Interact Web API Service 4.1

User Guide

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Interact Web API Service

This user guide covers Blue Prism Interact Web Application Programming Interface (API) Service.

Blue Prism® Interact enables developers to create web-based forms that will allow a user to interact with automations, not just at the point of initialization but also during the process if a human is required to review progress, enabling a “human/digital worker collaboration” approach.

Information from Interact is added into a Blue Prism queue for processing by the digital worker. Blue Prism can then send updated information, dynamically, back to Interact. This way a user can review and act upon the processed data and participate in the automation process.

It is assumed as part of this guide that the user is familiar with Blue Prism digital workforce and has experience with components such as Hub and Blue Prism.

Overview

As a digital workforce expands the addressable use cases of an enterprise, there is a further need for digital workers and humans to collaborate in the end-to-end execution of a business process. In addition, innovative ways of assigning work to a digital workforce are required to provide flexibility on who can interact with the resource. Blue Prism Interact provides new and existing Blue Prism users with a collaboration interface for an end users interaction with their digital workforce within a business process. Initiate, verify, receive and authorize varied work related to your business processes. In addition, Blue Prism Interact reduces the skill criteria required by allowing users to create dynamic web interfaces either by using the no-code form designer or using a Blue Prism Visual Business Object (VBO) to create forms based on the business process requirements.

Blue Prism Interact functionality is split across two Blue Prism components; firstly, a developer utilizing Hub and the Forms plugin to create and publish Forms for an end user to utilize; secondly the end user interface where they can, by utilizing published Forms, interact with the digital workforce.

The Interact end user interface is accessed via a web browser, negating the need for any locally installed software. Interact can be accessed as an internal web application or published externally.

This user guide covers the gathering of information from a Blue Prism queue and how the information can be updated and returned after processing, back to the Interact user interface.

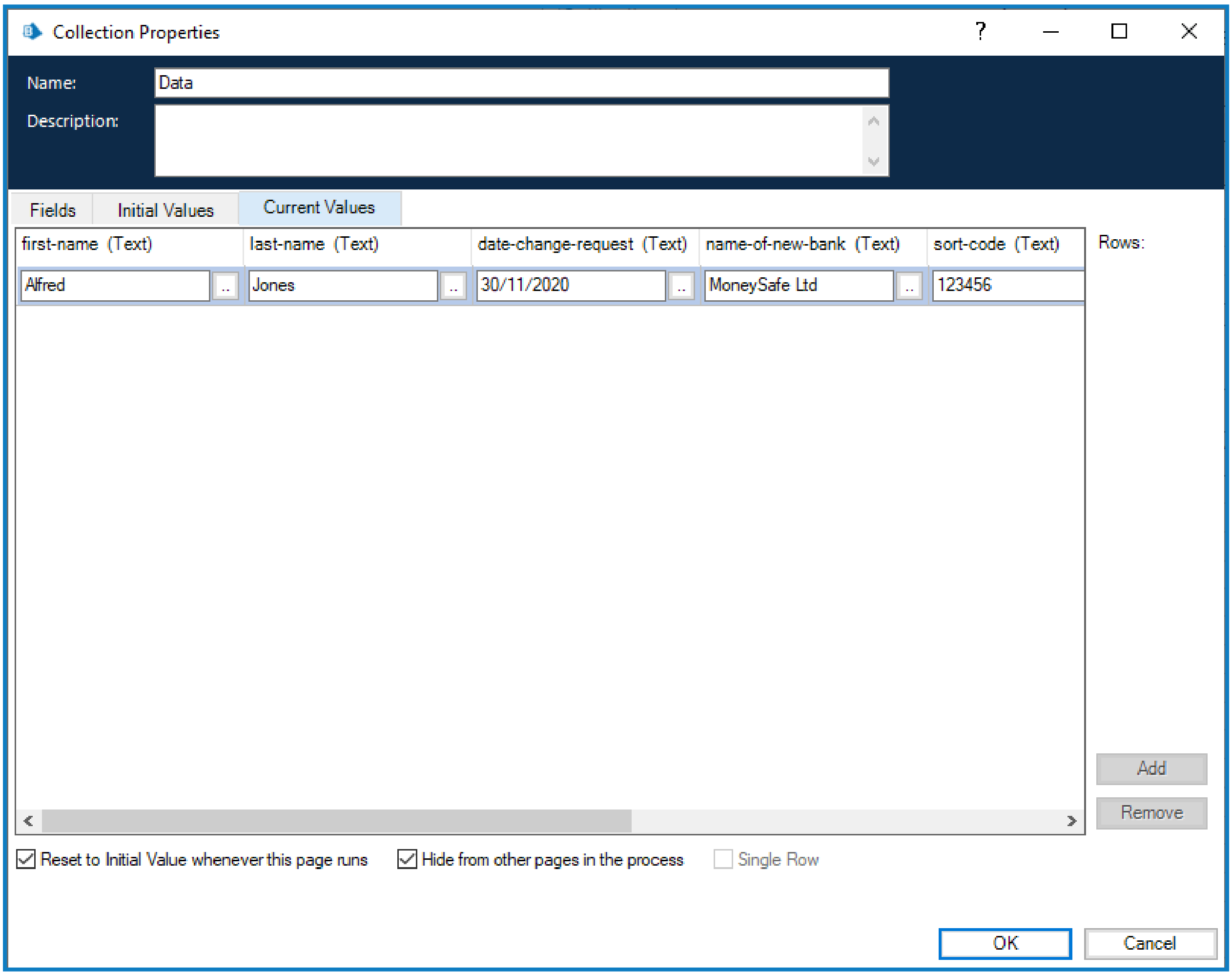
As well as detailing how to utilize the features of the Interact Web API Service we will also demonstrate the functionality by stepping through an example process illustrating how Forms can be updated dynamically.

Submission

Submitting a Form is detailed in the Interact user guide. All submissions are processed through the IADA parser and are added to the Blue Prism queue defined in the Form. This information can then be retrieved from the queue using the 'Get Next Item' action from the Blue Prism Internal Business Objects, Work Queues.

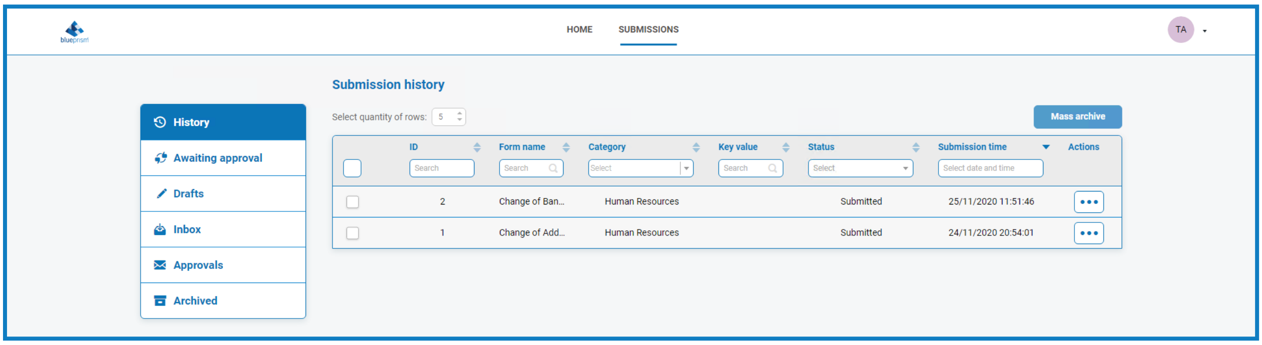
Using the 'Get Next Item' action retrieves a collection into your automation ready for processing. It is recommended that the collection is not defined with fields. This is so all the information can be pulled from Interact. Defining fields in the collection will cause the automation to fail if the Form is updated with either a new field or a field is deleted.

A typical collection is displayed below.



It is important to note one data item that is automatically added to the collection, this is the '_requestId' data item.

This data item is the submission ID of the Form submitted by the user. This ID is the number showing in the Submission History page as illustrated below.



This is the first key item of the linkage between Interact and Blue Prism. The second part of the linkage is the fields in the Form that contain the data items.

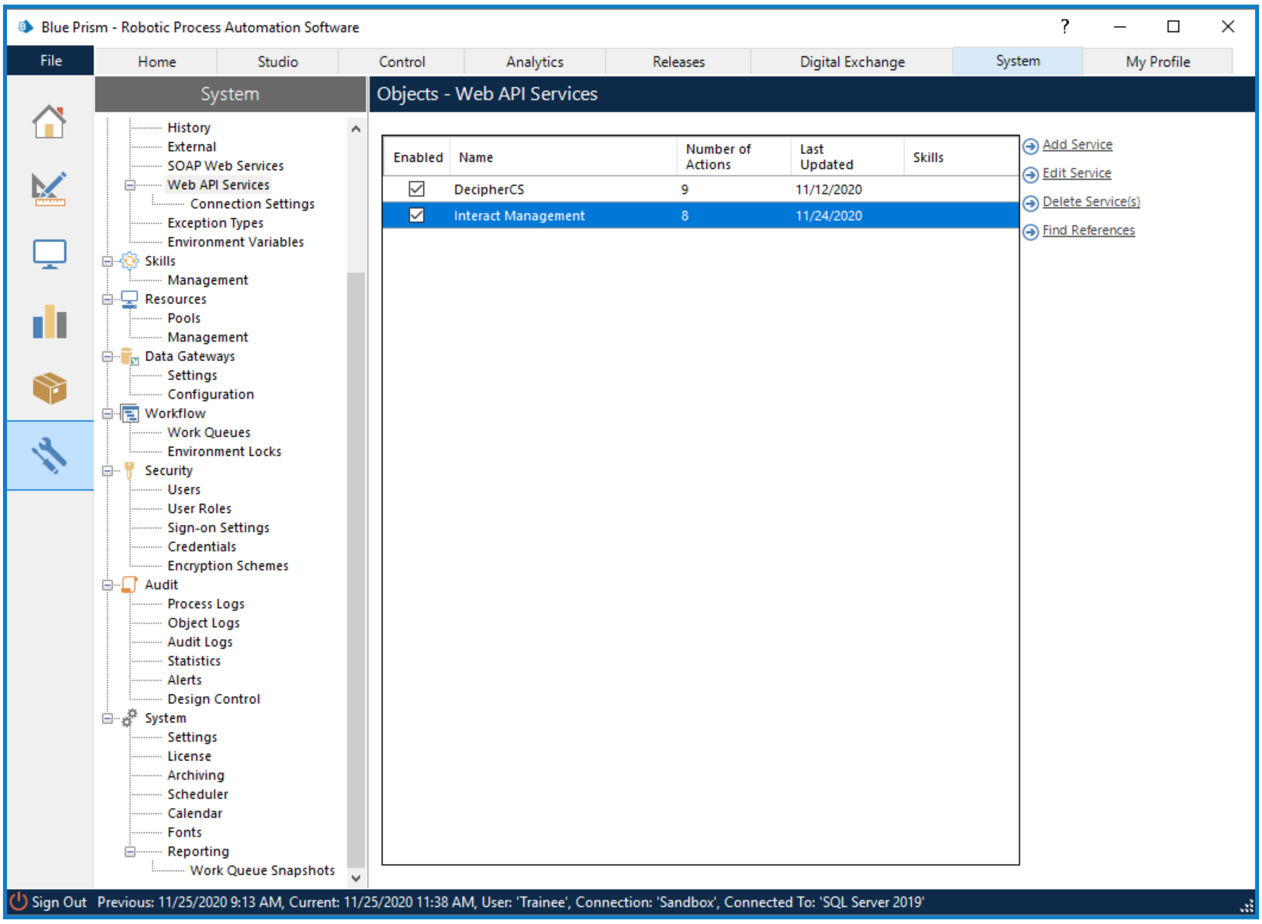
You can see in the collection displayed above, the Automation ID for the data items, for example first-name, last-name, date-of-employment, and so on. These are the ‘names’ that were defined for the fields when the Form was created in Hub. Hub will suggest an Automation ID for the field as you type the ‘label’, you can choose to use the one supplied or change it for something else to suit your particular need.

Automation IDs in Form fields must be in lowercase and the use of special characters is not allowed. If a ‘space’ is entered, then the character is replaced by a ‘hyphen’ character. This is to aid readability.

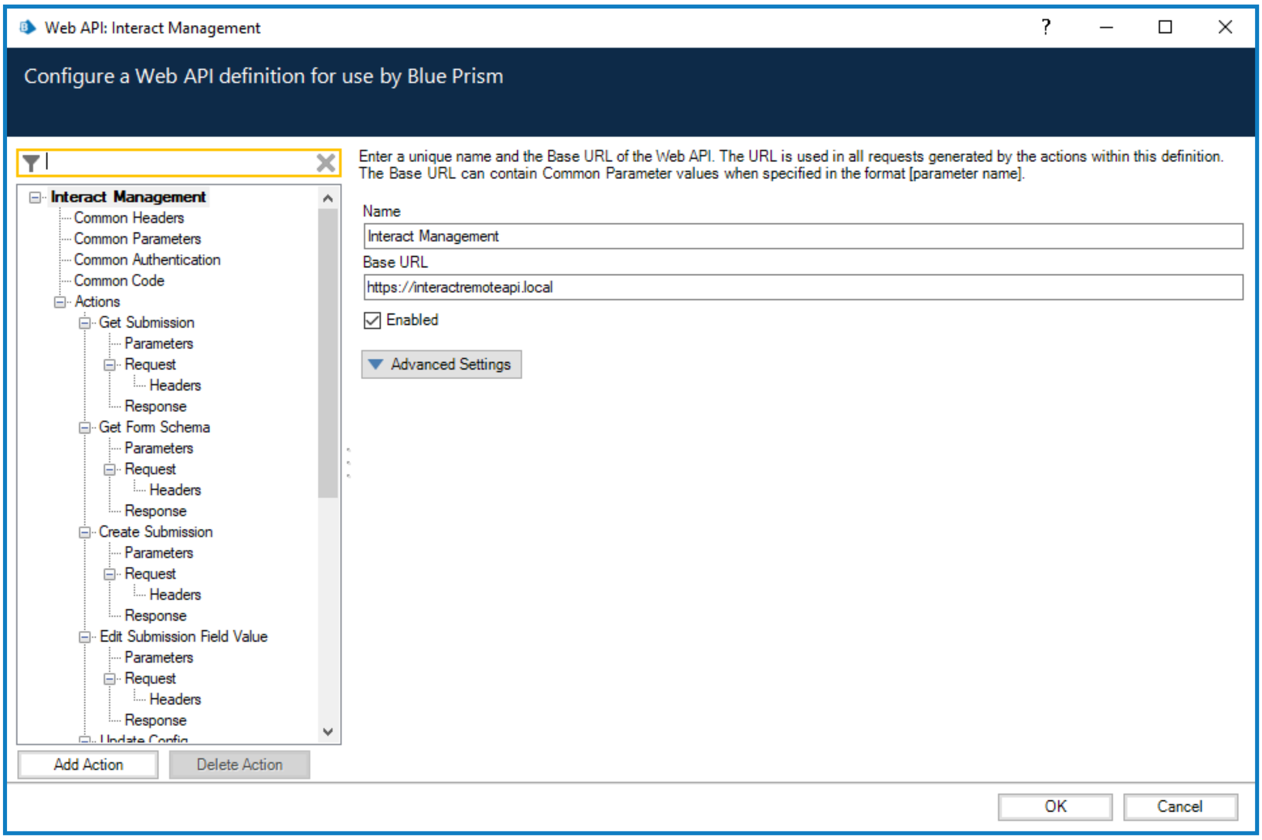
Communicating back to Interact

The communication channel back to Interact from Blue Prism is performed by a Blue Prism Web Service. The web service is available as a release that can be imported into Blue Prism. Once imported it will need to be updated with the appropriate base URL and authorization codes to enable secure communication.

> If you upgrade Interact to a new release, you must ensure you import the latest release file into Blue Prism.

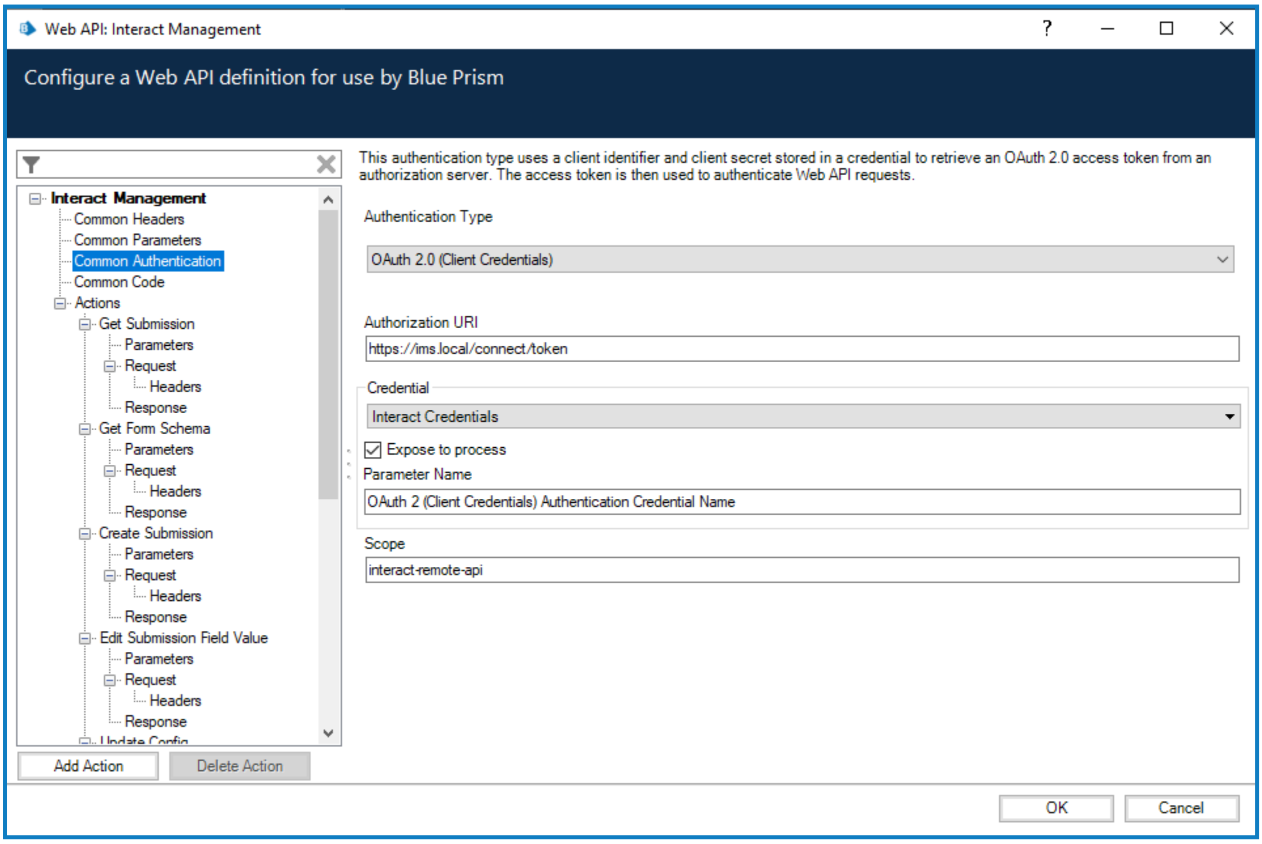


The image below shows the web API service.



In the main window of the web API service we can see the Base URL defined, this will need to be updated to reflect the configuration of your platform setup.

The Common Parameters section is left blank and the Common Authentication section is used. This requests a Bearer Token using stored credentials from the Credential store.

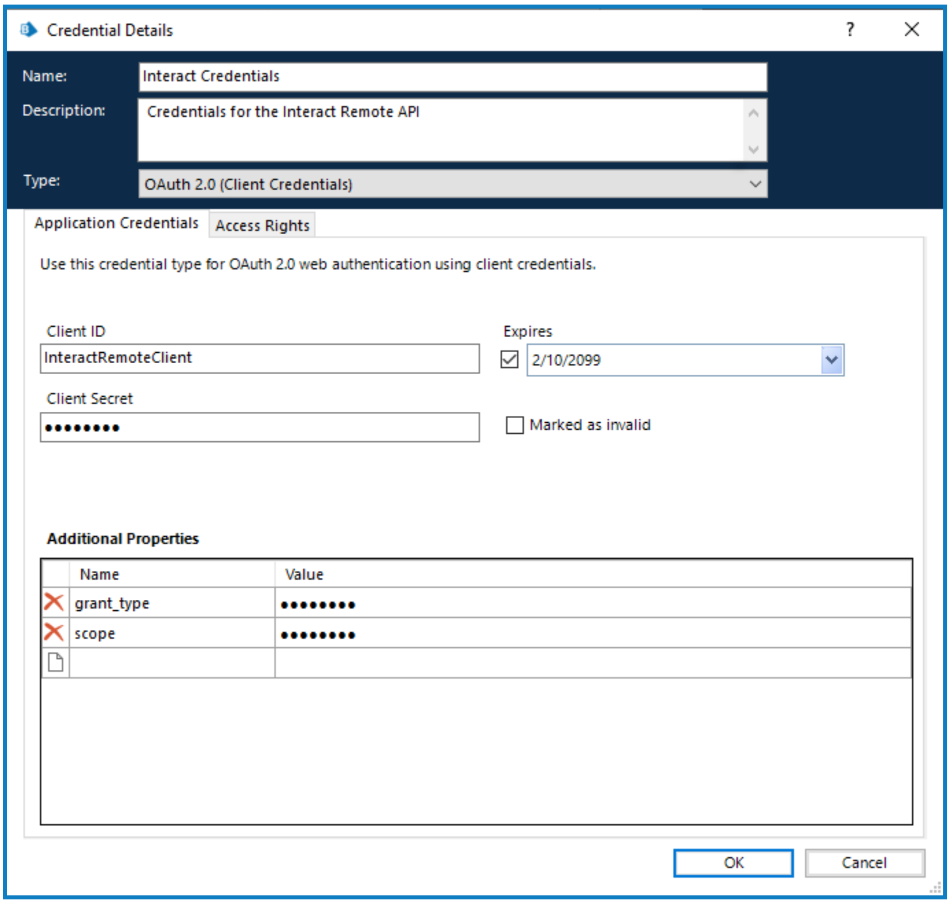


To set up the credentials a ‘client_secret’ must to be configured. This is generated and displayed during the installation process and is stored in the Interact Remote API Secret Key file in C:\Program Files (x86)\Blue Prism\Interact Remote API secret key.txt. See the Interact Installation guide for more details.

