

SAP BusinessObjects Design Studio  
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# What's New Guide: SAP BusinessObjects Design Studio



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# 1 About This Guide

This guide lists new and modified features in SAP BusinessObjects Design Studio that have been implemented since the previous release. It also lists new and modified chapters of the documentation.

## → Tip

To help you find chapters in the relevant documentation guides, the headings of new and modified features in this guide are identical to the headings in other guides, where features are described in detail.

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## 2 About the Documentation Set

The documentation set for SAP BusinessObjects Design Studio comprises the following guides and online help products:

### → Tip

The guides and tutorials are regularly updated and enhanced. Make sure that you have the latest version by checking the SAP Help Portal on a regular basis.

### Administrator Guide

The Administrator Guide contains detailed information, which users need in order to install, configure and manage SAP BusinessObjects Design Studio. The guide is available on the SAP Help Portal at <http://help.sap.com/boad>.

### Application Designer Guide

The Application Designer Guide contains the conceptual information, procedures and reference material, which application designers need in order to create analysis applications. The guide is available on the SAP Help Portal at <http://help.sap.com/boad>.

### End User Guide

The End User Guide contains procedures and background information for users working with analysis applications. This guide is available on the SAP Help Portal at <http://help.sap.com/boad>.

### Developer Guide

The *Developer Guide: Design Studio SDK* contains procedures, reference material and background information, which enables developers to create third-party components with the Design Studio SDK and enhance the analysis applications with custom components. The guide is available on the SAP Help Portal at <http://help.sap.com/boad>.

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## What's New Guide

The What's New Guide lists new and modified features in SAP BusinessObjects Design Studio that have been implemented since the previous release. The guide is available on the SAP Help Portal at <http://help.sap.com/boad>.

## Online Help

The Online Help contains the same information as the *Application Designer Guide* and the *Developer Guide: Design Studio SDK*, plus an additional chart properties guide called *Charts: Additional Information*. Choose ► [Help](#) ► [Help Contents](#) ► to open the guides in the design tool. You can also set the online help as a view within the design tool. Choose ► [View](#) ► [Help](#) ►.

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## 3 New and Modified Features in SAP BusinessObjects Design Studio

This section provides a list of new and modified features in the design tool of SAP BusinessObjects Design Studio. You can find more detailed information on the features in the *Application Designer Guide: Designing Analysis Applications*.

### 3.1 Using the SAPUI5 m Mode for Rendering Components

For SAP BusinessObjects Design Studio 1.6 the rendering capabilities have been extended.

In previous releases Design Studio used the so-called **Commons** part of the SAP UI5 library (these are controls in name space `sap.ui.commons` of SAPUI5) in order to create the Web user interface (UI) for all supported Design Studio components like List Box, Filter Panel, Button, etc. The Commons library was developed for creating basic common controls (components), mainly intended for desktop applications.

Design Studio 1.6 now also supports the so-called **Main** part of the SAPUI5 library (sometimes just referred as “m”, these are controls in name space `sap.m` of SAPUI5). The Main (m) part was developed having the mobile use case in focus; those components are therefore specialized for mobile devices.

However, the usage of the SAP UI5 m library is not restricted to mobile scenarios; it also supports desktop applications. In order to adjust the visualization accordingly, there are two form factors for the m mode: the **compact** for the desktop and the **cozy** form factor with more spacing and padding for mobile use cases.

Another reason for introducing components based on the SAPUI5 library is that SAP also uses the SAPUI5 Main library to create SAP Fiori UIs. That is why this library part is the go-to solution for the future.

#### Basic principles, limitations and recommendations

Take the following aspects in account when deciding on which rendering mode to choose for an application:

- You cannot use controls from both library parts (commons and m) in one application and mix them. Following this principle, you have to decide which mode to choose when creating a new applications in the *Create New Application* dialog box. This decision is visualized in the application property *SAPUI5 m Mode* with the values *true* or *false*, this property is read-only and cannot be changed.  
In case you have chosen the m mode, you also have to set the application property *Compact Form Factor true* or *false*.
- The Design Studio component model has also been extended in a way that provided components can offer both rendering modes. If your application is set to one of the rendering modes, only those components are displayed in the components palette, which offer the corresponding rendering. SAP tries to ship all components with support for both rendering modes – in rare cases there might be restrictions (see below).
- Once you have selected the rendering mode, you cannot change this setting for the application anymore. However, Design Studio offers a function to migrate SAPUI5 Commons-based applications to the Main mode

by choosing the *Migrate to SAPUI5 m Mode* in the *Tools* menu. The migration script sets the new mode and adjusts also component-specific settings, if needed. Most of the components have identical properties and methods, but there are also cases where you find differences in the component properties and the according API (see below).

