☒ Store strings in resource bundle (properties file) ☒ Auto-externalize strings
Resource bundle name: com.myapp.Bundle
Prefix for generated keys: AddressPanel ☐ no prefix

Edit localization settings and resource bundle strings

To edit localization settings and resource bundle strings, select **Form > Localize** from the main menu or click the **Localize** button (🌐) in the toolbar. Here you can create or delete locales and edit strings. The light gray color used to draw the string "Name:" in the table column "German" indicates that the string is inherited from a parent locale.

Localize

Localization settings and resource bundles
Edit localization settings, resource bundle strings or add new locales.

Localization settings

Resource bundle name:

Resource bundle file:

Prefix for generated keys: ☒ Auto-externalize strings

Resource bundles

Strings:

Key ^	(default)	German (de)
AddressPanel.countryLabel.text	Country:	Land:
AddressPanel.nameLabel.text	Name:	Name:
AddressPanel.phoneLabel.text	Phone:	Tel.:
AddressPanel.zipCityLabel.text	ZIP / City:	PLZ / Ort:

The above table is editable. Select a cell and start typing. Use RETURN to commit, ESC to cancel and arrow keys t...

☒ Show only strings used in active form

?

The **Resource bundle name** field is used to locate the properties files within the [Source Folders](#) of the current [Project](#). Use the **Browse** button to choose a resource bundle (.properties file).

In the **Prefix for generated keys** field you can specify a prefix for generated resource bundle keys. The format for generated keys is "<prefix>.<componentName>.<propertyName>". You can change the separator ('.') in the [Localization preferences](#).

If the **Auto-externalize strings** check box is selected, then JFormDesigner automatically puts all new strings into the properties file. E.g. when you add a **JLabel** to the form and change the "text" and "toolTipText" properties, both strings will be put into the properties file. You can exclude properties from externalization in the [Localization preferences](#).

Create new locale

To create a new locale, either select **Form > New Locale** from the main menu, **New Locale** (🇩🇪) from the toolbar or click the **New Locale** button in the **Localize** dialog. Select a language and an optional country. You can copy strings from an existing locale into the new locale, but JFormDesigner fully supports inheritance in the same way as specified by `java.util.ResourceBundle`. E.g. if a message is not in locale "de_AT" then it will be loaded from locale "de".

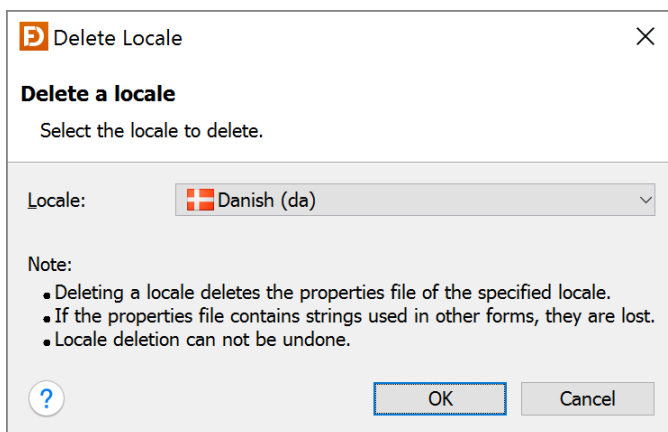


The "New Locale" dialog box is titled "New Locale" with a close button (X) in the top right corner. It contains the following elements:

- Create new locale**: A section header followed by the instruction "Specify the language and country of the new locale."
- Locale**: A section header followed by two dropdown menus:
 - Language:** A dropdown menu showing "Danish (da)" with a Danish flag icon.
 - Country (optional):** A dropdown menu showing "(none)".
- ☐ **Show all languages and countries**: A checkbox to toggle the display of all languages and countries.
- Copy**: A section header followed by a dropdown menu:
 - Copy strings from:** A dropdown menu showing "(none)".
- Buttons**: A help button (question mark icon), an "OK" button, and a "Cancel" button.

Delete a locale

To delete an existing locale, either select **Form > Delete Locale** from the main menu, **Delete Locale** (🇩🇪) from the toolbar or click the **Delete Locale** button in the **Localize** dialog. Select the locale to delete.



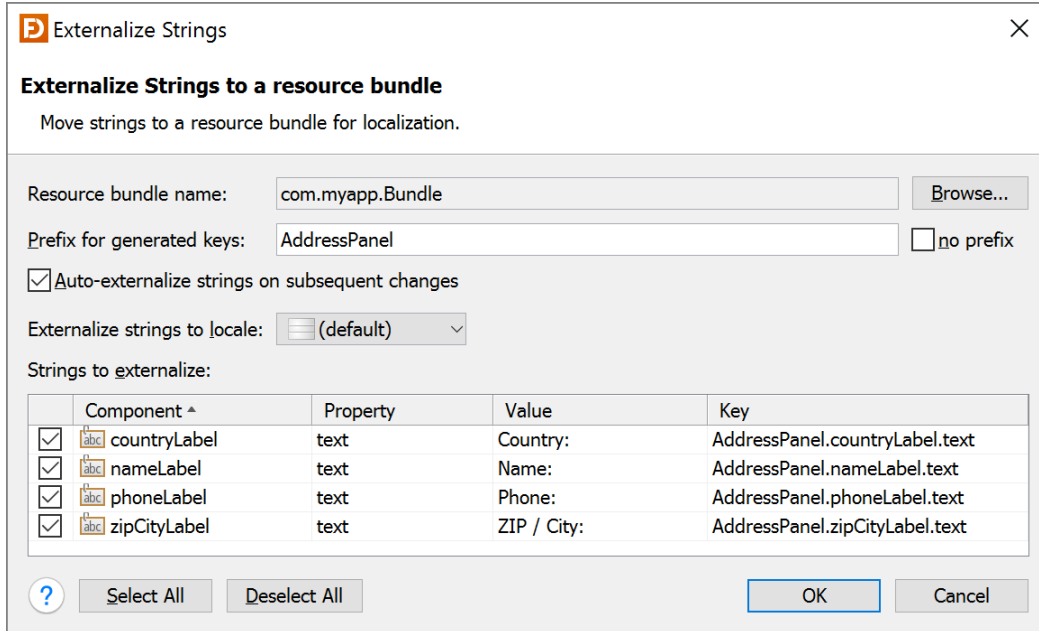
The "Delete Locale" dialog box is titled "Delete Locale" with a close button (X) in the top right corner. It contains the following elements:

- Delete a locale**: A section header followed by the instruction "Select the locale to delete."
- Locale:** A dropdown menu showing "Danish (da)" with a Danish flag icon.
- Note:** A section header followed by a list of bullet points:
 - Deleting a locale deletes the properties file of the specified locale.
 - If the properties file contains strings used in other forms, they are lost.
 - Locale deletion can not be undone.
- Buttons**: A help button (question mark icon), an "OK" button, and a "Cancel" button.

Externalize strings

Externalizing allows you to move strings from a .jfd file to a .properties file. If you want localize existing forms, start here.

Select **Form > Externalize Strings** from the main menu or **Externalize Strings** (🌐) from the toolbar, specify the resource bundle name, the prefix for generated keys and select/deselect the strings to externalize. You can exclude properties from externalization in the [Localization preferences](#).



Externalize Strings

Externalize Strings to a resource bundle
Move strings to a resource bundle for localization.

Resource bundle name:

Prefix for generated keys: ☐ no prefix

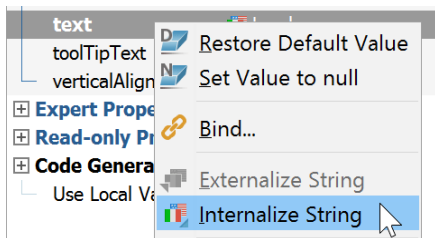
☒ Auto-externalize strings on subsequent changes

Externalize strings to locale: ▾

Strings to externalize:

	Component ^	Property	Value	Key
<input checked="" type="checkbox"/>	countryLabel	text	Country:	AddressPanel.countryLabel.text
<input checked="" type="checkbox"/>	nameLabel	text	Name:	AddressPanel.nameLabel.text
<input checked="" type="checkbox"/>	phoneLabel	text	Phone:	AddressPanel.phoneLabel.text
<input checked="" type="checkbox"/>	zipCityLabel	text	ZIP / City:	AddressPanel.zipCityLabel.text

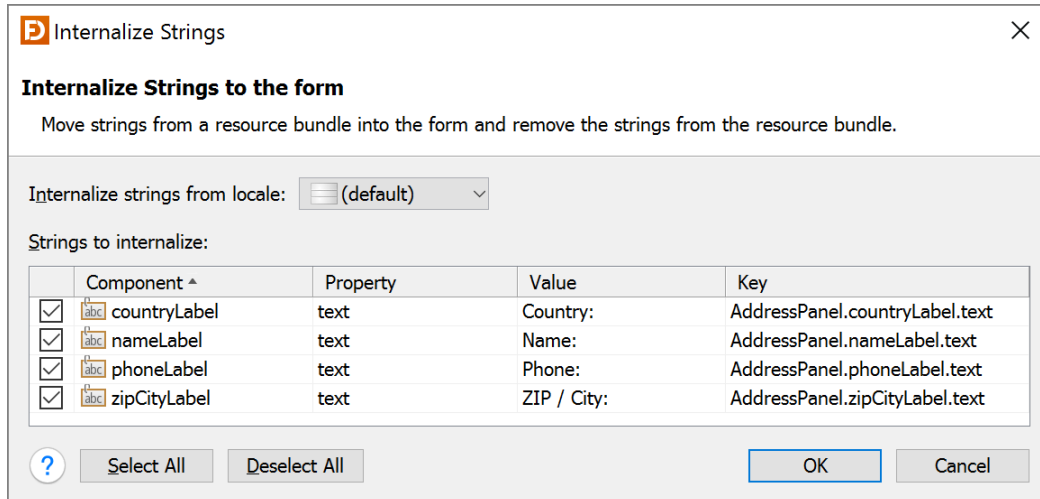
You can also externalize and internalize properties in the [Properties](#) view.



Internalize strings

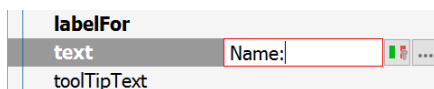
Internalizing allows you to move strings from a .properties file to a .jfd file.

Select **Form > Internalize Strings** from the main menu or **Internalize Strings** (🇮🇹) from the toolbar, specify the locale to internalize from and select/deselect the strings to internalize. If you internalize all strings, JFormDesigner asks you whether you want to disable localization for the form.

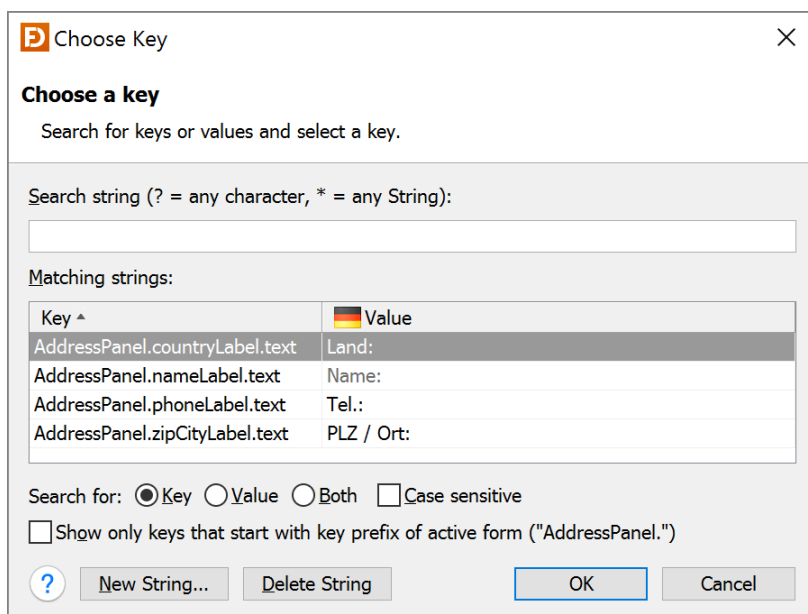


Choose existing strings

The flag button (🇮🇹) in the **Properties** view, which is only available for localized forms and string properties, allows you to choose existing strings from the resource bundle of the form.



In the **Choose Key** dialog you can search for keys and/or values. Then select a key in the table and press OK to use its value in the form.



4 Beans Binding (JSR 295)

JFormDesigner supports the Beans Binding specification (JSR 295).

A binding syncs two properties: the source property with the target property. The source is usually a (non-visual) **data model** object and the target is usually a UI component (e.g. a `JTextField`). Initially the value of the source property is copied to the target property. Depending on the "Update strategy", a binding tracks changes on both properties and syncs the properties.

Source

```
public class Task
{
```

```
    public enum Priority { HIGH, NORMAL, LOW };
```

```
    private String title;
```

```
    private String description;
```

```
    private String category = "None";
```

```
    private Priority priority = Priority.NORMAL;
```

```
    private boolean completed;
```

Target

Title:	Implement new layout manager
Description:	We need support for this new exciting layout manager.
Category:	Development
Priority:	High
Status:	<input type="checkbox"/> Completed

Beans Binding is open source and **not** part of the standard Java distribution. You must ship an additional library with your application. JFormDesigner includes `beansbinding.jar`, `beansbinding-doc.zip` and `beansbinding-src.zip` in its **redistributables**.

Maven Central Repository: `groupId: org.jdesktop` `artifactId: beansbinding` `version: 1.2.1`

API documentation: doc.formdev.com/beansbinding/

Source code: github.com/JFormDesigner/swing-beansbinding

The **Bindings** view **①** gives a good overview of all bindings in the form. The **Show Bindings View** button **②** makes this view visible. The **Bindings** property category **③** in the **Properties** view shows the bindings of the selected component and you can add (+), edit (...) and remove (-) bindings. Small arrows **④** indicate that the property is bound. Binding groups are also shown in the **Structure** view **⑤**. The **Binding** palette category **⑥** provides useful components.

The screenshot displays the JFormDesigner 6 - MyProject interface. The main form, 'TaskView', is shown with fields for Title, Description, Category, Priority, and Status. The 'Bindings' view (①) is open, showing a table of bindings. The 'Properties' view (③) shows the 'Bindings' category for the selected component. The 'Structure' view (⑤) shows the component hierarchy. The 'Binding' palette (⑥) is visible on the left. The 'Properties' view (④) shows the 'horizontalAlign...' property.


Source	Target	Options
bindingGroup		
this - task.title	titleField - text	
this - task.description	descriptionField - text	
enablementBindingGroup		
this - \${task != null}	titleField - editable	
this - \${task != null}	descriptionField - editable	
this - \${task != null}	categoryField - enabled	

Name	Value
Bindings (3)	
editable	← this - \${task != null}
editable	→ titleLabel - enabled
text	← this - task.title

Name	Value
Events (0)	
Client Properties (2)	
Properties (9, 1 set)	
background	<input type="checkbox"/> white
columns	20
editable	<input checked="" type="checkbox"/> true
enabled	<input checked="" type="checkbox"/> true
font	Tahoma 21
foreground	black
horizontalAlign...	LEADING
→ text	


Add/Edit Bindings

There are several ways to add/edit bindings:

- Right-click on a component in the [Design](#) or [Structure](#) view and select **Bind** from the popup menu. To edit an existing binding, select a bound property from the **Bind** submenu.
- Click the **Add/Edit Binding** button () in the **Bindings** property category in [Properties](#) view.
- Right-click on a component property in the [Properties](#) view and select **Bind** from the popup menu.
- Use the **Add/Properties** command in the [Bindings](#) view.

Remove Bindings

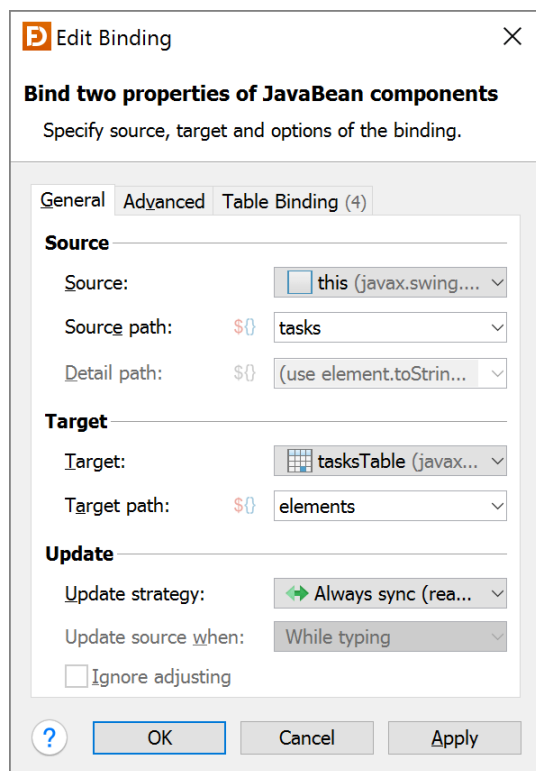
To remove existing bindings do one of:

- Click the **Remove Binding** button () in the **Bindings** property category in [Properties](#) view.
- Use the **Remove** command in the [Bindings](#) view.

Binding Dialog

This dialog enables you to edit all options of one binding.

General tab



Field	Description
Source	The source object.
Source path	The path (or expression) that identifies the source property.
Detail path	The path (or expression) that determines what is displayed to the user in the target JList. (only if target is JList.elements)
Target	The target object.
Target path	The path (or expression) that identifies the target property.
Update strategy	Specifies how the properties are kept synchronized. Possible values: "Always sync (read-write)", "Only read from source (read-only)" and "Read once from source (read-once)".
Update source when	Specifies when the source is updated from the target. Possible values: "While typing", "On focus lost" and "On focus lost or Enter key pressed". (only if target is JTextComponent.text)
Ignore adjusting	If enabled, do not update properties until the user finished adjusting. E.g. while a slider is adjusting its value or while the list selection is being updated. (only if target is JSlider.value, JList.selectedElement(s) or JTable.selectedElement(s))

Advanced tab

Edit Binding

Bind two properties of JavaBean components
Specify source, target and options of the binding.

General Advanced **Table Binding (4)**

Identification and Group

Name:

Group:

Converter and Validator

Converter:

Validator:

Alternate Values

☐ Source null:

☐ Source unreadable:

☐ Target null:

Miscellaneous

☐ Bind immediately

? OK Cancel Apply

Field	Description
Name	The binding's name. Useful for BindingGroup . getBinding(name) .
Group	The group this binding belongs to.
Converter	The Converter that converts the value from source type to target type and vice versa.
Validator	The Validator that validates the value before passing it from the target back to the source property.
Source null	Used if the value of the source property is null.
Source unreadable	Used if the source property is unreadable.
Target null	Used if the value of the target property is null.
Bind immediately	Bind this binding immediately after creation. Otherwise, bind when the group is bound.

Table Binding tab

On this tab you can bind `List<E>` element properties to `JTable` columns. Each item in the source `List<E>` represents a row in the `JTable`. See [JTableBinding](#) for details about table binding.

This tab is enabled if source is an instance of `java.util.List<E>`, target an instance of `javax.swing.JTable` and target property is `elements`.

Edit Binding

Bind two properties of JavaBean components
Specify source, target and options of the binding.

General Advanced **Table Binding (4)**

☒ Editable

Columns:


Source Path	Column Name	Column Class	Editable
title	Title	java.lang.String	<input checked="" type="checkbox"/>
category	Category	java.lang.String	<input checked="" type="checkbox"/>
priority	Priority	com.jformdesigner.ex...	<input checked="" type="checkbox"/>
completed	Completed	java.lang.Boolean	<input checked="" type="checkbox"/>

↑ ↓ Add Multiple... Add... Edit... Remove

? OK Cancel Apply

Field	Description
Editable	Specifies whether the table cells are editable or not.
Columns	The column bindings. The Source Path identifies the source property in <code><E></code> . The Column Name is shown in the <code>JTable</code> column header. Each column binding may have its own Converter , Validator and Alternative Values.

Path or Expression

To address source or target properties you can either use a path or an expression. Select the **Expression Language** button () left to the input field to enter an expression.

A path (implemented by [BeanProperty](#)) uses a dot-separated path syntax. E.g. `task.title` addresses the `title` property of an object's `task` property. This is equivalent to `source.getTask().getTitle()`.

An expression (implemented by [ELProperty](#)) uses the [Expression Language](#) (EL) also known from [JSP](#) and [JSF](#). Besides a dot-separated path syntax to address properties (e.g. "`${task.title}`") it also supports following operators:

- Arithmetic: `+`, `-`, `*`, `/` and `div`, `%` and `mod`
- Logical: `and`, `&&`, `or`, `||`, `not`, `!`
- Relational: `==`, `eq`, `!=`, `ne`, `<`, `lt`, `>`, `gt`, `<=`, `ge`, `>=`, `le`
- Empty: `empty`
- Conditional: `A ? B : C`

EL expression examples:

EL expression	Result
<code>\${task.title}</code>	The <code>title</code> property of an object's <code>task</code> property.
<code>\${firstName} \${lastName}</code>	Concatenation of <code>firstName</code> and <code>lastName</code> properties.
<code>\${mother.age > 65}</code>	<code>true</code> if mother is older than 65, <code>false</code> otherwise.
<code>\${image.width * image.height}</code>	Computes the number of pixels of an image.
<code>\${image.width * image.height * 4}</code>	Computes the number of bytes of an 32 bit image.

Following words are reserved for the EL and should not be used as identifiers:

```
and    or    not    div    mod
eq     ne    lt     gt     ge     le
true   false null   empty instanceof
```

Data model

The data model used by Beans Binding (JSR 295) is based on the [JavaBeans](#) specification. Getters are necessary to read property values and setters to modify property values. On modifications, property change events should be fired so that beans binding can update the UI components. E.g.:

```
public class Task {
    private String title;

    public String getTitle() {
        return title;
    }

    public void setTitle(String title) {
        String oldTitle = this.title;
        this.title = title;
        changeSupport.firePropertyChange("title", oldTitle, title);
    }

    private final PropertyChangeSupport changeSupport = new PropertyChangeSupport(this);

    public void addPropertyChangeListener(PropertyChangeListener listener) {
        changeSupport.addPropertyChangeListener(listener);
    }

    public void removePropertyChangeListener(PropertyChangeListener listener) {
        changeSupport.removePropertyChangeListener(listener);
    }
}
```


Data model access

The source and target combo boxes in the [Binding](#) dialog offer only the components added to the form. To bind your data model to form components, you could add an instance of your data object to the form (using [Choose Bean](#)), but this requires that the data object is a [JavaBean](#) with public null constructor, which is not always possible.

The preferred way to access the data model for binding is to add a getter for the data model to the form class. E.g.:

```
public class TaskViewForm extends JPanel {
    private Task task;

    public Task getTask() {
        return task;
    }
}
```

After compiling the form class, you can use `this` as binding source and `task.someProperty` as binding source path.

Add a setter to the form class, if the whole data model may change. E.g.:

```
public class TaskViewForm extends JPanel {
    public void setTask(Task task) {
        Task oldTask = this.task;
        this.task = task;
        firePropertyChange("task", oldTask, task);
    }
}
```

How to bind data to a JTable

Beans Binding requires that the data is in a `java.util.List` (or [ObservableList](#)). The type of each data row should be specified as type parameter to the list. E.g. `java.util.List<MyData>`. The data class should have getters and setters for its values, which can bound to table columns.

Steps to bind a table:

1. Add a `java.util.List` component from the **Bindings** palette category to the form. JFormDesigner creates a variable for the list in the Java code, but does not assign a value to it. It is up to you, to assign data to the list before invoking `initComponents()`.
2. Set the **Type Parameters** property (expand the **Class** property in [Properties](#) view) of the `List` to your data class (e.g. `MyData`). Make sure that the data class is compiled and in the classpath of the project.
3. Add a `JTable` to the form.
4. Right-click on the table and select **Bind > elements** from the popup menu, which opens the [Binding](#) dialog.
5. On the **General** tab, set the source to your `List` object and leave the source path empty.
6. Switch to the **Table Bindings** tab.
7. Click the **Add Multiple** button and add columns.