Configure credentials for the Interact Web API service

When configuring the credentials for the OAuth 2.0 (Client Credentials) the following four values must be configured in the Blue Prism System Settings (Security > Credentials):

- **Client ID** – Enter *InteractRemoteClient*
- **Client Secret** – Enter the code displayed and copied during installation or, if not copied, from the secret key file contents found in: C:\Program Files (x86)\Blue Prism\Interact Remote API secret key.txt
- **grant_type** – Set the value to *client_credentials*
- **scope** – Set the value to *interact-remote-api*



Remember to set up the Access Rights tab in the Credentials Details to ensure it can access the processes for the allowed users.

The web service has eight defined actions. These actions are available within the Utility - Interact API Blue Prism VBO along with a number of additional actions which map to the web service. The actions are:

Interact Web API	Blue Prism VBO: Utility - Interact API
Get Submission	Get Submission
Get Form Schema	Get Form Schema
Create Submission	Create Submission
Edit Submission Field Value	Edit Submission Field Value
Update Config	Update Config – this is superseded by the individual Change actions below. Change Field State to Optional Change Field State to Mandatory Change Field State to Read Only Change Field State to Hidden Change Page State to Visible Change Page State to Hidden
Update Status	Update Status – this is superseded by the individual Move actions below. Move Submission to History Tab Move Submission to Approved Tab Move Submission to Review Tab Move Submission to Declined Tab Move Submission to Draft Tab Move Submission to Inbox Tab Move Submission to Archived Tab
Raise Submission	Raise Submission
Get Users by Form Name	Get Users by Form Name

The actions are called from the Utility - Interact API VBO so, after the initial configuration of the URL and authorization codes, the Web Service does not need to be amended. Each of the actions within the Utility - Interact API VBO are explained in the next section.

Actions

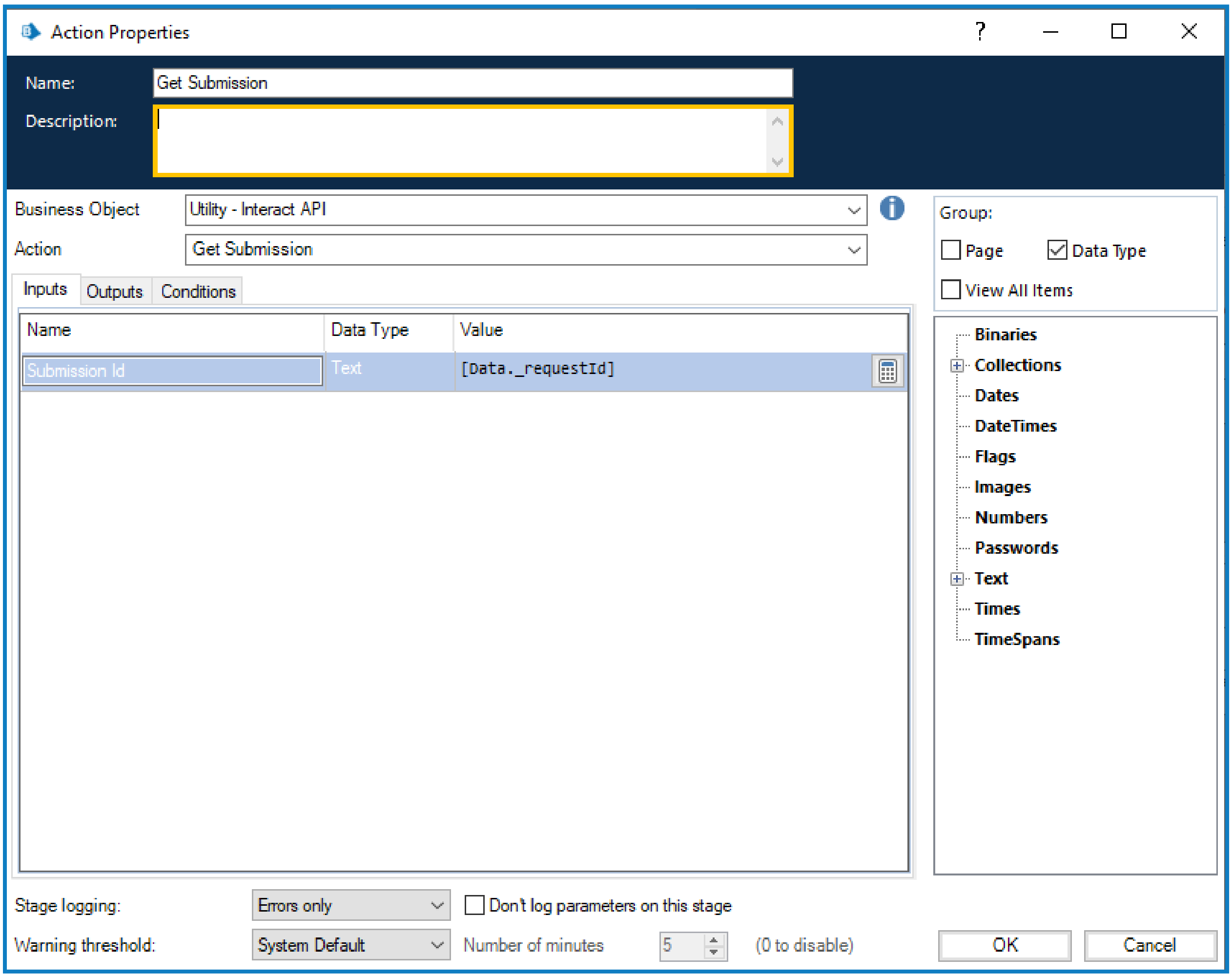
There are a number of actions within the Interact Web API Service, which are called using the Blue Prism Object (Utility - Interact API). Going through each of the actions in turn, the sections below explain how to use them in your automations.

> All of the web API service actions should be called from the Utility - Interact API VBO in Blue Prism, and not directly from the web service.

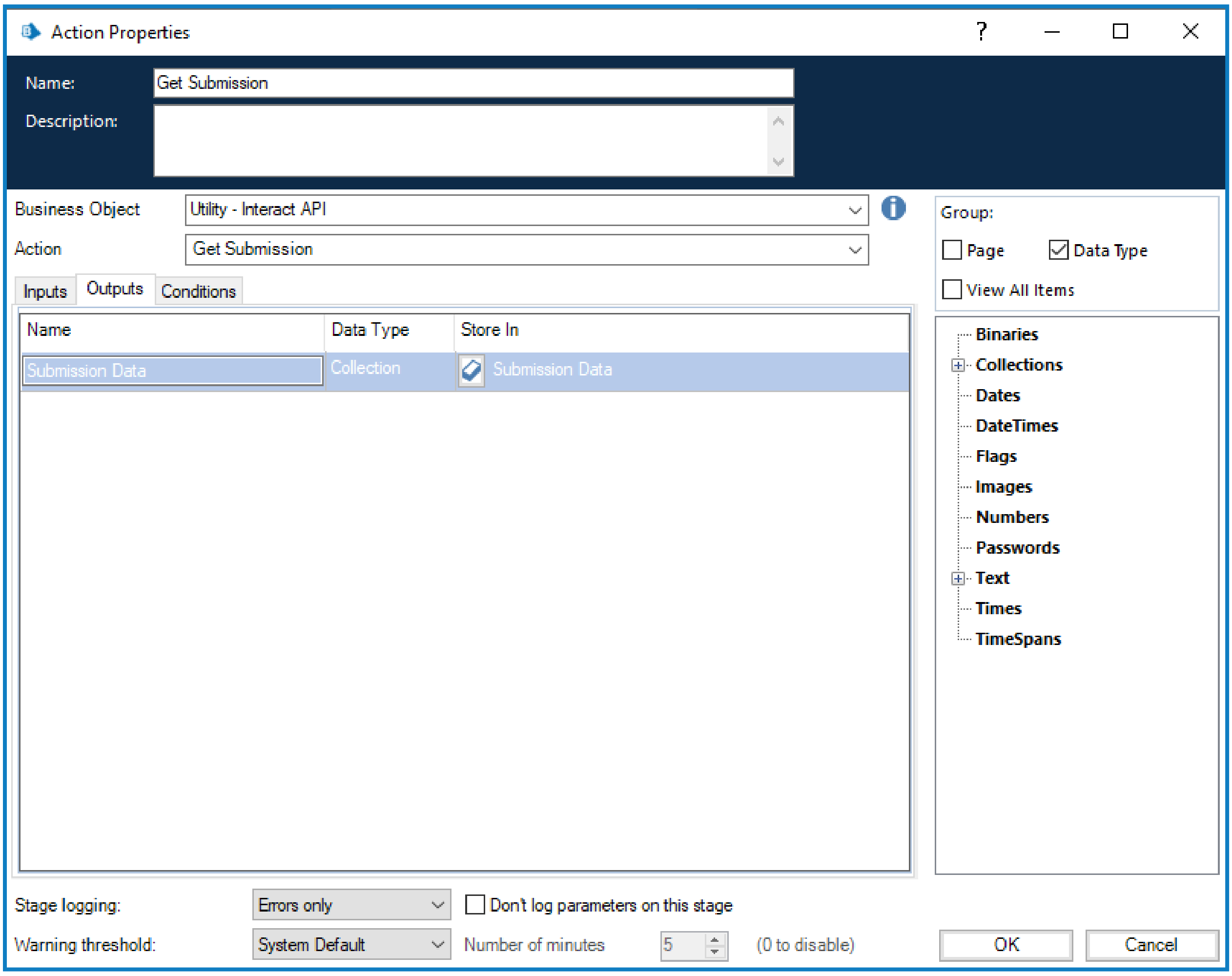
Get Submission

The Get Submission Object action does a very similar action as the Get Next Item action when it retrieves the information from a queue.

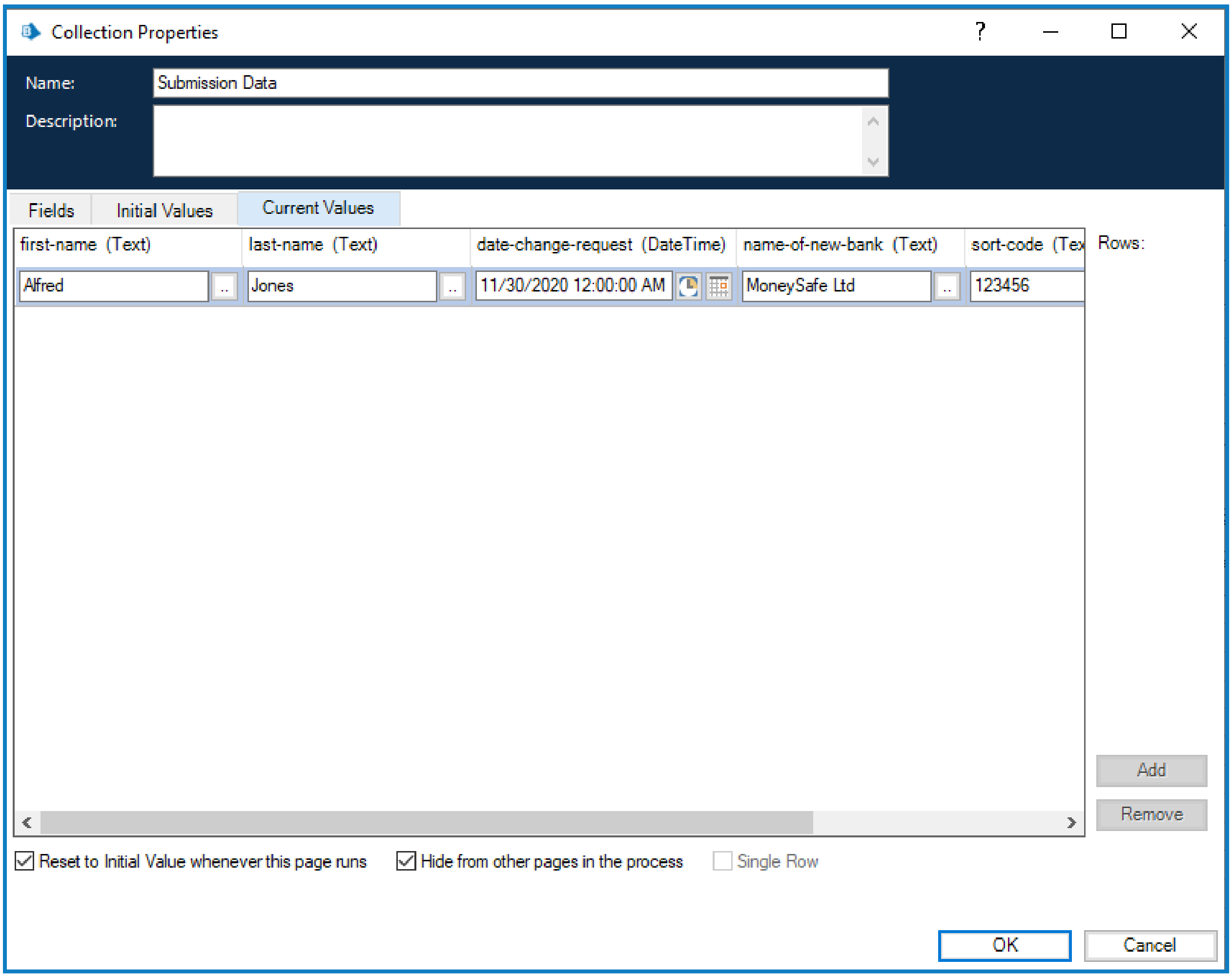
To utilize the action, an action is added to your process and the Business Object selected, with the action set to **Get Submission**. There is only one input parameter which is the Submission ID as illustrated below.



The output parameters retrieves the contents of the Interact Form, using the submission ID into a collection.



One difference when the submission is retrieved using this methodology rather than the standard Get Next Item action is the formatting of Date elements. Using the Get Next Item technique the Date is returned in a Text format, whereas the Get Submission returns it as a DateTime format as below.



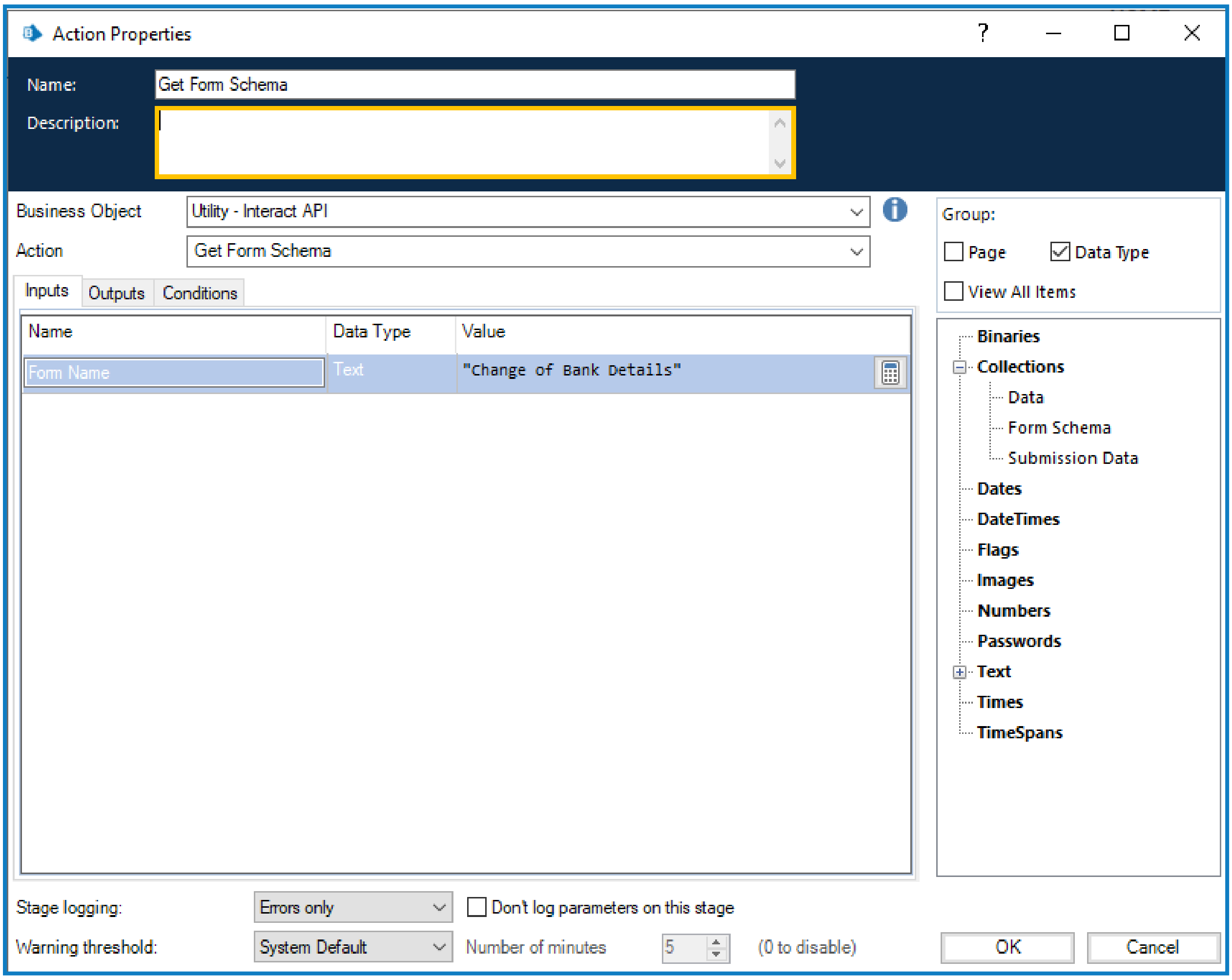
For a complete list of restrictions please see the section 'Interact Web API Service Restrictions'.

> You cannot use the 'Get Submission' action unless you know the submission ID, as this is unique per submission it cannot be hardcoded into your automation. This must be retrieved using the 'Get Next Item' action.

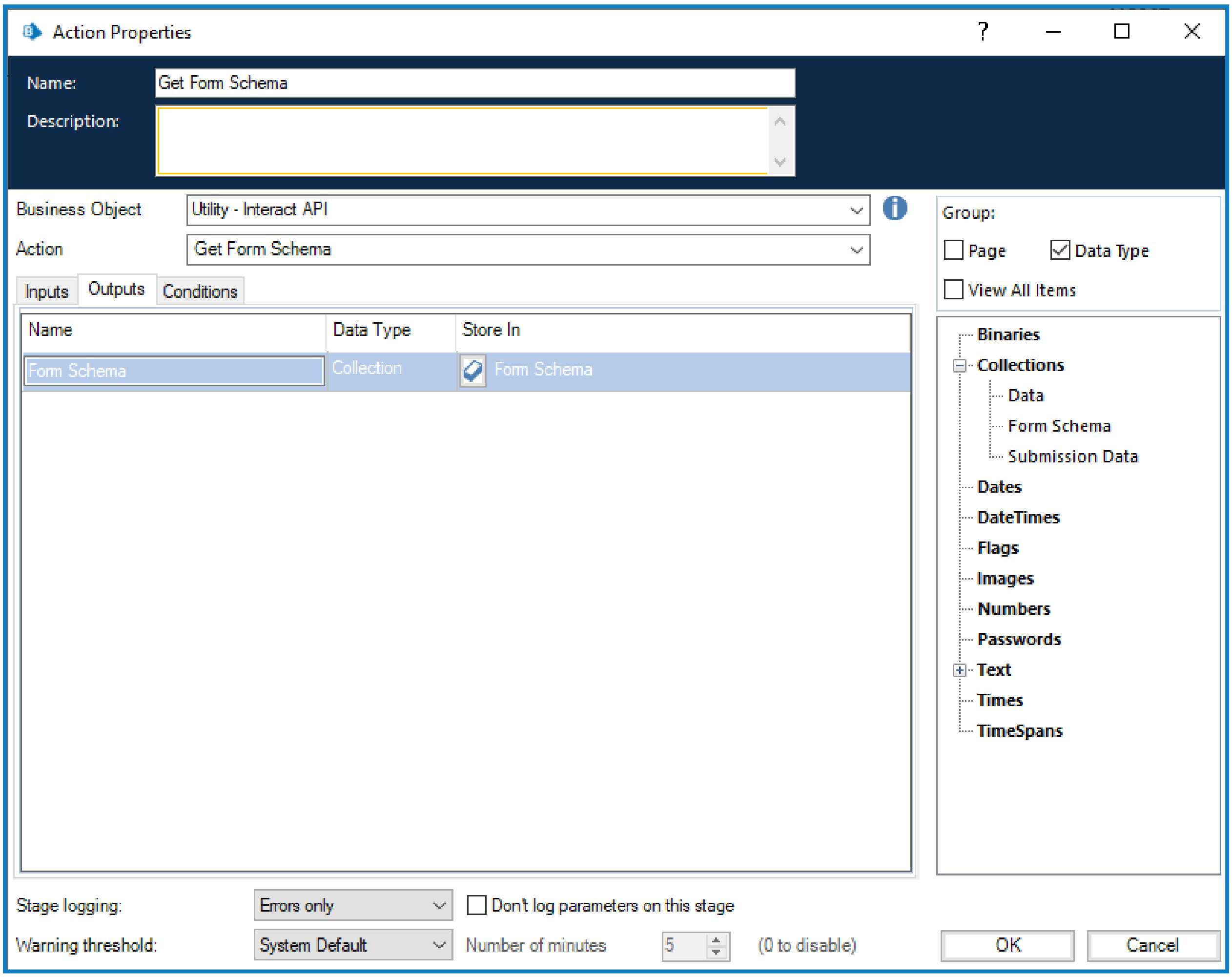
Get Form Schema

The Get Form Schema action gets a structure of an Interact Form in a collection allowing you to manipulate and then using the Create Submission action create an Interact Form either empty or partially created for a user to complete and submit.