- If a component does not support the SAPUI5 m mode rendering, it will be deleted by the migration script. SAP recommends copying the application first and then starting the migration.
- The right to left (RTL-) compliant rendering for RTL languages is only available in the SAPUI5 m rendering mode.

## Available components depending on the rendering type

Most of the components from the components palette are available in both rendering modes. However, there are also some components which are only available in the SAPUI5 commons or the m mode:

Table 1:

Components available only in the SAPUI5 Commons mode	Components available only in the SAPUI5 Main mode
<ul style="list-style-type: none"> <li>• Popup</li> <li>• Filter Line</li> <li>• Split Cell Container</li> <li>• Fragment Gallery</li> <li>• Charts</li> </ul>	<ul style="list-style-type: none"> <li>• Action Sheet</li> </ul>

Due to the different rendering in SAPUI5 m mode, some components and script elements have a different properties sheet in the m mode:

- application
  - Property *Position of Message Window* has been removed.  
The message popup will now always open where the message button is located.
  - Property *Compact Mode* has been added.  
Renders the application in compact mode. The components will take up less space and be more compact in general. The compact mode is more useful for desktop applications.
- dimension filter
  - Property *Display Mode* has been removed.
  - Property *Popup Width* has been removed.
  - Property *Popup Height* has been removed.
  - Property *Popup Position* has been removed.
  - Property *Popup is Modal* has been removed.
  - Property *Auto Apply* has been removed.
- filter panel
  - Property *Display Mode* has been removed.
  - Property *Drag and Drop* has been removed.
  - Property *Auto Apply* has been removed.
  - Property *Direct Input for Filter* has been removed.
  - Property *Desktop Style for Popup* has been removed.



- Event *On Cancel* has been removed.
- list box
  - Property *Multi Selection* has been removed.
  - Property *Selection Mode* has been added.  
This property specifies the behavior as well as the visualizations for the list box. This includes a mode which supports multiple selection.
- pagebook
  - Property *Transition Effect* has been removed.
  - Property *Transition Direction* has been removed.
  - Property *Enable Swiping* has been removed.
- text
  - Property *Style* has been removed.

## 3.2 Working with Templates

SAP BusinessObjects Design Studio offers you a set of standard (blank and predefined) and ready-to-run templates that serve various design and business needs. When you choose a template, the system automatically creates a copy of it. You can change the copy according to your needs.

Depending on the rendering mode, you can choose between different templates:

- SAPUI5 mode (SAPUI5 Namespace sap.ui commons)
  - Standard Templates
    - Blank
    - Basic Analysis Layout (new)
    - Basic Layout (new)
    - Planning Layout (updated)
  - Ready-To-Run Templates
    - Data Discovery and Visualization
    - Generic Analysis (updated)
    - Online Composition (updated)
- SAPUI5 m (SAPUI5 Namespace sap.m)
  - Blank (new)
  - Basic Layout (new)

The following templates have been removed:

- Ad-Hoc Analysis Template
- Basic Analysis Template
- KPI Dashboard Template
- KPI Details Template
- iPad Template 1
- iPad Template 2
- iPad Template 3
- iPhone Template 1

- iPhone Template 2

### 3.3 Binding the Properties of Standard Components to Data Sources

Data-bound components (also referred to as analytic components) - like crosstabs, charts or filter components and many SDK components - have a [Data Source](#) property that points to a data source. Some of these components also have one or more [Data Selection](#) properties that describe the subset of data to be used.

Unlike analytic components, basic components do not have a data source property. If you want basic components to display data from a data source, this must be set by scripting. While data-bound components are updated automatically when data is changed, it might be significantly more difficult to synchronize basic components in the same way. In this case, you have to know all the relevant events where a script has to update the basic component's properties.

An easier way to achieve this is to bind a property of a basic component in your application to a data source, by using the property-binding function at the top of the [Properties](#) view of this component. In this way, you can create analysis applications without using scripts.

In the following chapters, you will find workflows for using the property-binding function:

- Displaying Cell Values
- Configuring a List Box for Filtering Data
- Configuring an SDK Component to Use Multiple Data Sources

### 3.4 Connecting to a Streaming Data Source to Create Real-Time Visualizations

You no longer need to install a separate Real-Time Package to avail of real-time functionality. Now you can create visualizations with push-based streaming data, directly from within Design Studio. To do so, simply connect to a streaming data source such as SAP HANA SDS (Streaming Data Services) or SAP ESP (Event Stream Processor) from within the [Outline](#) view under [Data Sources](#) [Add Custom Data Source](#) [Streaming Data Source](#). You can then connect your streaming data to any OOTB (out of the box) [Info Chart](#) or [Chart](#).