Examples

For examples that use Beans Binding, take a look at the package `com.jformdesigner.examples.beansbinding` in the [examples](#).

5 Projects

Stand-alone edition only. The **IDE plug-ins** use the source folders and classpath from the IDE projects.

Projects allow you to store project specific options in project files. You can create new projects or open existing projects using the [menubar](#) or [toolbar](#).

When you start JFormDesigner the first time, it creates and opens a default project named DefaultProject.jfdproj in the folder `${user.home}/.jformdesigner`, where `${user.home}` is your home directory. You can see the value of `${user.home}` in the About dialog on the System tab.

You can use the default project, but it is recommended to create an own JFormDesigner project in your project root folder. Then you can commit the JFormDesigner project file into a version control system and reuse it on other computers. Paths in the project file are stored relative to the location of the project file. Project files have the extension **.jfdproj**

Pages

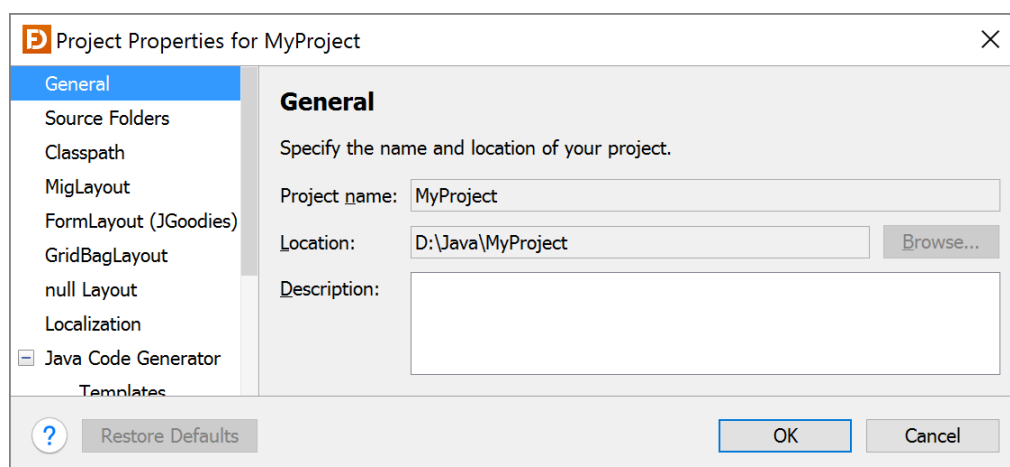
- [General](#)
- [Source Folders](#)
- [Classpath](#)

Project specific [preference](#) pages:

- [MigLayout](#)
- [FormLayout \(JGoodies\)](#)
- [GridBagLayout](#)
- [null Layout](#)
- [Localization](#)
- [Java Code Generator](#)
 - [Templates](#)
 - [Layout Managers](#)
 - [Localization](#)
 - [Binding](#)
 - [Code Style](#)
- [Client Properties](#)

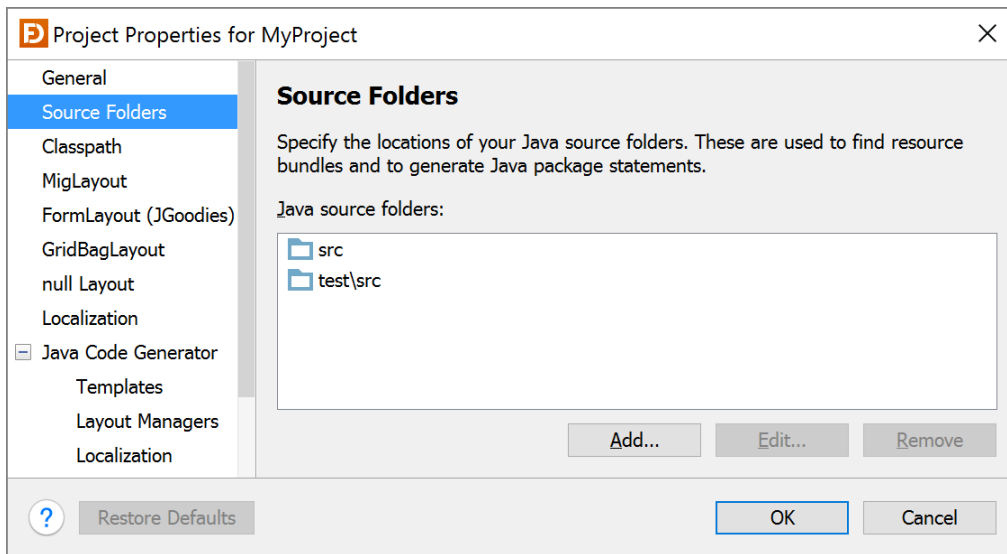
General

When creating a new project, you can specify a project name and the location where to store the project file.



Source Folders

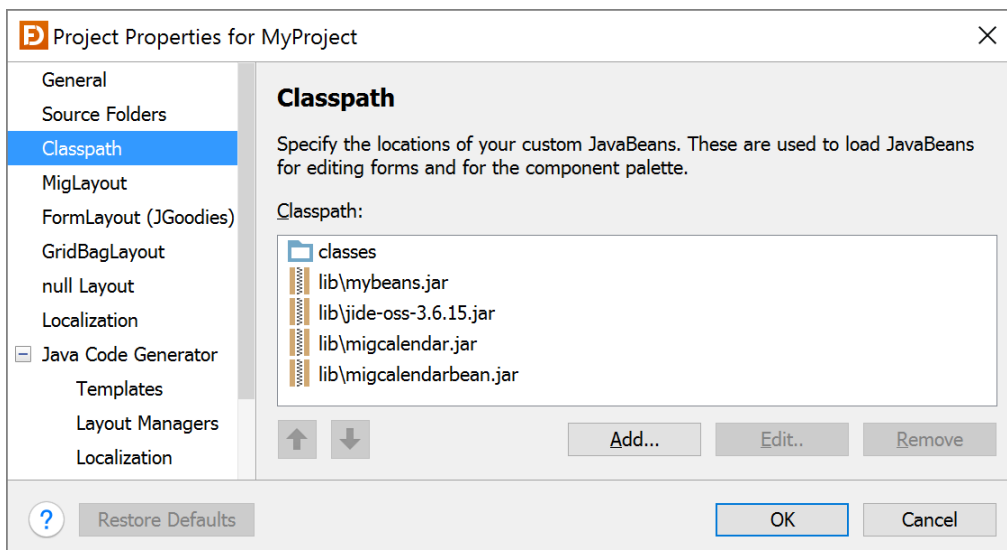
On this page, you can specify the locations of your Java source folders. Source folders are the root of packages containing .java files and are used find resource bundles for [localization](#) and are also used by the [Java code generator](#) to generate package statements.



If the folders list is focused, you can use the [Insert](#) key to add folders or the [Delete](#) key to delete selected folders.

Classpath

To use your custom components (JavaBeans), JFormDesigner needs to know, from where to load the JavaBean classes. Specify the locations of your custom JavaBeans on this page. You can add JAR files or folders containing . class files.



If the classpath list is focused, you can use the [Insert](#) key to add folders/JAR files, the [Delete](#) key to delete selected folders/JAR files, [Ctrl+Up](#) keys to move selected items up or [Ctrl+Down](#) keys to move selected items down.

6 Preferences



This dialog is used to set user preferences.

- **Stand-alone:** Select **Window > Preferences** from the menu to open this dialog.
- **Eclipse plug-in:** The JFormDesigner preferences are fully integrated into the Eclipse preferences dialog. Select **Window > Preferences** from the menu to open it and then expand the node "JFormDesigner" in the tree.
- **IntelliJ IDEA plug-in:** IntelliJ IDEA uses the term "Settings" instead of "Preferences". The JFormDesigner preferences are fully integrated into the IntelliJ IDEA settings dialog. Select **File > Settings** from the menu to open it and then select the "JFormDesigner" page.
- **NetBeans plug-in:** NetBeans uses the term "Options" instead of "Preferences". The JFormDesigner preferences are fully integrated into the NetBeans options dialog. Select **Tools > Options** from the menu to open it and then select the "JFormDesigner" page.

Pages

- General
- MigLayout
- FormLayout (JGoodies)
- GridBagLayout
- null Layout
- Localization
- Java Code Generator
 - Templates
 - Layout Managers
 - Localization
 - Binding
 - Code Style (**Stand-alone** only)
- Client Properties
- Native Library Paths
- BeanInfo Search Paths
- Check for Updates

Import and export preferences

In the Preferences dialog, you can use the **Import** () button to import preferences from a file and the **Export** () button to export preferences to a file. This preferences file is compatible with all JFormDesigner editions. On export, you can specify what parts of the preferences you want export.

You can also use IDE specific import/export commands:

- **Eclipse plug-in:** You can use the menu commands **File > Import** and **File > Export** to import and export preferences to/from Eclipse preferences files.
- **IntelliJ IDEA plug-in:** You can use the menu commands **File > Import Settings** and **File > Export Settings** to import and export settings to/from IntelliJ IDEA preferences files.
- **NetBeans plug-in:** You can use the **Import** and **Export** buttons in the Options dialog to import and export options to/from NetBeans options files.

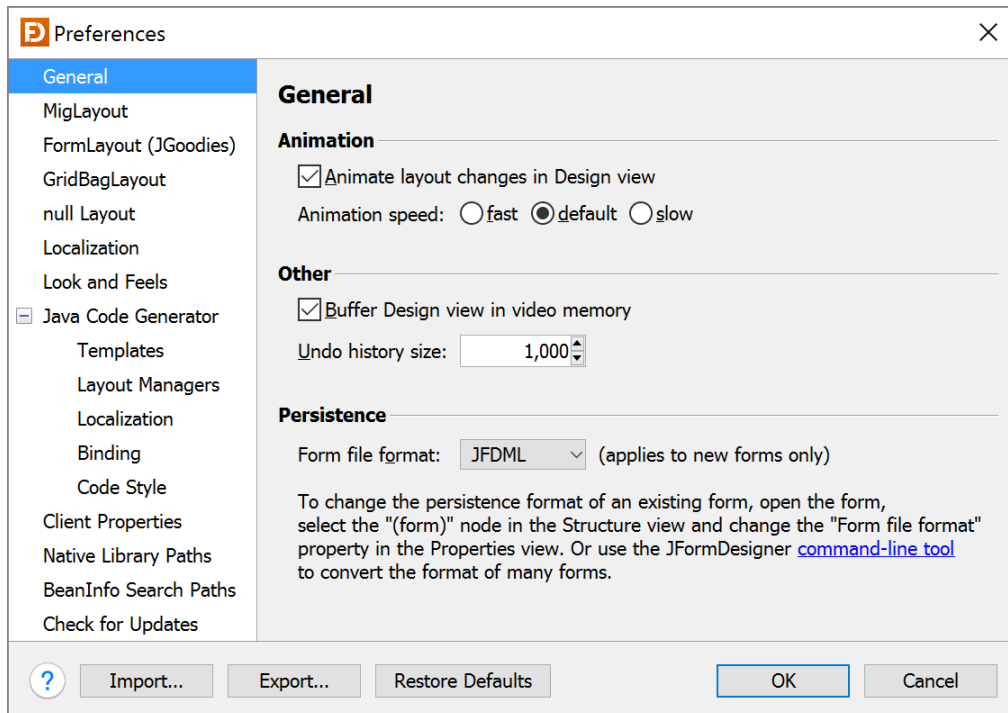
Note: Each IDE uses its own file format for preferences. The only way to transfer preferences between the different JFormDesigner editions is to use JFormDesigner preferences files.

Restore defaults

Use the **Restore Defaults** () button to restore the values of the active page to its defaults.

General

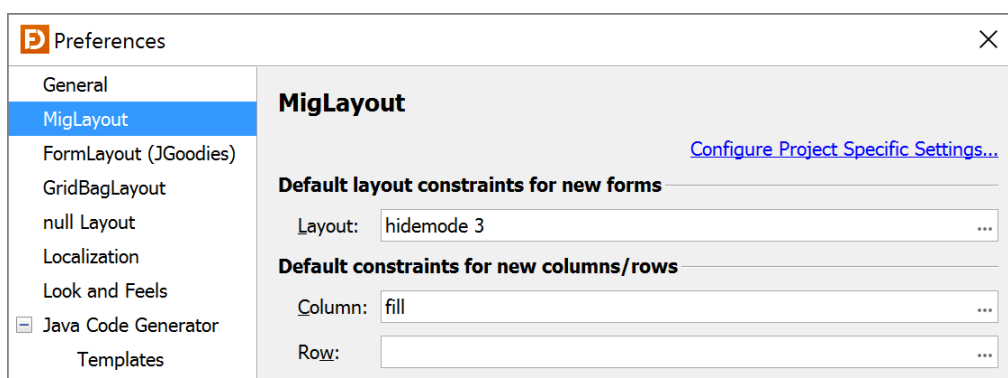
On this page, you can specify general options.



Option	Description	Default
Animate layout changes in Design view	If enabled, changes to the layout in the Design view are done animated.	On
Animation speed	The speed of the animation.	default
Buffer Design view in video memory	If enabled, parts of the Design view are buffered in the video memory of the graphics card to improve painting speed.	On
Undo history size	The maximum number of steps in the undo history of a form.	1000
Form file format	The format used to persist the form. Since version 5.1, JFormDesigner supports the compact, easy-to-merge and fast-to-load persistence format JFDML. To change the persistence format of an existing form, open the form, select the " ((form)) " node in the Structure view and change the "Form file format" property in the Properties view. Or use the JFormDesigner command-line tool to convert the format of many forms.	JFDML

MigLayout

On this page, you can specify [MigLayout](#) related options.



Option	Description	Default
Layout constraints	The layout constraints used for new forms/containers.	hidemode 3

Option	Description	Default
Column constraints	The column constraints used for new columns.	fill
Row constraints	The row constraints used for new rows.	

FormLayout (JGoodies)

On this page, you can specify [FormLayout](#) related options.

FormLayout (JGoodies)

[Configure Project Specific Settings...](#)

☒ Automatically insert/remove gap columns/rows

JGoodies Forms version: (auto-detect) ▾

Column/row templates for new columns/rows

Column: default ▾

Column gap: label component gap ▾

Row: default ▾

Row gap: line gap ▾


Custom column/row templates

Display Name ^	Identifier	Column Specifica...	Row Specification	Gap
my line gap	mylinegap	fill:2dlu	fill:2dlu	<input checked="" type="checkbox"/>
my paragraph gap	myparagr...	fill:10dlu	fill:10dlu	<input checked="" type="checkbox"/>

[LayoutMap Initialization Code](#) Add... Edit... Remove

Option	Description	Default
Automatically insert /remove gap columns /rows	If enabled, JFormDesigner automatically inserts/removes gap columns/rows.	On
JGoodies Forms version	Required JGoodies Forms version for the created forms.	auto-detect
Column/row templates for new columns/rows	Here you can specify the column and row templates that should be used when new columns or rows are inserted.	
Column	The column template used for new columns.	default
Column gap	The column template used for new gap columns.	label component gap
Row	The row template used for new rows.	default
Row gap	The row template used for new gap rows.	line gap
Custom column/row templates	If the predefined templates does not fit to your needs, you can define your own here. Since JGoodies Forms 1.2, you can add these custom column/row templates to the global LayoutMap using the "LayoutMap Initialization Code" link.	

Custom column/row templates

 Add Custom Column/Row Template

Custom column/row template
 Specify the custom column/row template information.

Display name:
 Identifier:
 Use for:
 ☐ columns
 ☐ rows
 ☒ both
 ☒ gaps

Default alignment
☐ left
 ☐ center
 ☐ right
 ☒ fill


Size
☐ default
 ☐ preferred
 ☐ minimum
☒ constant

☐ minimum

☐ maximum

Resize behavior
☒ none
☐ grow

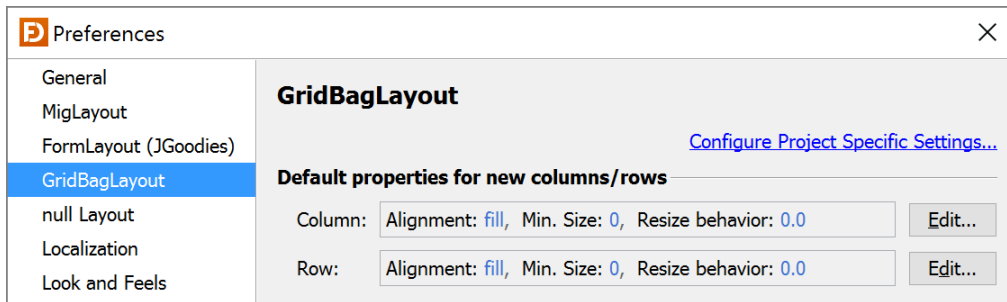
Java code (optional)
 Column code:
 Row code:



Option	Description
Display name	The display name is used within JFormDesigner whenever the template is shown in combo boxes or popup menus.
Identifier	The (unique) identifier is stored in form files. Choose a short string. Only letters and digits are allowed.
Use for	Specifies whether the template should be used for columns, rows or both. Also specifies whether it represents a gap column/row.
Default alignment	The default alignment of the components within a column/row. Used if the value of the component constraint properties "h align" or "v align" are set to DEFAULT.
Size	The width of a column or height of a row. You can use default, preferred or minimum component size. Or a constant size. It is also possible to specify a minimum and a maximum size. Note that the maximum size does not limit the column/row size if the column/row can grow (see resize behavior).
Resize behavior	The resize weight of the column/row.
Java code	Optional Java code used by the Java code generator. Useful if you have factory classes for ColumnSpecs and RowSpecs. Not available for JGoodies Forms 1.2 and later.

GridBagLayout

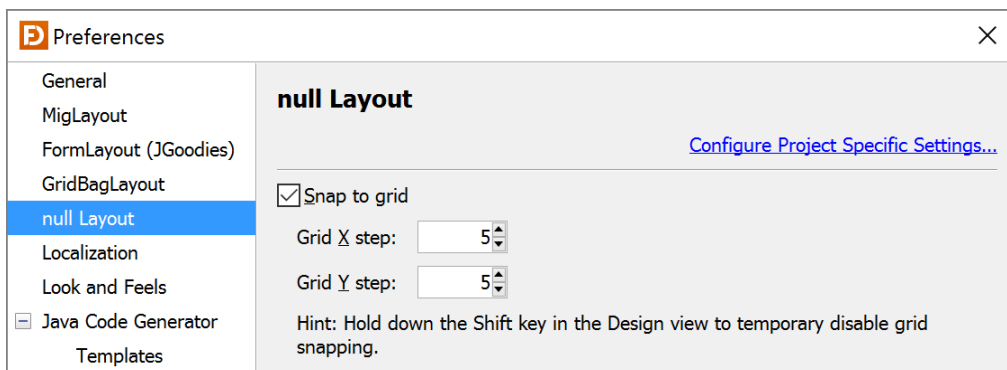
On this page, you can specify [GridBagLayout](#) related options.



Option	Description	Default
Default properties for new columns/rows	Here you can specify the column and row properties that should be used when new columns or rows are inserted.	
Column	The column properties used for new columns.	fill:0:0.0
Row	The row properties used for new rows.	fill:0:0.0

null Layout

On this page, you can specify [null layout](#) related options.



Option	Description	Default
Snap to grid	If enabled, snap to the grid specified below when moving or resizing a component in null layout.	On
Grid X step	The horizontal step size of the grid.	5
Grid Y step	The vertical step size of the grid.	5

Localization

On this page, you can specify [localization](#) related options.

The screenshot shows the 'Preferences' dialog box with the 'Localization' tab selected. The left sidebar lists various categories, with 'Localization' highlighted. The main panel contains the following settings:

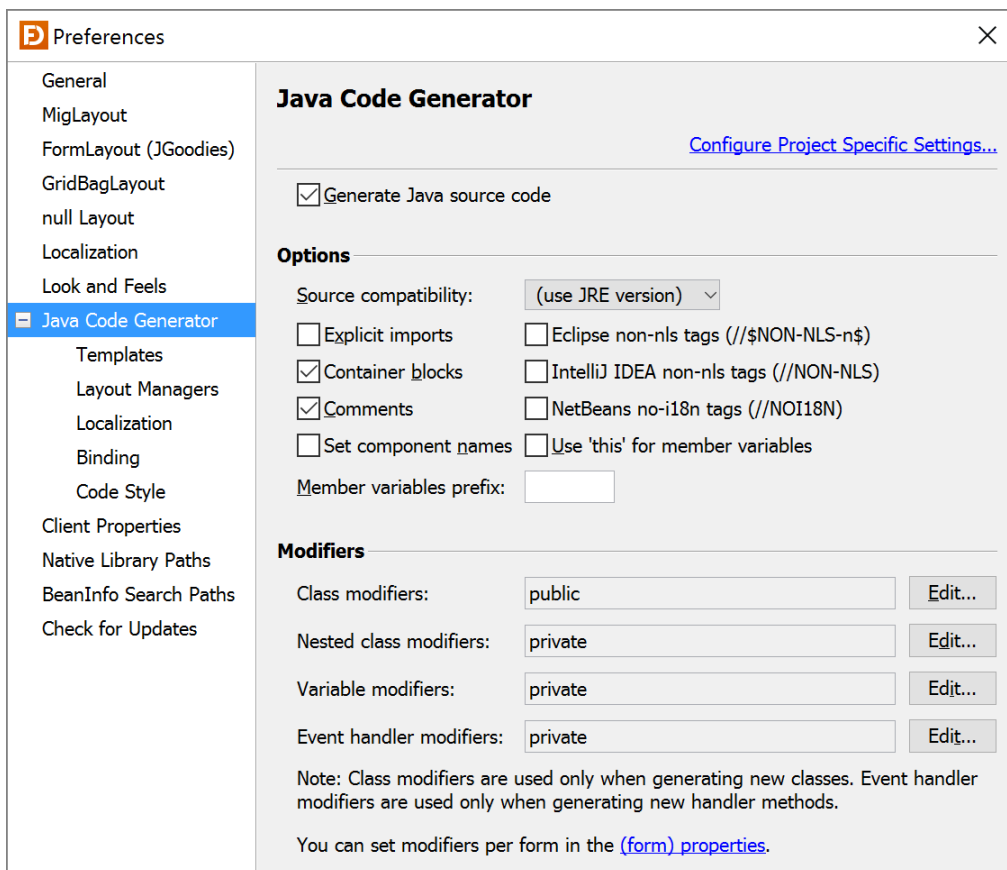
- Localization** (Section Header)
- [Configure Project Specific Settings...](#) (Link)
- ☒ Rename resource keys when renaming components
- ☒ Copy localized messages when copying components
- ☒ Delete localized messages when deleting components
- ☒ Delete localized messages when internalizing strings
- ☒ Delete messages only if key prefix is equal to form's key prefix
- Insert new messages: next to similar keys (ascending order) (Dropdown)
- Format used for generated keys: \${componentName}\${sep}\${propertyName} (Text) Reset (Button)
- Separator used for generated keys: . (Text)
- Encoding for properties files: UTF-8 (Dropdown)
- Template for properties files: #
Created by JFormDesigner on \${date} (Text)
- Exclude properties from externalization: contentType (javax.swing.JEditorPane)
nodePropertyName (Text)
- Add... Edit... Remove (Buttons)

Option	Description	Default
Rename resource keys when renaming components	If enabled, auto-rename resource keys when renaming components and the resource key contains the old component name.	On
Copy localized messages when copying components	If enabled, duplicate localized strings in all locales when copying components.	On
Delete localized messages when deleting components	If enabled, auto-delete localized strings, that were used by the deleted components, from all locales.	On
Delete localized messages when internalizing strings	If enabled, auto-delete localized strings, that were internalized, from all locales.	On
Delete messages only if key prefix is equal to form's key prefix	If enabled, messages will be auto-deleted only if their key prefix is equal to the key prefix of the form.	On
Insert new messages	Specifies where new messages will be inserted into properties files. "next to similar keys" inserts new messages next to other similar keys so that messages that belong together are automatically at the same location in the properties file. "at the end of the properties file" always appends new messages to the end of the properties file.	next to similar keys (ascending order)
Format used for generated keys	Format used when generating a resource key.	<code>\${componentName}\${sep}\${propertyName}</code>
Separator used for generated keys	Separator used when generating a resource key.	<code>.'</code>
Encoding for properties files	Specifies encoding used for properties files. Since Java 9, UTF-8 is used by default for reading properties files in applications. Java 8 uses ISO-8859-1. (Stand-alone only; in IDE plug-ins the encoding specified for .properties files in the IDE preferences is used)	UTF-8 if running in Java 9 or later; ISO-8859-1 if running in Java 8

Option	Description	Default
Template for properties files	Template used when creating new properties files.	
Exclude properties from externalization	Specify properties that should be excluded from externalization. Useful when using auto-externalization to ensure that some string property values stay in the Java code. If the list is focused, you can use the Insert key to add a property or the Delete key to delete selected properties.	