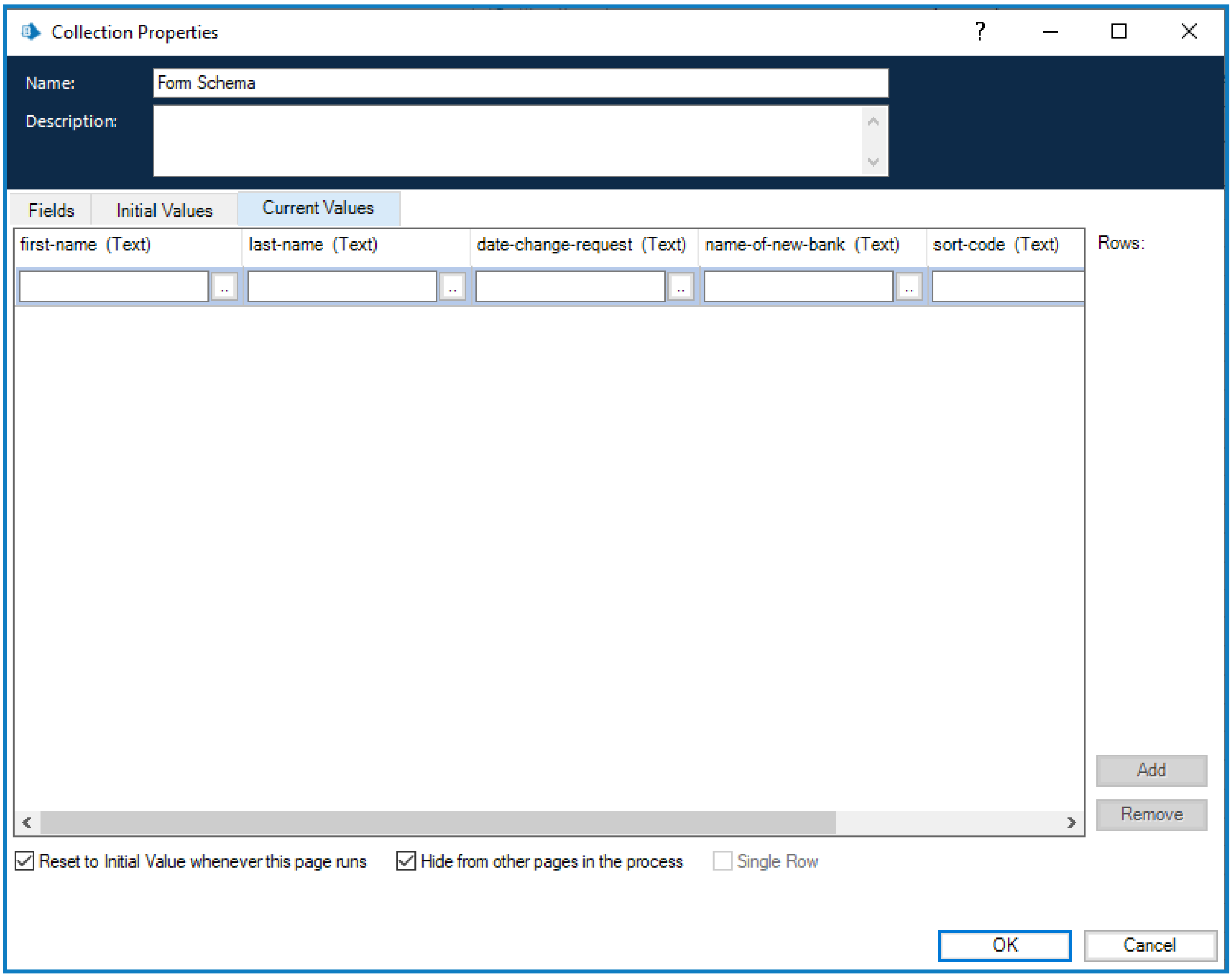
There is only one input parameter which is the name of the Form within Interact that you are retrieving the structure for, as illustrated below.



The outputs parameters are similar to the 'Get Submission' action where the request status is returned along with a collection containing the fields.



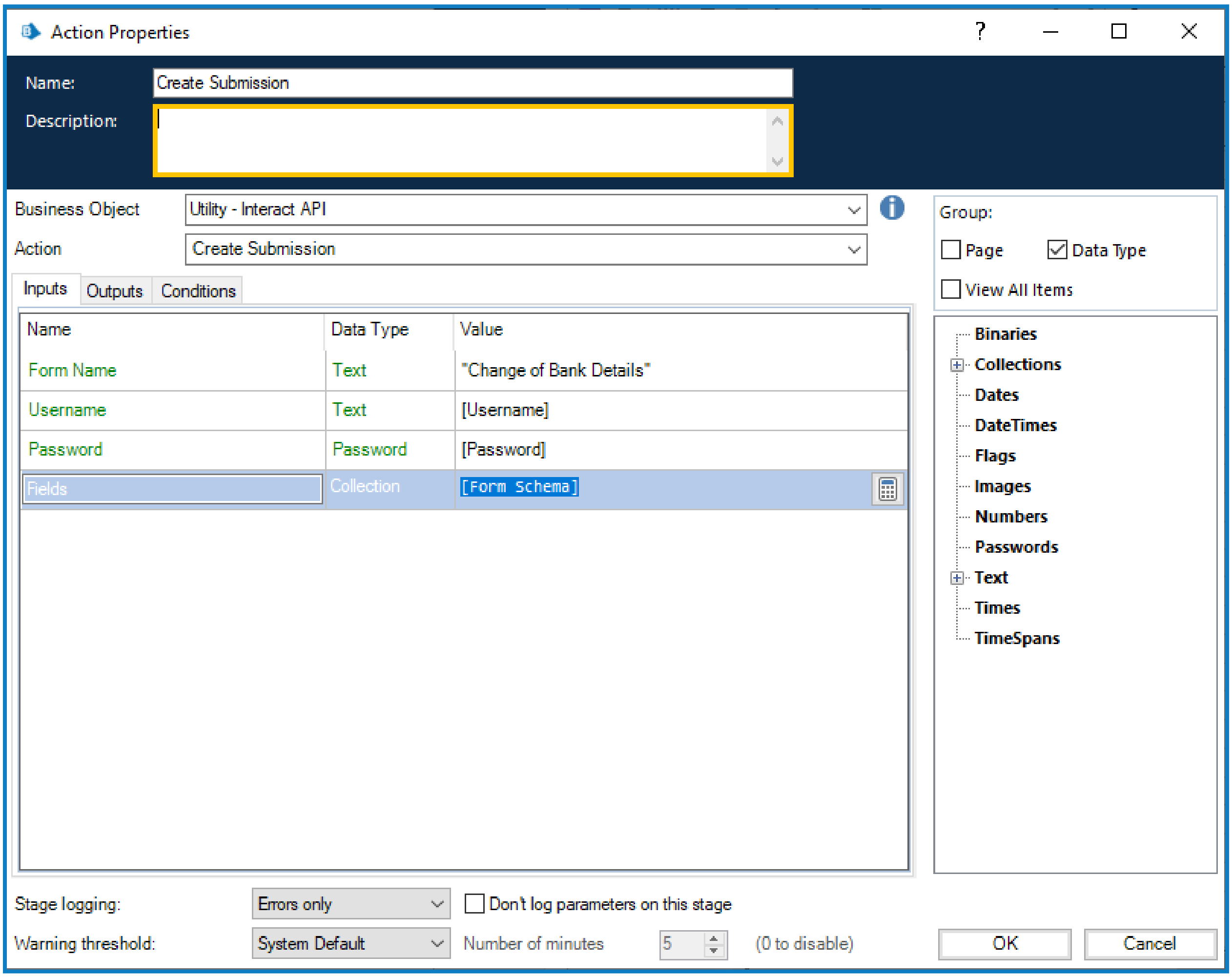
The retrieved collection is a blank collection containing the structure of the Form.



The structure of the fields presented is in the same format as the 'Get Next Item' format and therefore the Date element is requesting a Text data type to be submitted. The reason that Text type is used, is to support the multiple format Date element types within Interact, where the Date can be supplied in UK, US or International format.

Create Submission

There are four parameters that need to be defined within the Create Submission action.



These four parameters are as follows:

- **Username** – This is the username of the Interact user that the submission will be created for.
- **Password** – The password for this Interact user.
- **Form Name** – The Form that will be created within Interact.
- **Fields** – The values that will be set within the created submission.

To assist in creating a new submission, Get Form Schema on page 15 can be used to retrieve the basic structure of the Form. This could then be populated with new data items and then created as a new submission for a user.

> To create a submission, the fields and form schema must match that of the Form within Interact. Missing fields or an incorrect structure will end up creating a corrupt submission.

Once initiated the created submission will appear in the specified users Submission History as a submitted Form and will be added to the specified Blue Prism queue detailed in the Form construct.

There are no outputs parameters for the Create Submission action.

The user whose credentials are used to create the new submission must be allowed to access the Form. So, the Interact Role which contains the Form must have the user specified in the user list.

Edit Submission Field Value

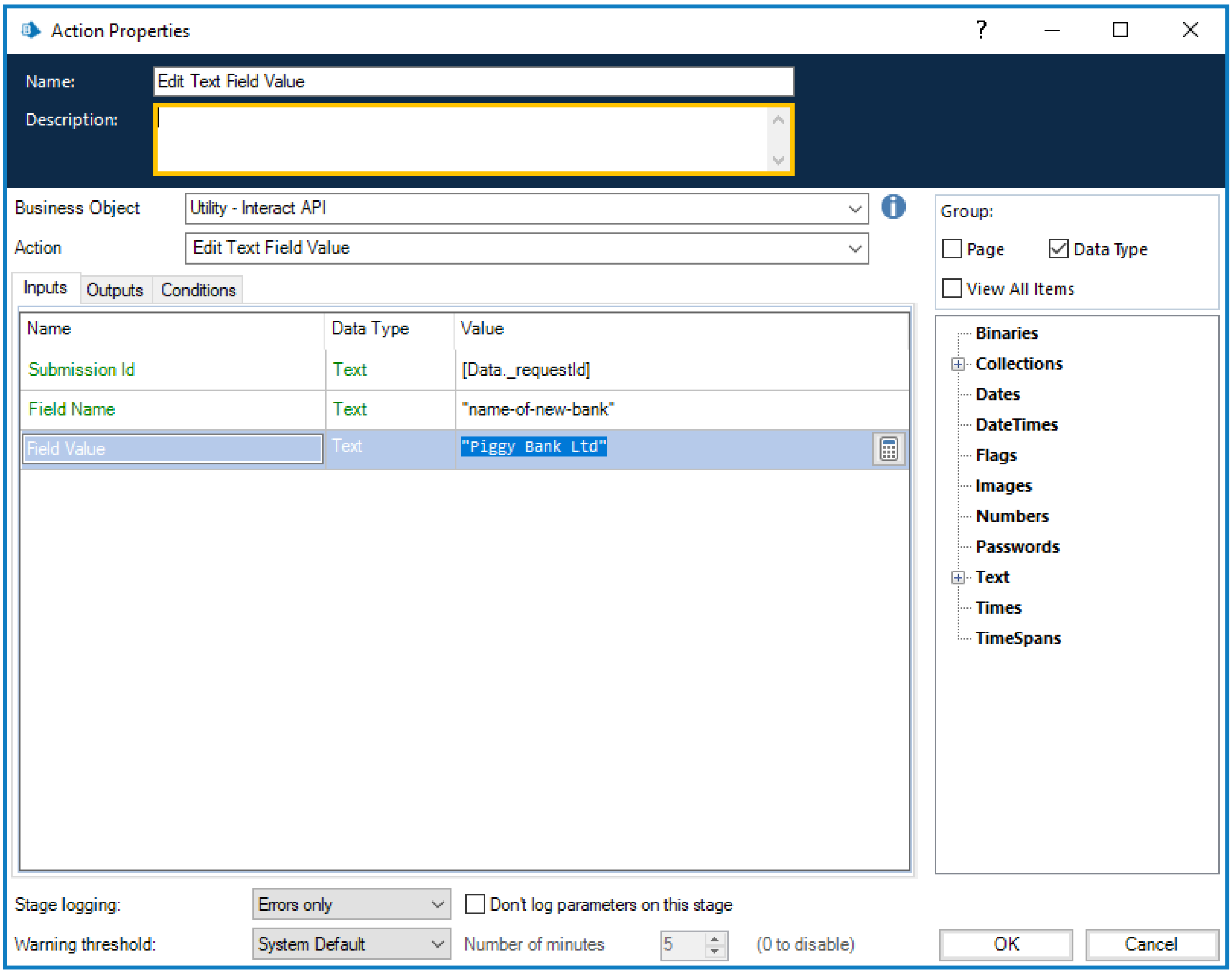
The Edit Submission Field Value action, like all the other actions, is called from the object. There are several actions within the object which allow you to update specific field elements, these actions link directly to the element type that is used in the Interact Form.

The Field Name in the sections below is the Automation ID that was created within the Form designer.

Details for the different element types are described in the following sections.

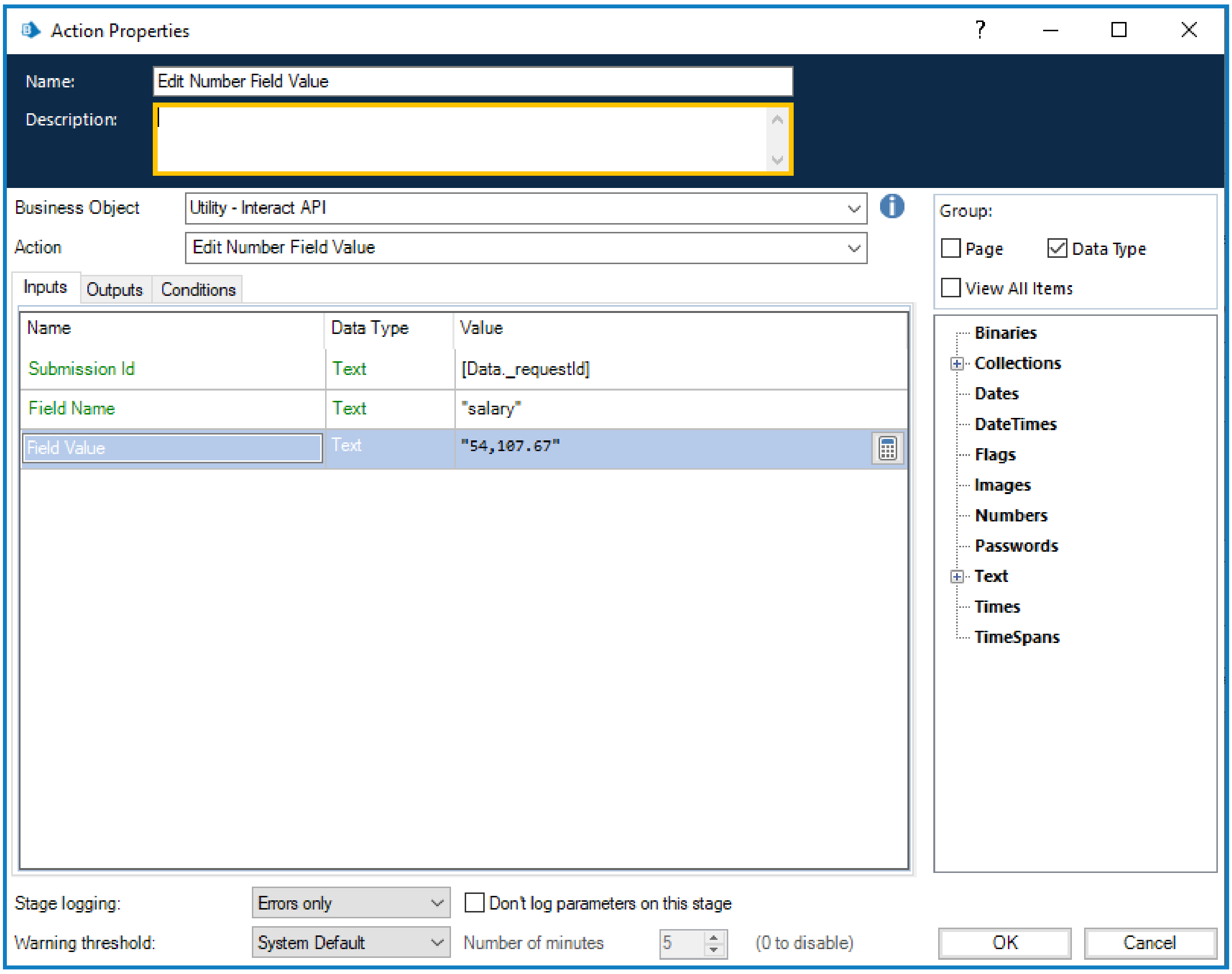
Text element

The Text element requires a simple Text field being passed to it.



Number element

The Number element will accept either a number or a text being passed to it. Though the field type is a Text type you must supply a number using only the acceptable delimiters such as commas and decimal points. If text is sent back the Interact Form will display a message regarding invalid data.

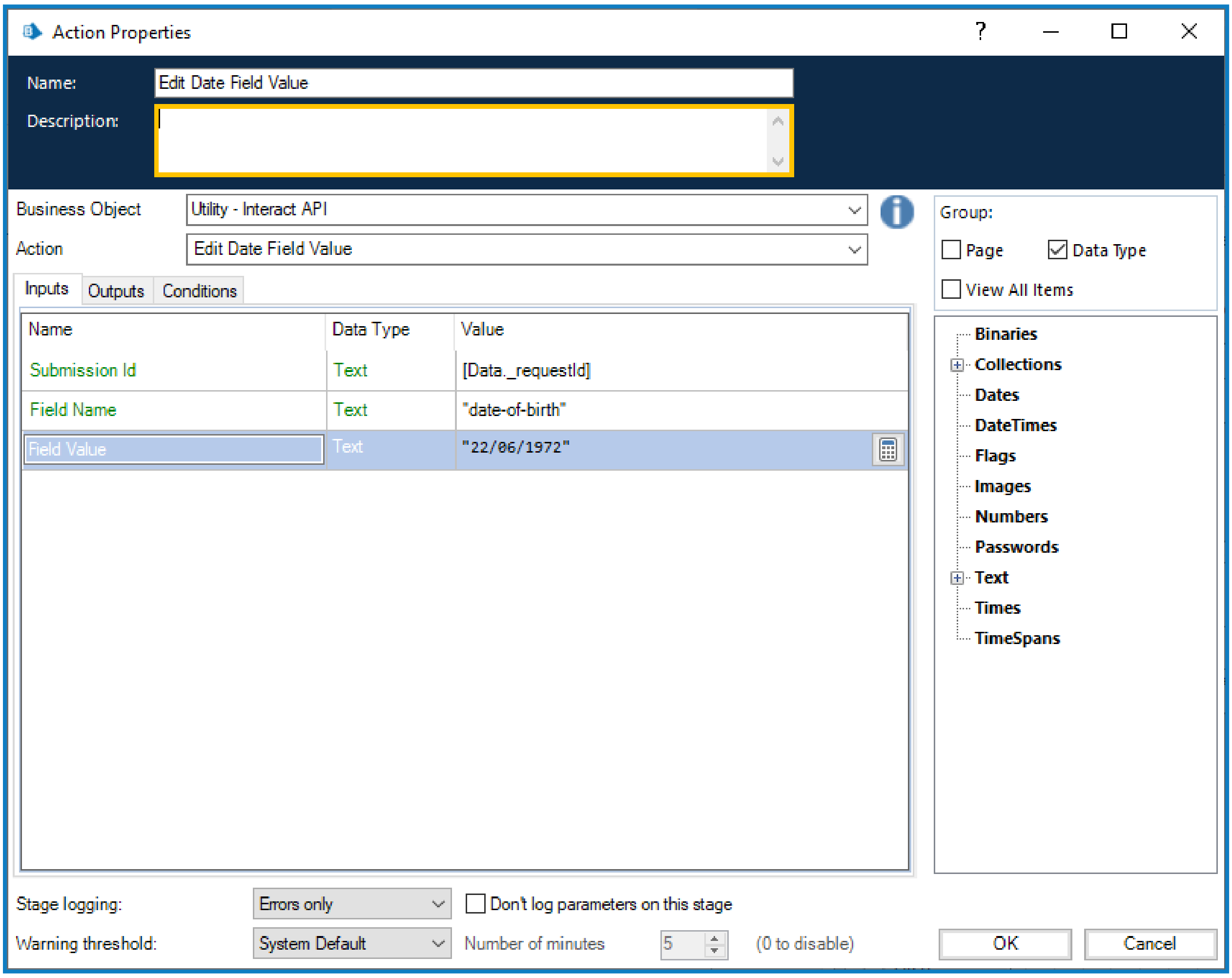


Date element

The Date element uses Text format to edit values in an Interact Form, this is to support the three different formats within the Interact Form. The Form will allow you to use these formats for dates:

- DD/MM/YYYY – UK format;
- MM/DD/YYYY – US format;
- YYYY/MM/DD – International format.

If you have set the Interact Form to accept the International format for dates and you send the date back in either the UK or US format, the Interact Form will display an invalid data message.