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## 3.5 Export to PDF Enhancements

The following enhancements were made to the export to PDF feature:

### 3.5.1 Wrapping Crosstab Column and Row Header Text

When exporting to PDF a report style version of your application using the `PDF.exportApplication()`; scripting method, you can set a property called *Wrap Header Text*. This property allows you to wrap the column header text, row header text or both, in an exported crosstab when the text is too long to fit in the header area by default. The header text is wrapped over a maximum of two lines.

### 3.5.2 Multiple Panels Export to PDF (WYSIWYG)

In addition to exporting single panel components, you can now export to PDF, multiple container panels as an array with the WYSIWYG scripting method `PDF.exportPanelScreen(panel)`; . This will result in an export to PDF of all visible panel components included in the array, one panel component per page, allowing the application designer more control over page layout.

### 3.5.3 Export to PDF Properties in Designer

The application designer can now take a more enterprise approach to setting the export to PDF properties before exporting to PDF from an application. Within the *PDF* technical component designer property there is a new property called *Show Export Settings Dialog*. When this property is set to false, it ensures that when the application user calls the export to PDF functionality, the application will be exported to PDF directly, without any property changes from the user. Setting the property to true allows the application user to define their export to PDF property settings through a dialog box before exporting. The designer property values appear in the dialog box by default. Any selections made by the user will overwrite any default values or values selected by the application designer in the *PDF* technical component designer properties.

### 3.5.4 North American Paper Sizes

The following North American standard paper size options are added to the export to PDF property *Paper Size*:

- letter
- legal
- ledger/tabloid

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## 3.6 Context Menu on Info Charts

A number of context menu functions are available to the application user for the *Info Chart* analytic component when they run their application. The *Info Chart* context menu can be used on the category axis only for filtering, drill-down actions and visualization.

## 3.7 Geo Map Enhancements

The following enhancements were made to the *Geo Map* component:

### 3.7.1 Lines and Multi-Lines as Shapes

Lines or multi-lines are now supported as shapes in a shape or choropleth layer on a *Geo Map*.

### 3.7.2 Pie Chart as a Geo Map Layer Option

You can now choose a *Pie* chart when defining layers in your *Geo Map*. The pie slices change, depending on the measures applied within the properties of the pie chart layer. A *Pie* chart legend can also be displayed on the *Geo Map*. For pie chart layers, you require two dimensions in the *Rows* area of the *Edit Initial View...*. The first dimension listed represents the geo-specific dimension and the second dimension is used to determine how the pie is sliced.

### 3.7.3 Uploading Custom Marker Image File to Geo Map

You can apply a custom marker to your *Geo Map* that replaces the default *Geo Map* points marker. Each layer can represent a different custom marker by referencing a different pixel based image file. You can decide the anchor point of your custom shape by selecting a value from the new *Vertical Anchor* additional property within the points layer.

### 3.7.4 Classification Type

Now in the *Geo Map* additional properties of the shapes layer, you can switch between two types of classification - *Quantile* and *Equal Interval*. Select the *Quantile* option to distribute a set of values into groups that contain an equal number of values. Select the *Equal Interval* option to arrange a set of values into groups that contain an equal range of values. Your choice will depend on whether you want to represent the distribution of the data rather than the actual data values.

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## 3.8 Exporting Applications as Templates

In the *Export Application As Template* dialog box, you can now define the icon that symbolizes your template in the *New Application* dialog box.

## 3.9 Single Sign-On With SAP HANA Data Sources in Design Tool

Application designers can now access SAP HANA data sources, which are configured as single sign-on SAP HANA HTTP or JDBC connections on the BI platform (not as connections with pre-defined user and password), without entering their credentials in the design tool. It is no longer necessary to configure additional user/password authentication for application designers in the SAP HANA user administration.

## 3.10 Universe Support

The following changes were made to universe support:

### 3.10.1 Multi-Source Relational Universes

In Design Studio you can now use multi-source relational universes.

### 3.10.2 Increased Maximum Result Set for Universes

The maximum result set from the Data Semantic Layer (DSL) provider has been increased for universes to 20000 rows or 200000 data cells.

### 3.10.3 Reload Data now Supports Universes

The scripting method `reloadData` is now supported with universes.