Java Code Generator

On this page, you can turn off the Java code generator and specify other code generation options.



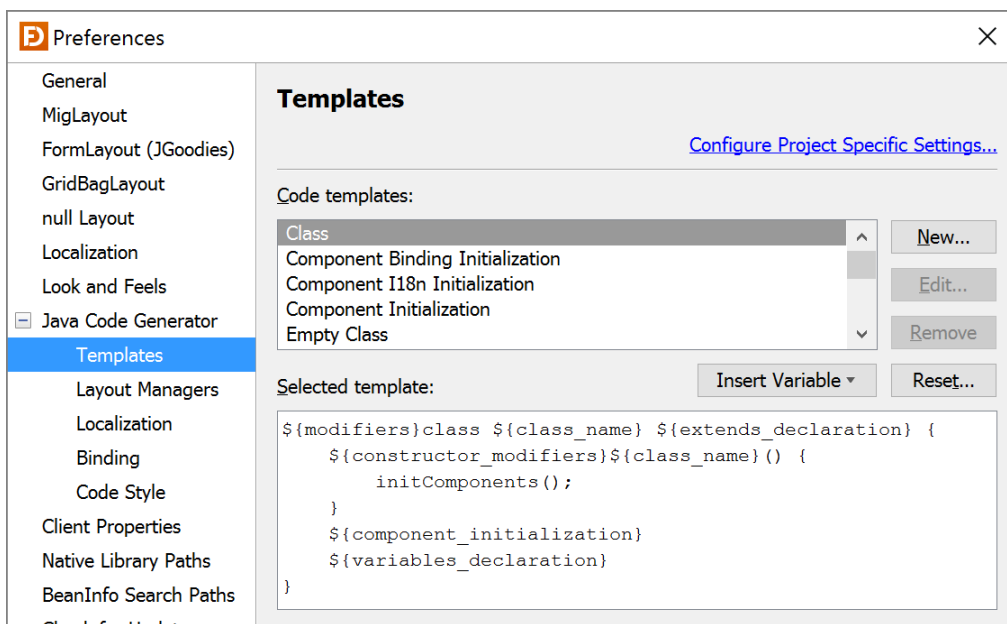
Option	Description	Default
Generate Java source code	If enabled, JFormDesigner generates Java source code when you save a form.	On
Source compatibility	Specifies the compatibility of the generated source code. Besides generating Java 1.x compatible source code, JFormDesigner can also use Java 5 (or later) features in the generated source code (e.g. auto-boxing, <code>@Override</code> , lambda expressions, <code>var</code> , etc).	Stand-alone: use Java 8 IDE plug-ins: use project setting
Explicit imports	If enabled, the code generator adds explicit import statements (without <code>'*'</code>) for used classes.	Off
Container blocks	If enabled, the code generator puts the initialization code for each container into a block (enclosed in curly braces).	On
Comments	If enabled, the code generator puts a comment line above the initialization code for each component.	On
Set component names	If enabled, the code generator inserts <code>java.awt.Component.setName()</code> statements for all components of the form.	Off
Use Eclipse code	If enabled, the Eclipse code formatter is used to format the generated code. (Off

Option	Description	Default
formatter	Eclipse plug-in only)	
Eclipse non-nls tags (//\$NON-NLS-n\$)	If enabled, the code generator appends non-nls comments to lines containing strings. These comments are used by the Eclipse IDE to denote strings that should not be externalized.	Off
IntelliJ IDEA non-nls tags (//NON-NLS)	If enabled, the code generator appends non-nls comments to lines containing strings. These comments are used by IntelliJ IDEA to denote strings that should not be externalized.	Off
NetBeans no-i18n tags (//NOI18N)	If enabled, the code generator appends non-nls comments to lines containing strings. These comments are used by the NetBeans IDE to denote strings that should not be externalized.	Off
Use 'this' for member variables	If enabled, the code generator inserts 'this.' before all member variables. E.g. <code>this.nameLabel.setText("Name:");</code>	Off
Member variables prefix	Prefix used for component member variables. E.g. "m_".	
Class modifiers	Class modifiers used when generating a new class. Allowed modifiers: <code>public</code> , <code>default</code> , <code>abstract</code> and <code>final</code> .	<code>public</code>
Nested class modifiers	Class modifiers used when generating a new nested class. Allowed modifiers: <code>public</code> , <code>default</code> , <code>protected</code> , <code>private</code> , <code>abstract</code> , <code>final</code> and <code>static</code> .	<code>private</code>
Variable modifiers	The default modifiers of the variables generated for components. Allowed modifiers: <code>public</code> , <code>default</code> , <code>protected</code> , <code>private</code> , <code>static</code> and <code>transient</code> .	<code>private</code>
Event handler modifiers	The default modifiers used when generating event handler methods. Allowed modifiers: <code>public</code> , <code>default</code> , <code>protected</code> , <code>private</code> , <code>final</code> and <code>static</code> .	<code>private</code>

You can set additional options per form in the ["\(form\)" properties](#).

Templates (Java Code Generator)

This page contains templates that are used by the code generator when generating a new class. See [Code Templates](#) for details about templates.



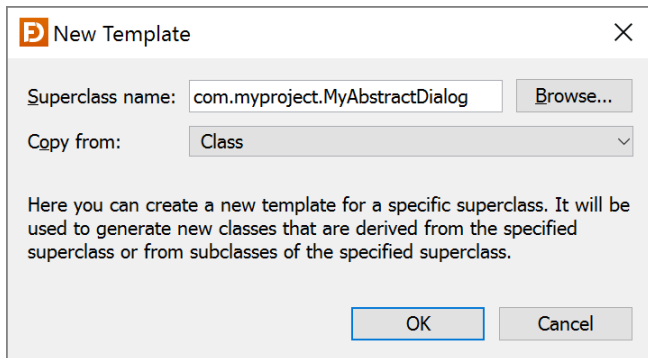
New: Create a new template for a specific superclass.

Edit: Edit the superclass of the selected user-defined template.

Remove: Remove the selected template. Only allowed for user-defined templates.

Reset: Reset the selected predefined template to the default.

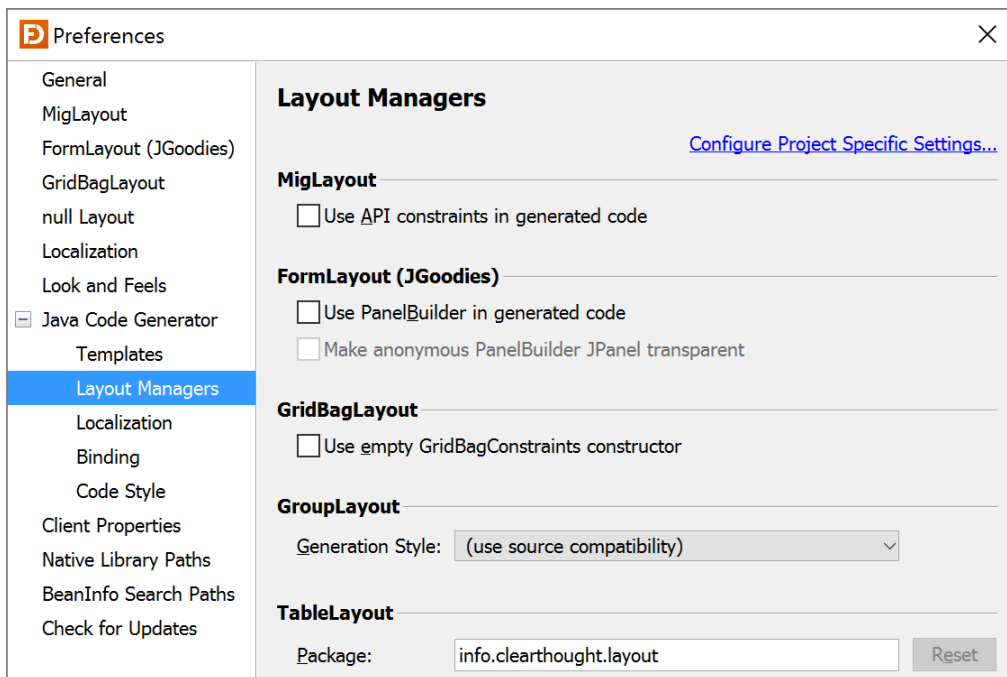
Insert Variable: Insert a variable at the current cursor location into the selected template.



The 'New Template' dialog box has a title bar with a close button. It contains a text field for 'Superclass name' with the value 'com.myproject.MyAbstractDialog' and a 'Browse...' button. Below it is a 'Copy from:' dropdown menu set to 'Class'. A descriptive text block states: 'Here you can create a new template for a specific superclass. It will be used to generate new classes that are derived from the specified superclass or from subclasses of the specified superclass.' At the bottom are 'OK' and 'Cancel' buttons.

Layout Managers (Java Code Generator)

On this page, you can specify code generation options for some layout managers.



The 'Preferences' dialog box shows the 'Layout Managers' section selected in the left sidebar. The main area is titled 'Layout Managers' and includes a link 'Configure Project Specific Settings...'. It contains settings for four layout managers:

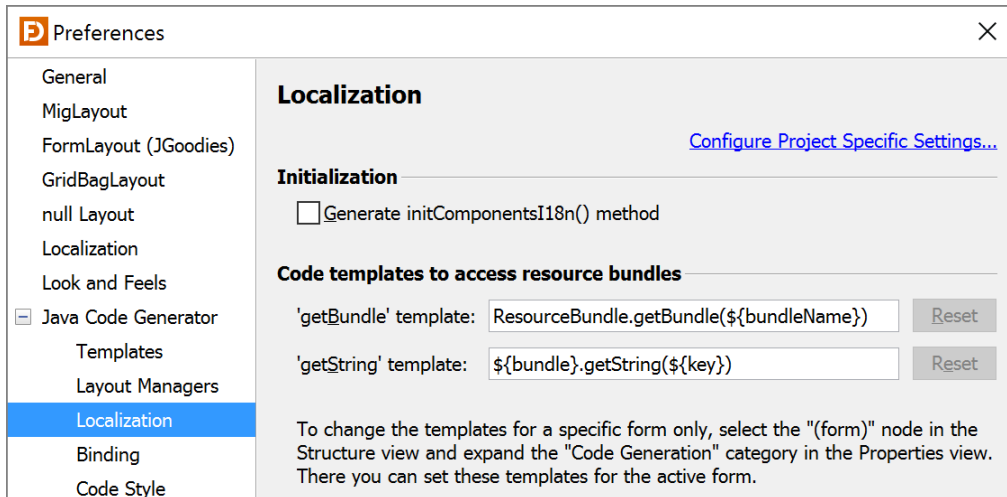
- MigLayout:** A checkbox for 'Use API constraints in generated code'.
- FormLayout (JGoodies):** Two checkboxes: 'Use PanelBuilder in generated code' and 'Make anonymous PanelBuilder JPanel transparent'.
- GridBagLayout:** A checkbox for 'Use empty GridBagConstraints constructor'.
- GroupLayout:** A 'Generation Style' dropdown menu currently set to '(use source compatibility)'.
- TableLayout:** A 'Package' text field containing 'info.clearthought.layout' and a 'Reset' button.

Option	Description	Default
Use API constraints in generated code	If enabled, then MigLayout API is used to create constraints. Otherwise strings are used.	Off
Use PanelBuilder in generated code	If enabled, the PanelBuilder class of JGoodies Forms is used for FormLayout.	Off
Make anonymous PanelBuilder JPanel transparent	If enabled, the JPanel of the PanelBuilder is made transparent.	Off
Use empty GridBagConstraints constructor	If enabled, the empty GridBagConstraints constructor is used in the generated code, which is necessary for Java 1.0 and 1.1 compatibility. Since Java 1.2, GridBagConstraints has a constructor with parameters, which is used by default.	Off
GroupLayout Generation Style	Specifies whether class javax.swing.GroupLayout is used, which is part of Java 6 and later. Or whether org.jdesktop.layout.GroupLayout from the Open Source Swing Layout Extension library swing-layout.jar is used, which is also available for Java 1.4 and 5.	use source compatibility

Option	Description	Default
		(see Java Code Generator preferences page)
TableLayout package	Package name used by the Java code generator for TableLayout. Change this only if you have a copy of the original TableLayout in another package.	info.clearthought.layout

Localization (Java Code Generator)

On this page, you can specify code generation options for localization.



Option	Description	Default
Generate initComponentsI18n() method	If enabled, the code generator puts the code to initialize the localized texts into a method initComponentsI18n(). You can invoke this method from your code to switch the locale of a form at runtime. You can set this options also per form in the "(form)" properties .	Off
'getBundle' template	Template used by code generator for getting a resource bundle.	ResourceBundle. getBundle ({bundleName})
'getString' template	Template used by code generator for getting a string from a resource bundle.	\${bundle}.getString ({key})

Binding (Java Code Generator)

On this page, you can specify code generation options for Beans Binding (JSR 295).

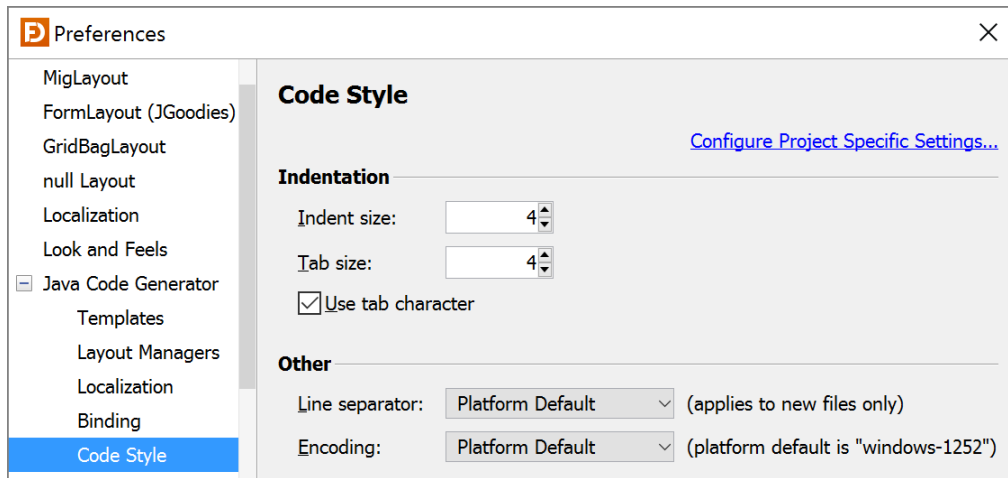


Option	Description	Default
Generate initComponentsBindings() method	If enabled, the code generator puts the code to create bindings into a method initComponentsBindings(). You can set this options also per form in the "(form)" properties .	Off

Code Style (Java Code Generator)

Stand-alone: On this page, you can specify code style options, which are used for code generation.

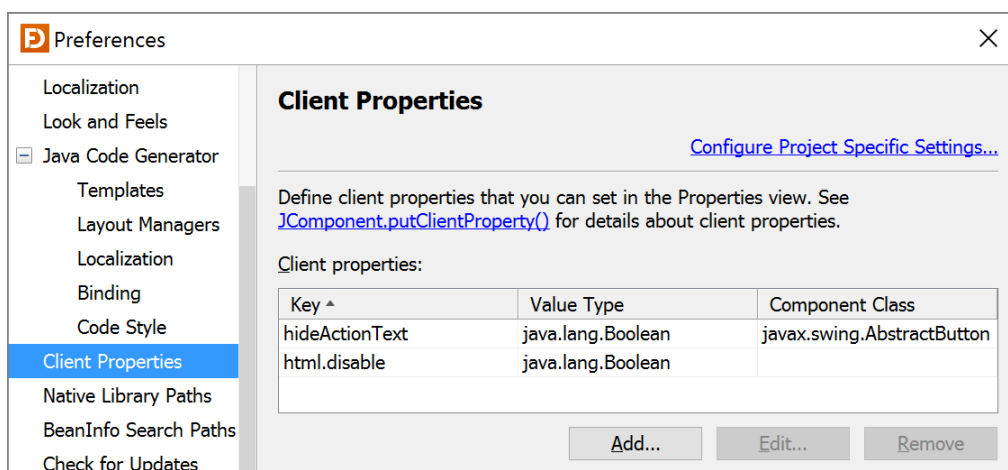
IDE plug-ins: This page is not available in IDE plug-ins because IDEs already have preferences that control code style. JFormDesigner uses the code style settings from IDE projects or preferences.



Option	Description	Default
Indent size	The number of spaces used for one indentation level.	4
Tab size	The number of spaces that represents one tabulation.	4
Use tab character	Specifies whether the tab character (\t) is used for indentation or only space characters.	On
Line separator	The line separator used for newly created .java and .properties files.	Platform default
Encoding	The character encoding used for reading and writing Java files.	Platform default

Client Properties

On this page, you can define [client properties](#), which can be set in the [Properties](#) view.



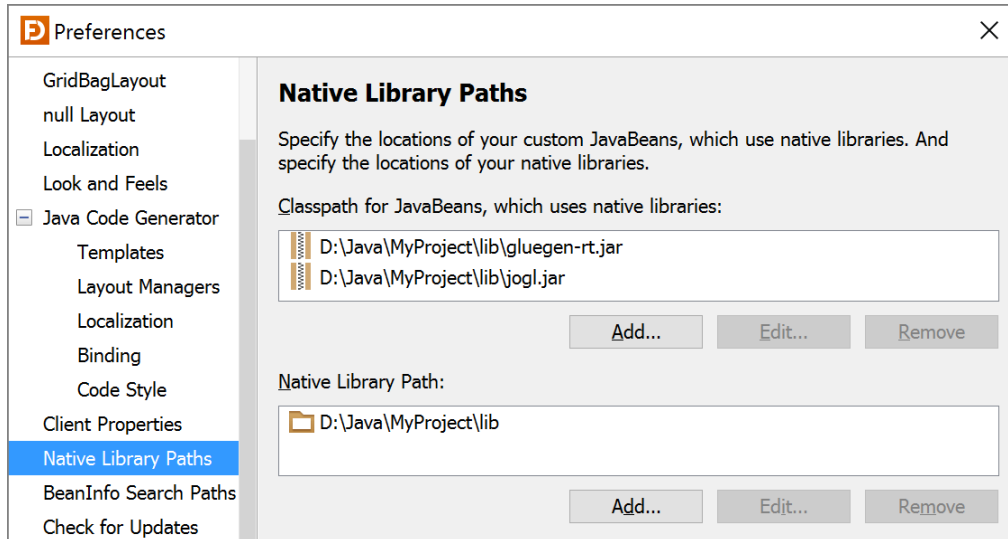
If the client properties list is focused, you can use the [Insert](#) key to add a client property or the [Delete](#) key to delete selected client properties.

Option	Description
Key	The key that identifies the client property.
Component class(es)	The component class(es) to which the client property belongs. E.g. if set to <code>javax.swing.JButton</code> , then the client property is shown in the Properties view for buttons and for subclasses of <code>JButton</code> . To specify multiple classes, separate them with commas. If not specified, the client property is shown for all <code>JComponent</code> components.
Value type	The type of the client property value. You can select one of the common types (<code>String</code> , <code>Boolean</code> , <code>Integer</code> , etc) from the combo box or enter the class name of a custom type.
Predefined values	If the value type is <code>java.lang.String</code> , then you can specify predefined values for the client property. When editing the client property in the Properties view, a combo box that contains these values is shown. The combo box is editable by default. Select the "Allow only predefined values" check box to make the combo box not-editable.
Property editor class	Optional class name of a property editor that should be used when editing the client property in the Properties view.

Native Library Paths

On this page, you can specify the locations of custom JavaBeans that use native libraries and you can specify the folders where to search for the native libraries.

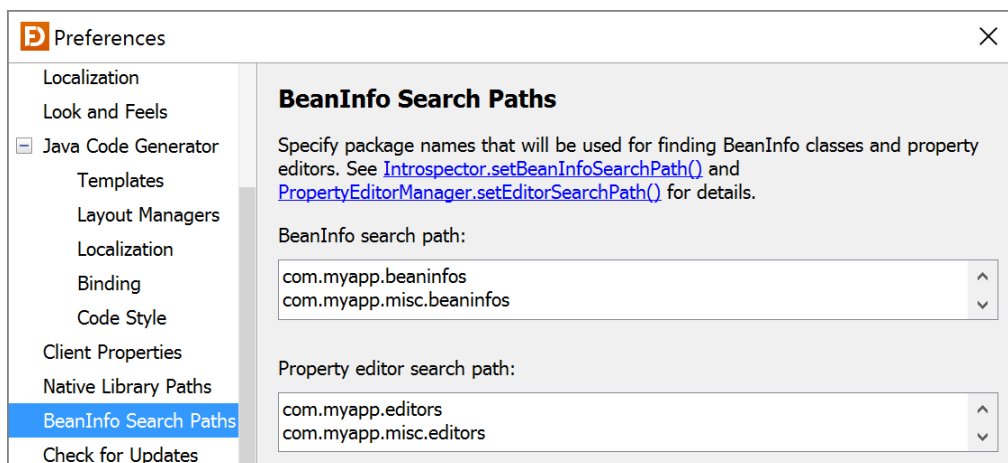
Note: When removing or changing paths, a restart of JFormDesigner (or the IDE) is probably necessary to make the changes work.



Option	Description
Classpath for JavaBeans, which use native libraries	JAR files or folders containing .class files, which are using native libraries. They must be specified here to ensure that the native libraries are loaded from a special class loader only once.
Native Library Path	Folders used to search for native libraries.

BeanInfo Search Paths

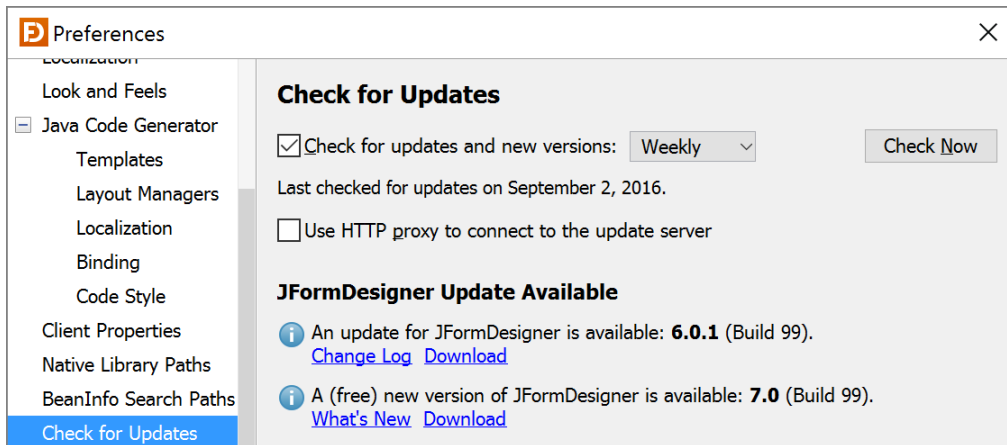
On this page, you can specify package names that will be used for finding BeanInfo classes and property editors.



Option	Description
BeanInfo search path	Package names that will be used for finding BeanInfo classes. Only necessary if the BeanInfo class is not in the same package as the component class to which it belongs. See java.beans.Introspector and Introspector.setBeanInfoSearchPath() for details.
Property editor search path	Package names that will be used for finding property editors. Only necessary if the property editor is not in the same package as the property type to which it belongs. See java.beans.PropertyEditorManager and PropertyEditorManager.setEditorSearchPath() for details.