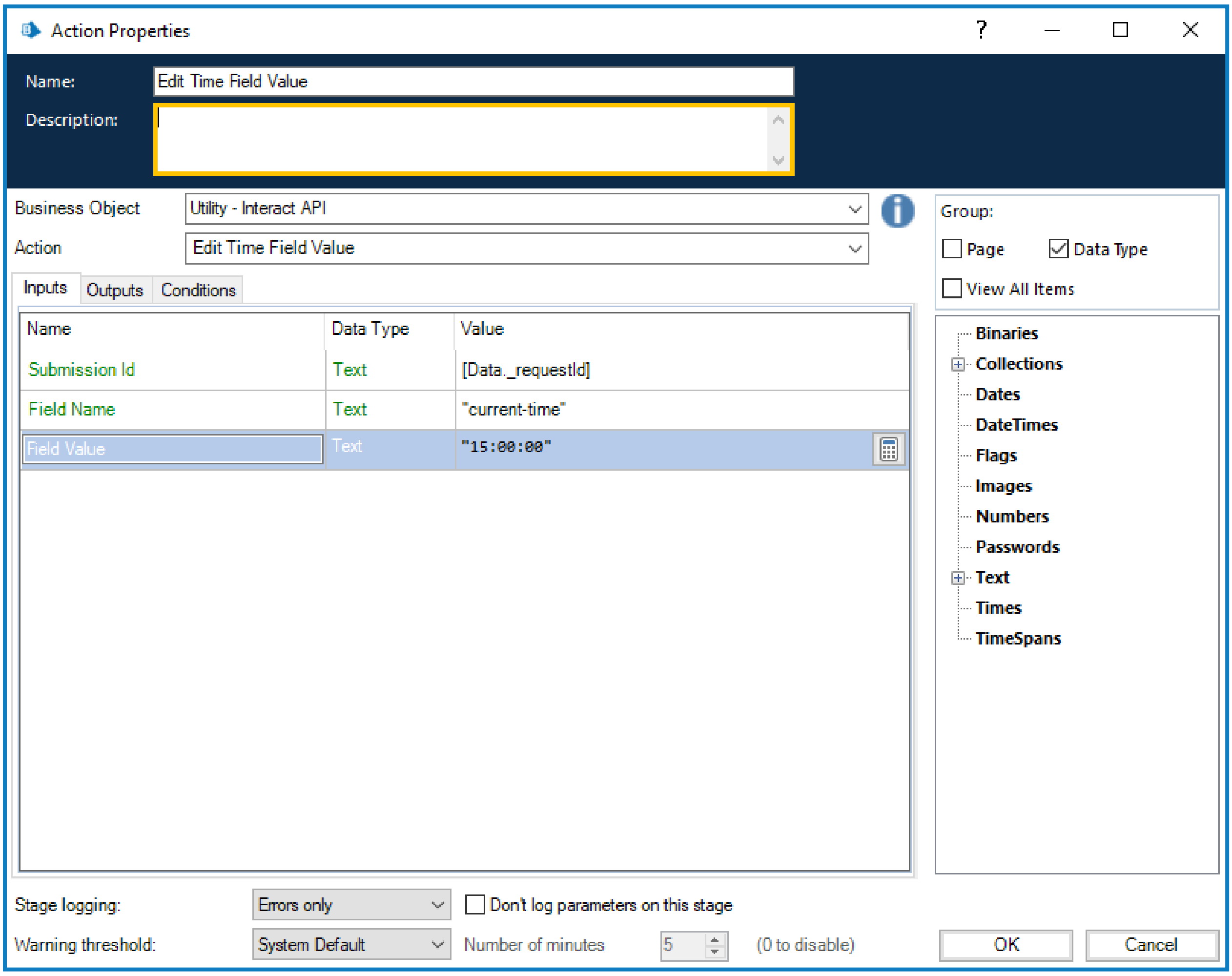


Time element

The Time element uses Text format to edit values in an Interact Form. You can supply the Time in one of two formats these being:

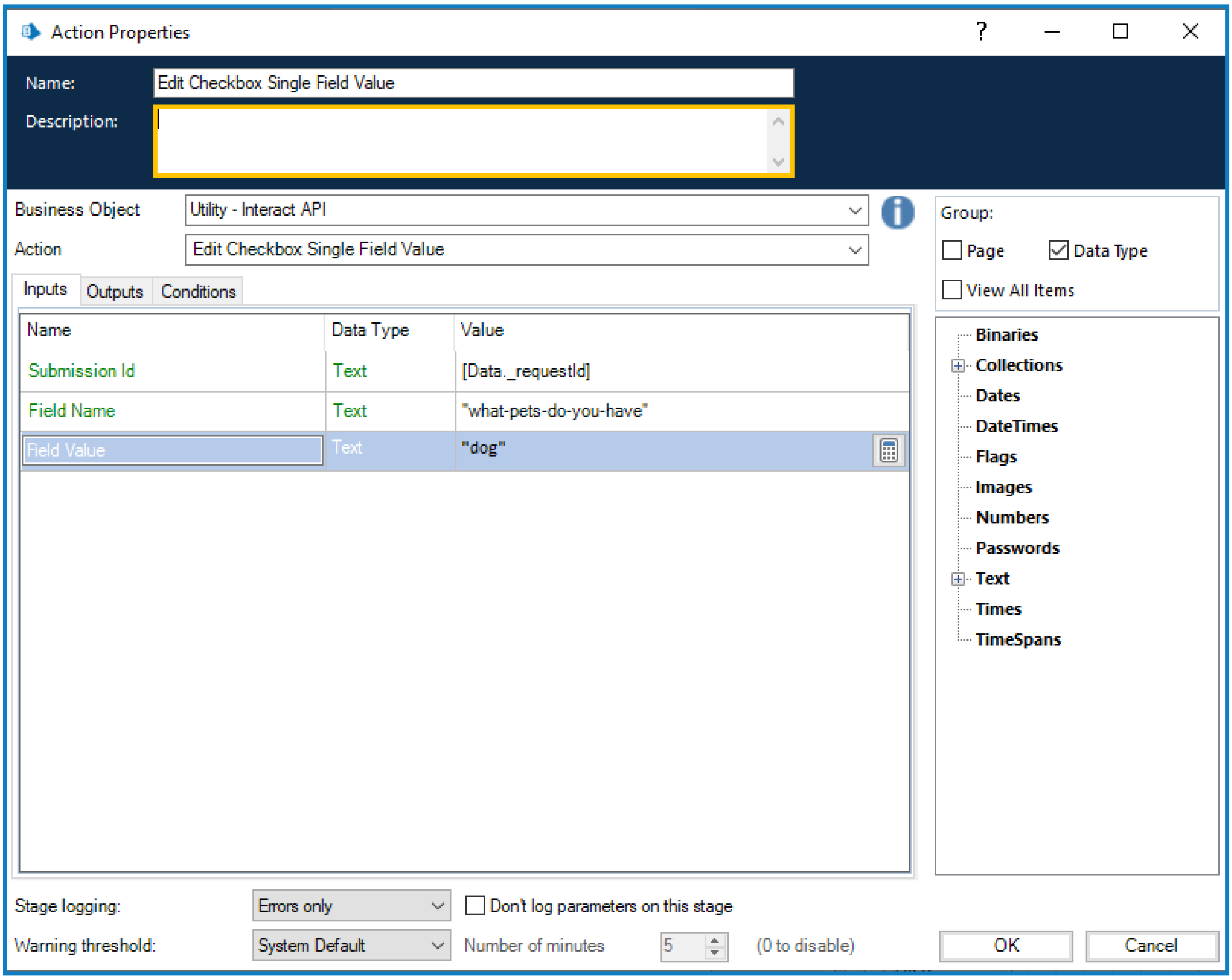
- 03:00:00 PM; or
- 15:00:00.

Both will return 3 o'clock in the afternoon in Interact.



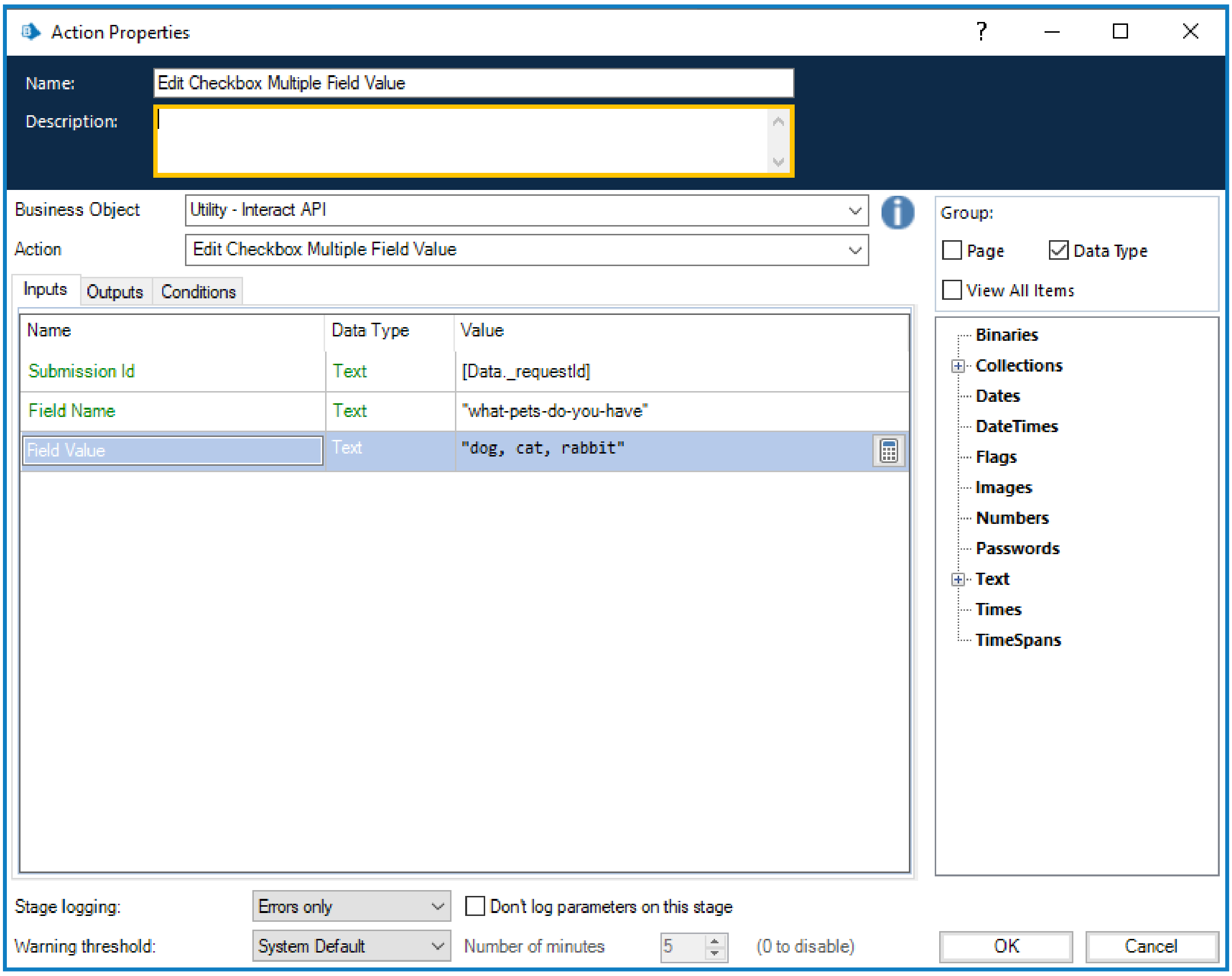
Checkbox element (Single)

The Checkbox Edit Value is two different actions supporting use of both Single and Multiple Checkboxes. To update the values for a Single Checkbox, it is a simple text string that is submitted.



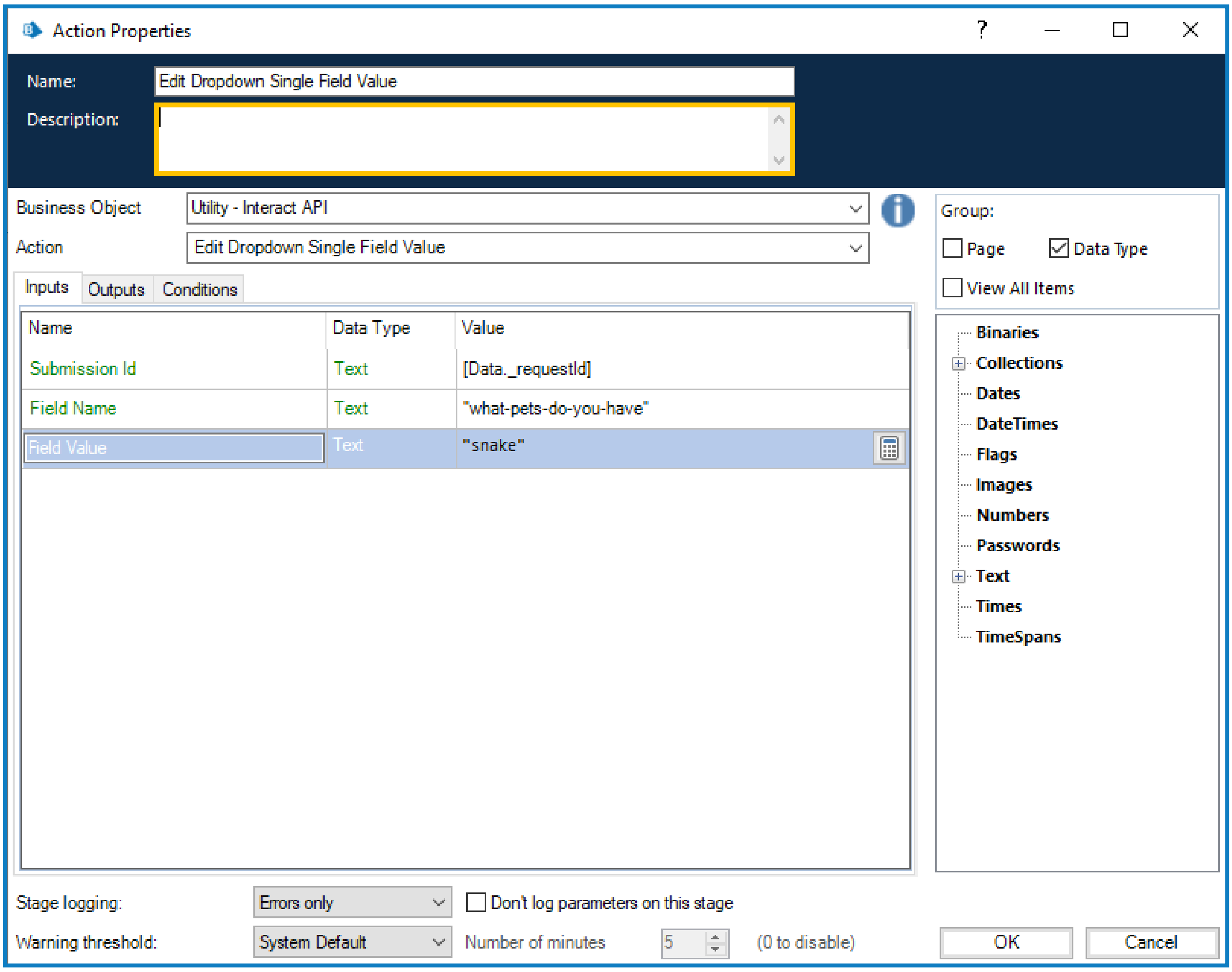
Checkbox element (Multiple)

For the Checkbox Edit Value (Multiple) again it is a simple text string that is submitted but using a comma separated string for the different values.



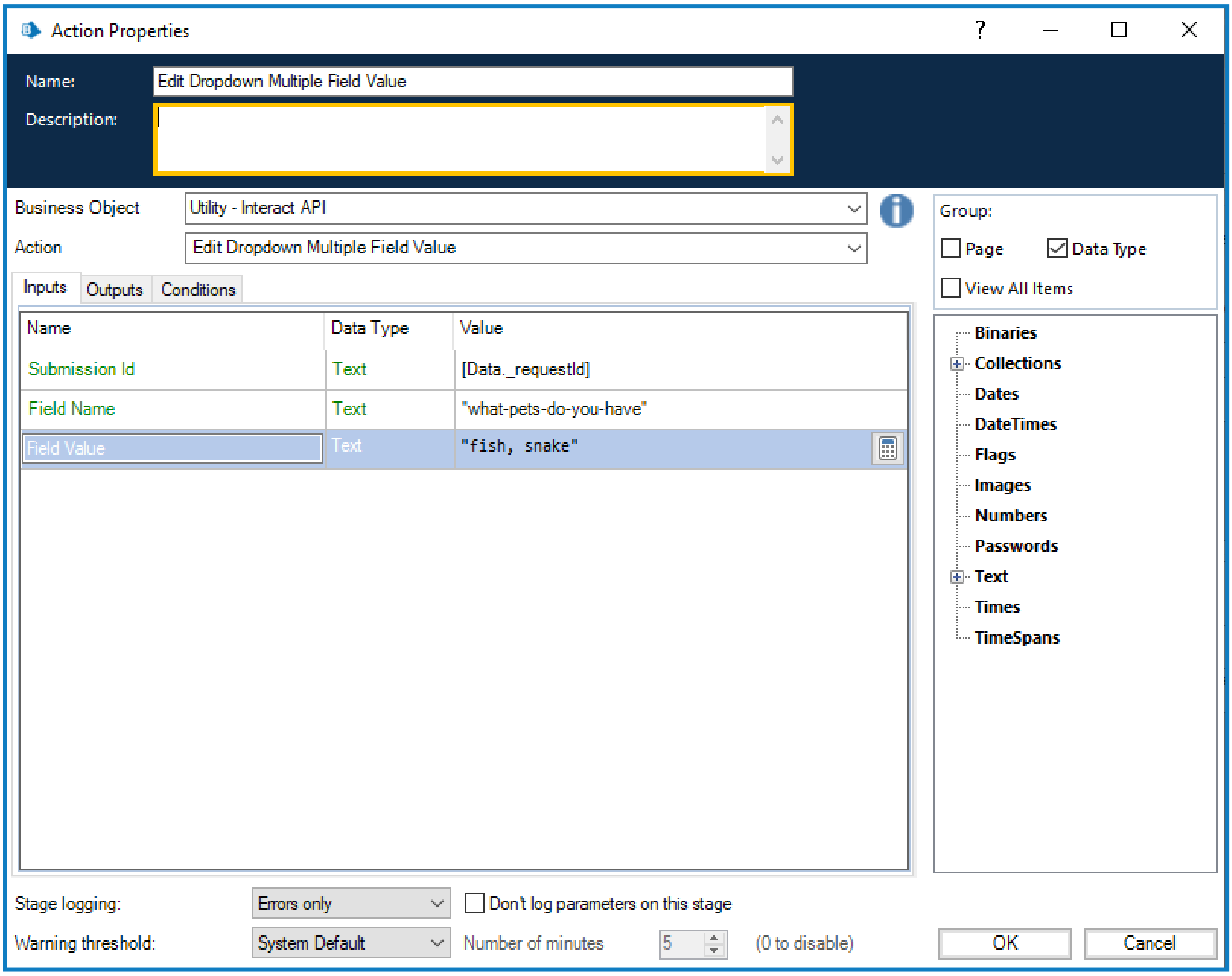
Dropdown element (Single)

The Dropdown element, like the Checkbox element, supports two actions for the single and multiple entries. To update the values for a Single Dropdown, it is a simple text string that is submitted.



Dropdown element (Multiple)

For the Dropdown Edit Value (Multiple) again it is a simple text string that is submitted but using a comma separated string for the different values.



Radio group element

The Radio group element is like a single Checkbox or Dropdown element. The edited value is a single text field which includes the required updated value.