## 3.11 Using the Context Menu (Technical Component)

- There are two new entries in the context menu relating to the structure members / measures in the crosstab:
  - ► *Add Dynamic Calculation* ► [Operator] ► for adding a new calculation based on one available measure
  - ► *Add Calculation* ► [Operator] ► for adding a calculation by using two or more available measures as operands and an operator

For further information on these functions, see [Calculating New Measures \[page 24\]](#).

- There is a new entry in the context menu relating to the dimensions and dimension members in the crosstab:
  - *Filter by Measure* for defining filters to get the Top N or Bottom N values of a specified dimension based on their measure values.

For further information on this function, see [Creating Filters by Measure \[page 25\]](#).

## 3.12 User Interface Reference and Components

### 3.12.1 New Components

The following components are new in SAP BusinessObjects Design Studio 1.6:

- Info Chart
- Scorecard
- Spreadsheet
- Info Chart Feeding Panel
- Tree
- Action Sheet (technical component)
- Timer (technical component)

#### 3.12.1.1 Info Charts

You can now select from a new collection of chart types within the *Analytic Components* area of the designer. The different types of *Info Chart* can be selected from the *Chart Type Picker* by the designer at design time and by the application user when they run their application. Working with the *Info Chart* component offers you improved functionality and ease of use, for example:

- There is no requirement to apply conditional formatting directly in the chart. The *Info Chart* automatically displays the same conditional formatting as appears in your crosstab.
- A wide range of additional properties are divided into multiple tabs for ease of navigation.
- Dimensions can now be split into more than two axes. With the *Chart* component you could assign only crosstab rows and columns. With the *Info Chart* component, each dimension can be assigned a different axis independently.
- Changes to the query structure that do not add or remove measures or dimensions will have no impact on the info chart. In other words, the swap axis functionality has no effect on the *Info Chart*.

- Chart feeding is defined either using the *Info Chart Feeding Panel* or by configuring the chart at design time.
- More flexibility with feeding the chart for the application user when running the application, using the *Info Chart Feeding Panel* and the *Chart Type Picker*.

### 3.12.1.2 Info Chart Feeding Panel

The *Info Chart Feeding Panel* is a basic component that you can bind to a data bound info chart, through the *Chart Reference* property in the designer, or by using the `setChartReference` scripting method. The *Info Chart Feeding Panel* offers the application user a representation of all the measures and dimensions bound to that info chart in the *Edit Initial View...* It also allows the user to move measures and dimensions up and down within their respective areas in the *Info Chart Feeding Panel* component. Any changes they make to the position of measures and dimensions in the *Info Chart Feeding Panel* are then directly reflected in the info chart. It is important to note that you cannot drag measures into the dimensions area or vice versa. If the user makes a change to the position of measures and dimensions in the *Info Chart Feeding Panel* and then changes the chart type using the *Chart Type Picker*, the measures and dimensions remain in their new position. This ability to modify how data is fed to the info chart, gives the application user greater freedom when running their application.

### 3.12.1.3 Timer Technical Component

The *Timer* technical component allows you to poll a data source at regular intervals to update an info chart or a chart at a set interval rather than every time there is a new event. It can be used in conjunction with with any OOTB (out of the box) Design Studio *Info Chart* or *Chart*. You can also use the *Timer* technical component in cases where you do not need real-time streaming using WebSockets to push to the browser.

### 3.12.1.4 Action Sheet Technical Component

The *Action Sheet* is a new technical component, which can be scripted to contain an action list that opens next to another component. To activate the *Action Sheet*, you must call a scripting method, for example, from within the *onClick* event of a button. This function takes as a non-optional parameter, the component to which it is rendered beside. The *Action Sheet* is modal, as it is closed when the application user clicks away from it. You can configure multiple instances within an application of the *Action Sheet* technical component. The *Action Sheet Items* property allows you to set the Value, Text and Icon to appear in your *Action Sheet*. The *Placement* property allows you to position the *Action Sheet* relative to another component. The options include the following:

- auto
- left
- right
- top
- bottom
- horizontal
- vertical

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### 3.12.1.5 Tree

The *Tree* basic component can be bound to a hierarchical dimension in a data source. If the dimension has no hierarchy, the *Tree* component will display a simple list. If the dimension has a hierarchy, the *Tree* component will reflect the actual result set as it appears in the crosstab. If a change is made within the *Tree* component, the result set in the crosstab and other components bound to the same data source will change accordingly. Similarly, if you change the result set in the crosstab, the *Tree* component will also change. The *Tree* component can be used, for example, when assigning bookmarks to folders. For more information, you can refer to the chapter in this guide called *Assigning Bookmarks to Folders*.