Check for Updates

This page allows you to specify whether JFormDesigner should check for updates and new versions. Click the "Check Now" button to check for updates immediately.



7 IDE Integrations

JFormDesigner is available as stand-alone application and as plug-ins for various IDEs. The IDE plug-ins completely integrate JFormDesigner into the IDEs.

Following IDE plug-ins are available:

- [Eclipse plug-in](#)
- [IntelliJ IDEA plug-in](#)
- [NetBeans plug-in](#)

Other IDEs

If there is no JFormDesigner plug-in for your favorite IDE, you can use the stand-alone edition of JFormDesigner side by side with your IDE.

IDE interworking with stand-alone edition

Care must be taken because you edit the Java source in the IDE and JFormDesigner stand-alone also modifies the Java source file when generating code for the form. As long as you follow the following rule, you will never have a problem:

Save the Java file in the IDE **before** saving the form in JFormDesigner stand-alone.

Your IDE will recognize that the Java file was modified outside of the IDE and will reload it. Some IDEs ask the user before reloading files, other IDEs silently reload files.

If you have not saved the Java file in the IDE, then you should prevent the IDE from reloading it. In this case save the Java file in the IDE and then use **Generate Java Code** in JFormDesigner stand-alone.

JFormDesigner generates Java code when you either **Save** the form or select **Generate Java Code**. JFormDesigner does not hold a copy of the Java source in memory. Every time JFormDesigner generates Java code, it first reads the Java source file, parses it, updates it and writes it back to the disk.

7.1 Eclipse plug-in

This plug-in integrates JFormDesigner into [Eclipse](#) and other Eclipse based IDEs.

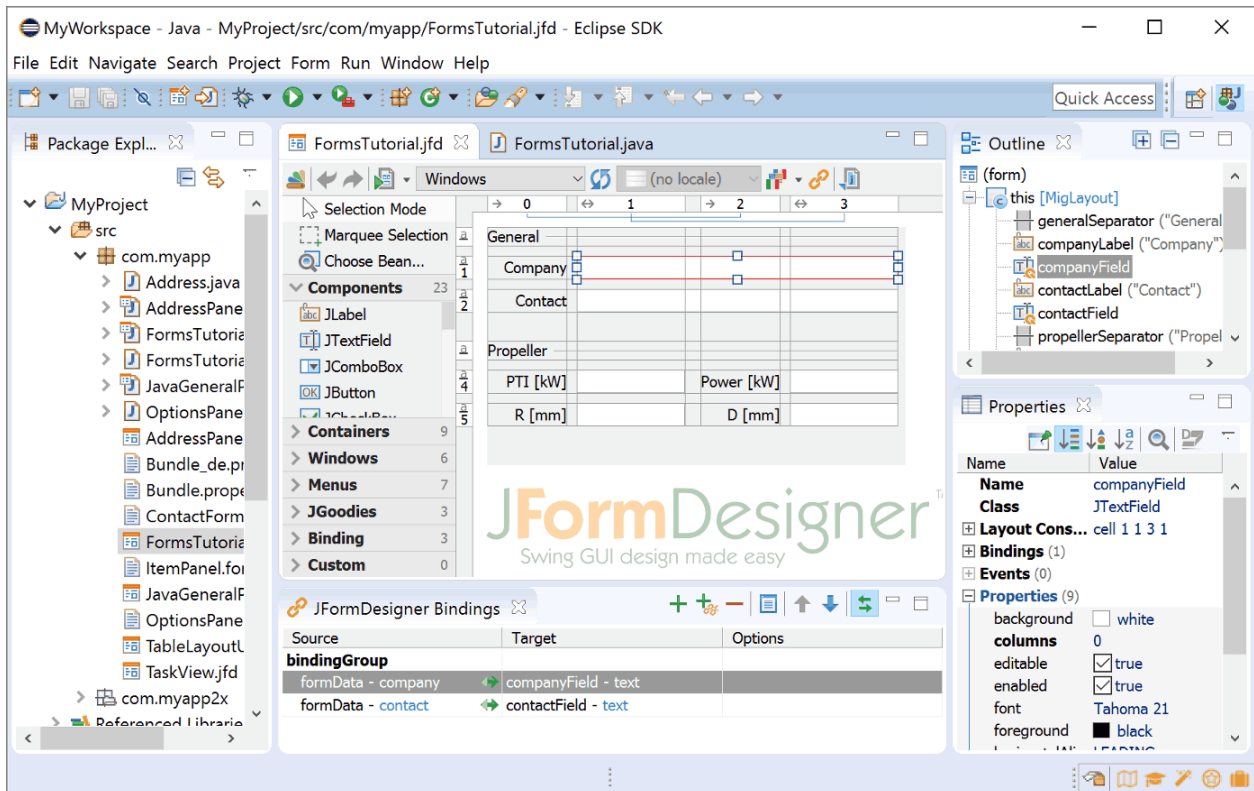
Benefits

Using this plug-in has following benefits compared to JFormDesigner stand-alone edition:

- Fully integrated as editor for JFormDesigner .jfd files. Create and design forms within Eclipse. No need to switch between applications.
- Uses the source folders and classpath of the current Eclipse project. No need to specify them twice.
- The Java code generator updates the .java file in-memory on each change in the designer. You can design forms and edit its source code without the need to save them (as necessary when using JFormDesigner stand-alone edition).
- Folding of generated GUI code in Java editor.
- Go to event handler method in Java editor.
- Two-way synchronization of localized strings in designer and in properties file editors. Changing localized strings in the designer immediately updates the .properties file in-memory and changing the .properties file updates the designer.
- Copy needed libraries (MigLayout, JGoodies Forms, TableLayout, etc) to the project and add them to the classpath of the current Eclipse project. Optionally include source code and Javadoc.
- Integrated into refactoring:
 - Copy, rename, move or delete .jfd files when coping, renaming, moving or deleting .java files.
 - JFormDesigner .jfd files and palette are updated when using **Refactor > Rename**, **Refactor > Move**, **Refactor > Change Method Signature** or **Rename in workspace** on packages, classes, fields and methods.
 - Rename component in Design view allows using Eclipse Java refactoring to rename all occurrences of the component name (including Preview).
 - Rename/move .properties files updates .jfd and .java files.
 - Rename nested class updates .jfd file.

User interface

The screenshot below shows the Eclipse main window editing a JFormDesigner form. JFormDesigner adds the menu **Form** to the main menu, which is only visible if a JFormDesigner form editor is active.

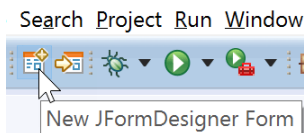


A JFormDesigner editor consists of:

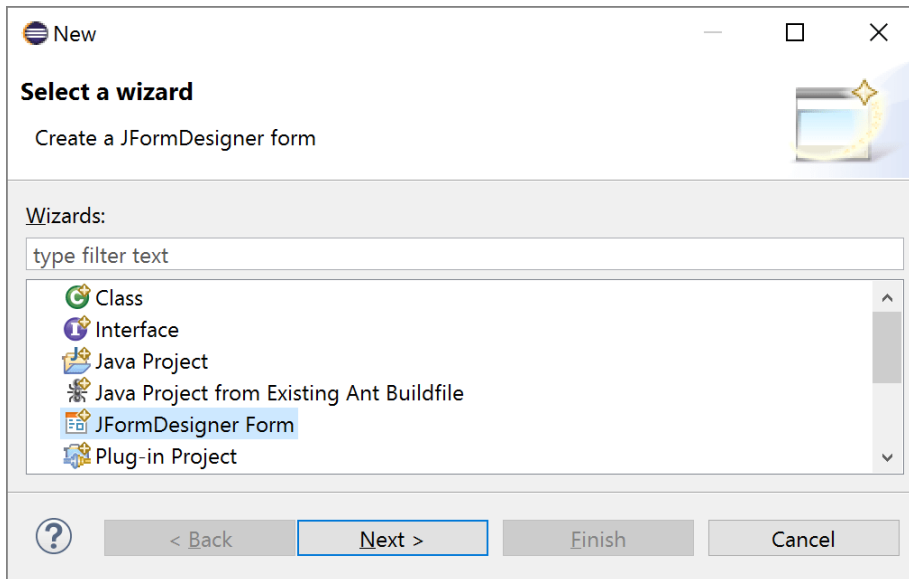
- **Toolbar**: Located at top of the editor area.
- **Palette**: Located at the left side.
- **Design View**: Located at the center.
- **Structure View**: Located in Eclipse's Outline view.
- **Properties View**: Located in Eclipse's Properties view.
- **Bindings View**: Located below the Design view. This view is not visible by default. Click the **Show Bindings View** button (🔗) in the toolbar to make it visible.
- **Error Log View**: Automatically opens on errors in a view at the bottom.

Creating new forms

To create a new form, click the **New JFormDesigner Form** (📄) button in the Eclipse toolbar.



You can also create new forms in Eclipse's Package Explorer view. First select the destination package or folder, then invoke Eclipse's **New** command and select **Other**, which opens Eclipse's **New** dialog. Then choose **JFormDesigner Form** from the list of wizards and click Next to proceed.



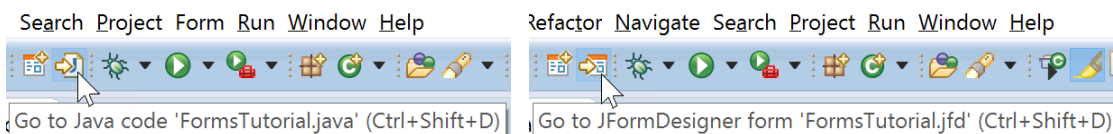
In the **New JFormDesigner Form** dialog, enter the form name (which is also used as class name), choose a superclass, a [layout manager](#) and set [localization](#) options.

Open forms for editing

You can open existing forms the same way as opening any other file in Eclipse. Locate it in Eclipse's Package Explorer view and double-click it.

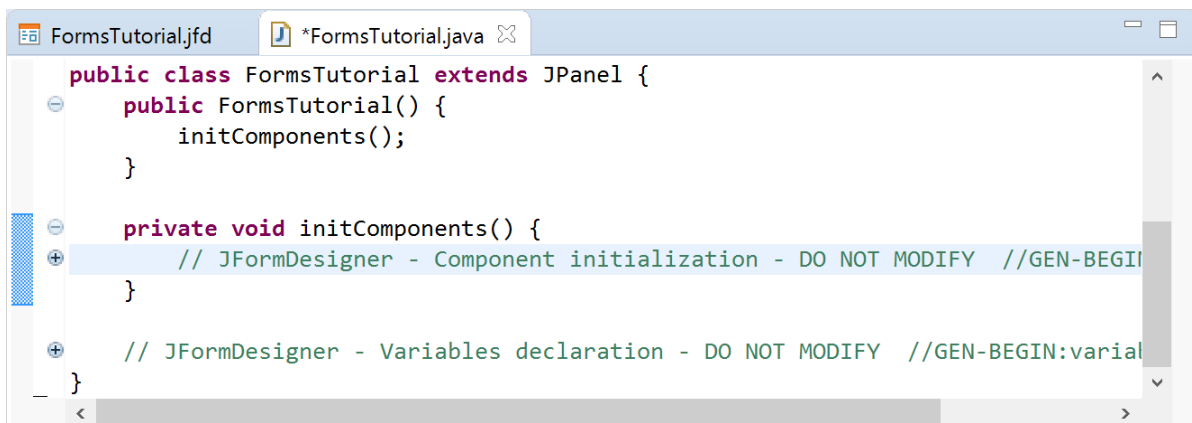
Go to Java code / Go to form

JFormDesigner adds a button to Eclipse's main toolbar that enables you to switch quickly from a JFormDesigner form editor to its Java editor and vice versa. If a form editor is active, then the button is named **Go to Java code** (📄). If a Java editor is active, then it is named **Go to JFormDesigner form** (🎨). You can also use [Ctrl+Shift+D](#) (Mac: [Shift+Command+D](#)).



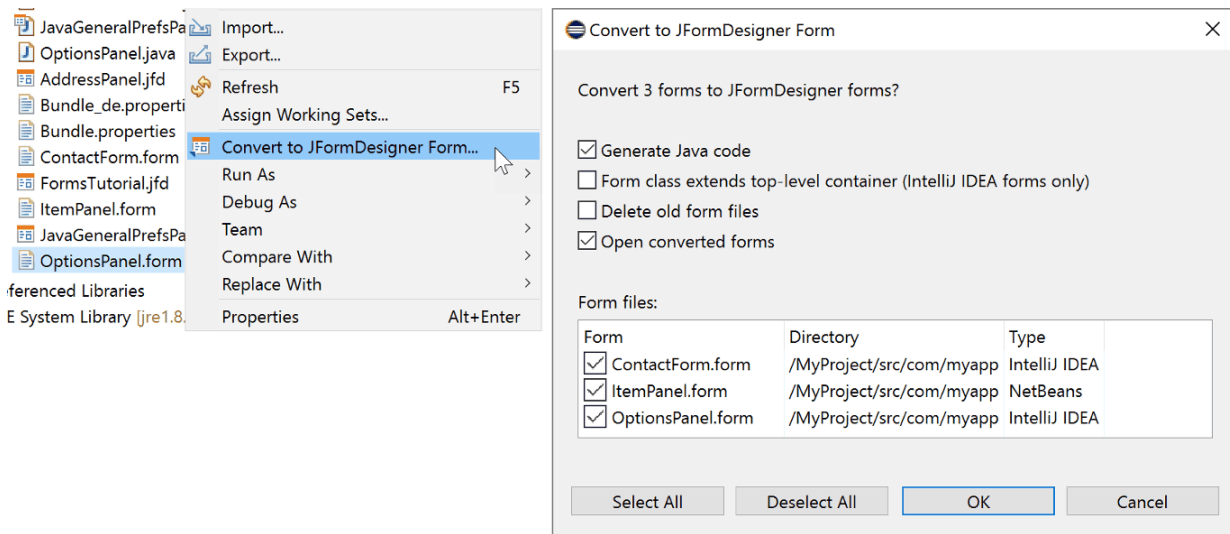
Code folding

To move the generated code out of the way, JFormDesigner folds it in the Java editor.



Convert NetBeans and IntelliJ IDEA forms

You can convert existing NetBeans and IntelliJ IDEA forms to JFormDesigner forms. Right-click on the form file (or any container) and select **Convert to JFormDesigner Form**.



When converting an IntelliJ IDEA form, JFormDesigner inserts its own generated GUI code into the existing Java class and removes IntelliJ IDEA's GUI code.

Preferences

The JFormDesigner preferences are fully integrated into the Eclipse preferences dialog. Select **Window > Preferences** from the menu to open it and then expand the node "JFormDesigner" in the tree. See [Preferences](#) for details.

You can also set project specific settings in the Eclipse project dialog. Select **Project > Properties** from the menu to open it and then expand the node "JFormDesigner" in the tree. See [Preferences](#) for details.

Keyboard shortcuts

You can assign shortcut keys to JFormDesigner commands in Eclipse's keys preferences. Select **Window > Preferences > General > Keys** to open it. Search for "JFormDesigner" to find JFormDesigner commands.

7.2 IntelliJ IDEA plug-in

This plug-in integrates JFormDesigner into [Jetbrains IntelliJ IDEA](#) (Community and Ultimate Editions).

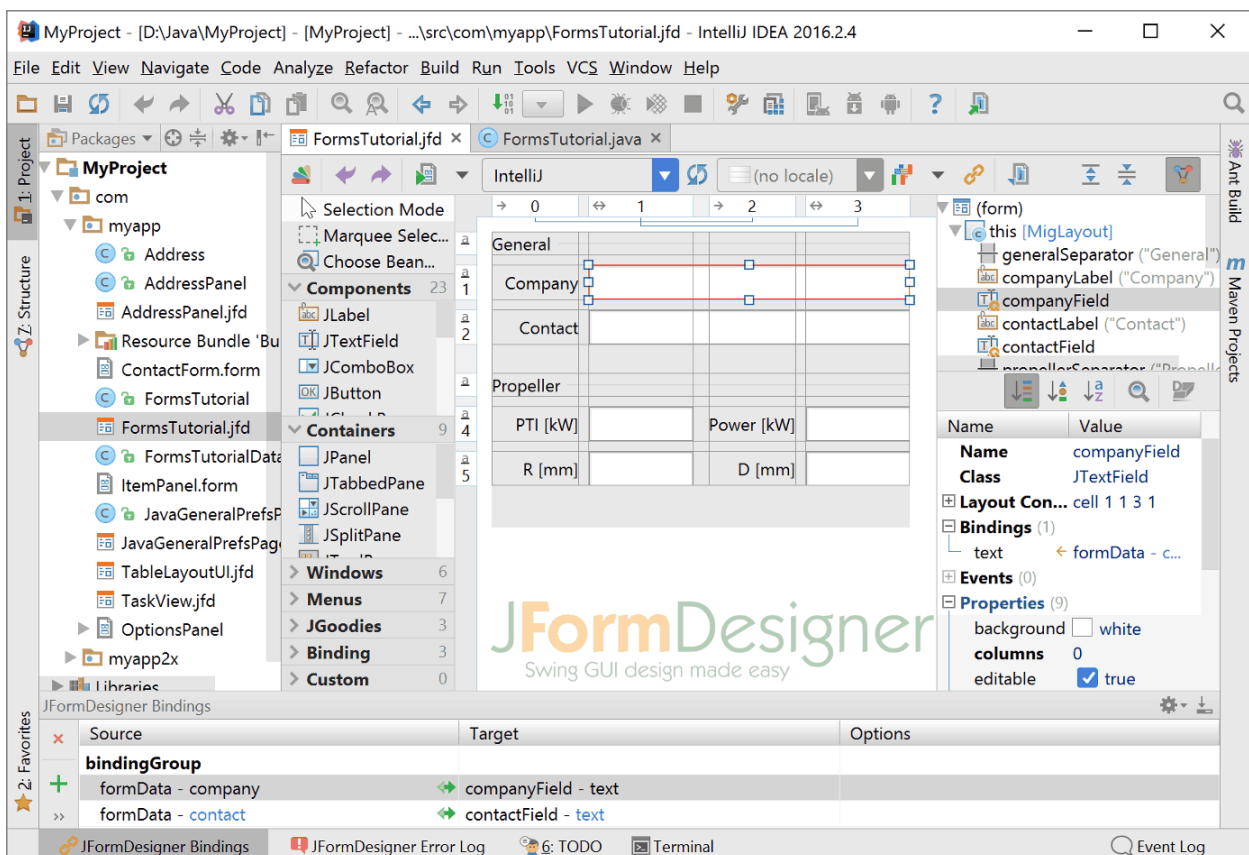
Benefits

Using this plug-in has following benefits compared to JFormDesigner stand-alone edition:

- Fully integrated as editor for JFormDesigner .jfd files. Create and design forms within IntelliJ IDEA. No need to switch between applications.
- Uses the source folders and classpath of the current IntelliJ IDEA project/module. No need to specify them twice.
- The Java code generator updates the .java file in-memory on each change in the designer. You can design forms and edit its source code without the need to save them (as necessary when using JFormDesigner stand-alone edition).
- Folding of generated GUI code in Java editor.
- Go to event handler method in Java editor.
- Two-way synchronization of localized strings in designer and in properties file editors. Changing localized strings in the designer immediately updates the .properties file in-memory and changing the .properties file updates the designer.
- Copy needed libraries (MigLayout, JGoodies Forms, TableLayout, etc) to the project and add them to the classpath of the current IntelliJ IDEA project/module. Optionally include source code and Javadoc.
- Assign shortcut keys to most JFormDesigner commands in IntelliJ IDEA's keymap settings.



User interface

The screenshot below shows the IntelliJ IDEA main window editing a JFormDesigner form.



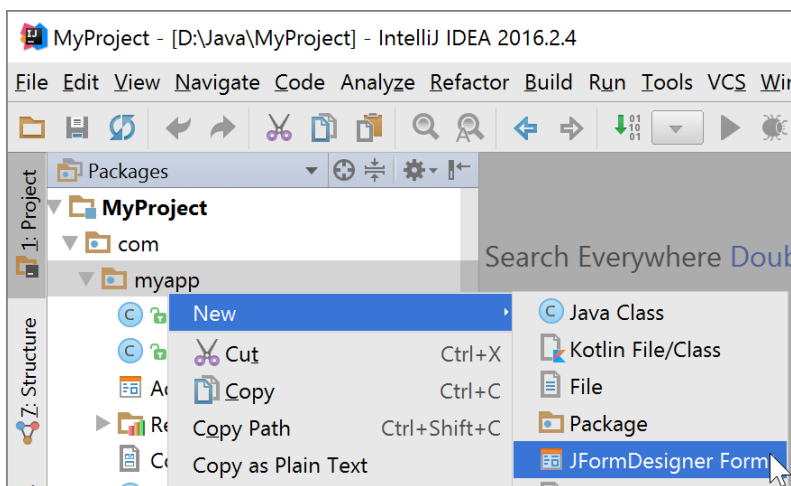
A JFormDesigner editor consists of:

- **Toolbar:** Located at top of the editor area.

- **Palette**: Located at the left side.
- **Design View**: Located at the center.
- **Structure View**: Located at the upper right. You can hide this view in the editor and show it instead in IntelliJ IDEA's Structure tool window by unselecting **Show Structure in Editor** ().
- **Properties View**: Located at the lower right.
- **Bindings View**: Located below the Design view. This view is not visible by default. Click the **Show Bindings View** button () in the toolbar to make is visible.
- **Error Log View**: Automatically opens on errors in a tool window at the bottom. This view is not visible in the above screenshot.

Creating new forms

You can create new forms in any of IntelliJ IDEA's project views. First select the destination package or folder, then invoke IDEA's **New** command and choose **JFormDesigner Form**.





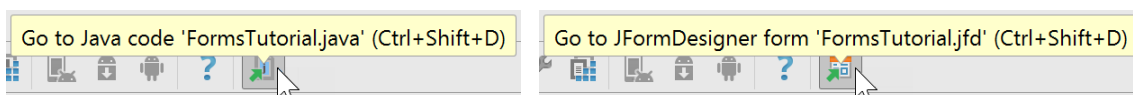
In the **New JFormDesigner Form** dialog, enter the form name (which is also used as class name), choose a superclass, a **layout manager** and set **localization** options.

Open forms for editing

You can open existing forms the same way as opening any other file in IntelliJ IDEA. Locate it in any of IntelliJ IDEA's project views and double-click it.

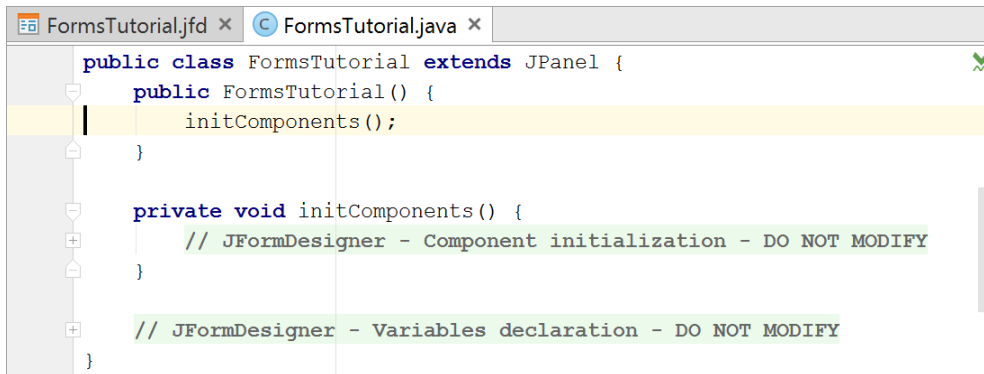
Go to Java code / Go to form

JFormDesigner adds a button to IntelliJ IDEA's main toolbar that enables you to switch quickly from a JFormDesigner form editor to its Java editor and vice versa. If a form editor is active, then the button is named **Go to Java code** (). If a Java editor is active, then it is named **Go to JFormDesigner form** (). You can also use **Ctrl+Shift+D** (Mac: **Shift+Command+D**).