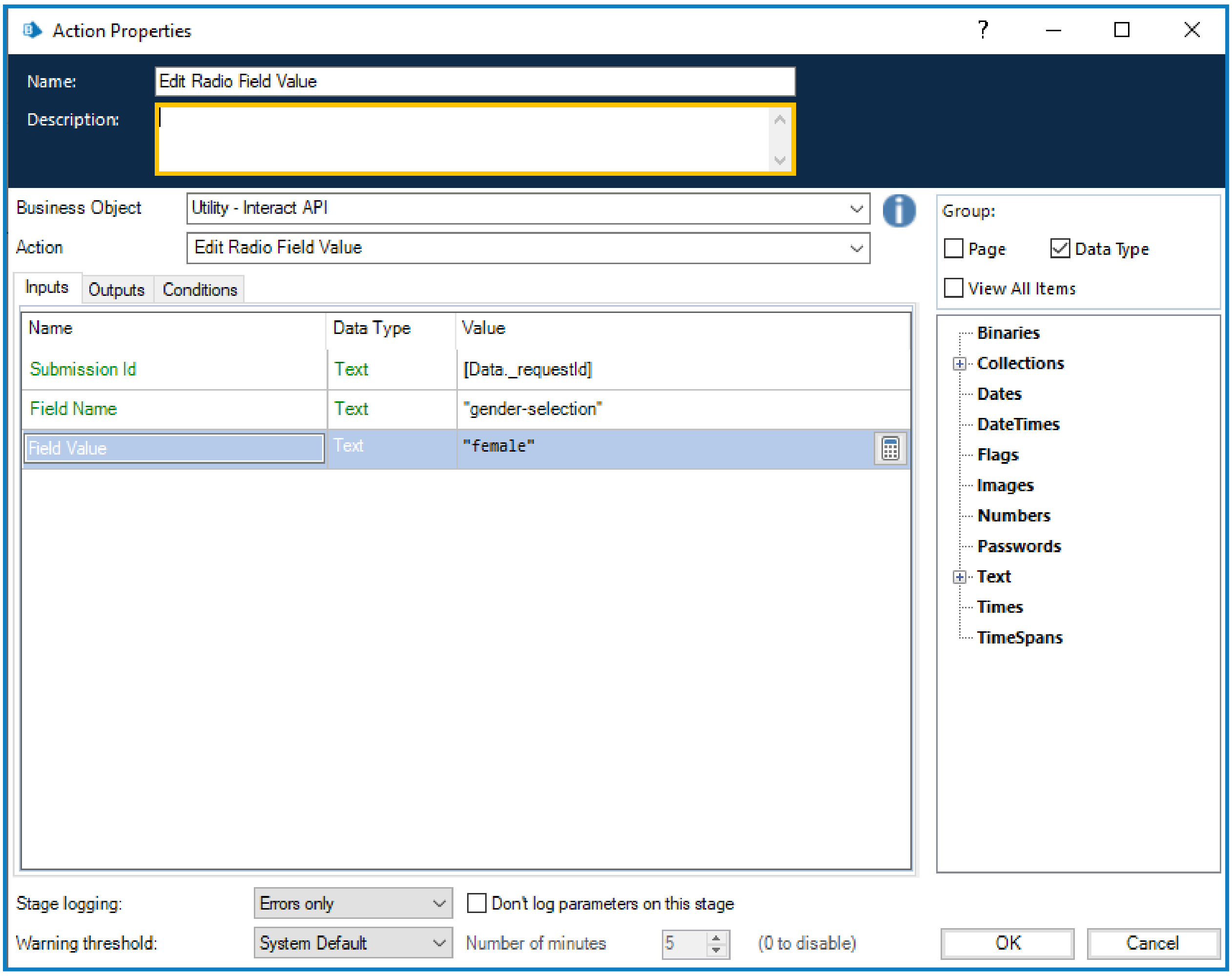
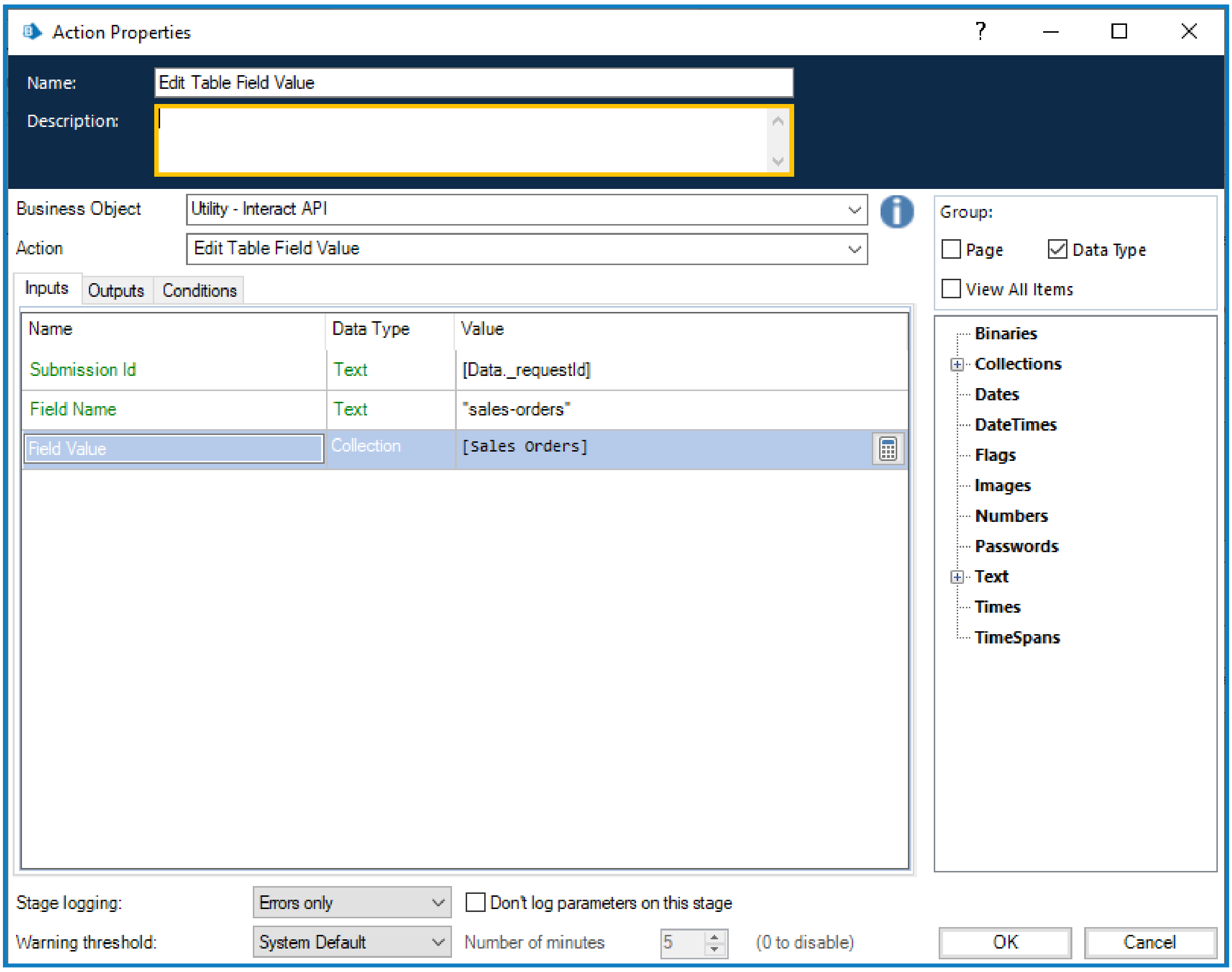


Table element

The Table element uses a collection to enable you to update the values. The collection must contain the same number of columns as the form field within the targeted form. Automation IDs must be used for the field names of the collection. The number of rows can be increased or decreased to accommodate the data being updated.

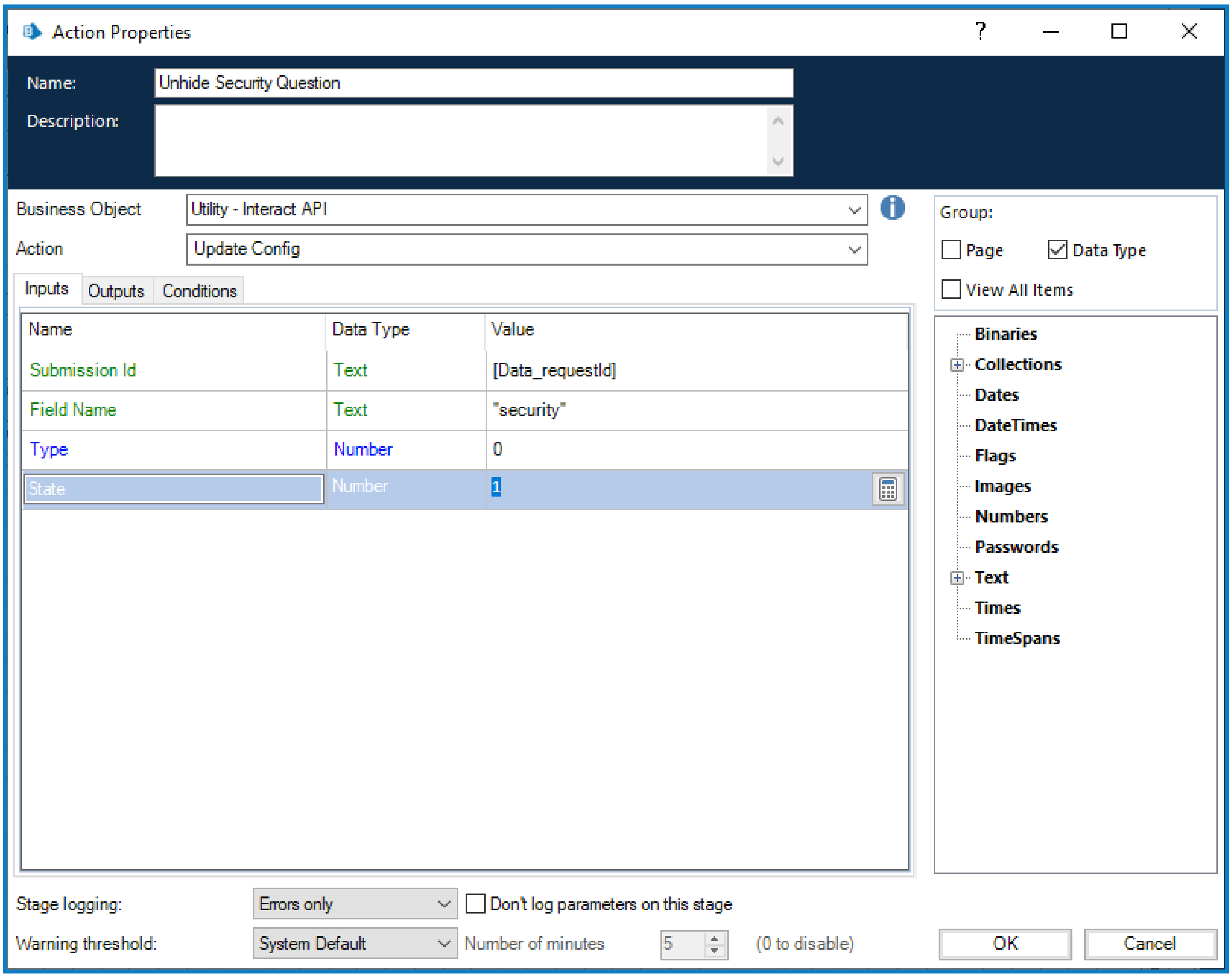


The Edit Table action overwrites the whole table as opposed to appending rows to an existing table.

Update Config

The Update Config action has been replaced with individual actions and will be removed from the Blue Prism Object in a future release. Each of the state options now has an independent action. If you are using Update Config, you should change to use the appropriate action.

The Update Config action allows you to change the state of a field or a page within a submission. The inputs for the action are illustrated below. This example shows a field with the name of ‘security being set to a ‘mandatory’ state. The inputs are the Submission ID, the Automation ID of the field or the page name if you are change the state of a page, a Type and the State inputs.



There are no outputs from the Update Config action.

The Type and the State inputs work together. For the Type there are two values that can be used:

- 0 – to modify the state of a field
- 2 – to modify the state of a page

If modifying the state of a field (Type set to ‘0’), then the State options are as follows:

- 0 – changes the field to an optional state. Please use the action Change Field State to Optional on page 36.
- 1 – changes the field to a mandatory state. Please use the action Change Field State to Mandatory on page 37.
- 2 – changes the field to a read-only state. Please use the action Change Field State to Read Only on page 38.
- 3 – changes the field to a hidden state. Please use the action Change Field State to Hidden on page 39.

If modifying the state of a page (Type set to ‘2’), then the State options are as follows:

- 0 – changes the page to a shown state. Please use the action Change Page State to Visible on page 40.
- 1 – changes the page to a shown state. Please use the action Change Page State to Visible on page 40.
- 2 – changes the page to a shown state. Please use the action Change Page State to Visible on page 40.
- 3 – changes the page to a hidden state. Please use the action Change Page State to Hidden on page 41.

The Update Config is typically used in a human/digital worker collaboration scenario where the Form is dynamically updated as the human interacts with the automation. This is detailed separately showing how these Actions can be used to update a Form with input from a user.

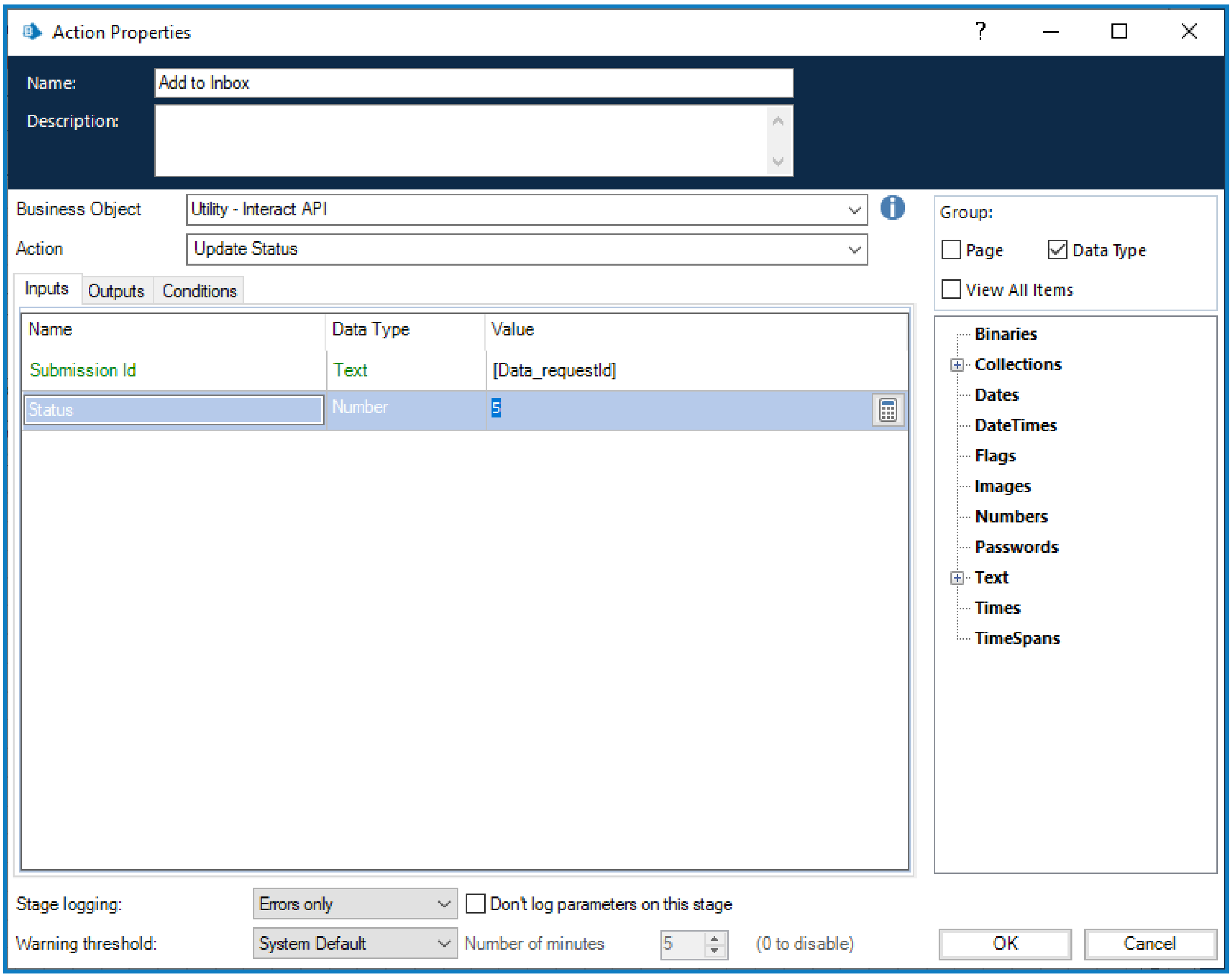
The Paragraph elements are blocks of text that cannot be changed in a Form once the Form has been deployed. However, it is possible using ‘Get Form Schema’ to obtain the element ID of the Paragraph field, then using Update Config, hide or unhide them as the update progresses.

Update Status

> The Update Status action has been replaced with individual actions and will be removed from the Blue Prism Object in a future release. Each of the status options now has an independent action. If you are using Update Status, you should change to use the appropriate action.

The Update Status action, like the Update Config on page 29 action, is typically used in a Human-in-the Loop scenario. The action allows you to move the submission between different Interact tabs.

The inputs for the action are illustrated below and are the Submission ID and the Status.



There are six statuses that can be applied to a submission, these are defined as follows:

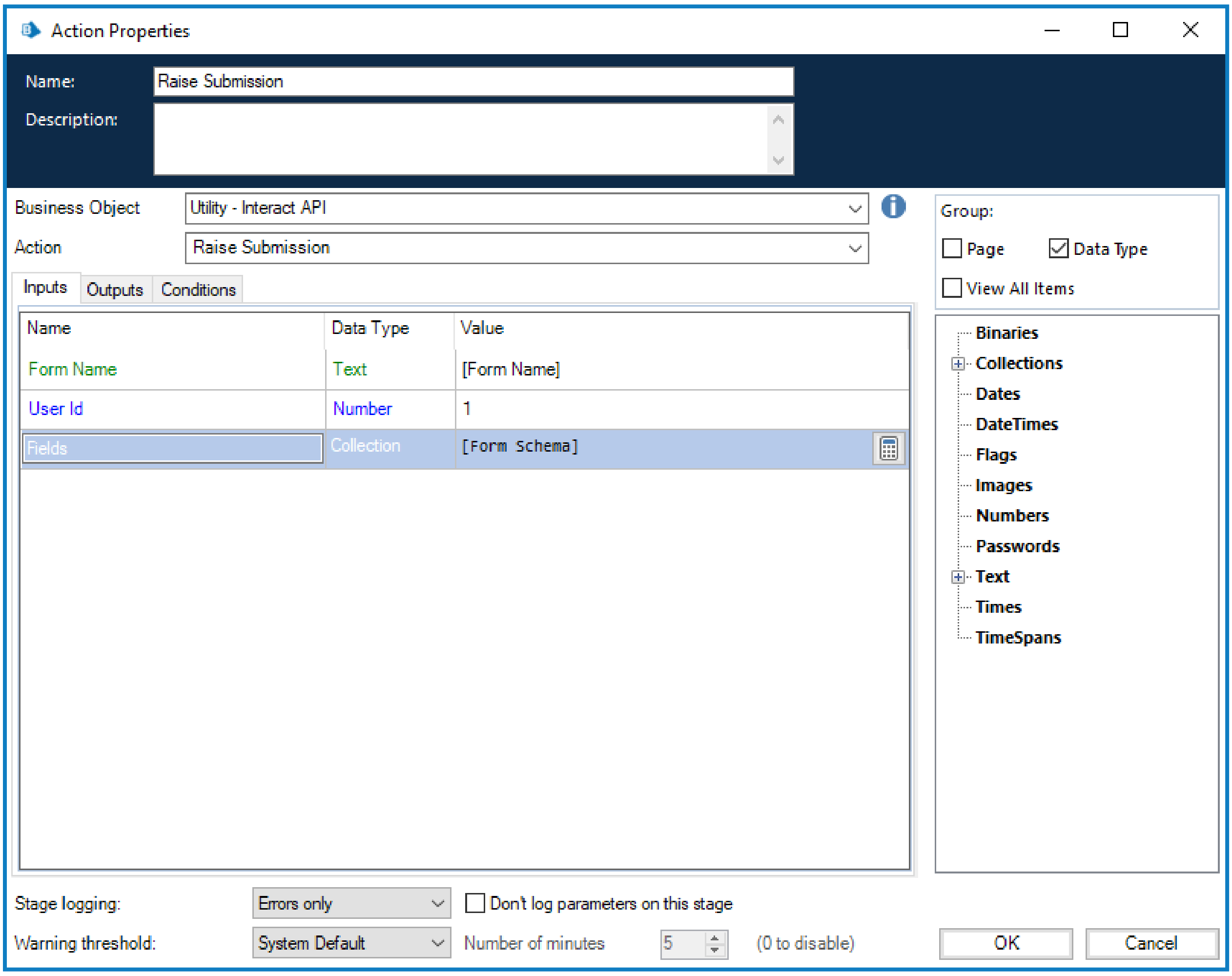
- 0 – Sets the status to Submitted and moves the submission to the **History** tab, if not already there. Please use the action Move Submission to History Tab on page 42.
- 1 – Sets the status to Approved and moves the submission to the **History** tab, if not already there. Please use the action Move Submission to Approved Tab on page 43.
- 2 – Moves the submission to the Awaiting approval tab. Please use the action Move Submission to Review Tab on page 44.
- 3 – Sets the status to Declined and moves the submission to the **History** tab, if not already there. Please use the action Move Submission to Declined Tab on page 45.
- 4 – Moves the submission to the **Draft** tab. Please use the action Move Submission to Draft Tab on page 46.

- 5 – Moves the submission to the **Inbox** tab. Please use the action Move Submission to Inbox Tab on page 47.
- 6 – Moves the submission to the **Archived** tab. Please use the action Move Submission to Archived Tab on page 48.

Raise Submission

The Raise Submission action allows you to create a submission in a user's particular Inbox folder. The submission raised can be fully or partially completed, or even completely empty depending on your requirements.

The inputs for the action are the Form Name, the User ID (which can be obtained by running 'Get Users by Form Name') and the data to be loaded in the fields, as illustrated below. The data file loaded can be created by running the 'Get Form Schema' command.