### 3.12.1.6 Scorecard

The Scorecard component is used for creating dashboards and reports with controlled visualization content and restricted navigation possibilities. Scorecards can help you to make complex result sets browsable by using user friendly visualizations (like charts) and highly customizable layouting properties.

The Scorecard component is not recommended for use in applications with dynamic data sources and data sources with free multidimensional navigation (slice & dice). The predefined data selections in the Scorecard can lose the context and the data selection can turn invalid in such scenarios.

#### How to use the Scorecard

You can add a Scorecard component to an analysis application to allow users to view the data as a highly customizable table and as micro charts in columns. Depending on your configuration of the Scorecard column properties, each column can display information in the form of a text, image or charts. Each column property can be connected to a selection of the assigned data source.

### 3.12.1.7 Spreadsheet

The *Spreadsheet* component displays multi-dimensional data in a grid with analytic functions. In addition, the Spreadsheet component offers an easy-to-use function for copying cells and sheet areas. This means that the spreadsheet is mainly intended for planning applications with input-ready queries.

#### Restrictions

When you use the Spreadsheet component, keep the following restrictions in mind:

- The universal display hierarchy of SAP BW data sources.
- Only one hierarchy per axis is supported.
- The Key and Text of dimensions are only displayed in one cell/column and not in separate cells/columns.



- Attributes are not supported
- In SAP UI5 m rendering mode, the Spreadsheet component is only supported in the Compact Form Factor.
- The Spreadsheet component can only be used with the Blue Crystal theme
- The Spreadsheet component does not allow any interaction in mobile applications.

## Restrictions for Design Studio based on SAP HANA as platform

If your Design Studio is based on SAP HANA as platform, note the following additional restrictions when using the spreadsheet component:

- Bottom up hierarchies (parent node below child node/member) are not supported.
- New lines cannot be inserted.
- Dynamic calculations and calculations based on the menu entry *Calculate Totals As...* are not supported.

## 3.12.2 Application Properties

Application properties have been changed as described below. The following new and changed additional properties are available for applications in the *Property* view:

### Bookmark Loading

The property *Bookmark Loading* has been added.

Allows you to clear prompts on standard bookmark load. You can select different prompt behavior on loading a standard bookmark, depending on the type of prompts in an application, the values in the *Merge Prompts* application property and the values selected within the new *Bookmark Loading* application property. The optional values include the following:

- Hide and Keep Prompts
- Hide and Clear Prompts
- Show and Keep Prompts
- Show and Clear Prompts

### Application Properties in SAPUI5 m Mode (changed, removed or new)

The following application properties have been changed, removed or added for applications rendered in the SAPUI5 mode:

- Property *Position of Message Window* has been removed.  
The message popup will now always open where the message button is located.
- Property *Compact Form Factor* has been added.

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Renders the application in compact mode. The components will take up less space and be more compact in general. The compact mode is more useful for desktop applications.

### 3.12.3 Crosstab Component

The *Crosstab* component has been enhanced as follows:

- *Enabling Drag and Drop*

The following restrictions are valid for using drag and drop:

- Drag and Drop is not supported if your Design Studio is based on SAP HANA as platform.
- Drag and Drop cannot be used when the crosstab is in planning mode, which means if the crosstab contains input ready cells.
- Drag and Drop is not supported for mobile scenarios (for example, applications running on the iPhone or iPad)

Drag and Drop can be enabled and disabled on application and on component level:

- On Application Level

Use the application property *Drag and Drop between Components* to specify if Drag and Drop operations between different components are allowed or not. This property is set to *false* by default, what means that drag and drop operations cannot be carried out between components. Drag and Drop operations within one single component (if existing) are still possible. Set this property to *true* if you want to enable Drag and Drop operations between components (for example, between the Navigation Panel and the Crosstab).

- On Crosstab (component) Level

Use the crosstab property *Drag and Drop enabled* if you want to enable Drag and Drop operations within the crosstab. The property is set to *false* by default, what means that the crosstab does not allow any Drag and Drop operation. If this property is set to *true*, the crosstab will:

- enable internal Drag and Drop operations. Thus the application user can drag and drop dimensions and members within the crosstab and remove dimensions and members by dragging and dropping them outside the area of the crosstab.
- accept external drops of dimensions from other components (for example the navigation panel). This only works if the application property *Drag and Drop between Components* is set to *true* as well.

- Using Header Scrolling (changed)

The behaviour of the header scrolling function in the crosstab has changed. For further information, see the chapter *Using the Header Scrolling in the Crosstab* in the Application User Guide.

