

Understanding Behavior Sets

Overview

This document explains the basic concepts of how behavior sets work within [REDACTED] and how they are applied to [REDACTED] user interfaces.

A behavior set is a group of configured behaviors including value, scope and property that is used to create defined parameters on the many fields utilized by [REDACTED]. Fields are created or added to data objects using the [REDACTED] Data Dictionary and Page Designer components.

The ability to create fields, and behavior sets on fields, is a powerful feature of [REDACTED]; it provides the configurator with a means of customizing user interfaces to specific [REDACTED] need without having to alter the hard code. An unlimited amount of behavior sets can be created on any individual field, which means that a single field can be used in many variations and in many UIs throughout [REDACTED].

For additional information about behavior sets as they relate to the Data Dictionary, refer to the [Data Dictionary component documentation](#). For additional information about fields as they relate to Page Designer, refer to the [Page Designer component documentation](#).

Behavior Set Components


At the basic level, all behavior sets have three components of customization that can be utilized to fulfill specific [REDACTED] requirements: values, scope, and properties. Each of these components can be uniquely defined [REDACTED]:

1. **Values:** This refers to the parameters associated with an individual business data type (BDT). BDTs can include, but are not limited to text, number, currency, yes/no, integer, date, time, year and single valid value. When a BDT is selected during field creation its pre-configured values will display in the Business Data Type Information section on the General tab and in the Properties section of the Behaviors tab.
2. **Scope:** This refers to specific areas in [REDACTED] that a behavior set's properties will involve. Unless a configuration is made, each Scope Type will use the default *All*. Scope provides a means of calculating weight assignment when there are multiple behavior sets configured on a single field. Scope is modified using Maintain Scope Lightbox. There are four required scope items available for configuration: [REDACTED]. The Function Category scope option is a filter field that helps the configurator narrow Business Function options; Function Category is not required and is not factored into the total weight calculation.
3. **Properties:** This refers to a field's specific behavior set attributes as it relates to Scope. Properties can be configured on one field's multiple behavior sets so that the field will behave differently in each data object it has been added to. Field properties including default value, visibility, requirement criteria, and editing permissions can be unique for each behavior set created for a single field as defined by Scope.



Configuring Behavior Sets


Defining Values

A field's business data type (BDT), and its values, drive behavior set configuration. It is important that the correct BDT is selected when a new field is added to a custom data object. The BDT cannot be modified once saved.



The General tab's Business Data Type Information section displays the required, pre-configured values of each unique BDT.

Using Text as an example, the pre-configured and required value for the Text BDT is *Field Length*. The *Field Length* value cannot be modified in  but the number of alphanumeric characters the user will be able to enter into the text box on  user interface(s), where the field displays, can be modified by setting a maximum.

The default maximum is 500, this can be altered according to need. For instance, the Text BDT *Field Length* max can be set to 50 for a First Name field. When set to 50, the user will be able to enter up to 50 alphanumeric characters into the First Name field's text box on the  UI(s) where it displays. If the user attempts to enter more than the set max, a warning message will be triggered.



The Values available for behavior set configuration on the Properties section is driven by the BDT selected when adding a new field.



Defining Scope - Maintain Scope Lightbox

A behavior set's scope is the area(s) for which it is relevant across Portal. It is used to create multiple unique behaviors on a single field. Weight values are assigned to each defined Scope Type to assist in runtime filtering. There are four Scope Types available for configuration:

- Scope is defined on each behavior set using Maintain Scope Lightbox which is launched by clicking **Maintain** on the Behavior tab's Scope section.

- *All* is the default for all Scope Types on the lightbox. Defaults can be modified by de-selecting *All* and selecting the desired specific values that populate the drop downs.
- Required, defined Scope Types assign weight value to a behavior set so that it is filtered correctly by attribute at runtime.
- Function Category is not required and it is not factored into the total weight calculation. This field is used to filter down correct values from Business Function.
- The four required Scope Types and one filter field available on Maintain Scope Lightbox come standard for use with the base application; additional Scope Types may be added with an upgrade to the software.

Default View



Defined Scope Types View



Scope Types

The Scope Type values on Maintain Scope Lightbox provide a means to create complex configurations on multiple behavior sets created for a single custom field. The relevance of the values on Maintain Scope Lightbox:

are as follows:

Channel: This defines the three main functional areas [REDACTED] Portal. Channel is used to set functional area conditions of the behavior set. For example, when Channel is set to [REDACTED] only, then the behavior set's configured properties will only be valid for [REDACTED], but not for [REDACTED] or [REDACTED], even if the field displays on [REDACTED] and [REDACTED] user interfaces.

Function Category: This is not a scope item. The Function Category field acts as a filter for the Business Function Scope Type to narrow down correct options from the hundreds of business functions that must be managed in the application.