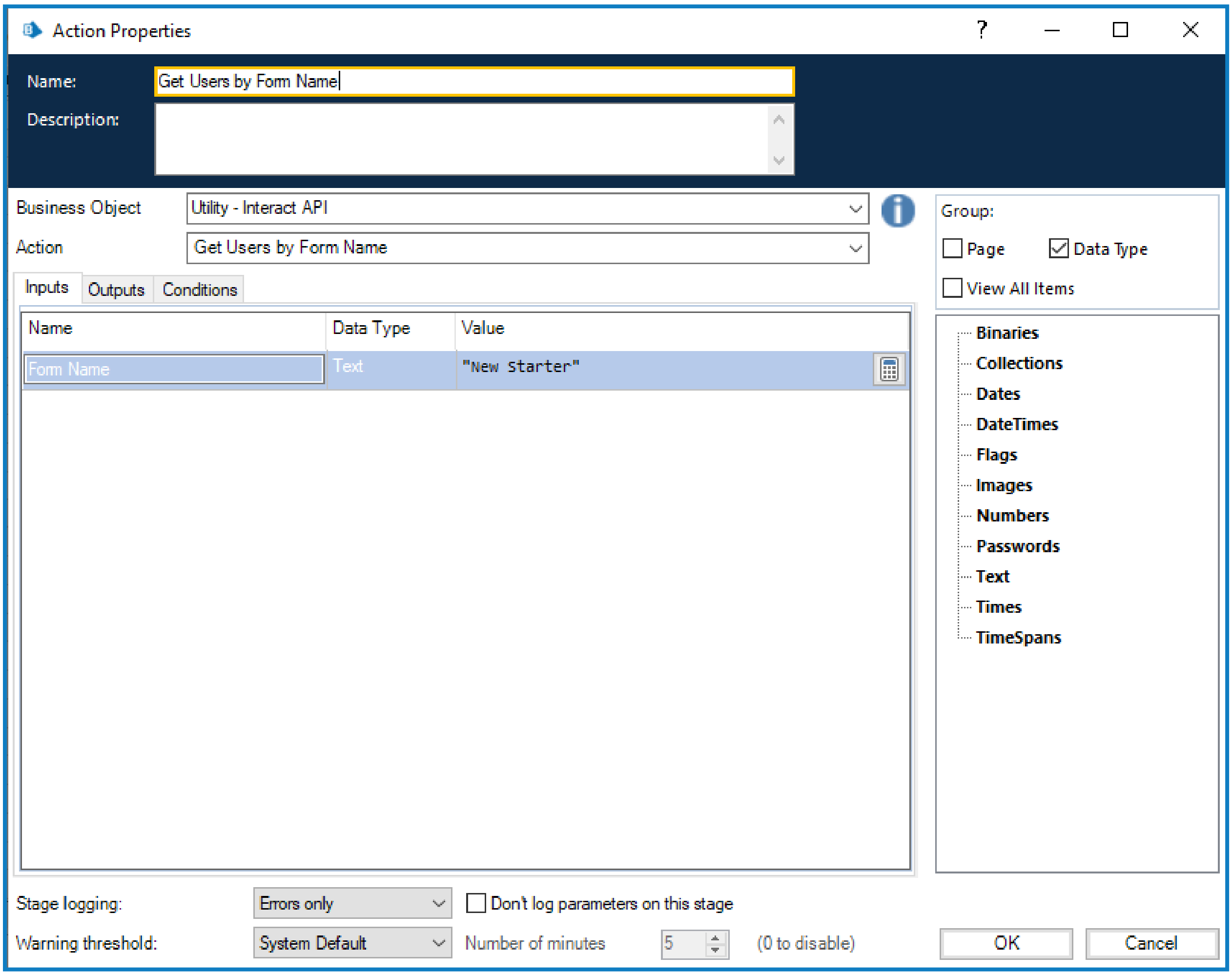


There are no outputs for the Raise Submission action.

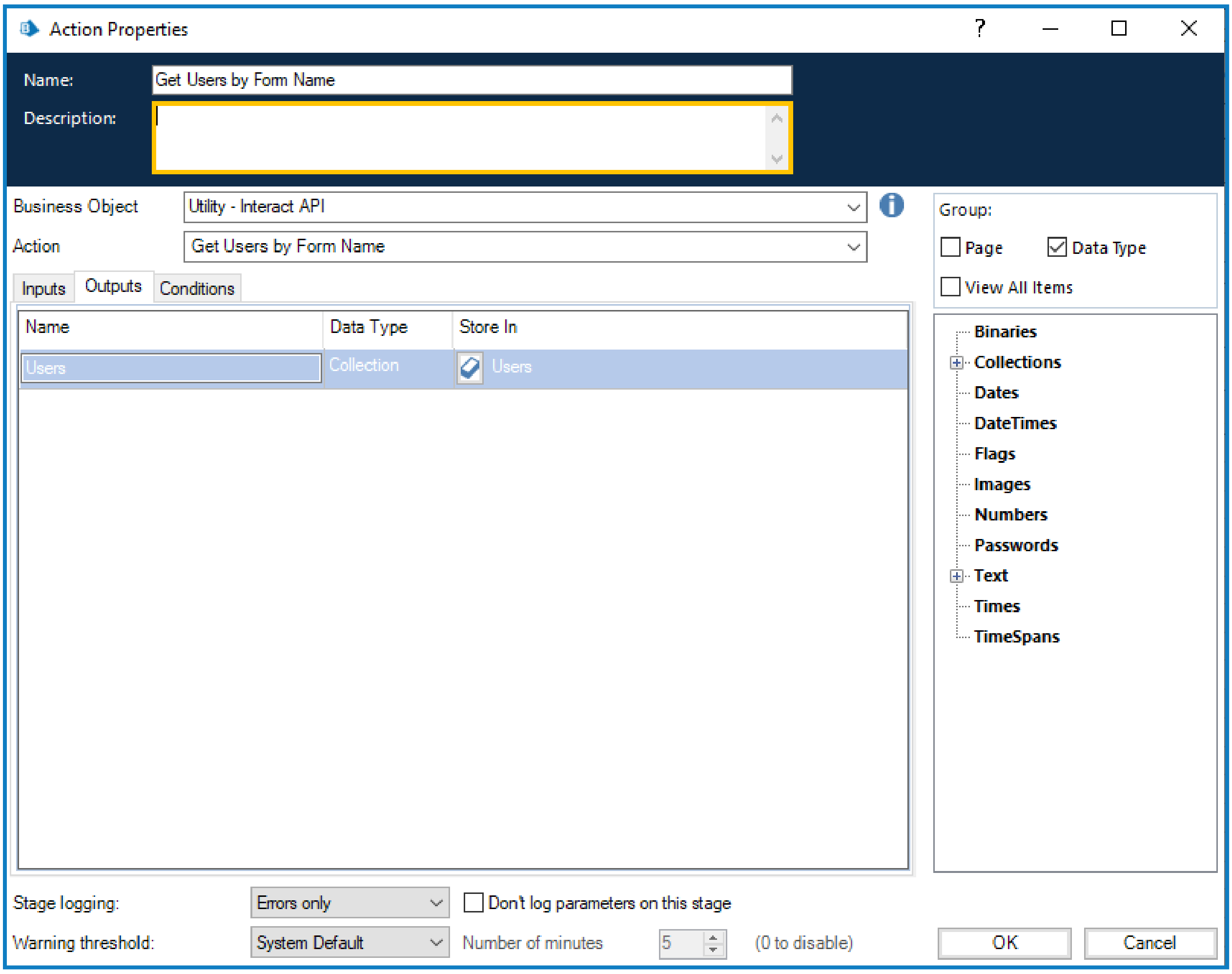
Get Users by Form Name

The Get Users by Form Name allows you to collect a list of users associated with a particular Form Name.

The input for the action is the Form Name, as illustrated below.



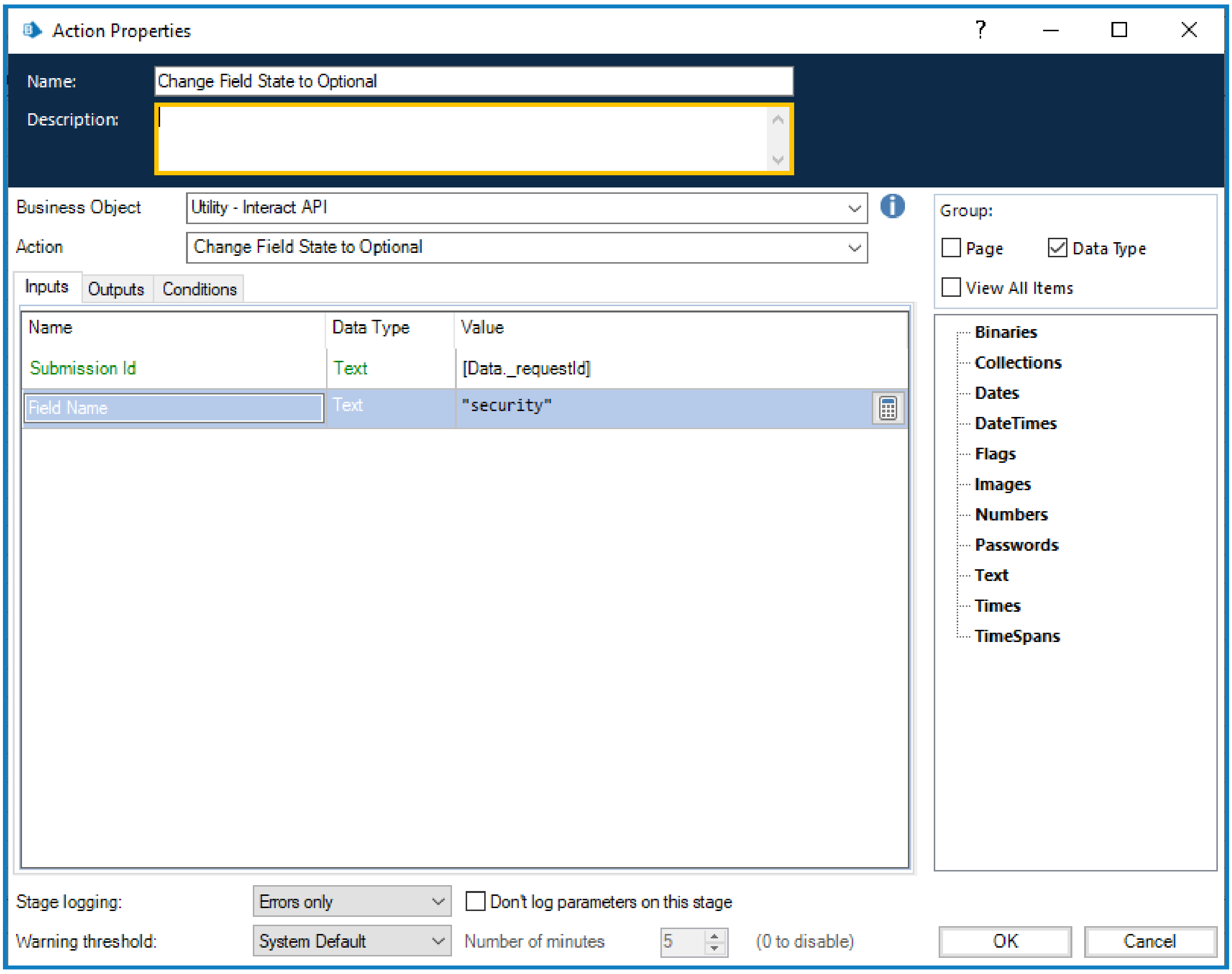
The output is a collection that lists the users associated with that Form Name.



Change Field State to Optional

The Change Field State to Optional allows you to change the state of a field within a submission, moving it to an Optional condition.

The inputs for the action are the Submission ID and the Field Name you are changing the state to optional, as illustrated below. This example shows a field with the name of ‘security’ being set to a ‘optional’ state.

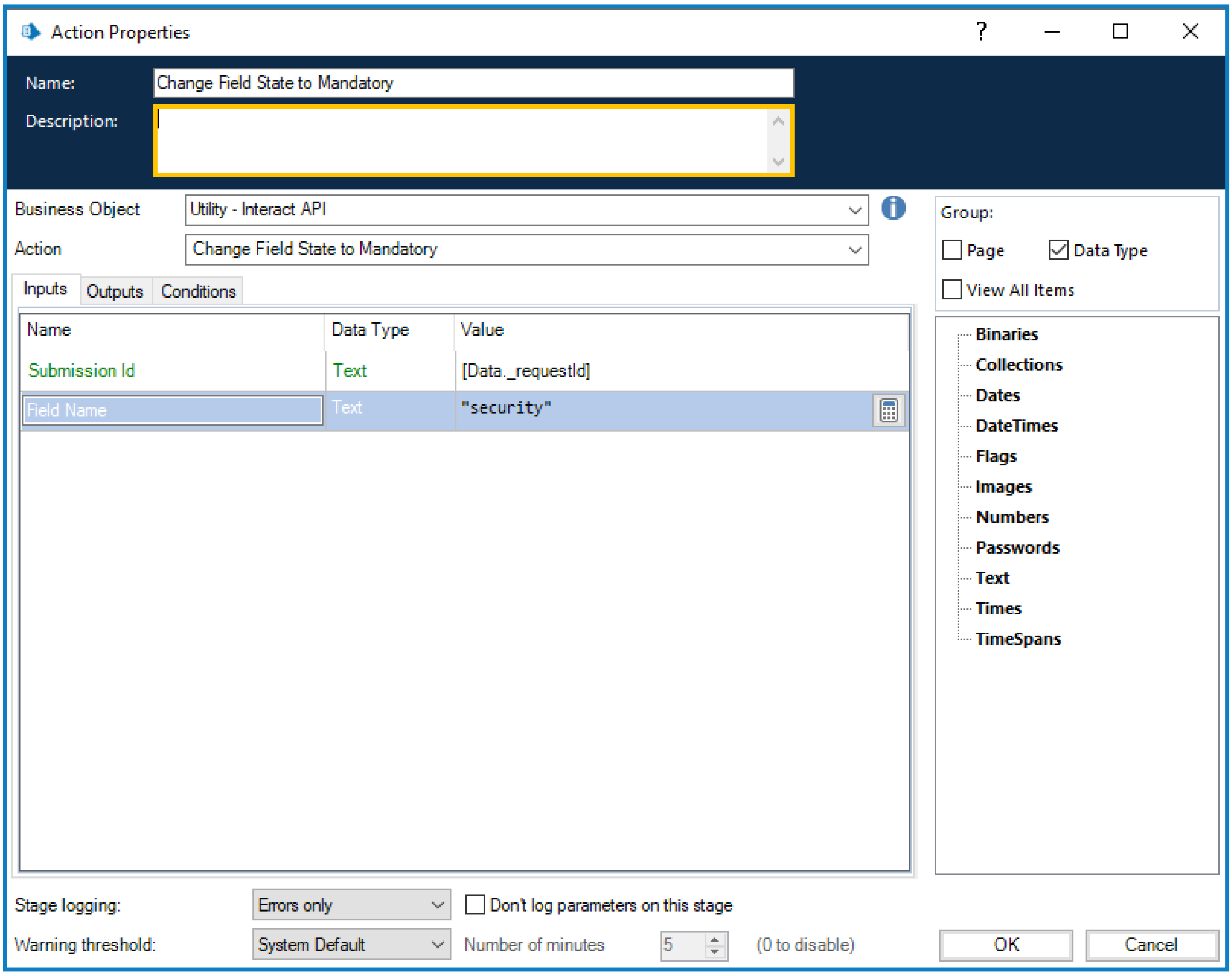


There are no outputs for the Change Field State to Optional.

Change Field State to Mandatory

The Change Field State to Mandatory allows you to change the state of a field within a submission, moving it to a Mandatory condition.

The inputs for the action are the Submission ID and the Field Name you are changing the state to mandatory, as illustrated below. This example shows a field with the name of ‘security’ being set to a ‘mandatory’ state.

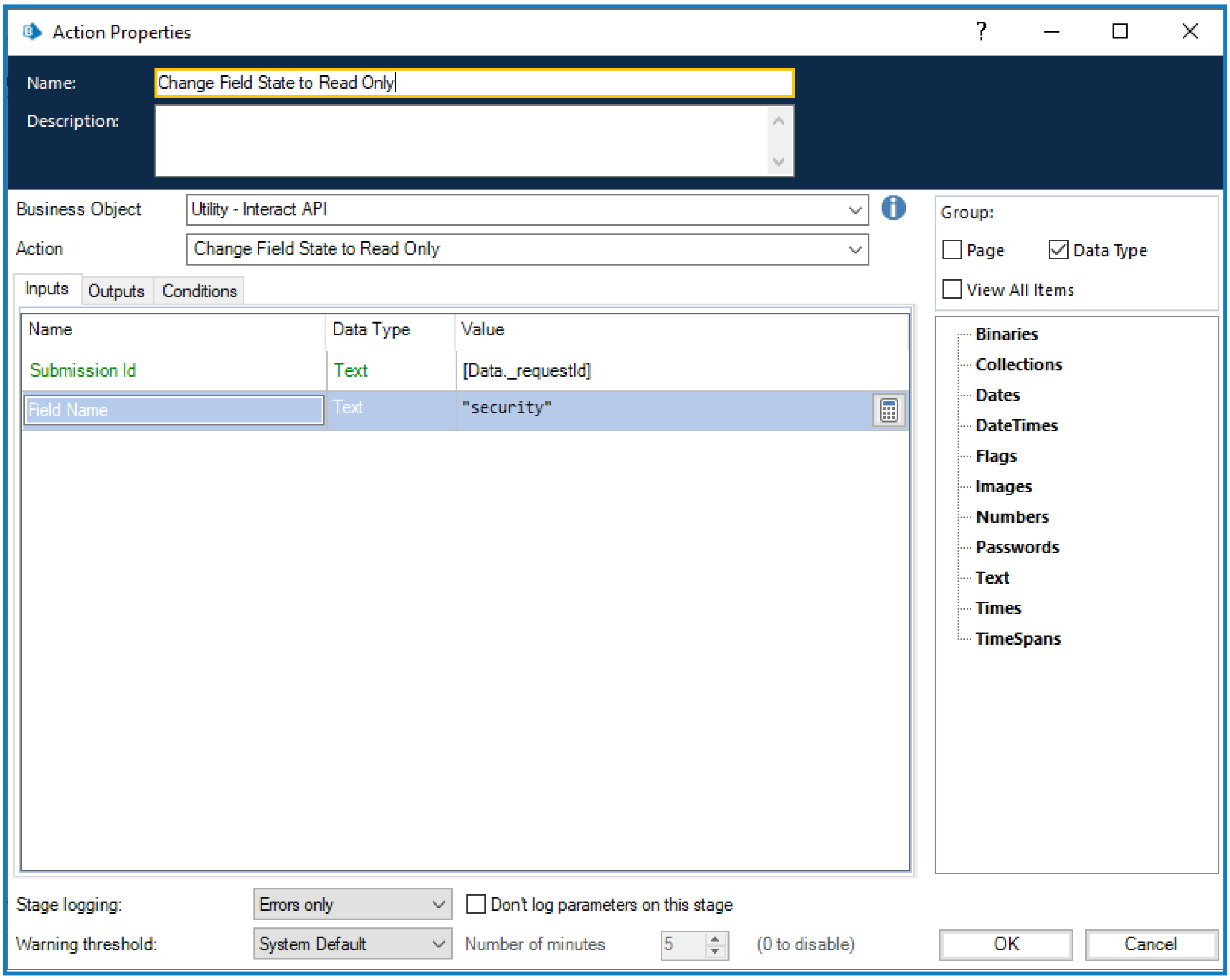


There are no outputs for the Change Field State to Mandatory.

Change Field State to Read Only

The Change Field State to Read Only allows you to change the state of a field within a submission, moving it to a Read Only condition.

The inputs for the action are the Submission ID and the Field Name you are changing the state to read only, as illustrated below. This example shows a field with the name of 'security' being set to a 'read only' state.

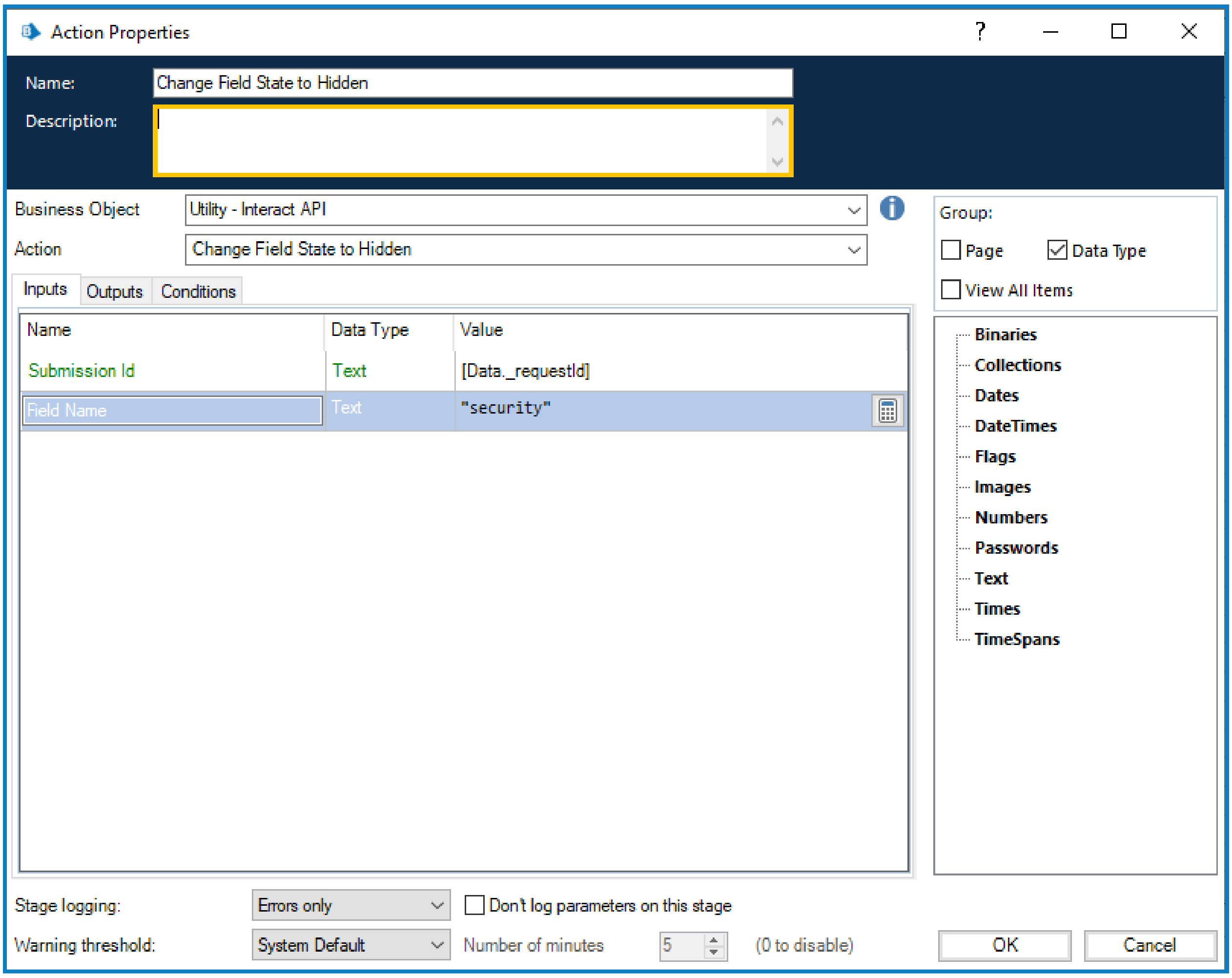


There are no outputs for the Change Field State to Read Only.