### 3.12.4 Dimension Filter Component

The following component properties of the *Dimension Filter* rendered in SAPUI5 m mode have been modified as described below:

- Property *Display Mode* has been removed.
- Property *Desktop Style for Popup* has been removed
- Property *Popup Width* has been removed.
- Property *Popup Height* has been removed.

- 
- Property *Popup Position* has been removed.
  - Property *Popup is Modal* has been removed.
  - Property *Auto Apply* has been removed.

### 3.12.5 Filter Panel Component

The properties of the *Filter Panel* component rendered in SAPUI5 m mode have been enhanced as described below:

- Property *Display Mode* has been removed.
- Property *Drag and Drop* has been removed.
- Property *Auto Apply* has been removed.
- Property *Direct Input for Filter* has been removed.
- Property *Pause Refresh* has been added.  
With this property you can set the initial state of the pause button.
- Property *Desktop Style for Popup* has been removed.
- Event *On Cancel* has been removed.

### 3.12.6 List Box

The following properties of the *List Box* component rendered in SAPUI5 m mode have been changed as described below:

- Property *Multi Selection* has been removed.
- Property *Selection Mode* has been added.  
This property specifies the behavior as well as the visualizations for the list box. This includes a mode, which supports multiple selection.

### 3.12.7 Pagebook

The following properties of the *Pagebook* component rendered in SAPUI5 m mode have been changed and enhanced as described below:

- Property *Multi Selection* has been removed.
- Property *Selection Mode* has been added.  
This property specifies the behavior as well as the visualizations for the list box. This includes a mode, which supports multiple selection.

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## 3.12.8 Text

The properties of the *Text* component rendered in SAPUI5 m mode have been changed as follows:

- Property *Style* has been removed.

## 3.13 API Reference

The API reference has been enhanced as follows:

### New Methods

The following methods are new:

- Methods relating to the object Action Sheet
  - addItem
  - getSelectedText
  - getSelectedValue
  - open
  - removeAllItems
  - removeItem
- Methods relating to the object ApplicationInfo:
  - isRightToLeft
- Methods relating to the object Array:
  - pop
  - push
- Methods relating to the object Bookmark:
  - Bookmark:
    - getBookmarkFoldersTreeModel
- Methods relating to the object ContextMenu:
  - getComponent
  - getDataSource
  - isItemVisible
  - setItemVisible
- Methods relating to the object DataSourceAlias:
  - copyFilter
- Methods relating to the object Icon:
  - getBackgroundColor
  - getBackgroundShape
  - getColor

- 
- getIconUri
  - getSizeFactor
  - getTooltip
  - setBackgroundColor
  - setBackgroundShape
  - setColor
  - setIconUri
  - setSizeFactor
  - setTooltip
  - Methods relating to the object Info Chart:
    - clearSelection
    - getAxisScalingMax
    - getAxisScalingMin
    - getBottomMargin
    - getChartType
    - getCSSClass
    - getDataSource
    - getHeight
    - getLeftMargin
    - getLegendPosition
    - getRightMargin
    - getSelectedMember
    - getSelectedMembers
    - getTopMargin
    - getWidth
    - hideLoadingState
    - isVisible
    - removeAxisScaling
    - setAxisScaling
    - setBottomMargin
    - setCSSClass
    - setChartType
    - showDataLabels
    - setDataSelection
    - setDataSource
    - setHeight
    - setLeftMargin
    - setLegendPosition
    - showLoadingState
    - setRightMargin
    - setTopMargin
    - showTotals
    - setVisible
    - setWidth
  - Methods relating to the object Info Chart Feeding Panel:

- 
- getBottomMargin
  - getCSSClass
  - getHeight
  - getLeftMargin
  - getRightMargin
  - getTopMargin
  - getWidth
  - hideLoadingState
  - isVisible
  - setBottomMargin
  - setCSSClass
  - setChartReference
  - setHeight
  - setLeftMargin
  - setRightMargin
  - setTopMargin
  - setVisible
  - setWidth
  - showLoadingState
  - Methods relating to the object PDF:
    - exportPanelScreen (panelArray)
  - Methods relating to the object Split Cell Container:
    - getDataSources
  - Methods relating to the object Tree:
    - getBottomMargin
    - getCSSClass
    - getHeight
    - getLeftMargin
    - getRightMargin
    - getSelectedMember
    - getSelectedMembers
    - getSelectedText
    - getSelectedTexts
    - getSelectedValue
    - getSelectedValues
    - getTopMargin
    - getWidth
    - hideLoadingState
    - isVisible
    - removeModel
    - setBottomMargin
    - setCSSClass
    - setHeight
    - setLeftMargin
    - setModel

- 
- setRightMargin
  - setTopMargin
  - setVisible
  - setWidth
  - showLoadingState

## **New Arrays**

The following arrays are new:

- PanelArray
- BookmarkFolderInfoArray

## **New Constants**

The following constants are new:

- ContextMenuItemId
- IconBackgroundShape
- InfoChartType

---

## 4 New and Modified Features in Analysis Applications

This section provides a list of new and modified features for users working with analysis applications on desktop browser and mobile devices. You can find more detailed information on the features in the *End User Guide: SAP BusinessObjects Design Studio*.