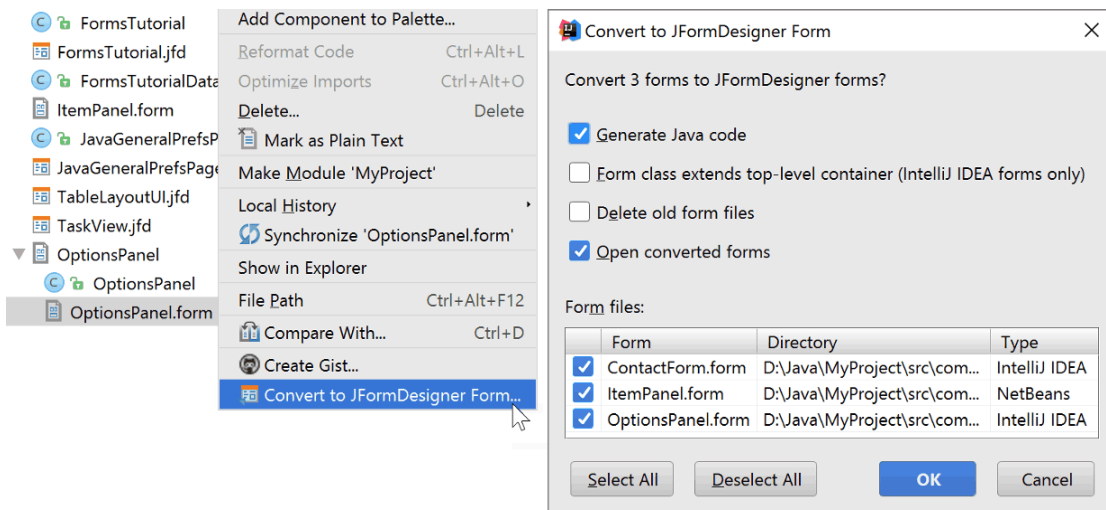
Code folding

To move the generated code out of the way, JFormDesigner folds it in the Java editor.



Convert IntelliJ IDEA and NetBeans forms

You can convert existing IntelliJ IDEA and NetBeans forms to JFormDesigner forms. Right-click on the form file (or any container) and select **Convert to JFormDesigner Form**.



When converting an IntelliJ IDEA form, JFormDesigner inserts its own generated GUI code into the existing Java class and removes IntelliJ IDEA's GUI code.

Settings

JFormDesigner uses the term "Preferences" instead of IntelliJ IDEA's "Settings". The JFormDesigner preferences are fully integrated into the IntelliJ IDEA settings dialog. Select **File > Settings** from the menu to open it and then select the "JFormDesigner" page. To set project specific settings, select the subpage named "Project Specific". See [Preferences](#) for details.

Keyboard shortcuts

You can assign shortcut keys to most JFormDesigner commands in IntelliJ IDEA's keymap settings. Select **File > Settings > Keymap** to open it. In the actions tree expand **Plug-ins > JFormDesigner**.

7.3 NetBeans plug-in

This plug-in integrates JFormDesigner into [NetBeans](#).

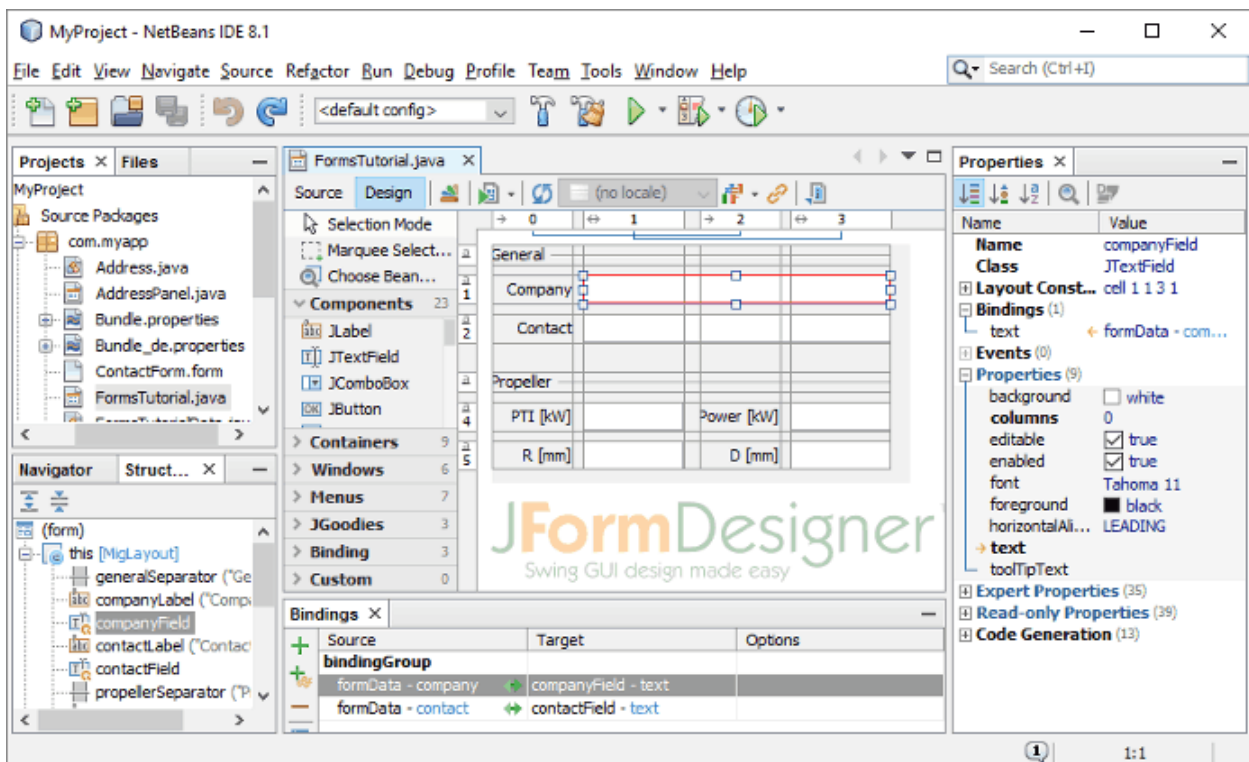
Benefits

Using this plug-in has following benefits compared to JFormDesigner stand-alone edition:

- Fully integrated as editor for JFormDesigner .jfd files. Create and design forms within NetBeans. No need to switch between applications.
- Uses the source folders and classpath of the current NetBeans project. No need to specify them twice.
- The Java code generator updates the .java file in-memory on each change in the designer. You can design forms and edit its source code without the need to save them (as necessary when using JFormDesigner stand-alone edition).
- Folding and guarding of generated GUI code in Java editor.
- Go to event handler method in Java editor.
- Two-way synchronization of localized strings in designer and in properties file editors. Changing localized strings in the designer immediately updates the .properties file in-memory and changing the .properties file updates the designer.
- Automatically add needed libraries (MigLayout, JGoodies Forms, TableLayout, etc) to the project.
- Integrated into refactoring: Copy, rename, move or delete .jfd files when coping, renaming, moving or deleting .java files.

User interface

The screenshot below shows the NetBeans main window editing a JFormDesigner form.



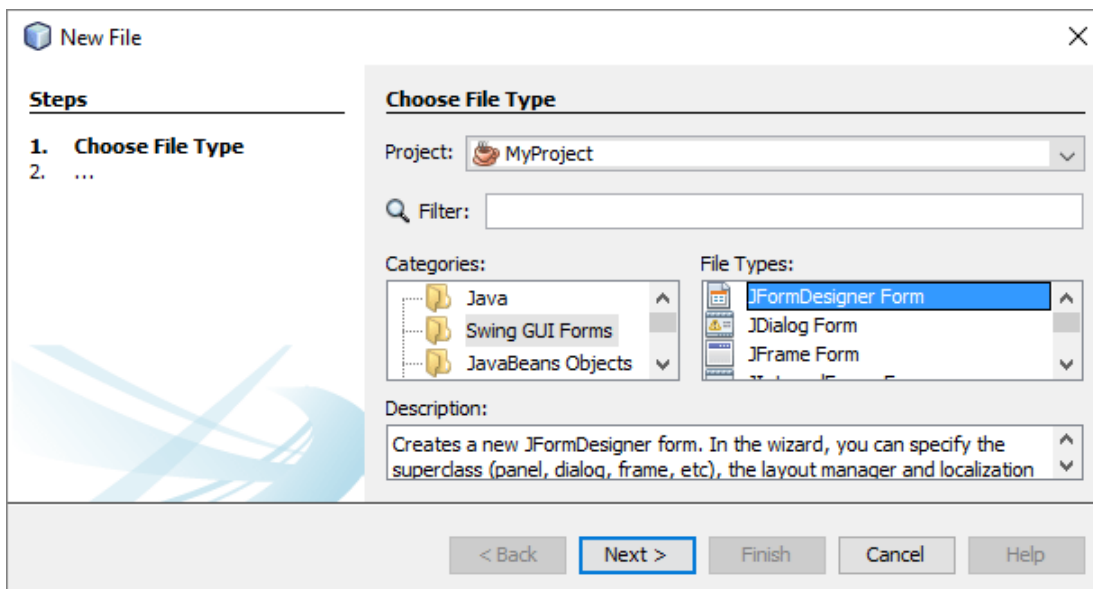
A JFormDesigner editor consists of:

- **Toolbar**: Located at top of the editor area.
- **Palette**: Located at the left side.
- **Design View**: Located at the center.
- **Structure View**: Located at the lower left.

- **Properties View**: Located at the right side.
- **Bindings View**: Located below the Design view. This view is not visible by default. Click the **Show Bindings View** button (🔗) in the toolbar to make it visible.
- **Error Log View**: Automatically opens on errors in a view at the bottom.

Creating new forms

You can create new forms using NetBeans's **New File** command. In the category **Swing GUI Forms** choose **JFormDesigner Form** and click Next to proceed.

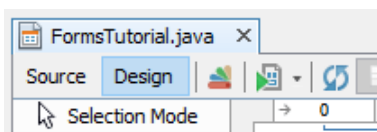


Open forms for editing

You can open existing forms the same way as opening any other file in NetBeans. Locate it in NetBeans's Project view and double-click it.

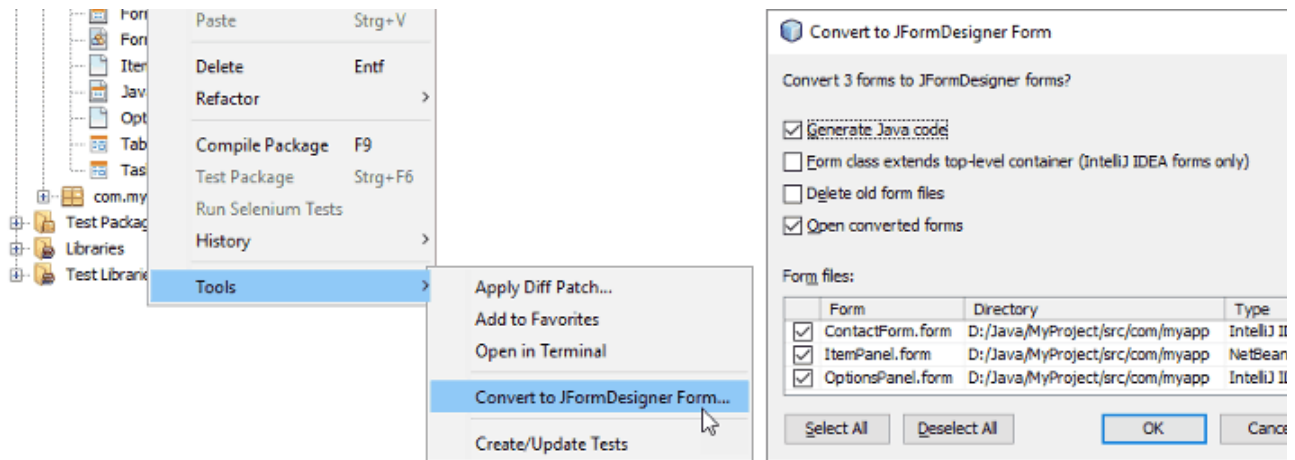
Source / Design

The **Source** and **Design** toggle buttons in the editor toolbar enable you to switch from a JFormDesigner form editor to its Java editor and vice versa.



Convert NetBeans and IntelliJ IDEA forms

You can convert existing NetBeans and IntelliJ IDEA forms to JFormDesigner forms. Right-click on the form file (or any container) and select **Tools > Convert to JFormDesigner Form**.



When converting an IntelliJ IDEA form, JFormDesigner inserts its own generated GUI code into the existing Java class and removes IntelliJ IDEA's GUI code.

Options

JFormDesigner uses the term "Preferences" instead of NetBeans "Options". The JFormDesigner preferences are fully integrated into the NetBeans options dialog. Select **Tools > Options** from the menu to open it and then select the "JFormDesigner" page. See [Preferences](#) for details.

You can also set project specific options in the NetBeans project dialog. Select **File > Project Properties** from the menu to open it and then expand the node "JFormDesigner" in the tree. See [Preferences](#) for details.

Keyboard shortcuts

You can assign shortcut keys to some JFormDesigner commands in NetBeans keymap options. Select **Tools > Options > Keymap** to open it. Click on the Category column to sort key bindings by category name and scroll to the JFormDesigner category.

8 Layout Managers

Layout managers are an essential part of Swing forms. They lay out components within a container. JFormDesigner provides support for following layout managers:

- [BorderLayout](#)
- [BoxLayout](#)
- [CardLayout](#)
- [FlowLayout](#)
- [FormLayout](#) (JGoodies)
- [GridBagLayout](#)
- [GridLayout](#)
- [GroupLayout](#) (Free Design)
- [HorizontalLayout](#) (SwingX)
- [IntelliJ IDEA GridLayout](#)
- [MigLayout](#)
- [null Layout](#)
- [TableLayout](#)
- [VerticalLayout](#) (SwingX)

How to choose a layout manager?

For "normal" forms use either one of the grid-based layout managers ([MigLayout](#), [FormLayout](#), [TableLayout](#) or [GridBagLayout](#)) or use "Free Design" ([GroupLayout](#)). Each layout manager has its advantages and disadvantages. MigLayout, FormLayout and TableLayout are open source and require that you ship an additional library with your application.

- MigLayout has most features (units, alignment, grouping, docking, flowing, in-cell flow and more).
- FormLayout has many features (dialog units, column/row alignment, column/row grouping), but may have problems if a component spans multiple columns or rows and can not handle right-to-left component orientation.
- TableLayout does not have these limitations, but has fewer features than FormLayout.
- GridBagLayout is the weakest of these four grid-based layout managers, but JFormDesigner hides its complexity and adds additional features like gaps. Use GridBagLayout if you cannot use MigLayout, FormLayout or TableLayout.
- GroupLayout (Free Design) allows you to lay out your forms by simply placing components where you want them. Visual guidelines suggest optimal spacing, alignment and resizing of components.

For button bars use [MigLayout](#), [FormLayout](#), [TableLayout](#), [GridBagLayout](#) or [FlowLayout](#).

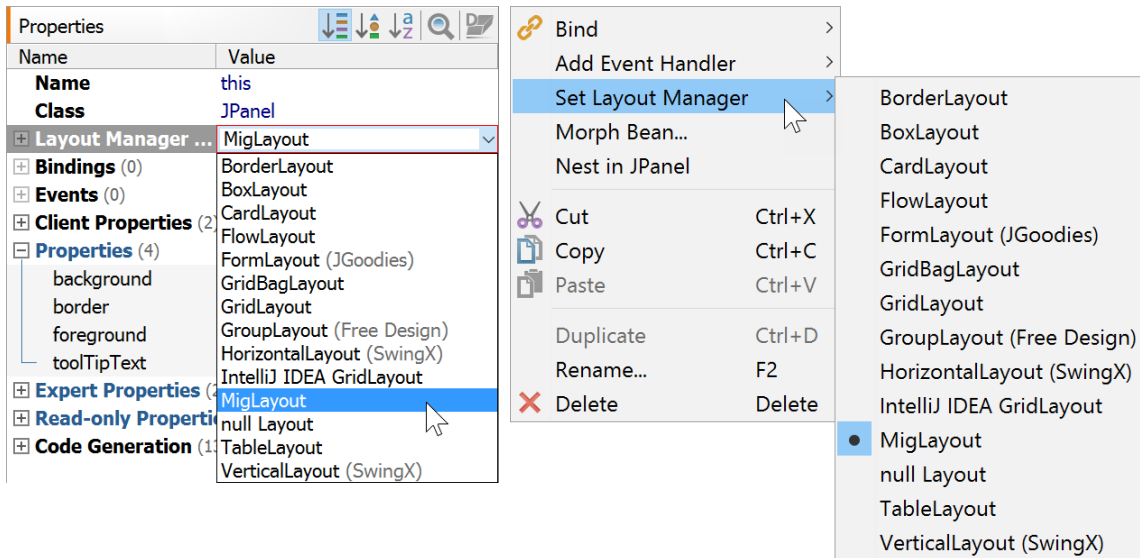
To layout a main window, use [BorderLayout](#). Place the toolbar to the north, the status bar to the south and the content to the center.

For toolbars use [JToolBar](#), which has its own layout manager (based on BoxLayout).

For radio button groups, [BoxLayout](#) may be a good choice. Mainly because [JRadioButton](#) has a gap between its text and its border and therefore the gaps provided by FormLayout, TableLayout and GridBagLayout are not necessary.

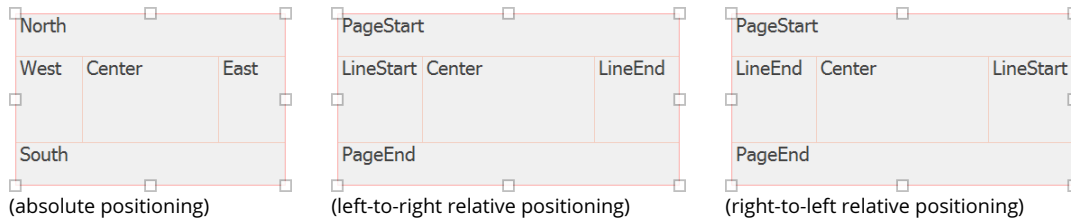
Change layout manager

You can change the layout manager at any time. Either in the [Properties](#) view or by right-clicking on a container in the [Design](#) or [Structure](#) view and selecting the new layout manager from the popup menu.



8.1 BorderLayout

The border layout manager places components in up to five areas: center, north, south, east and west. Each area can contain only one component.



The components are laid out according to their preferred sizes. The north and south components may be stretched horizontally. The east and west components may be stretched vertically. The center component may be stretched horizontally and vertically to fill any space left over.

In addition to absolute positioning, BorderLayout supports relative positioning, which swaps west and east components if the component orientation of the container is set to right-to-left. To use relative positioning, first add a component to one of the four side areas and then change the layout constraints property of that component to `PAGE_START`, `PAGE_END`, `LINE_START` or `LINE_END`.

BorderLayout is part of the standard Java distribution. The API documentation is available [here](#).

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
horizontal gap	The horizontal gap between components.	0
vertical gap	The vertical gap between components.	0

Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description
constraints	Specifies where the component will be placed. Possible values: <code>CENTER</code> , <code>NORTH</code> , <code>SOUTH</code> , <code>EAST</code> , <code>WEST</code> , <code>PAGE_START</code> , <code>PAGE_END</code> , <code>LINE_START</code> and <code>LINE_END</code> .

8.2 BorderLayout

The box layout manager places components either vertically or horizontally. The components will not wrap as in [FlowLayout](#).



This layout manager is used rarely. Take a look at the BorderLayout API documentation for more details about it.

BoxLayout is part of the standard Java distribution. The API documentation is available [here](#).

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description
axis	The axis to lay out components along. Possible values: X_AXIS, Y_AXIS, LINE_AXIS and PAGE_AXIS.

8.3 CardLayout

The card layout manager treats each component in the container as a card. Only one card is visible at a time. The container acts as a stack of cards. The first component added to a card layout is the visible component when the container is first displayed.

CardLayout is part of the standard Java distribution. The API documentation is available [here](#).

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
horizontal gap	The horizontal gap at the left and right edges.	0
vertical gap	The vertical gap at the top and bottom edges.	0

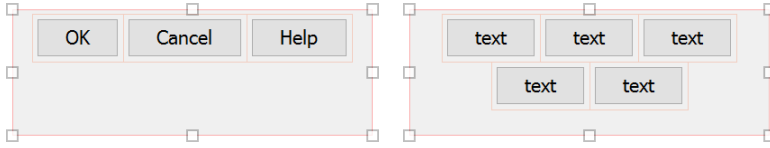
Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description
Card Name	Identifier that can be used to make a card visible. See API documentation for <code>CardLayout.show(Container, String)</code> .

8.4 FlowLayout

The flow layout manager arranges components in a row from left to right, starting a new row if no more components fit into a row. Flow layouts are typically used to arrange buttons in a panel.



FlowLayout is part of the standard Java distribution. The API documentation is available [here](#).

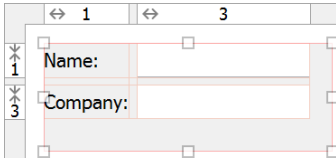
Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
alignment	The alignment of the layout. Possible values: LEFT, RIGHT, CENTER, LEADING and TRAILING.	CENTER
horizontal gap	The horizontal gap between components and between the component and the border of the container.	5
vertical gap	The vertical gap between components and between the component and the border of the container.	5
align on baseline	Specifies whether components are vertically aligned along their baseline. Components that do not have a baseline are centered.	false

8.5 FormLayout (JGoodies)

FormLayout is a powerful, flexible and precise general purpose layout manager. It places components in a grid of columns and rows, allowing specified components to span multiple columns or rows. Not all columns/rows necessarily have the same width/height.



Unlike other grid-based layout managers, FormLayout uses 1-based column/row indices. And it uses "real" columns/rows as gaps. Therefore the unusual column/row numbers in the above screenshot. Using gap columns/rows has the advantage that you can give gaps different sizes.

Use the column and row [headers](#) to insert or delete columns/rows and change column/row properties. JFormDesigner automatically adds/removes gap columns if you add/remove a column/row.

Compared to other layout managers, FormLayout provides following outstanding features:

- Default alignment of components in a column/row.
- Specification of minimum and maximum column width or row height.
- Supports different units: Dialog units, Pixel, Point, Millimeter, Centimeter and Inch. Especially Dialog units are very useful to create layouts that scale with the screen resolution.
- [Column/row templates](#).
- [Column/row grouping](#).

FormLayout is open source and **not** part of the standard Java distribution. You must ship two additional libraries with your application. JFormDesigner includes `jgoodies-forms.jar` and `jgoodies-common.jar` in its [redistributables](#). For more documentation and tutorials, visit www.jgoodies.com/freeware/libraries/forms/.

Maven Central Repository: *groupId:* `com.jgoodies` *artifactId:* `jgoodies-forms` *version:* `1.8.0`

API documentation: doc.formdev.com/jgoodies-forms/

Source code: github.com/JFormDesigner/swing-jgoodies-forms

IDE plug-ins: If you use FormLayout the first time, the JFormDesigner IDE plug-in ask you whether it should copy the required libraries (and its source code and documentation) to the IDE project and add it to the classpath of the IDE project.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description
columnSpecs	Comma separated encoded column specifications. This property is for experts only. Use the column header instead of editing this property.
rowSpecs	Comma separated encoded row specifications. This property is for experts only. Use the row header instead of editing this property.

Column/row properties

Each column and row has its own properties. Use the column and row [headers](#) to change column/row properties.