Change Field State to Hidden

The Change Field State to Hidden allows you to change the state of a field within a submission, moving it to a Hidden condition.

The inputs for the action are the Submission ID and the Field Name you are changing the state to hidden, as illustrated below. This example shows a field with the name of 'security' being set to a 'hidden' state.

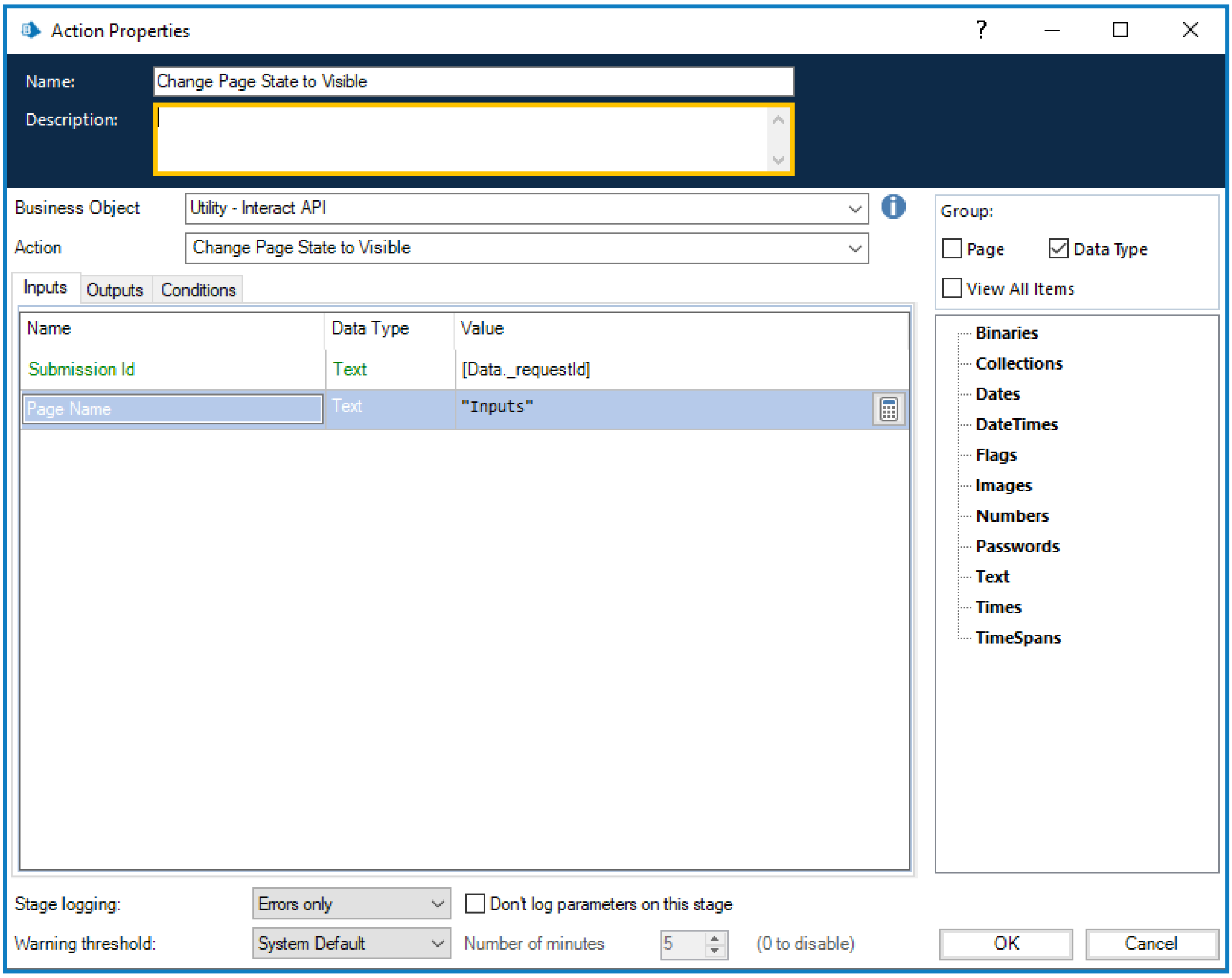


There are no outputs for the Change Field State to Hidden.

Change Page State to Visible

The Change Page State to Visible allows you to make a page become visible within a submission.

The inputs for the action are the Submission ID and the Page Name you are changing to become visible, as illustrated below. This example shows a page with the name of 'inputs' being set to a 'visible' state.

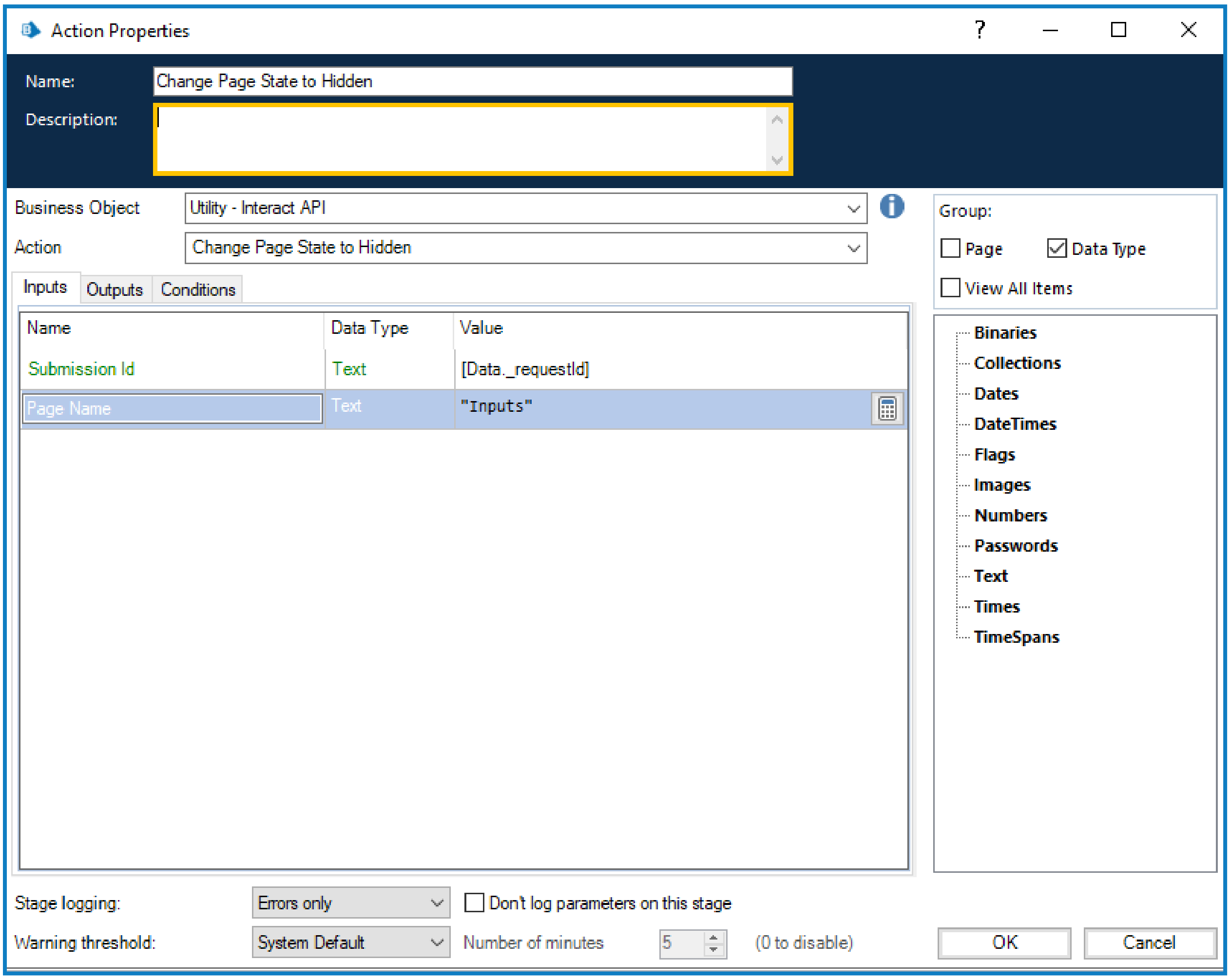


There are no outputs for the Change Page State to Visible.

Change Page State to Hidden

The Change Page State to Hidden allows you to make a page hidden from view within a submission.

The inputs for the action are the Submission ID and the Page Name you are changing to become hidden , as illustrated below. This example shows a page with the name of 'inputs' being set to a 'hidden' state.

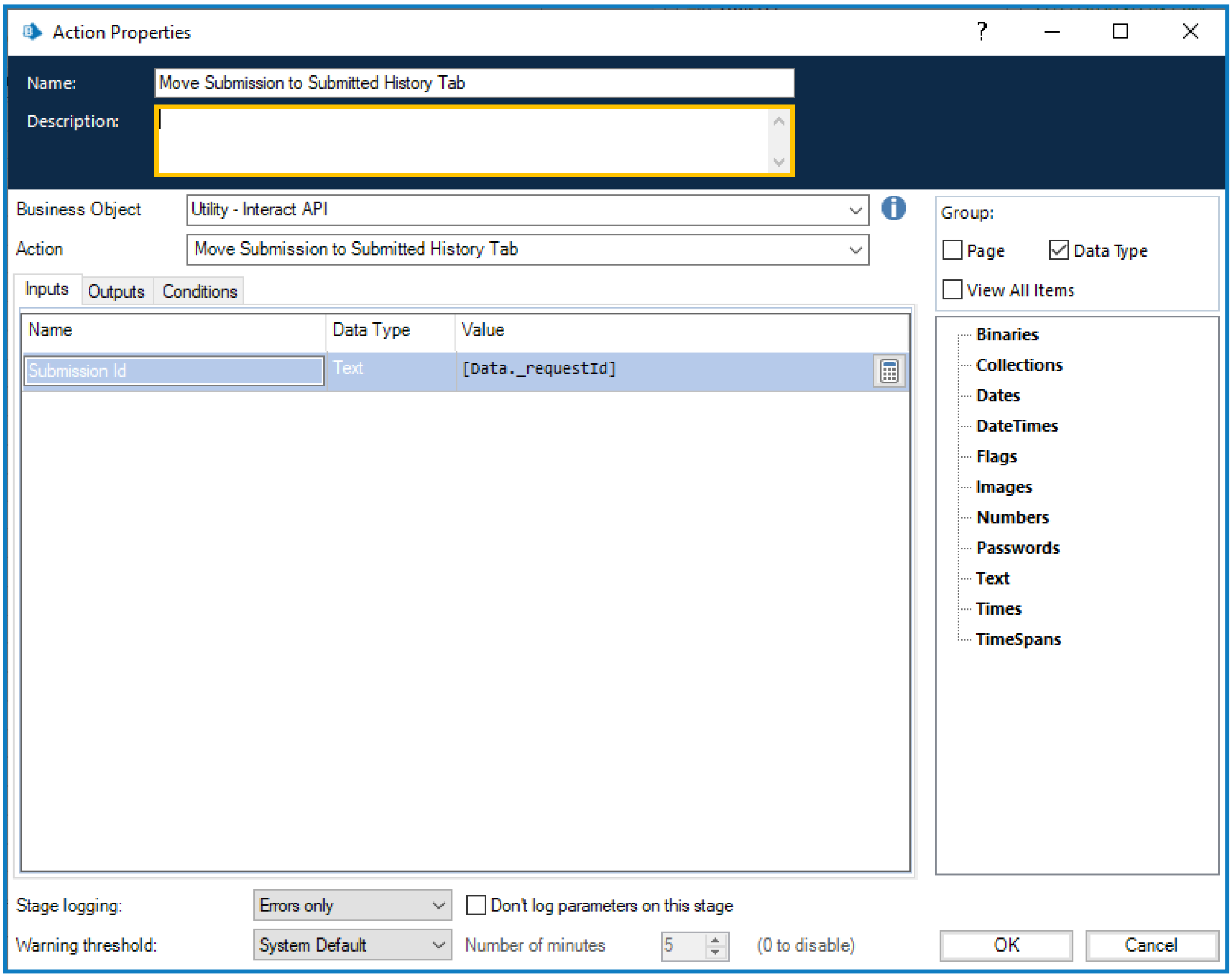


There are no outputs for the Change Page State to Hidden.

Move Submission to History Tab

The Move Submission to History Tab allows you to move a submission from its current folder to the **History** folder, and set the status of the submission to Submitted.

The input for the action is the Submission ID of the submission being moved, as illustrated below.

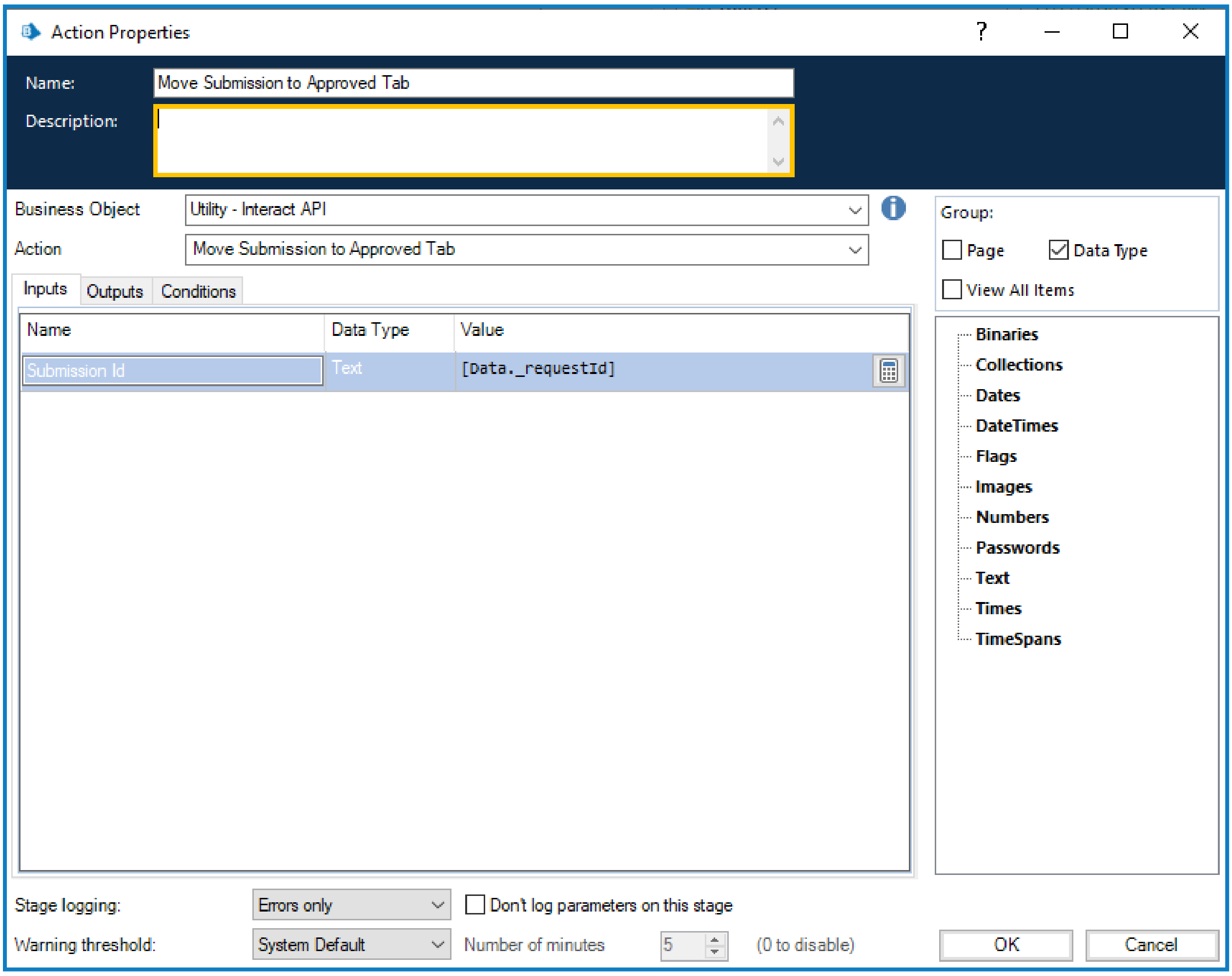


There are no outputs for the Move Submission to History Tab.

Move Submission to Approved Tab

The Move Submission to Approved allows you to move a submission from its current folder to the **History** folder, and set the status of the submission to Approved.

The input for the action is the Submission ID of the submission being moved, as illustrated below.

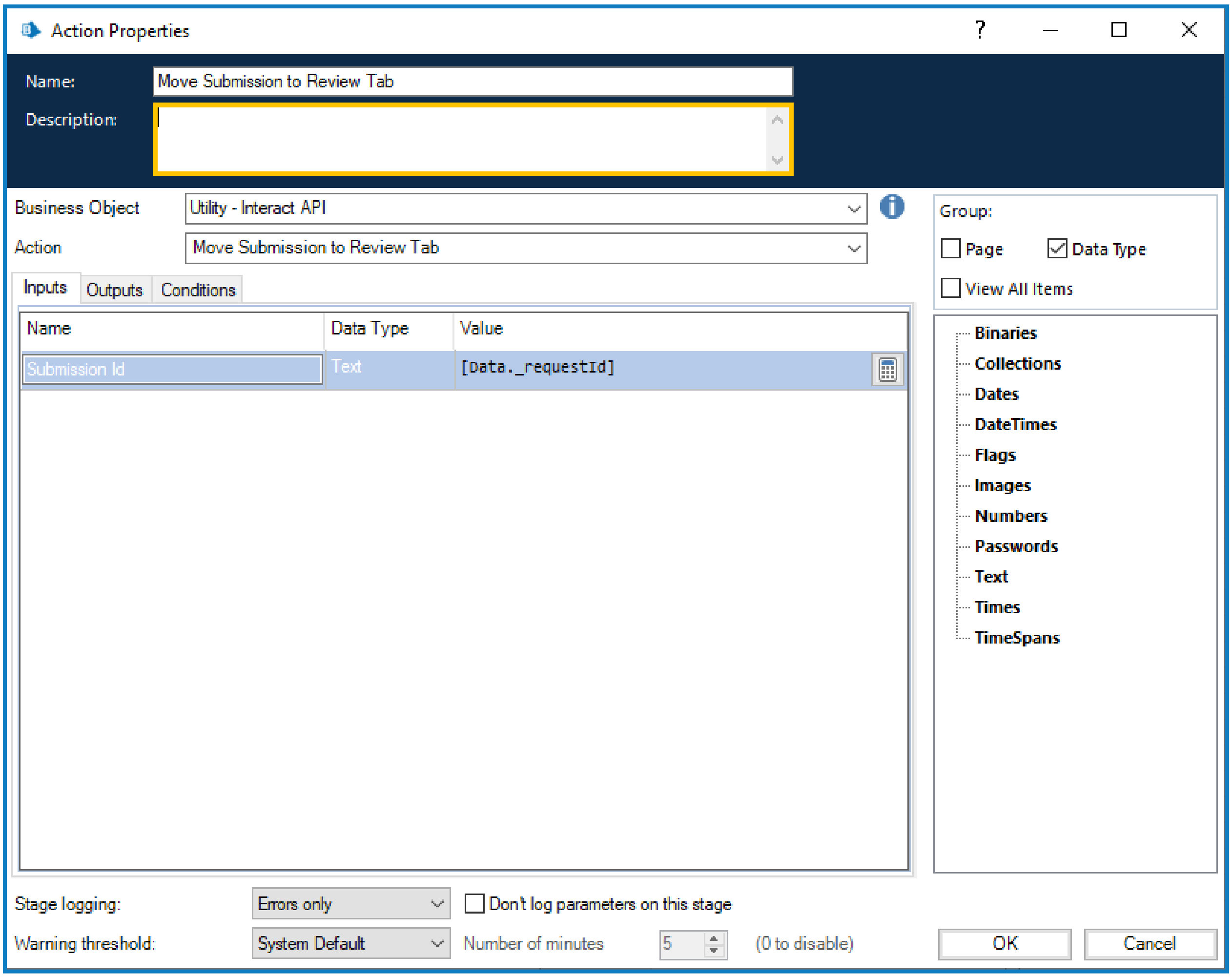


There are no outputs for the Move Submission to Approved.

Move Submission to Review Tab

The Move Submission to Review Tab allows you to move a submission from its current folder to the **Awaiting approval** folder.

The input for the action is the Submission ID of the submission being moved, as illustrated below.