### 4.1 Applying Global Filters

You can now use a combination of scripting methods and the *Filter Line* component, to create a global filter that allows the application user to apply a filter across multiple data sources. This global filter can be dynamically added to their application.

Specifically in the area of online composition (self-service), you can allow the user to apply a global dimension filter across all portable fragment bookmarks that they drop into their *Split Cell* container. The first dimension to be dropped into the split cell will be chosen as the source data source. All other data sources are target data sources. The application designer can script this to allow the end user to choose from a list, the source data source they wish to use. Once a global filter is applied, the portable fragment bookmarks that have been dropped into the *Split Cell* container and have these dimensions in common, will update to reflect this global filter - even if they are from different queries. All other portable fragment bookmarks dropped into the *Split Cell* container that do not have these dimensions in common will not be updated.

### 4.2 Calculating New Measures

Based on measures that are available in your crosstab, you can calculate new measures. There are two types of calculations.

For simple calculations, you use two or more available measures as operands and an operator to create a new measure. The new measure is the sum of two available measures, for example.

For dynamic calculations, you only use one available measure as an operand and you create a new measure based on this operand. For example, if you use sales volume per region as the operand, you can add a new measure that displays the rank of each region according to sales volume. If you now filter out or add new regions to your analysis, the rank numbers are changed dynamically. These calculations are therefore called dynamic calculations. The newly created measures are added to the crosstab. You can edit the name and delete measures by using the context menu for these measures.



## 4.3 Creating Filters by Measure

By using the *Filter by Measure* entry in the context menu on a dimension in the crosstab, you can define filters to get the Top N or Bottom N values of a specified dimension based on their measure values.

This means the filter is applied to the members of the selected dimension and does not affect totals or subtotals in your crosstab. You can also change this kind of filter and remove it by using the context menu.

Filtering measures is a dynamic action. Whenever you change the view of your data, the filter is applied again. For example, if you add a Top 5 filter, five members are shown in your analysis. If you then add members that you previously removed from the crosstab, some of these newly added members could match the Top 5 criteria and replace some of the previously displayed members.

### Prerequisites

This function is only available for SAP BW data sources or data sources based on SAP HANA HTTP connections via SAP HANA Info Access Service (InA).

Table 2:

SAP BW data sources	SAP HANA data sources
<p>The menu entry <i>Filter by Measure</i> is only available in the context menu if there is only a measure structure contained in the query.</p> <p>Therefore Filter by Measure is not available in the following scenarios:</p> <ul style="list-style-type: none"><li>• queries with two structures</li><li>• queries with no structure</li><li>• queries with no structure and a measure restriction in the fixed filter (selection space)</li><li>• queries with one non-measure structure (and a measure restriction in the fixed filter)</li></ul>	<p>SAP HANA data sources (via InA / HTTP connection) only offer a restricted feature set:</p> <ul style="list-style-type: none"><li>• Only one measure based filter is supported per data source. Therefore the menu entry is automatically deactivated as soon as the data source has one measure-based filter and will only be activated again if this filter is removed</li><li>• If one dimension in the drilldown (rows or columns) contains an active hierarchy, measure-based filters are not supported Therefore this menu entry is deactivated.</li></ul>

## 4.4 Assigning Bookmarks to Folders

When users create their own bookmarks, they can assign them online to a bookmark folder structure. This folder structure is created by the administrator on the Central Management Console on the BI platform. The application designer can provide access to a representation of this folder structure to the user online, by scripting a *Tree* component, offering a hierarchical view of the bookmarks to which they have access rights.

---

## 4.5 Update to Creating a Bookmark Based on a Query

When creating a bookmark and adding an optional application identifier parameter called `appIdentifier` to filter when calling for a list of bookmarks, the parameter is no longer limited to 64 characters in length.

### **i** Note

This feature is not supported on the SAP NetWeaver platform.

## 4.6 Crosstab Hierarchies Exported to Microsoft Excel

If your *Crosstab* contains expanded hierarchies, or expanded multiple hierarchies in either columns or rows, or both, the export to Microsoft Excel will now represent the same expanded state as shown in the *Crosstab*.