Column Properties

Column: ← →

Template: default

Specification:

Default alignment

☐ left ☐ center ☐ right ☒ fill

Size

☒ default ☐ preferred ☐ minimum

☐ constant Dialog units

☐ minimum Dialog units

☐ maximum Dialog units

Resize behavior

☒ none

☐ grow

Grouping

Group ID: (0 = no group)

? OK Cancel Apply

Field	Description
Column /Row	The index of the column/row. Use the arrow buttons (or Alt+Left , Alt+Right , Alt+Up , Alt+Down keys) to edit the properties of the previous or next column/row.
Template	FormLayout provides several predefined templates for columns and rows. Here you can choose one.
Specification	The column/row specification. This is a string representation of the options below.
Default alignment	The default alignment of the components within a column/row. Used if the value of the component constraint properties "h align" or "v align" are set to DEFAULT.
Size	The width of a column or height of a row. You can use default, preferred or minimum component size. Or a constant size. It is also possible to specify a minimum and a maximum size. Note that the maximum size does not limit the column/row size if the column/row can grow (see resize behavior).
Resize behavior	The resize weight of the column/row.
Grouping	See column/row grouping for details.

Tip: The column/row context menu allows you to alter many of these options for multi-selections.

Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description	Default
grid x	Specifies the component's horizontal grid origin (column index).	1
grid y	Specifies the component's vertical grid origin (row index).	1
grid width	Specifies the component's horizontal grid extend (number of columns).	1
grid height	Specifies the component's vertical grid extend (number of rows).	1
h align	The horizontal alignment of the component within its cell. Possible values: DEFAULT, LEFT, CENTER, RIGHT and FILL.	DEFAULT
v align	The vertical alignment of the component within its cell. Possible values: DEFAULT, TOP, CENTER, BOTTOM and FILL.	DEFAULT
insets	Specifies the external padding of the component, the minimum amount of space between the component and the edges of its display area. Note that the insets do not increase the column width or row height (in contrast to the <code>GridBagConstraints.insets</code>).	0,0,0,0

Tip: The component context menu allows you to alter the alignment for multi-selections.

Column/Row Templates

FormLayout provides several predefined templates for columns and rows. You can also define [custom column/row templates](#) in the [Preferences](#) dialog.

Column templates

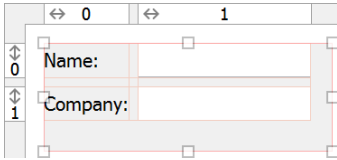
Name	Description	Gap
default	Determines the column width by computing the maximum of all column component preferred widths. If there is not enough space in the container, the column can shrink to the minimum width.	no
preferred	Determines the column width by computing the maximum of all column component preferred widths.	no
minimum	Determines the column width by computing the maximum of all column component minimum widths.	no
related gap	A logical horizontal gap between two related components. For example the OK and Cancel buttons are considered related.	yes
unrelated gap	A logical horizontal gap between two unrelated components.	yes
label component gap	A logical horizontal gap between a label and an associated component.	yes
glue	Has an initial width of 0 pixels and grows. Useful to describe <i>glue</i> columns that fill the space between other columns.	yes
button	A logical horizontal column for a fixed size button.	no
growing button	A logical horizontal column for a growing button.	no

Row templates

Name	Description	Gap
default	Determines the row height by computing the maximum of all row component preferred heights. If there is not enough space in the container, the row can shrink to the minimum height.	no
preferred	Determines the row height by computing the maximum of all row component preferred heights.	no
minimum	Determines the row height by computing the maximum of all row component minimum heights.	no
related gap	A logical vertical gap between two related components.	yes
unrelated gap	A logical vertical gap between two unrelated components.	yes
label component gap	A logical vertical gap between a label and an associated component. (requires JGoodies Forms 1.4 or later)	yes
narrow line gap	A logical vertical narrow gap between two rows. Useful if the vertical space is scarce or if an individual vertical gap shall be smaller than the default line gap.	yes
line gap	A logical vertical default gap between two rows. A little bit larger than the narrow line gap.	yes
paragraph gap	A logical vertical default gap between two paragraphs in the layout grid. This gap is larger than the default line gap.	yes
glue	Has an initial height of 0 pixels and grows. Useful to describe <i>glue</i> rows that fill the space between other rows.	yes

8.6 GridBagLayout

The grid bag layout manager places components in a grid of columns and rows, allowing specified components to span multiple columns or rows. Not all columns/rows necessarily have the same width/height. Essentially, GridBagLayout places components in rectangles (cells) in a grid, and then uses the components' preferred sizes to determine how big the cells should be.



Use the column and row [headers](#) to insert or delete columns/rows and change column/row properties.

GridBagLayout is part of the standard Java distribution. The API documentation is available [here](#).

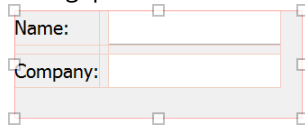
Extensions

JFormDesigner extends the original GridBagLayout with following features:

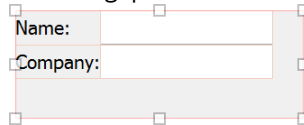
- **Horizontal and vertical gaps**

Simply specify the gap size and JFormDesigner automatically computes the `GridBagConstraints.insets` for all components. This makes designing a form with consistent gaps using GridBagLayout much easier. No longer wrestling with `GridBagConstraints.insets`.

With gaps:



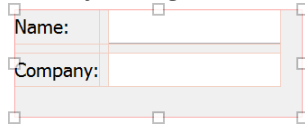
Without gaps:



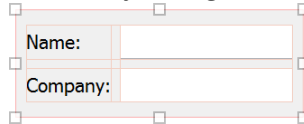
- **Left/top layout alignment**

The pure GridBagLayout centers the layout within the container if there is enough space. JFormDesigner easily allows you to fix this problem by switching on two options: [align left](#) and [align top](#).

With layout alignment:



Without layout alignment:



- **Default component alignment**

Allows you to specify a default alignment for components within columns/rows. This is very useful for columns with right aligned labels because you specify the alignment only once for the column and all added labels will automatically aligned to the right.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
horizontal gap	The horizontal gap between components.	5
vertical gap	The vertical gap between components.	5
align left	If true, aligns the layout to the left side of the container. If false, then the layout is centered horizontally.	true
align top	If true, aligns the layout to the top side of the container. If false, then the layout is centered vertically.	true

These four properties are JFormDesigner extensions to the original GridBagLayout. However, no additional library is required.

Column/row properties

Each column and row has its own properties. Use the column and row [headers](#) to change column/row properties.

Field	Description
Column/Row	The index of the column/row. Use the arrow buttons (or Alt+Left , Alt+Right , Alt+Up , Alt+Down keys) to edit the properties of the previous or next column/row.
Default alignment	The default alignment of the components within a column/row. Used if the value of the constraints properties "h align" or "v align" is DEFAULT.
Size	The minimum width of a column or height of a row.
Resize behavior	The resize weight of the column/row.

Tip: The column/row context menu allows you to alter many of these options for multi-selections.

Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description	Default
grid x	Specifies the component's horizontal grid origin (column index).	0
grid y	Specifies the component's vertical grid origin (row index).	0
grid width	Specifies the component's horizontal grid extend (number of columns).	1
grid height	Specifies the component's vertical grid extend (number of rows).	1
h align	The horizontal alignment of the component within its cell. Possible values: DEFAULT, LEFT, CENTER, RIGHT and FILL.	DEFAULT
v align	The vertical alignment of the component within its cell. Possible values: DEFAULT, TOP, CENTER, BOTTOM, FILL, BASELINE, ABOVE_BASELINE and BELOW_BASELINE.	DEFAULT
weight x	Specifies how to distribute extra horizontal space.	0.0
weight y	Specifies how to distribute extra vertical space.	0.0
insets	Specifies the external padding of the component, the minimum amount of space between the component and the edges of its display area.	0,0,0,0
ipad x	Specifies the internal padding of the component, how much space to add to the	0

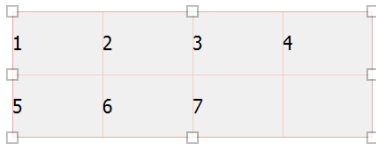
Property Name	Description	Default
	minimum width of the component.	
ipad y	Specifies the internal padding, that is, how much space to add to the minimum height of the component.	0

In contrast to the GridBagConstraints API, which uses `anchor` and `fill` to specify the alignment and resize behavior of a component, JFormDesigner uses the usual `h/v align` notation.

Tip: The component context menu allows you to alter the alignment for multi-selections.

8.7 GridLayout

The grid layout manager places components in a grid of cells. Each component takes all the available space within its cell, and each cell is exactly the same size.



This layout manager is used rarely.

GridLayout is part of the standard Java distribution. The API documentation is available [here](#).

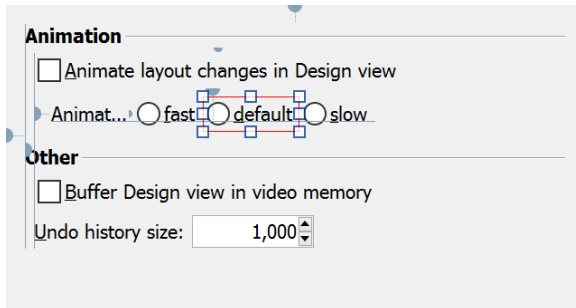
Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
columns	The number of columns. Zero means any number of columns.	
rows	The number of rows. Zero means any number of rows. Note: If the number of rows is non-zero, the number of columns specified is ignored. Instead, the number of columns is determined from the specified number of rows and the total number of components in the layout.	
horizontal gap	The horizontal gap between components.	0
vertical gap	The vertical gap between components.	0

8.8 GroupLayout (Free Design)

The goal of the group layout manager is to make it easy to create professional cross platform layouts. It is designed for GUI builders, such as JFormDesigner, to use the "Free Design" paradigm. You can lay out your forms by simply placing components where you want them. Visual guidelines suggest optimal spacing, alignment and resizing of components.



GroupLayout has been developed by the NetBeans team and is also used by the NetBeans GUI Builder (formerly Project Matisse). They provide a comprehensive tutorial on designing GUIs using GroupLayout, which is also suitable for JFormDesigner: <https://netbeans.apache.org/kb/docs/java/quickstart-gui.html>

GroupLayout is part of the standard Java distribution since Java 6. If you need to run your application also on Java 5 or 1.4, you can use the open-source **Swing Layout Extension** library, which is compatible to the Java 6 GroupLayout, but uses different package names. Change the option "GroupLayout Generation Style" in the [Layout Managers \(Java Code Generator\)](#) preferences if necessary.

Maven Central Repository: `groupId: org.swinglabs artifactId: swing-layout version: 1.0.3`

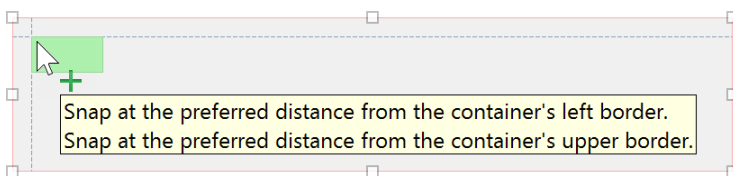
The API documentation is available [here](#).

IDE plug-ins: If you use GroupLayout from the **Swing Layout Extension** library the first time, the JFormDesigner IDE plug-in ask you whether it should copy the required library (and its source code and documentation) to the IDE project and add it to the classpath of the IDE project.

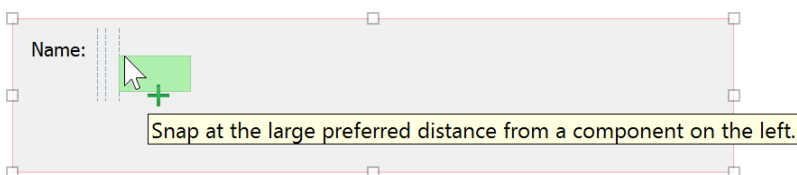
Alignment guidelines

Alignment guidelines appear only when adding or moving components. They indicate the preferred positions to which components snap when releasing the mouse button.

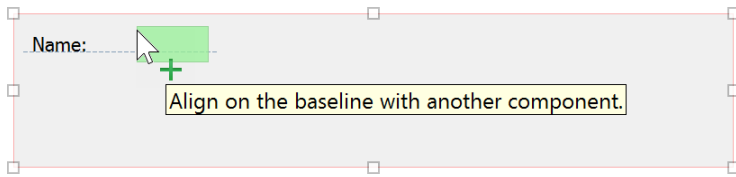
Insets are the preferred spacings between components and their container.



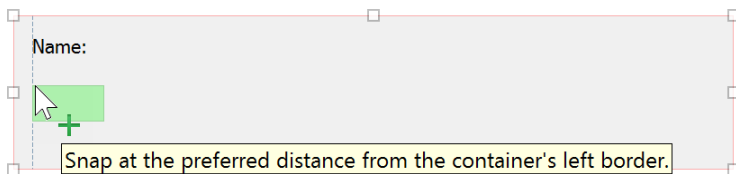
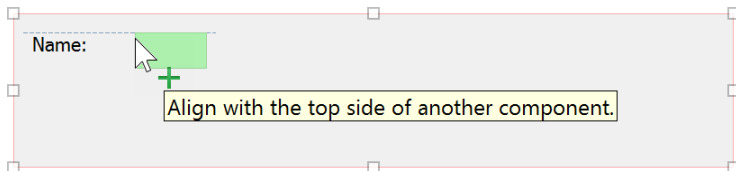
Offsets are the preferred spacings between adjacent components.



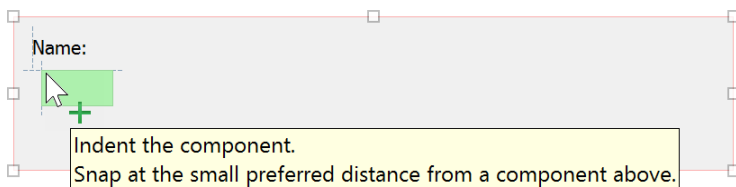
Baseline alignment is the preferred relationship between adjacent components that display text.



Edge alignments (top, bottom, left and right) are possible relationships between adjacent components.

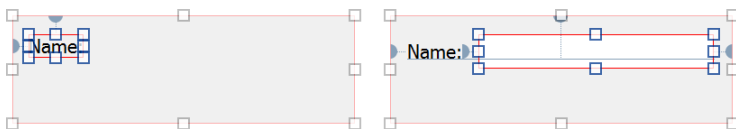


Indentation alignment is a special alignment relationship in which one component is located below another and offset slightly to the right.



Anchoring indicators

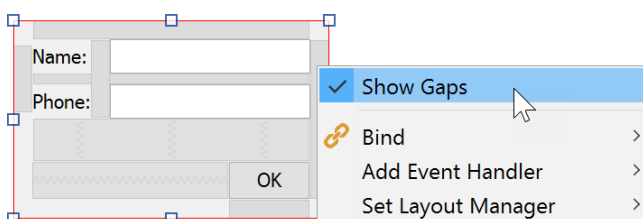
Anchoring indicators appear when components have snapped into position. They illustrate the alignment and relationship among components.



Anchors connecting components to their container or to adjacent components are represented by small semi-circular indicators with dashed lines.

Visualization of gaps









The gaps between components are visualized as light gray rectangles. Fixed size gaps are solid and resizable gaps are shown with springs inside. Adjacent gaps are shown when a component is selected. All gaps between all components are shown if a container is selected.



To disable visualization of gaps, right-click on a GroupLayout container and deselect **Show Gaps**.

Commands

The designer [context menu](#) provides following GroupLayout specific commands:

Command	Description
	Align in column/row Aligns the selected components left/right/top/bottom/center in column/row.
	Align Aligns the selected components left/right/top/bottom.
	Anchor Changes the anchoring of the selected components. A component is usually horizontally anchored left/right and vertically anchored top/bottom. Anchoring connects a component to a container edge or a neighborhood component edge.
	Horizontal Auto Resizing Makes the selected components resize horizontally at runtime if the container size changes.
	Vertical Auto Resizing Makes the selected components resize vertically at runtime if the container size changes.
	Same Width Makes the selected components all the same width. If one of the selected components is already in a group of "Same Width" components, the other components are added to the existing group. To remove components from a group, select them and then execute this command. Grouped components are marked with a small indicator. 
	Same Height Makes the selected components all the same height. See "Save Width" command for more details.
	Set to Default Size Makes the selected components have its default size.
	Edit Layout Space Changes the gaps around the selected component.
	Show Gaps Shows/hides the gaps around the selected components.
	Duplicate Duplicates the selected components and places the new components below the original components. Use Ctrl+Left , Ctrl+Right , Ctrl+Up or Ctrl+Down keys to place the duplicated components left, right, above or below the original components.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
honors visibility	Specifies whether component visibility is considered when positioning and sizing components. If true, non-visible components are not treated as part of the layout. If false, components are positioned and sized regardless of visibility.	true

Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description	Default
horizontal size	Specifies the component's horizontal size in pixel or Default. If set to Default, the component's preferred width is used.	Default
vertical size	Specifies the component's vertical size in pixel or Default. If set to Default, the component's preferred height is used.	Default
horizontal resizable	Specifies whether the component is horizontal resizable.	false
vertical resizable	Specifies whether the component is vertical resizable.	false

Property Name	Description	Default
top gap	Specifies size of the top gap.	
left gap	Specifies size of the left gap.	
bottom gap	Specifies size of the bottom gap.	
right gap	Specifies size of the right gap.	
top gap resizable	Specifies whether the top gap is vertical resizable.	false
left gap resizable	Specifies whether the left gap is horizontal resizable.	false
bottom gap resizable	Specifies whether the bottom gap is vertical resizable.	false
right gap resizable	Specifies whether the right gap is horizontal resizable.	false

8.9 HorizontalLayout (SwingX)

The horizontal layout manager places components horizontally. The components are stretched vertically to the height of the container. The components will not wrap as in [FlowLayout](#).



Because the **SwingX project seems to be discontinued**, it is not recommended to use this layout manager.

HorizontalLayout is part of the SwingX open source project and **not** part of the standard Java distribution. You must ship an additional library with your application. The JFormDesigner distribution does not include the SwingX library.

Layout manager properties

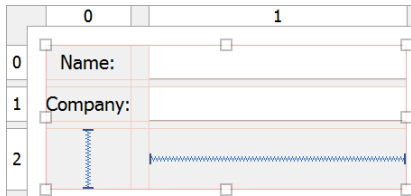
A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
gap	The horizontal gap between components.	0

8.10 IntelliJ IDEA GridLayout

The IntelliJ IDEA grid layout manager places components in a grid of columns and rows, allowing specified components to span multiple columns or rows. Not all columns/rows necessarily have the same width/height.

Note: The IntelliJ IDEA grid layout manager is supported to make it easier to migrate forms, which were created with IntelliJ IDEA's GUI builder. If you never used it, it is recommended to use one of the other grid-based layout managers.



Use the column and row [headers](#) to insert or delete columns/rows and change column/row properties. Use horizontal and vertical spacers, which are available in the [Palette](#), to define space between components.

IntelliJ IDEA GridLayout is open source and **not** part of the standard Java distribution. You must ship an additional library with your application. JFormDesigner includes `intellij_forms_rt.jar` in its [redistributables](#). For more documentation and tutorials, visit www.jetbrains.com/idea/.

IDE plug-ins: If you use IntelliJ IDEA GridLayout the first time, the JFormDesigner IDE plug-in ask you whether it should copy the required library (and its source code) to the IDE project and add it to the classpath of the IDE project.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
horizontal gap	The horizontal gap between components. If -1, then inherits gap from parent container that also uses IntelliJ IDEA GridLayout, or uses 10 pixels.	-1
vertical gap	The vertical gap between components. If -1, then inherits gap from parent container that also uses IntelliJ IDEA GridLayout, or uses 5 pixels.	-1
same size horizontally	If true, all columns get the same width.	false
same size vertically	If true, all rows get the same height.	false
margin	Size of the margin between the containers border and its contents.	0,0,0,0

Layout constraints properties

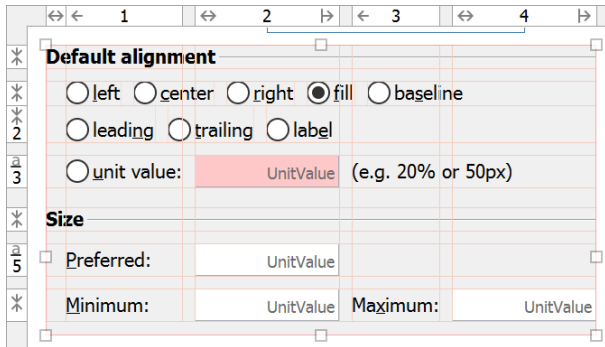
A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description	Default
grid x	Specifies the component's horizontal grid origin (column index).	0
grid y	Specifies the component's vertical grid origin (row index).	0
grid width	Specifies the component's horizontal grid extend (number of columns).	1
grid height	Specifies the component's vertical grid extend (number of rows).	1
fill	Specifies how the component fills its cell. Possible values: None, Horizontal, Vertical and Both.	None
anchor	Specifies how the component is aligned within its cell. Possible values: Center, North, North East, East, South East, South, South West, West and North West.	Center

Property Name	Description	Default
indent	The indent of the component within its cell. In pixel multiplied by 10.	0
align grid with parent	If true, align the grid of nested containers, which use IntelliJ IDEA GridLayout, with the grid of this container.	false
horizontal size policy	Specifies how the component affects horizontal resizing behavior. Possible values: Fixed, Can Shrink, Can Grow, Want Grow and combinations.	Can Shrink and Can Grow
vertical size policy	Specifies how the component affects vertical resizing behavior. Possible values: Fixed, Can Shrink, Can Grow, Want Grow and combinations.	Can Shrink and Can Grow
minimum size	The minimum size of the component.	-1, -1
preferred size	The preferred size of the component.	-1, -1
maximum size	The maximum size of the component.	-1, -1

8.11 MigLayout

MigLayout is a superbly versatile and powerful layout manager. It is grid-based, but also supports docking and grouping.



Use the column and row [headers](#) to insert or delete columns/rows and change column/row properties.

Compared to other layout managers, MigLayout provides following outstanding features:

- Default alignment of components in a column/row.
- Specification of minimum and maximum column width or row height.
- Supports [different units](#): LogicalPixel, Pixel, Point, Millimeter, Centimeter, Inch, Percent and ScreenPercent. Especially LogicalPixel units are very useful to create layouts that scale with the screen resolution.
- [Gaps](#) between columns, rows and components.
- Flexible [Growing and Shrinking](#).
- [Column/row grouping](#).
- [In-cell Flow](#) allows putting more than one component into a single grid cell.
- [Docking Components](#) to the edges of the container.
- [Button Bars and Button Order](#).
- Override minimum, preferred and maximum [component sizes](#).
- [Visual Bounds](#) improves/fixes layout (especially on macOS).
- [Baseline](#) support.

MigLayout is open source and **not** part of the standard Java distribution. You must ship two additional libraries with your application. JFormDesigner includes `miglayout-swing.jar` and `miglayout-core.jar` in its [redistributables](#). For more documentation and tutorials, visit miglayout.com or github.com/mikaelgrev/miglayout.

Maven Central Repository: `groupId: com.miglayout artifactId: miglayout-swing version: 11.2`

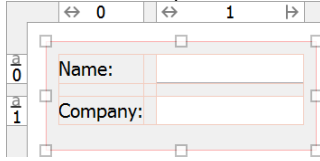
The API documentation is available here: doc.formdev.com/miglayout-swing/ and doc.formdev.com/miglayout-core/.

IDE plug-ins: If you use MigLayout the first time, the JFormDesigner IDE plug-in ask you whether it should copy the required libraries (and its source code and documentation) to the IDE project and add it to the classpath of the IDE project.

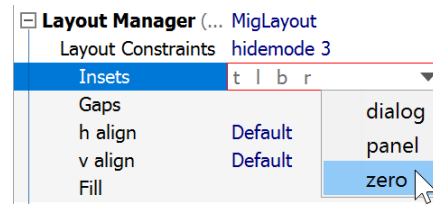
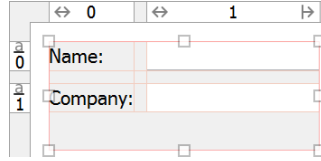
Insets

By default, all MigLayout containers have insets around the grid. This is similar to setting an `EmptyBorder` on the container. You can change the insets in the [Layout manager properties](#).