Business Function: This is the function of the behavior set configuration. There are two types of business function, page render (display something) and page action (do something). Business Function will vary depending on the action the user is taking and which UI is being targeted. For example, the [REDACTED] Business Function (display something) processes when [REDACTED] UI loads for the first time; the [REDACTED] Business Function (do something) processes when Save is clicked on [REDACTED] UI.

Regulatory Country: This is the country which has governance over the [REDACTED]. By selecting specific values from this drop down, behavior set properties can be narrowed to apply to specific countries.

Defining Properties

A field's behavior set properties will vary based on the requirements and constraints of the original configuration but, at a basic level, all behavior set properties will include five sub-sections: Value (the Business Data Type's values), Default Value, Required, Visible, and Editable. Each of these properties can be individually refined using the *Always*, *Never*, and *By Expression* configurations. The *By Expression* option utilizes the Expression Editor and allows for more precise and complex configurations on fields.

Properties work with scope to apply multiple unique behaviors to one custom field based on channel, claim type, regulatory county and/or business function.

It is important to match business functions and properties to maintain a consistent and seamless user experience. For example, creating a behavior set where the field is *Always* Required for the *Display* Business Function, but *Never* Required for the *Save* Business Function would result in users seeing a field go from being required to not required after clicking Save. To avoid this, the field should be made *Always* Required for both the *Display* and *Save* Business Functions.

The properties of each behavior set created on a single field can be configured differently so that the field may be utilized in many variations across [REDACTED].

The Properties sub-sections: Values, Default Value, Required, Visible, and Editable, are explained as follows:

Values: This sub-section is populated based on the BDT that was chosen when creating the field and adding it to the target data object; the BDT value parameters can be modified as needed.

Default Value: This refers to what, if any, value will be used as a placeholder on the field when it displays on [REDACTED], [REDACTED]. This is done by selecting *Always* on the Default Value section and setting the parameters. The field can, alternatively, be set to *Never* (never apply a default), or it can be configured *By Expression* which utilizes the Expression Editor component of [REDACTED].

Required: This refers to whether or not the field will be required on user interfaces. If the field is set to *Always* required the user will not be able to save without an error until a value is entered; if *Never* required, the field may be

left blank by the user; *By Expression* allows for more complex configurations on field requirement using the Expression Editor.

Visible: This refers to whether the field is *Always*, visible, *Never* visible, or visible on user interfaces. *By Expression* is selected when the configurator wants to use the Expression Editor to create exact configurations that will make the field visible based on desired criteria and page actions.

Editable: This refers to whether or not the field can *Always* be edited on user interfaces, *Never* editable, or if the user should be able to edit the field only under certain conditions that are configured *By Expression*.






Behavior Set Weight and Contention

Weight

Weight is used to manage the system processing of multiple behavior sets created on a single field. The total weight of a behavior set is determined based on the number of Scope Types on the Maintain Scope Lightbox that are set to a value other than *All*. If all scope values for a behavior set are set to *All* (the default), it will have a weight of zero (0).

Each defined Scope Type is given a weight of one (1). If four Scope Types are defined from *All* to some value, then the weight of the behavior set is four (4); if three Scope Types are defined from *All* to some value, its weight is three (3); if two Scope Types are defined from *All* to some value, its weight is two (2); and if one Scope Type is defined with a value other than *All*, the weight is one (1).





The scope weight of the below behavior set is four (4) because  and  each have values selected other than All; Function Category is a filter field for Business Function and does not factor into weight. The total number of items selected for any one Scope Type does not factor into the total behavior set weight, the system only sees a weight of one (1) for each Scope Type, regardless of how many individual items are selected. So even though Regulatory Country has three (3) items defined other than All, it counts as a weight of one (1).

The highest scope weight a behavior set can have is four (4).



Contention


Because there are numerous business functions, and there can be an unlimited amount of behavior sets configured on any single field, weight and scope are used to process behavior sets. A behavior set that has a weight of four (4) will be processed before a behavior set that has a weight of three (3), etc. When more than one behavior set on the same field has the same weight and the same parameters, a contention occurs. A contention is a conflict that results when two or more behavior sets have identical or overlapping scopes and weights.

When a contention occurs, an error message will display which will warn  of the conflict; the names of the impacted behavior sets will display so  can resolve the issue and Save.





Configuration Defaults

In addition to the Scope Type default of *All*, there is also an application / properties default. A  must be aware of these two hard coded defaults as they will ultimately impact any behavior sets functioning on user interfaces in the absence of any configuration:

Application/Properties Default: This is how all fields behave in the absence of a configured behavior set. It refers to the hard coded default behaviors of fields when they display on user interfaces. The default behavior of all fields are *Editable*, *Visible*, and *Not Required*.

Configuration/Scope Type Default: This refers to the hard coded default behavior of all Scope Types on the Maintain Scope Lightbox. The default for all Scope Types is *All* items available in the drop down. To change the default for any one Scope Type, *All* must be deselected and individual drop down items selected. There is a max limit of twelve Business Functions for any one Function Category selected.