---

# 5 New and Modified Features for Developing Extensions

This section provides a list of new and modified features for developing extensions with the Design Studio SDK. You can find more detailed information on the features in the *Developer Guide: Design Studio SDK*.

## 5.1 Design Studio SDK

The Design Studio SDK has been enhanced as follows:

- There is now a reliable way of loading resources for SDK components in a specific order (provided by the RequireJS JavaScript library).
- SDK components can be implemented as technical components (components that are not primarily for visualizing data).
- It is possible to specify for individual SDK components, properties, and resources whether they support the SAPUI5 or the SAPUI5 m library, or both.
- Properties of type *URL* can indicate a specific value help in the *Properties* view of the design tool (for example, for images, CSS files).
- There is a new property type *MultiLineText* for translatable, multiple-line texts.
- There is a new property type *Array*.
- There is a new property type *Object*.
- There is a new sample component *SAPUI5 List* which demonstrates how to use the `Array` and `Object` property types.
- There are captions for user-defined enumerations of property values in the *Properties* view of the design tool.
- There is a new method to call Design Studio script methods from the Component JavaScript.
- The hierarchy information of the Metadata Runtime JSON is now supported.

---

## 6 New and Modified Administration Options in SAP BusinessObjects Design Studio

This section provides a list of new and modified options for administrators. You can find more detailed information on the options in the *Administrator Guide: SAP BusinessObjects Design Studio*.

### 6.1 Changing the Maximum Number of Cells for Export to PDF on the BI Platform

Administrators can now change the maximum number of crosstab cells that application users can export to PDF on the BI platform. Using a new property called *Maximum Number of Cells per PDF Export* within the Central Management Console (CMC), administrators can increase or decrease the default value of 12000 crosstab cells, depending on the available memory in their environment. If the application user tries to export a crosstab containing more than the number of cells set by the administrator, they will receive an information message requesting them to contact their administrator. To successfully export a crosstab to PDF, the number of crosstab cells must be less than or equal to the maximum number set by the administrator. Alternatively, the administrator can increase the maximum number set within the CMC.

#### **i** Note

- In local mode and on the SAP NetWeaver platform, crosstabs exceeding the default number of 12000 cells cannot be successfully exported to PDF.

### 6.2 New Supported Languages

Message texts and tooltips in the analysis applications are now available in Czech, Italian, Kazakh, Turkish and Ukrainian. These new languages are available in Design Studio used in local mode, and in Design Studio with a BI platform or SAP NetWeaver platform.

### 6.3 BI Platform APS Servers Update Automatically after Updating or Changing SDK Components

When you add a new SDK component or update a pre-existing SDK component, a restart of the APS is no longer required.

---

## 6.4 SAP NetWeaver Portal to Change Locale in BI Platform OpenDocument URL

It is now possible to take on the locale settings from the SAP NetWeaver Portal to change the locale of BI platform OpenDocument URLs. To do this, the administrator must activate a new property in the CMC called *Allow Language to be set as an OpenDocument Parameter*.

## 6.5 Maintaining Settings in the Design Tool

The *Support Settings* page in the *Preferences* dialog box has a new section for SAP HANA HTTP data sources. The new setting applies to SAP HANA data sources that are connected using HTTP as the protocol for communication (not JDBC).

If you use proxies for HTTP communication with the SAP HANA system, you need to activate the respective checkbox in this new section and enter the host name and port of the system hosting the proxy service.

You can also use this setting for support purposes: Using Fiddler as a proxy, you can record Fiddler traces, which help SAP to diagnose your issues with SAP HANA HTTP data sources.

In the status bar of the design tool, the indicator *HTTP Proxy: Off/On* shows you if this setting is switched on or off.

### **i** Note

The new setting is available for all platforms except SAP NetWeaver.

## 6.6 Support for SAP BusinessObjects Business Intelligence platform 4.2

Design Studio now supports SAP BusinessObjects Business Intelligence platform 4.2.

---

## 7 New and Modified Chapters in Documentation

In the *Application Designer Guide: Designing Analysis Applications*, chapter “Working with the Outline View” now includes information about basic principles when working with components in the Layout folder. Knowing this principle is important when using transparent components in the application.

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## GENERAL

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Mar	15	2120	150	100%
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Jun	15	500	50	100%
Jul	15	300	30	100%
Aug	15	200	20	100%
Sep	15	150	15	100%
Oct	15	100	10	100%
Nov	15	50	5	100%
Dec	15	50	5	100%
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