Default insets (panel):



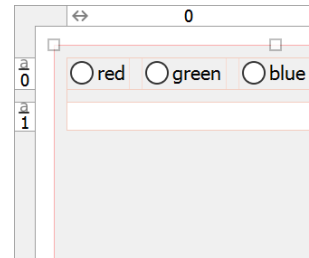
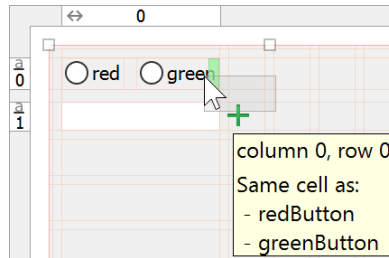
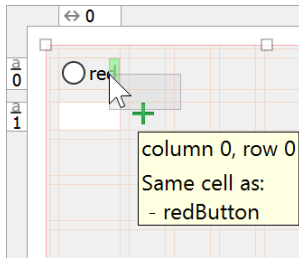
Zero insets:



If you prefer zero insets by default, you can change the default layout constraints in the [MigLayout preferences](#).

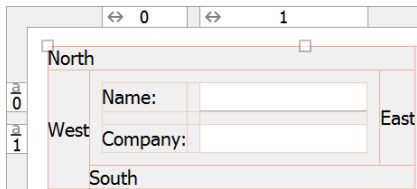
In-cell Flow

MigLayout allows you to place more than one component into a single grid cell. This is very useful for radio [button groups](#) and avoids nested containers.

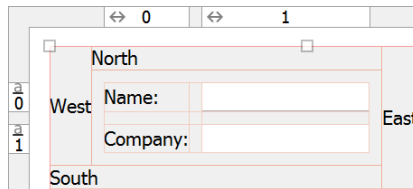


Docking Components

MigLayout supports docking components to its edges (similar to `BorderLayout`). You can dock more than one component to one edge. The center is laid out with a grid.



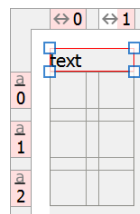
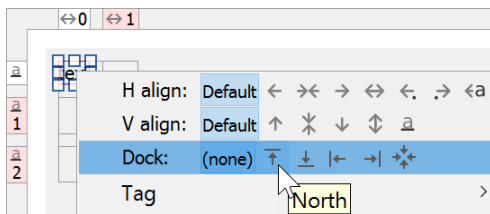
Order: north, west, south, east



Order: east, south, west, north

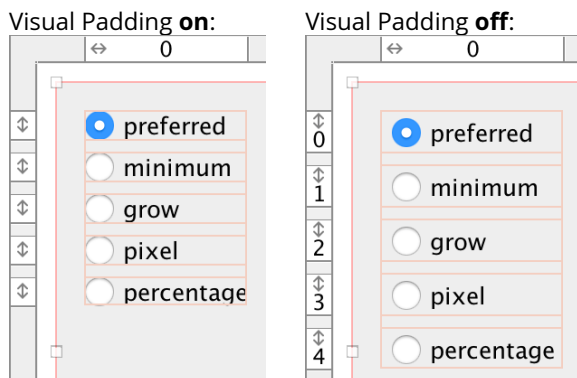
The docked components are laid out based on the component order. Earlier components get more space as you can see in the above screenshots. Use drag and drop in the [Structure](#) view to change order of docked components.

To dock a component, first place it somewhere in the grid, then right-click on the component and select one of the **Dock** items from the context menu.



Visual Bounds

Some component bounds are larger than their visual bounds (especially on macOS), which gives too large gaps on macOS but optimal gaps on other platforms. MigLayout solves this by considering visual padding when computing component sizes.



Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	White Paper	Default
Layout Constraints	Comma separated list of layout constraints. This is a string representation of the options below.	Layout Constraints	
Insets	Specifies the insets for the container. Use this instead of an EmptyBorder .	insets	panel
Gaps	Specifies the default gaps between the columns/rows.	gap	related
h align	The horizontal alignment of the layout within its container. Possible values: Default, Left, Center, Right, Leading and Trailing.	alignx	Default
v align	The vertical alignment of the layout within its container. Possible values: Default, Top, Center and Bottom.	aligny	Default
Fill	Specifies whether columns and/or rows should claim all available space in the container. Possible values: (none), X, Y and Both.	fill	(none)
Hide Mode	Specifies how the layout manager handles invisible components.	hidemode	0
Flow Y	If true, multiple components in a single cell are lay out vertically.	flowy	false
right-to-left	If true, the columns are added from right-to-left.	righttoleft	false
bottom-to-top	If true, the rows are added from bottom-to-top.	bottomtotop	false
Visual Padding	If true, padding of visual bounds is considered when computing component sizes.	novisualpadding	true
Column Constraints	Constraints of all columns of the container. This property is for experts only. Use the column header instead of editing this property.	Column Constraints	
Row Constraints	Constraints of all rows of the container. This property is for experts only. Use the row header instead of editing this property.	Row Constraints	

Column/row properties

Each column and row has its own properties. Use the column and row [headers](#) to change column/row properties.

Column Properties

Column: ← →

Constraints

Column:

Gap before: Gap after:

Default alignment

☐ left ☐ center ☐ right ☒ fill

☐ leading ☐ trailing ☐ label

☐ unit value: (e.g. 20% or 50px)

Size

Preferred:

Minimum: Maximum:

Resize behavior

☐ grow Priority:

☒ shrink Priority:

Grouping

Group ID: (empty = no grouping)

?

Field	Description	White Paper
Column /Row	The index of the column/row. Use the arrow buttons (or Alt+Left , Alt+Right , Alt+Up , Alt+Down keys) to edit the properties of the previous or next column /row.	
Constraints	The column/row constraints. This is a string representation of the options below.	Column /Row Constraints
Gap before /after	The gaps before and after the column/row.	BoundSize
Default alignment	The default alignment of the components within a column/row. Used if the value of the component constraint properties "h align" or "v align" are set to Default.	align , fill
Size	The width of a column or height of a row. You can specify preferred, minimum and a maximum sizes.	UnitValue , BoundSize
Resize behavior	The grow/shrink weight and priority of the column/row.	grow , growprio , shrink , shrinkprio
Grouping	See column/row grouping for details.	sizegroup

Tip: The column/row context menu allows you to alter many of these options for multi-selections.

Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

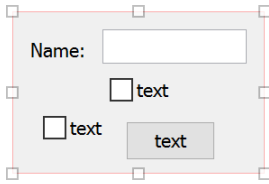
Property Name	Description	White Paper	Default
Layout Constraints	Comma separated component constraints.	Component Constraints	
Grid Bounds	The computed grid cell bounds (read-only).		
Cell	The component's grid cell origin (column and row indices).	cell	0,0
Span	The component's grid cell extend (number of columns and rows).	span	1,1
h align	The horizontal alignment of the component within its cell. Possible values: Default, Left, Center, Right, Fill, Leading, Trailing and Label.	alignx	Default
v align	The vertical alignment of the component within its cell. Possible values: Default, Top, Center, Bottom, Fill and Baseline.	aligny	Default
Width	Overrides the component's minimum, preferred and maximum widths.	width , wmin , wmax	
Height	Overrides the component's minimum, preferred and maximum heights.	height , hmin , hmax	
Gaps	The gaps between the component and the cell edges. Increases cell size.	gap	0,0,0,0
Padding	The padding between the component and the cell edges. Does not increase cell size.	pad	0,0,0,0

Property Name	Description	White Paper	Default
Dock	Dock the component at an edge or the center of the container. Possible values: (none), North, South, West, East and Center.	dock	(none)
Tag	Tag used for platform dependent button ordering. Possible values: (none), ok, cancel, help, help2, yes, no, apply, next, back, finish, left, right and other.	tag	(none)

Tip: The component context menu allows you to alter some constraints for multi-selections.

8.12 null Layout

null layout is not a real layout manager. It means that no layout manager is assigned and the components can be put at specific x,y coordinates.



It is useful for making quick prototypes. But it is not recommended for production because it is not portable. The fixed locations and sizes do not change with the environment (e.g. different fonts on various platforms).

Preferred sizes

JFormDesigner supports preferred sizes of child components. This solves one common problem of null layout: the component sizes change with the environment (e.g. different fonts on various platforms). Unlike other GUI designers, no additional library is required.

Grid

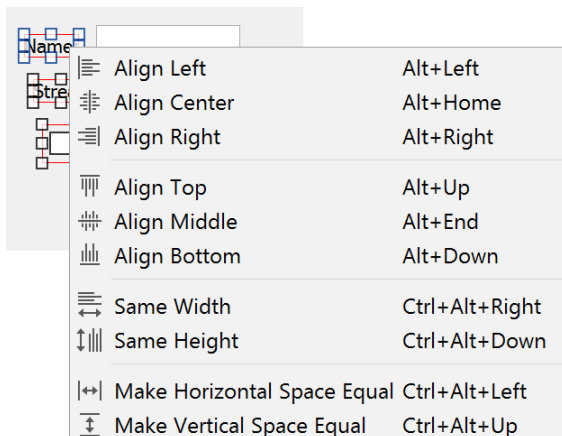
To make it easier to align components, the component edges snap to an invisible grid when moving or resizing components. You can specify the grid step size in the [Preferences](#) dialog. To temporary disable grid snapping, hold down the [Shift](#) key while moving or resizing components.

Keyboard

You can move selected components with [Ctrl+ArrowKey](#) and change size with [Shift+ArrowKey](#).








Aligning components

The align commands help you to align a set of components or make them same width or height.



The dark blue handles in the above screenshot indicate the first selected component.

Command	Description
Align Left	Line up the left edges of the selected components with the left edge of the first selected component.
Align Center	Horizontally line up the centers of the selected components with the center of the first selected component.
Align Right	Line up the right edges of the selected components with the right edge of the first selected component.

Command	Description
 Align Top	Line up the top edges of the selected components with the top edge of the first selected component.
 Align Middle	Vertically line up the centers of the selected components with the center of the first selected component.
 Align Bottom	Line up the bottom edges of the selected components with the bottom edge of the first selected component.
 Same Width	Make the selected components all the same width as the first selected component.
 Same Height	Make the selected components all the same height as the first selected component.
 Make Horizontal Space Equal	Makes the horizontal space between 3 or more selected components equal. The leftmost and rightmost components stay unchanged. The other components are horizontally distributed between the leftmost and rightmost components.
 Make Vertical Space Equal	Makes the vertical space between 3 or more selected components equal. The topmost and bottommost components stay unchanged. The other components are vertically distributed between the topmost and bottommost components.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
auto-size	If true, computes the size of the container so that all children are entire visible. If false, the size of the container in the Design view is used.	true

Layout constraints properties

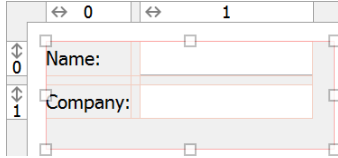
A component contained in a container with this layout manager has following [layout constraints properties](#):

Property Name	Description	Default
x	The x coordinate of the component relative to the left corner of the container.	0
y	The y coordinate of the component relative to the upper corner of the container.	0
width	The width of the component in pixel or Preferred. If set to Preferred, the component's preferred width is used.	Preferred
height	The height of the component in pixel or Preferred. If set to Preferred, the component's preferred width is used.	Preferred

8.13 TableLayout

The table layout manager places components in a grid of columns and rows, allowing specified components to span multiple columns or rows. Not all columns/rows necessarily have the same width/height.

A column/row can be given an absolute size in pixels, a percentage of the available space, or it can grow and shrink to fill the remaining space after other columns/rows have been resized.



Use the column and row [headers](#) to insert or delete columns/rows and change column/row properties.

TableLayout is open source and **not** part of the standard Java distribution. You must ship an additional library with your application. JFormDesigner includes `TableLayout.jar` in its [redistributables](#). For more documentation and tutorials, visit www.clearthought.info/sun/products/jfc/tsc/articles/tablelayout/.

Maven Central Repository: *groupId:* `tablelayout` *artifactId:* `TableLayout` *version:* `20050920`

API documentation: doc.formdev.com/tablelayout/

Source code: github.com/JFormDesigner/swing-tablelayout

IDE plug-ins: If you use TableLayout the first time, the JFormDesigner IDE plug-in ask you whether it should copy the required library (and its source code and documentation) to the IDE project and add it to the classpath of the IDE project.

Extensions

JFormDesigner extends the original TableLayout with following features:

- **Default component alignment**

Allows you to specify a default alignment for components within columns/rows. This is very useful for columns with right aligned labels because you specify the alignment only once for the column and all added labels will automatically aligned to the right.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
horizontal gap	The horizontal gap between components.	5
vertical gap	The vertical gap between components.	5

Column/row properties

Each column and row has its own properties. Use the column and row [headers](#) to change column/row properties.

Field	Description
Column /Row	The index of the column/row. Use the arrow buttons (or Alt+Left , Alt+Right , Alt+Up , Alt+Down keys) to edit the properties of the previous or next column/row.
Default alignment	The default alignment of the components within a column /row. Used if the value of the constraints properties "h align" or "v align" is DEFAULT.
Size	Specifies how TableLayout computes the width/height of a column/row.

Tip: The column/row context menu allows you to alter many of these options for multi-selections.

Layout constraints properties

A component contained in a container with this layout manager has following [layout constraints properties](#):

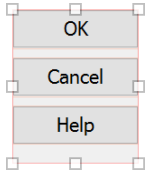
Property Name	Description	Default
grid x	Specifies the component's horizontal grid origin (column index).	0
grid y	Specifies the component's vertical grid origin (row index).	0
grid width	Specifies the component's horizontal grid extend (number of columns).	1
grid height	Specifies the component's vertical grid extend (number of rows).	1
h align	The horizontal alignment of the component within its cell. Possible values: DEFAULT, LEFT, CENTER, RIGHT and FILL.	DEFAULT
v align	The vertical alignment of the component within its cell. Possible values: DEFAULT, TOP, CENTER, BOTTOM and FILL.	DEFAULT

In contrast to the TableLayoutConstraints API, which uses [column1,row1,column2,row2] to specify the location and size of a component, JFormDesigner uses the usual [x,y,width,height] notation.

Tip: The component context menu allows you to alter the alignment for multi-selections.

8.14 VerticalLayout (SwingX)

The vertical layout manager places components vertically. The components are stretched horizontally to the width of the container.



Because the **SwingX project seems to be discontinued**, it is not recommended to use this layout manager.

VerticalLayout is part of the SwingX open source project and **not** part of the standard Java distribution. You must ship an additional library with your application. The JFormDesigner distribution does not include the SwingX library.

Layout manager properties

A container with this layout manager has following [layout manager properties](#):

Property Name	Description	Default
gap	The vertical gap between components.	0

9 Java Code Generator

JFormDesigner can generate and update Java source code. It uses the same name for the Java file as for the Form file. E.g.:

`C:\MyProject\src\com\myproject\WelcomeDialog.jfd` (form file)

`C:\MyProject\src\com\myproject\WelcomeDialog.java` (java file)

Stand-alone: Before creating new forms, you should specify the locations of your Java [source folders](#) in the [Project dialog](#). Then JFormDesigner can generate valid [package](#) statements. For the above example, you should add `C:\MyProject\src`.

IDE plug-ins: The source folders of the IDE projects are used.

If the Java file does not exist, JFormDesigner generates a new one. Otherwise, it parses the existing Java file and inserts/updates the code for the form and adds import statements if necessary.

Stand-alone: The Java file will be updated when saving the form file.

IDE plug-ins: If the Java file is opened in the IDE editor, it will be immediately updated in-memory on each change in JFormDesigner. Otherwise, it will be updated when saving the form file.

JFormDesigner uses special comments to identify the code sections that it will generate/update. E.g.:

```
// JFormDesigner - ... //GEN-BEGIN:initComponents
// JFormDesigner - ... //GEN-END:initComponents
```

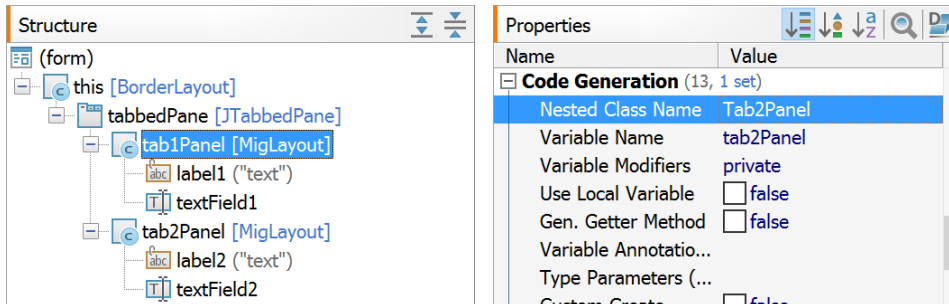
The starting comment must contain `GEN-BEGIN:<keyword>`, the ending comment `GEN-END:<keyword>`. These comments are NetBeans compatible. The text before `GEN-BEGIN` and `GEN-END` (in the same line) does not matter. JFormDesigner uses the following keywords:


Keyword name	Description
initComponents	Used for code that instantiates and initializes the components of the form.
variables	Used for code that declares the class level variables for components.
initI18n	Used for code that initializes localized component properties if option "Generate initComponentsI18n() method" is enabled in the Localization (Java Code Generator) preferences or "(form)" properties.
initBindings	Used for code that initializes bindings if option "Generate initComponentsBindings() method" is enabled in the Localization (Java Code Generator) preferences or "(form)" properties.

9.1 Nested Classes

One of the advanced features of JFormDesigner is the generation of nested classes. Normally, all code for a form is generated into one class. If you have forms with many components, e.g. a `JTabbedPane` with some tabs, it is not recommended having only one class. If you hand-code such a form, you would create a class for each tab.

In JFormDesigner you can specify a nested class for each component. You do this in the [Code Generation](#) category in the [Properties](#) view. JFormDesigner automatically generates/updates the specified nested classes. This allows you to program more object-oriented and makes your code easier to read and maintain.



Components having a nested class are marked with a  overlay symbol in the [Structure](#) view.

Example source code:

```
public class NestedClassDemo
    extends JPanel
{
    public NestedClassDemo() {
        initComponents();
    }

    private void initComponents() {
        // JFormDesigner - Component initialization - DO NOT MODIFY //GEN-BEGIN:initComponents
        tabbedPane = new JTabbedPane();
        tab1Panel = new Tab1Panel();
        tab2Panel = new Tab2Panel();

        //===== this =====
        setLayout(new BorderLayout());

        //===== tabbedPane =====
        {
            tabbedPane.addTab("tab 1", tab1Panel);
            tabbedPane.addTab("tab 2", tab2Panel);
        }
        add(tabbedPane, BorderLayout.CENTER);
        // JFormDesigner - End of component initialization //GEN-END:initComponents
    }

    // JFormDesigner - Variables declaration - DO NOT MODIFY //GEN-BEGIN:variables
    private JTabbedPane tabbedPane;
    private Tab1Panel tab1Panel;
    private Tab2Panel tab2Panel;
    // JFormDesigner - End of variables declaration //GEN-END:variables

    //---- nested class Tab1Panel -----

    private class Tab1Panel
        extends JPanel
    {
        private Tab1Panel() {
            initComponents();
        }

        private void initComponents() {
            // JFormDesigner - Component initialization - DO NOT MODIFY //GEN-BEGIN:initComponents
            label2 = new JLabel();
            textField1 = new JTextField();
            CellConstraints cc = new CellConstraints();

            //===== this =====
            setBorder(Borders.TABBED_DIALOG);
            setLayout(new FormLayout( ... ));
        }
    }
}
```



```

        //---- label2 ----
        label2.setText("text");
        add(label2, cc.xy(1, 1));

        //---- textField1 ----
        add(textField1, cc.xy(3, 1));
        // JFormDesigner - End of component initialization //GEN-END: initComponents
    }

    // JFormDesigner - Variables declaration - DO NOT MODIFY //GEN-BEGIN: variables
    private JLabel label2;
    private JTextField textField1;
    // JFormDesigner - End of variables declaration //GEN-END: variables
}

//---- nested class Tab2Panel -----
private class Tab2Panel
    extends JPanel
{
    private Tab2Panel() {
        initComponents();
    }

    private void initComponents() {
        // JFormDesigner - Component initialization - DO NOT MODIFY //GEN-BEGIN: initComponents
        label3 = new JLabel();
        checkBox1 = new JCheckBox();
        CellConstraints cc = new CellConstraints();

        //===== this =====
        setBorder(Borders.TABBED_DIALOG);
        setLayout(new FormLayout( ... ));

        //---- label3 ----
        label3.setText("text");
        add(label3, cc.xy(1, 1));

        //---- checkBox1 ----
        checkBox1.setText("text");
        add(checkBox1, cc.xy(3, 1));
        // JFormDesigner - End of component initialization //GEN-END: initComponents
    }

    // JFormDesigner - Variables declaration - DO NOT MODIFY //GEN-BEGIN: variables
    private JLabel label3;
    private JCheckBox checkBox1;
    // JFormDesigner - End of variables declaration //GEN-END: variables
}
}

```

When changing the nested class name in the [Code Generation](#) category, JFormDesigner also renames the nested class in the Java source code. When removing the nested class name, then JFormDesigner does not remove the nested class in the Java source code to avoid loss of own source code.

9.2 Code Templates

When generating new Java files or classes, JFormDesigner uses the templates specified in the [Preferences](#) dialog.

Template name	Description
File header	Used when creating new Java files. Contains a header comment and a <code>package</code> statement.
Class	Used when generating a new (nested) class. Contains a class declaration, a constructor, a component initialization method and variable declarations.
Empty Class	Used when generating a new empty class. This can happen, if all form components are contained in nested classes.
Event Handler Body	Used for event handler method bodies.
Component Initialization	Replaces the variable <code>\${component_initialization}</code> used in other templates. Contains a method named <code>initComponents</code> . Invoke this method from your code to instantiate the components of your form. Feel free to change the method name if you don't like it.
Component Initialization	Used for code that initializes localized component properties if option "Generate initComponents() method" is enabled in the Localization (Java Code Generator) preferences or "(form)" properties .
Component Binding Initialization	Used for code that initializes bindings if option "Generate initComponents() method" is enabled in the Localization (Java Code Generator) preferences or "(form)" properties .
Variables Declaration	Replaces the variable <code>\${variables_declaration}</code> used in other templates.
java.awt.Dialog	Used for classes derived from <code>java.awt.Dialog</code> . Compared to the "Class" template, this has special constructors, which are necessary for <code>java.awt.Dialog</code> derived classes.
java.awt.Frame	Used for classes derived from <code>java.awt.Frame</code> . Equal to the "Class" template, but necessary because <code>java.awt.Frame</code> extends <code>java.awt.Window</code> , which has its own template and a constructor that is not compatible with <code>java.awt.Frame</code> .
java.awt.Window	Used for classes derived from <code>java.awt.Window</code> . Compared to the "Class" template, this has a special constructor, which are necessary for <code>java.awt.Window</code> derived classes.
javax.swing. AbstractAction	Used for nested action classes.

You can change the existing templates or create additional templates in the [Preferences](#) dialog. It is possible to define your own templates for specific superclasses.

Following variables can be used in the templates:

Variable name	Description	Context
<code>\${date}</code>	Current date.	global
<code>\${user}</code>	User name.	global
<code>\${package_declaration}</code>	<code>package</code> statement. If the form is not saved under one of the source folders specified in the Project dialog, the variable is empty (no <code>package</code> statement will be generated).	file header
<code>\${class_name}</code>	Name of the (nested) class.	class
<code>\${component_initialization}</code>	See template "Component initialization".	class
<code>\${constructor_modifiers}</code>	Modifiers of the constructor. Based on the class modifiers.	class
<code>\${extends_declaration}</code>	The <code>extends</code> declaration of the class; empty if the class has no superclass.	class
<code>\${modifiers}</code>	Modifiers of the (nested) class. You can specify the default modifiers in the Preferences dialog.	class
<code>\${variables_declaration}</code>	See template "Variables declaration".	class

10 Command Line Tool

The command-line tool allows you to run some commands (e.g. Java code generation) on many forms.

Available commands

- **Java Code Generation:** Usually its not necessary to run the [Java code generator](#) from command-line because the Java code is automatically generated and updated while editing a form in JFormDesigner. However, in rare cases it is useful to re-generate the Java code of JFormDesigner forms. E.g. if you want upgrade to JGoodies [FormLayout](#) 1.2 (or later), which introduced a new much shorter syntax for encoded column and row specifications.
- **Externalize strings:** If you have to [localize](#) many existing non-localized forms, then this command does the job very quickly.
- **Convert layout manager:** Allows you to convert all usages of one layout manager to another one. Useful for migrating forms to a modern powerful layout manager (e.g. [MigLayout](#)).
- **Convert .jfd file format:** Since version 5.1, JFormDesigner supports the compact, easy-to-merge and fast-to-load persistence format JFDML. This command allows you to convert all your .jfd files from XML to JFDML and benefit from the new format.

Requirements

You need an installation of the JFormDesigner **stand-alone edition**. If you usually use one of the IDE plug-ins, then simply download the stand-alone edition and install it.

Preferences

To specify [preferences](#) for the command-line tool, you should create a stand-alone edition [project](#), enable and set project specific settings and pass the project .jfdproj file to the command-line tool.

If you usually use the JFormDesigner stand-alone edition and already have a .jfdproj file, then you can use it for the command-line tool. Otherwise, start the JFormDesigner stand-alone edition and create a new [project](#).

If you don't use a project, then the command-line tool uses the [preferences](#) store of the stand-alone edition. If you use one of the IDE plug-ins of JFormDesigner, you have to start the stand-alone edition and set the necessary preferences. To transfer JFormDesigner preferences from an IDE to the stand-alone edition, you can use the **Import** and **Export** buttons in the Preferences dialogs. Make sure that the [Code Style](#) preferences are correct because they are not transferred from the IDE.

Command Line Syntax

Launch the command-line tool as follows, where [] means optional arguments and arguments in *italics* must be provided by you.

```
java -classpath <jfd-install>/lib/JFormDesigner.jar
    com.jformdesigner.application.CommandLineMain
    [--generate|--i18n-externalize|--convert-layout|--convert-jfd]
    [--dry-run] [--verbose|-v] [--recursive|-r]
    [<command-specific-options>]
    [<project-path>/MyProject.jfdproj]
    <folder> or <path>/MyForm1.jfd
[...]
```

Option	Description
-classpath <jfd-install>/lib/JFormDesigner.jar	Specifies the JAR that contains the command-line tool. This is a standard argument of the Java application launcher .
com.jformdesigner.application.CommandLineMain	The class name of the command-line tool.

Option	Description
<code>--generate</code>	Generate Java code for the given forms or folders.
<code>--i18n-externalize</code>	Externalize strings in the given forms or folders. This requires that you've specified Source Folders in the used project.
<code>--convert-layout</code>	Convert one layout manager to another one.
<code>--convert-jfd</code>	Convert the given .jfd files to another format.
<code>--dry-run</code>	Execute the given command, but do not save modifications. Only shows what would happen. This option enables <code>--verbose</code> .
<code>--verbose</code> or <code>-v</code>	Prints file names of processed .jfd and .java files to the console.
<code>--recursive</code> or <code>-r</code>	Recursively process folders.
<code>--bundle-name=<bundleName></code>	Only used for <code>--i18n-externalize</code> . The resource bundle name used to store strings. You can use variables {package} (package name of form) and {basename} (basename of form). Default is "{package}.Bundle", which creates Bundle.properties in same package as the form. This option is ignored when processing already localized forms.
<code>--key-prefix=<keyPrefix></code>	Only used for <code>--i18n-externalize</code> . The prefix for generated key . You can use variable {basename} (basename of form). Default is "{basename}". This option is ignored when processing already localized forms.
<code>--auto-externalize=<true false></code>	Only used for <code>--i18n-externalize</code> . Set the auto-externalize option in the processed forms. Default is true.
<code>--old-layout=<layoutClassName></code>	Only used for <code>--convert-layout</code> . The full qualified class name of the layout manager that will be converted to another layout manager.
<code>--new-layout=<layoutClassName></code>	Only used for <code>--convert-layout</code> . The full qualified class name of the target layout manager.
<code>--lookandfeel=<lookAndFeelClassName></code>	Only used for <code>--convert-layout</code> . The full qualified class name of a look and feel that will be used for layout manager conversion. This is useful if the old layout manager uses units that depend on the look and feel (e.g. GroupLayout dialog units). Default is the system look and feel.
<code>--format=<JFDML XML></code>	Only used for <code>--convert-jfd</code> . The target format into which the .jfd files will be converted. Default is "JFDML".
<code>--encoding=<encoding></code>	Only used for <code>--convert-jfd</code> . The encoding used to store JFDML content. See java.nio.charset.Charset for supported encodings. Defaults is "UTF-8".
<code>--header-comment=<headerComment></code>	Only used for <code>--convert-jfd</code> . A comment that is stored in the header of the converted .jfd files. May contain "\n", which is converted to real newline character.
<code><project-path>/MyProject.jfdproj</code>	Optional JFormDesigner stand-alone edition project used to extend the classpath and to specify other preferences . Useful when using custom components.
<code><folder></code> or <code><path>/MyForm1.jfd [...]</code>	List of folders or .jfd files. If a folder is specified, all .jfd files in the folder are processed.

The options and parameters are processed in the order they are passed. An option is always used for subsequent parameters, but not for preceding ones. E.g. "`src1 --recursive src2`" processes `src2` recursively, but not `src1`. It is also possible to specify options or projects more than once. E.g. "`project1.jfdproj src1 project2.jfdproj src2`" uses `project1.jfdproj` for `src1` and `project2.jfdproj` for `src2`.

Using custom components

If you're using custom components (JavaBeans) in your forms, it is necessary to tell the command-line tool the classpath of your components, because e.g the code generator needs to load the classes of custom components. There are two options to specify the classpath for your custom components:

- JFormDesigner stand-alone edition [project](#): The JARs and folders specified on the [Classpath](#) page in the project settings are used by the command-line tool. This is the preferred way if you use the stand-alone edition.
- Classpath of [Java application launcher](#): Simply add your JARs to the -classpath option of the Java application launcher. This is the preferred way if you use Ant (see below).

Examples

Generate code for a single form:

```
cd C:\MyProject
java -classpath C:\ProgramFiles\JFormDesigner\lib\JFormDesigner.jar
    com.jformdesigner.application.CommandLineMain
    --generate src/com/myproject/MyForm1.jfd
```

Generate code for all forms in a project that use custom components:

```
cd C:\MyProject
java -classpath C:\ProgramFiles\JFormDesigner\lib\JFormDesigner.jar;classes;swingx.jar
    com.jformdesigner.application.CommandLineMain
    --generate --recursive src
```

Externalize strings in all forms of the *src* folder and use one bundle file per form and no key prefix:

```
cd C:\MyProject
java -classpath C:\ProgramFiles\JFormDesigner\lib\JFormDesigner.jar
    com.jformdesigner.application.CommandLineMain
    --i18n-externalize --recursive
    --bundle-name={package}.{basename} --key-prefix=
    MyProject.jfdproj src
```

Convert all usages for *FormLayout* to *MigLayout* in all forms of the *src* folder:

```
cd C:\MyProject
java -classpath C:\ProgramFiles\JFormDesigner\lib\JFormDesigner.jar
    com.jformdesigner.application.CommandLineMain
    --convert-layout
    --old-layout=com.jgoodies.forms.layout.FormLayout
    --new-layout=net.miginfocom.swing.MigLayout
    --lookandfeel=com.sun.java.swing.plaf.windows.WindowsLookAndFeel
    --recursive
    MyProject.jfdproj src
```


Ant

Although we don't provide a special task for [Ant](#), it is easy to invoke the JFormDesigner command-line tool from an Ant script. The `<classpath>` element makes it easy to specify JARs and folders of custom components.

```
<property name="jfd-install-dir" value="C:/Program Files/JFormDesigner"/>

<java classname="com.jformdesigner.application.CommandLineMain"
      fork="true" failonerror="true" logError="true">
  <classpath>
    <pathelement location="${jfd-install-dir}/lib/JFormDesigner.jar"/>
    <pathelement location="myLibrary.jar"/>
  </classpath>
  <arg value="--generate"/>
  <arg value="--recursive"/>
  <arg value="src"/>
</java>
```


11 Runtime Library

Note: If you use the Java code generator, you don't need this library.

The open-source (BSD license) runtime library allows you to load JFormDesigner .jfd files at runtime within your applications. Turn off the Java code generation in the [Preferences](#) dialog or in the [Project](#) settings if you use this library.

You'll find the library `jfd-loader.jar` in the [redistributables](#) of the JFormDesigner installation; the source code is in `jfd-loader-src.zip` and the documentation is in `jfd-loader-javadoc.zip`.

The API documentation is also available here: doc.formdev.com/jfd-loader/.

Classes

- **FormLoader** provides methods to load JFormDesigner .jfd files into in-memory form models.
- **FormCreator** creates instances of Swing components from in-memory form models and provides methods to access components.
- **FormSaver** saves in-memory form models to JFormDesigner .jfd files. Can be used to convert proprietary form specifications to JFormDesigner .jfd files: first create an in-memory form model from your form specification, then save the model to a .jfd file.

Example

The following example demonstrates the usage of FormLoader and FormCreator. It is included in the [examples](#) distributed with all JFormDesigner editions.

```
public class LoaderExample
{
    private JDialog dialog;

    public static void main(String[] args) {
        new LoaderExample();
    }

    LoaderExample() {
        try {
            // load the .jfd file into memory
            FormModel formModel = FormLoader.load(
                "com/jformdesigner/examples/LoaderExample.jfd");

            // create a dialog
            FormCreator formCreator = new FormCreator(formModel);
            formCreator.setTarget(this);
            dialog = formCreator.createDialog(null);

            // get references to components
            JTextField nameField = formCreator.getTextField("nameField");
            JCheckBox checkBox = formCreator.getCheckBox("checkBox");

            // set values
            nameField.setText("enter name here");
            checkBox.setSelected(true);

            // show dialog
            dialog.setModal(true);
            dialog.pack();
            dialog.show();

            System.out.println(nameField.getText());
            System.out.println(checkBox.isSelected());
            System.exit(0);
        } catch (Exception ex) {
            ex.printStackTrace();
        }
    }
}
```



```
// event handler for checkBox
private void checkBoxActionPerformed(ActionEvent e) {
    JOptionPane.showMessageDialog(dialog, "check box clicked");
}

// event handler for okButton
private void okButtonActionPerformed() {
    dialog.dispose();
}
}
```


12 JavaBeans

What is a Java Bean?

A Java Bean is a reusable software component that can be manipulated visually in a builder tool.

JavaBean (components) are self-contained, reusable software units that can be visually composed into composite components and applications. A bean is a Java class that:

- is public and not abstract
- has a public "null" constructor (without parameters)
- has properties defined by public getter and setter methods.

JFormDesigner supports:

- Visual beans (must inherit from `java.awt.Component`).
- Non-visual beans.

BeanInfo

JFormDesigner supports/uses following classes/interfaces specified in the `java.beans` package:

- `BeanInfo`
- `BeanDescriptor`
- `EventSetDescriptor`
- `PropertyDescriptor`
- `PropertyEditor` (incl. support for custom and paintable editors)
- `Customizer`

If you are writing BeanInfo classes for your custom components, you can specify additional information needed by JFormDesigner using the `java.beans.FeatureDescriptor` extension mechanism.

You can also use [BeanInfo Annotations](#) to specify these attributes without the pain of implementing BeanInfo classes.

For examples using BeanInfo Annotations, example implementations of BeanInfo classes and PropertyEditors, take a look at the [examples](#).

BeanDescriptor Attributes

Following attributes are supported in `BeanDescriptor`:

Attribute Name	Description
isContainer	Specifies whether a component is a container or not. A container can have child components. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>beanDesc.setValue("isContainer", Boolean.TRUE);</pre>
containerDelegate	If components should be added to a descendant of a container, then it is possible to specify a method that returns the container for the children. <code>JFrame.getContentPane()</code> is an example for such a method. The value must be a <code>String</code> and specifies the name of a method that takes no arguments and returns a <code>java.awt.Container</code> . E.g. <pre>beanDesc.setValue("containerDelegate", "getContentPane");</pre>
layoutManager	

Attribute Name	Description
	<p>Allows the specification of a layout manager, which is used when adding the component to a form. If specified, then JFormDesigner does not allow the selection of a layout manager. The value must be a Class. E.g.</p> <pre>beanDesc.setValue("layoutManager", BorderLayout.class);</pre>
persistenceDelegate	<p>Specifies an instance of a class, which extends java.beans.PersistenceDelegate, that can be used to persist an instance of the bean. E.g.</p> <pre>beanDesc.setValue("persistenceDelegate", new MyBeanPersistenceDelegate());</pre>

PropertyDescriptor Attributes

Following attributes are supported in **PropertyDescriptor**:

Attribute Name	Description
category	<p>Specifies the property category to which the property belongs. JFormDesigner adds the specified category to the Properties view. The value must be a String.</p> <pre>propDesc.setValue("category", "My Properties");</pre>
enumerationValues	<p>Specifies a list of valid property values. The value must be an Object[]. For each property value, the Object[] must contain three items:</p> <ul style="list-style-type: none"> • Name: A displayable name for the property value. • Value: The actual property value. • Java Initialization String: A Java code piece used when generating code. <pre>propDesc.setValue("enumerationValues", new Object[] { "horizontal", JSlider.HORIZONTAL, "JSlider.HORIZONTAL", "vertical", JSlider.VERTICAL, "JSlider.VERTICAL", });</pre>
extraPersistenceDelegates	<p>Specifies a list of persistence delegates for classes. The value must be an Object[]. For each class, the Object[] must contain two items:</p> <ul style="list-style-type: none"> • Class: The class for which the persistence delegate should be used. • Persistence delegate: Instance of a class, which extends java.beans.PersistenceDelegate, that should be used to persist an instance of the specified class. <p>Use the attribute "persistenceDelegate" (see below) to specify a persistence delegate for the property value. Use this attribute to specify persistence delegates for classes that are referenced by the property value. E.g. if a property value references classes MyClass1 and MyClass2:</p> <pre>propDesc.setValue("extraPersistenceDelegates", new Object[] { MyClass1.class, new MyClass1PersistenceDelegate(), MyClass2.class, new MyClass2PersistenceDelegate(), });</pre>
imports	<p>Specifies one or more class names for which import statements should be generated by the Java code generator. This is useful if you don't use full qualified class names in enumerationValues or PropertyEditor.getJavaInitializationString(). The value must be a String or String[]. E.g.</p> <pre>propDesc.setValue("imports", "com.mycompany.MyConstants"); propDesc.setValue("imports", new String[] { "com.mycompany.MyConstants", "com.mycompany.MyExtendedConstants", });</pre>
notMultiSelection	<p>Specifies whether the property is not shown in the Properties view when multiple components are selected. The value must be a Boolean. Default is false. E.g.</p> <pre>propDesc.setValue("notMultiSelection", Boolean.TRUE);</pre>
notNull	

Attribute Name	Description
	Specifies that a property can not set to <code>null</code> in the Properties view. If true, the Set Value to null command is disabled. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>propDesc.setValue("notNull", Boolean.TRUE);</pre>
notRestoreDefault	Specifies that a property value can not restored to the default in the Properties view. If true, the Restore Default Value command is disabled. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>propDesc.setValue("notRestoreDefault", Boolean.TRUE);</pre>
persistenceDelegate	Specifies an instance of a class, which extends <code>java.beans.PersistenceDelegate</code> , that can be used to persist an instance of a property value. E.g. <pre>propDesc.setValue("persistenceDelegate", new MyPropPersistenceDelegate());</pre>
preferredBinding	Specifies that a property is a preferred binding property. If true, the property is added to the Bind submenu (right-click on component) and highlighted in bold in the Binding dialog. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>propDesc.setValue("preferredBinding", Boolean.TRUE);</pre>
readOnly	Specifies that a property is read-only in the Properties view. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>propDesc.setValue("readOnly", Boolean.TRUE);</pre>
transient	Specifies that the property value should not persisted and no code should generated. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>propDesc.setValue("transient", Boolean.TRUE);</pre>
variableDefault	Specifies whether the default property value depends on other property values. The value must be a <code>Boolean</code> . Default is false. E.g. <pre>propDesc.setValue("variableDefault", Boolean.TRUE);</pre>

Design time

JavaBeans support the concept of "design"-mode, when JavaBeans are used in a GUI design tool, and "run"-mode, when JavaBeans are used in an application.

You can use the method `java.beans.Beans.isDesignTime()` in your JavaBean to determine whether it is running in JFormDesigner or in your application.

Reload beans

JFormDesigner automatically reloads classes of custom JavaBeans when changed. So you can change the source code of used custom JavaBeans, compile them in your IDE and use them in JFormDesigner immediately without restarting.

You can also manually reload classes:

- **Stand-alone:** Select **View > Refresh Designer** from the menu or press **F5**.
- **IDE plug-ins:** Click the **Refresh Designer** button (🔄) in the designer tool bar.

Refresh does following:

1. Create a new class loader for loading JavaBeans, BeanInfos and Icons.
2. Recreates the form in the active **Design** view.

Unsupported standard components

- all AWT components

13 Annotations

The `@BeanInfo` and `@PropertyDesc` annotations make it very easy to specifying BeanInfo information directly in the custom component. It is no longer necessary to implement extra BeanInfo classes. This drastically reduces time and code needed to create BeanInfo information.

When using the JFormDesigner annotations, you have to add the library `jfd-annotations.jar` (from [redistributables](#)) to the build path of your project (necessary for the Java compiler). The documentation is in `jfd-annotations-javadoc.zip`. It is **not** necessary to distribute `jfd-annotations.jar` with your application.

The API documentation is also available here: doc.formdev.com/jfd-annotations/

@BeanInfo

This annotation can be used to specify additional information for constructing a `BeanInfo` class and its `BeanDescriptor`.

Example for specifying a description, an icon, property display names and flags, and property categories:

```
@BeanInfo(
    description="My Bean",
    icon="MyBean.gif",
    properties={
        @PropertyDesc(name="magnitude", displayName="magnitude (in %)", preferred=true)
        @PropertyDesc(name="enabled", expert=true)
    },
    categories={
        @Category(name="Sizes", properties={"preferredSize", "minimumSize", "maximumSize"}),
        @Category(name="Colors", properties={"background", "foreground"}),
    }
)
public class MyBean extends JComponent { ... }
```

Example for a container component that has a content pane:

```
@BeanInfo(isContainer=true, containerDelegate="getContentPane")
public class MyPanel extends JPanel { ... }
```

@PropertyDesc

This annotation can be used to specify additional information for constructing a `PropertyDescriptor`.

This annotation may be used in a `@BeanInfo` annotation (see `@BeanInfo.properties()`) or may be attached to property getter or setter methods. If the getter method of a property is annotated, then the setter method of the same property is not checked for this annotation.

Important: This annotation requires that the `@BeanInfo` annotation is specified for the bean class. Otherwise, this annotation is ignored when specified at methods.

Example for attaching this annotation to a property getter method:

```
@PropertyDesc(displayName="magnitude (in %)", preferred=true)
public int getMagnitude() {
    return magnitude;
}
```


Example for specifying this annotation in a `@BeanInfo` annotation:

```
@BeanInfo(
    properties={
        @PropertyDesc(name="magnitude", displayName="magnitude (in %)", preferred=true)
    }
)
public class MyBean extends JComponent { ... }
```

@DesignCreate

This annotation can be used to mark a static method that should be invoked by JFormDesigner to create instances of the bean, which are then used in the JFormDesigner [Design](#) view. The annotated method must be static, must not have parameters and must return the instance of created bean.

Example for using this annotation to initialize the bean with test data for the Design view:

```
public class MyBean extends JComponent {
    @DesignCreate
    private static MyBean designCreate() {
        MyBean myBean = new MyBean();
        myBean.setData( new SomeDummyDataForDesigning() );
        return myBean;
    }
    public MyBean() {
        // ...
    }
}
```


14 JGoodies Forms

JFormDesigner supports and uses software provided by [JGoodies](#) Karsten Lentzsch.

The **JGoodies Forms** framework support is very extensive. Not only the layout manager [FormLayout](#) is supported, also some important helper classes are supported: [Borders](#), [ComponentFactory](#) and [FormSpecs](#) (was [FormFactory](#)).

JGoodies Forms ComponentFactory

The JGoodies Forms ComponentFactory (com.jgoodies.forms.factories) defines three factory methods, which create components. You find these components in the palette category JGoodies.

- **Label**: A label with an optional mnemonic. The mnemonic and mnemonic index are defined by a single ampersand (&). For example "&Save" or "Save &As". To use the ampersand itself duplicate it, for example "Look&&Feel".
- **Title**: A label that uses the foreground color and font of a [TitledBorder](#) with an optional mnemonic. The mnemonic and mnemonic index are defined by a single ampersand (&).
- **Titled Separator**: A labeled separator. Useful to separate paragraphs in a panel, which is often a better choice than a [TitledBorder](#).

text

15 Examples & Redistributables

A JFormDesigner installation includes example source code and redistributable files. Because JFormDesigner is available in several editions and each IDE plug-in has its own requirements regarding plug-in directory structure and installation location, the installation location of the examples and redistributables depends on the JFormDesigner edition. The tables below list the locations for each JFormDesigner edition.

Examples

The `examples.zip` archive contains example source code and forms. See included `README.html` for details.

Edition	Location
Stand-alone	<code><jformdesigner-install>/examples.zip</code> <i>macOS:</i> <code><JFormDesigner.app>/examples.zip</code> (right-click on JFormDesigner application and select "Show Package Contents" from the context menu to see contents of <code><JFormDesigner.app></code>)
Eclipse plug-in	<code><eclipse-install>/features/com.jformdesigner_x.x.x/examples.zip</code> or <code><eclipse-install>/dropins/JFormDesigner-x.x-eclipse/features/ com.jformdesigner_x.x.x/examples.zip</code>
IntelliJ IDEA plug-in	<code><user-home>/ .IdeaIC<version>/config/plugins/JFormDesigner/examples.zip</code> or <code><intellij-idea-install>/plugins/JFormDesigner/examples.zip</code> <i>macOS:</i> <code><user-home>/Library/Application Support/IdeaIC<version>/JFormDesigner/examples.zip</code>
NetBeans plug-in	<code><netbeans-install>/jformdesigner/examples.zip</code> <i>macOS:</i> <code><NetBeans.app>/Contents/Resources/NetBeans/jformdesigner/examples.zip</code> (right-click on NetBeans application and select "Show Package Contents" from the context menu to see contents of <code><NetBeans.app></code>)

Redistributables

The `redist` folder contains the JFormDesigner [Annotations Library](#), the JFormDesigner [Runtime Library](#) and 3rd party open source files (layout manager, beans binding, etc). See [redist/README.html](#) for information about licenses.

Edition	Location
Stand-alone	<code><jformdesigner-install>/redist/</code> <i>macOS:</i> <code><JFormDesigner.app>/redist/</code> (right-click on JFormDesigner application and select "Show Package Contents" from the context menu to see contents of <code><JFormDesigner.app></code>)
Eclipse plug-in	<code><eclipse-install>/plugins/com.jformdesigner.redist_x.x.x/</code> or <code><eclipse-install>/dropins/JFormDesigner-x.x-eclipse/plugins/ com.jformdesigner.redist_x.x.x/</code>
IntelliJ IDEA plug-in	<code><user-home>/ .IdeaIC<version>/config/plugins/JFormDesigner/redist/</code> or <code><intellij-idea-install>/plugins/JFormDesigner/redist/</code> <i>macOS:</i> <code><user-home>/Library/Application Support/IdeaIC<version>/JFormDesigner/redist/</code>
NetBeans plug-in	<code><netbeans-install>/jformdesigner/redist/</code> <i>macOS:</i> <code><NetBeans.app>/Contents/Resources/NetBeans/jformdesigner/redist/</code> (right-click on NetBeans application and select "Show Package Contents" from the context menu to see contents of <code><NetBeans.app></code>)