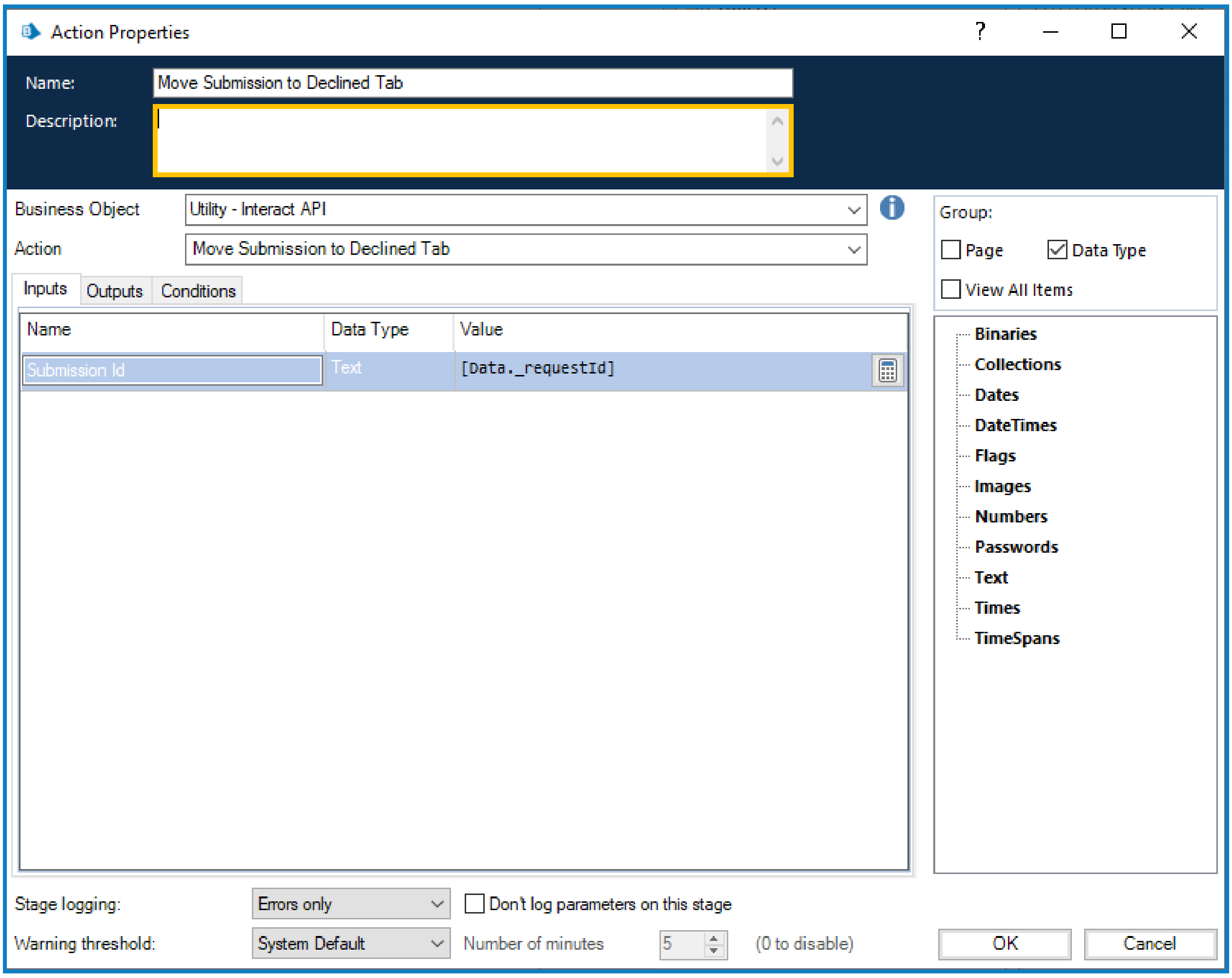


There are no outputs for the Move Submission to Review Tab.

Move Submission to Declined Tab

The Move Submission to Declined Tab allows you to move a submission from its current folder to the **Declined** folder.

The input for the action is the Submission ID of the submission being moved, as illustrated below.

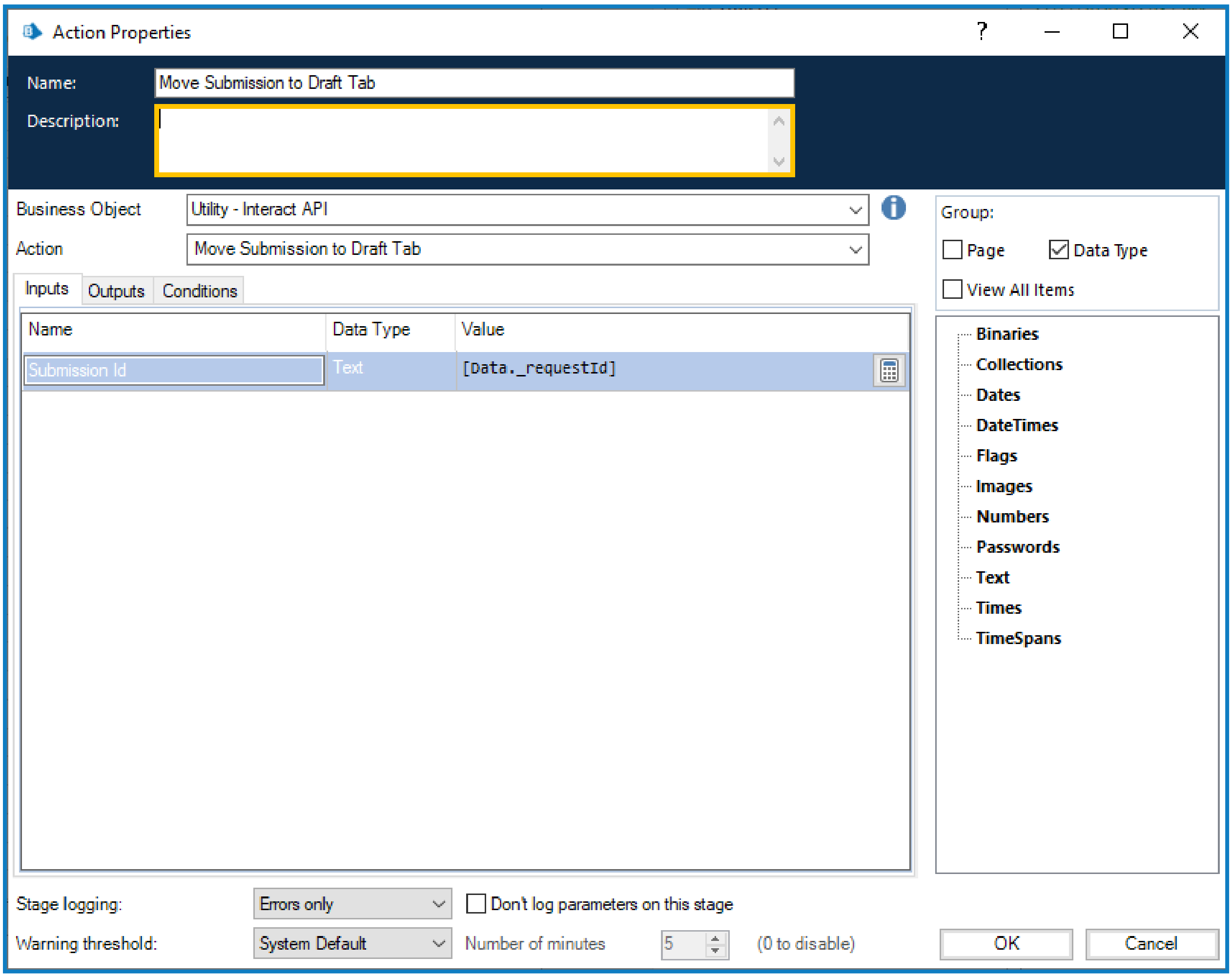


There are no outputs for the Move Submission to Declined Tab.

Move Submission to Draft Tab

The Move Submission to Draft Tab allows you to move a submission from its current folder to the **Draft** folder.

The input for the action is the Submission ID of the submission being moved, as illustrated below.

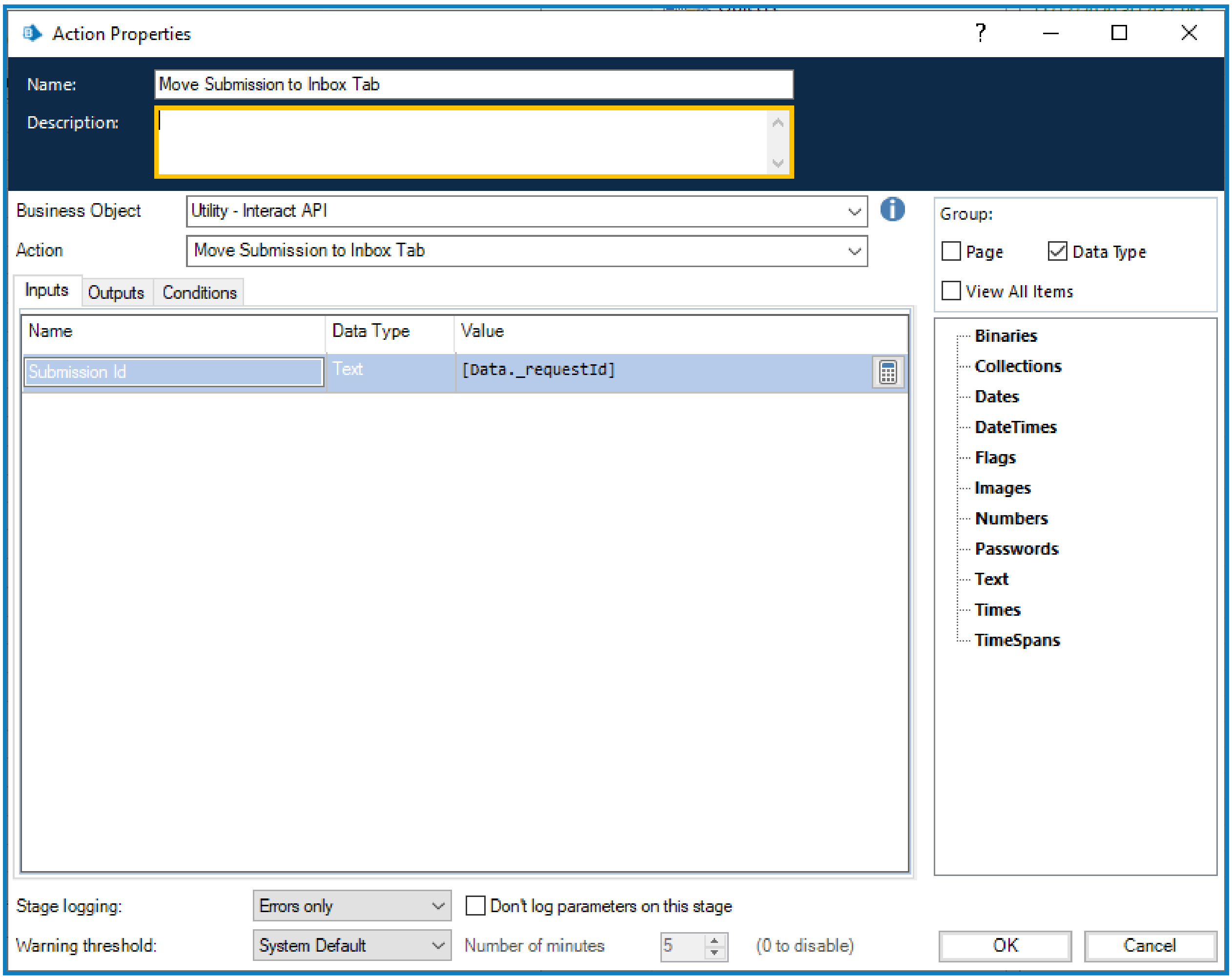


There are no outputs for the Move Submission to Draft Tab.

Move Submission to Inbox Tab

The Move Submission to Inbox Tab allows you to move a submission from its current folder to the **Inbox** folder.

The input for the action is the Submission ID of the submission being moved, as illustrated below.

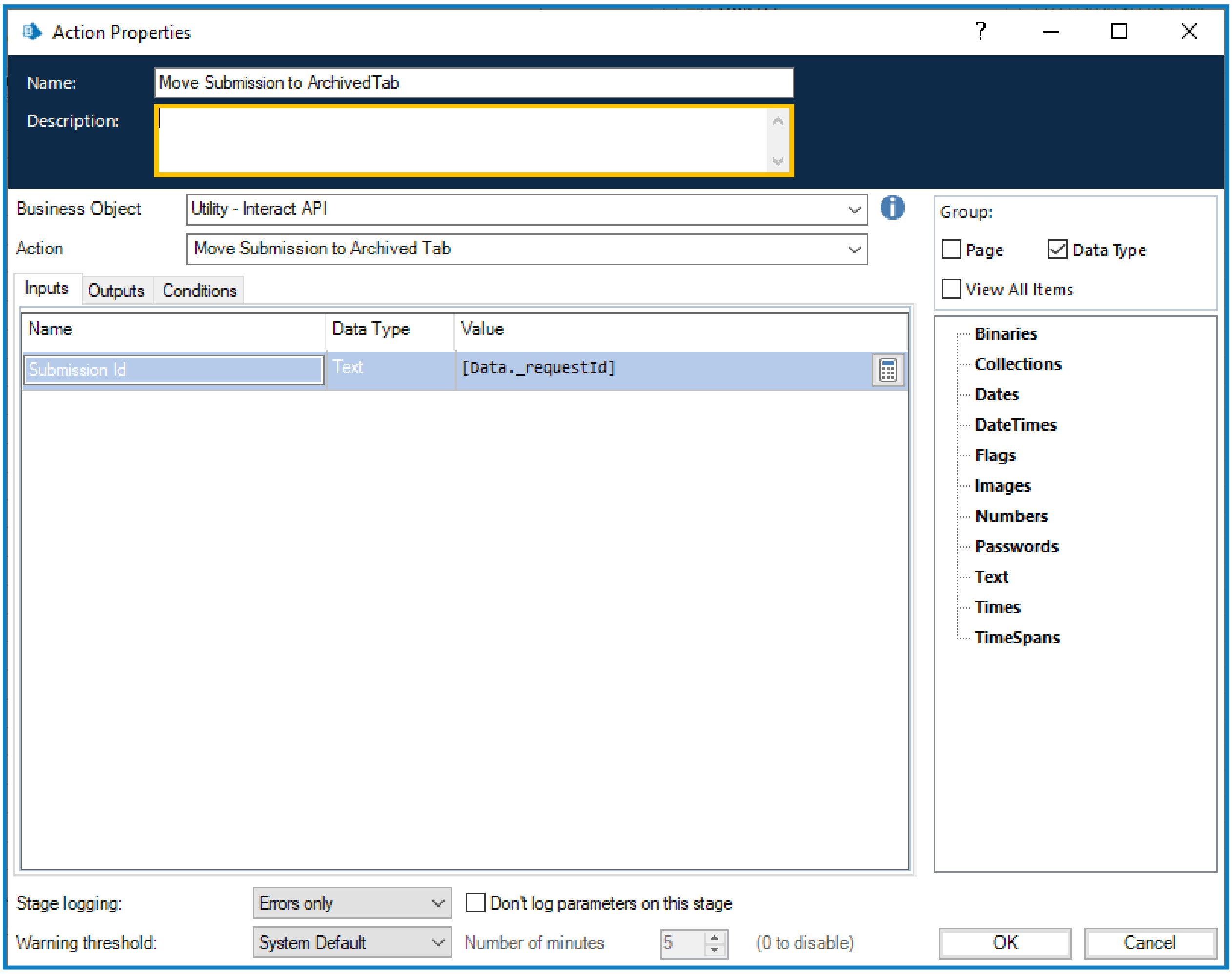


There are no outputs for the Move Submission to Inbox Tab.

Move Submission to Archived Tab

The Move Submission to Archived Tab allows you to move a submission from its current folder to the Archived folder.

The input for the action is the Submission ID of the submission being moved, as illustrated below.



There are no outputs for the Move Submission to Archived Tab.

Human/digital worker collaboration

To best show the way that human/digital worker collaboration operates let us consider a simple scenario. This scenario is a simple change of address request from a user.

The steps on a high-level are detailed below:

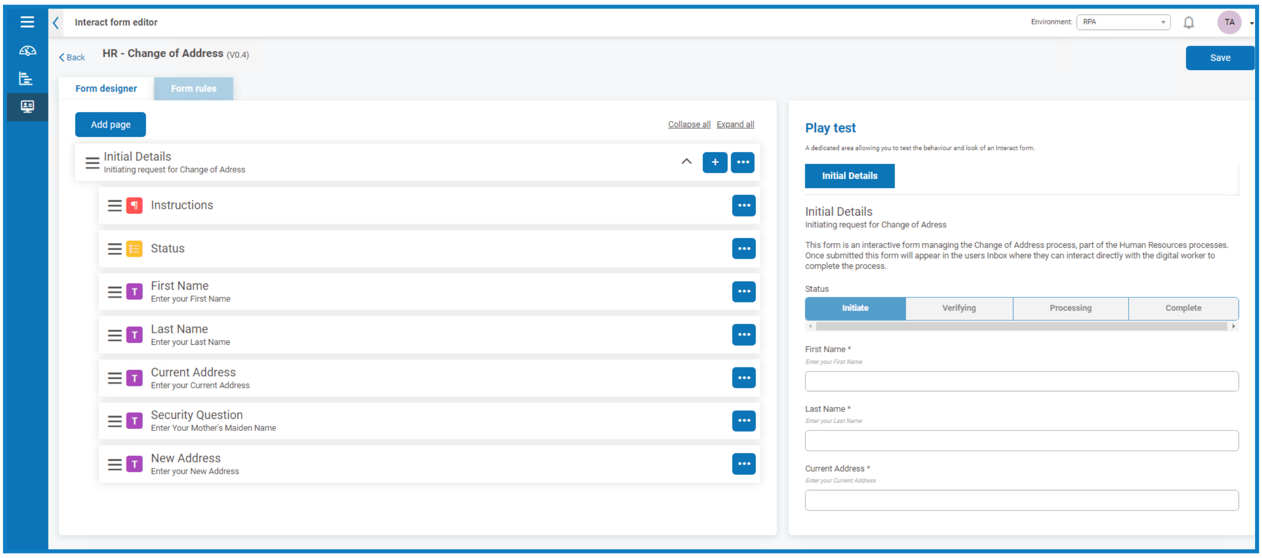
- The user will initiate the request through Interact;
- The digital worker will review the request and move the item to the user's inbox;
- The user will then review and update the request, providing their response to a security question, and submit the request;

  > At this point the user can leave the Form open in the inbox, see the Form being updated dynamically by the digital worker and provide additional information when requested.

- The digital worker processes the information provided and then requests additional information from the user, the new address;
- The user provides the information and the digital worker updates the record and then completes the task.

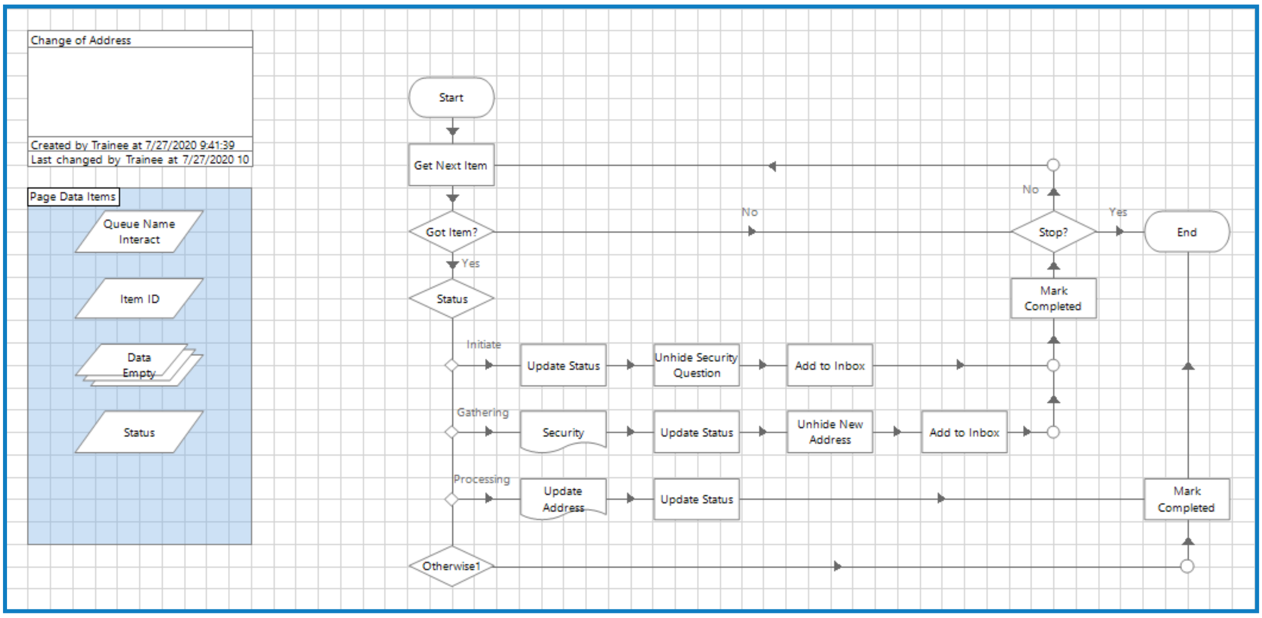
The Form created in Interact is displayed below.

The Form captures initialing the First and Last Names, as well as the current address. The other fields, as you can see in the Play Test Area, are hidden. These are the security question and the new address fields.



The automation associated with the process is illustrated below. This is a process that loops through and allows to the user to work dynamically with the digital worker.

The process operates dependent on the value of the 'Status' flag. This is a read-only radio group across the top of the Form. As the process progresses through the different stages this flag is updated and the Status changes in the Form.



This video shows the automation process in operation following the steps detailed above.

Interact Web API Service object restrictions

The following restrictions apply to the Interact Web API Service object.

The table below lists the restrictions.

Function	Element Type	Applicable Restrictions
Get Submission	Number	Number elements are delivered as 'Text' format when using the Get Submission Web API Service. Cast to Number once inside Blue Prism
Get Submission	Date	Retrieving a Date element using the Get Submission Web API Service, returns the Date in 'DateTime' format. It is recommended that DateTime values are converted to Text once inside Blue Prism. The use of Text is recommended to support the different Date formats within Interact.
IADA	Number	Number elements are delivered as 'Text' format into a Blue Prism queue. Cast to Number once inside Blue Prism
Create Submission	Number	When creating a new submission using the Web API Service the submission will fail if a Number element is left blank. Submit Number element fields with a number set
Create Submission	Radio Group	When creating a new submission using the Web API Service the submission will fail if a Radio Group element is left blank. Submit Radio Group element fields with a value set
Create Submission	Upload	When creating a new submission using the Web API Service you cannot send anything back when using the Upload element. This is the expected functionality.
Edit Submission	Upload	When editing a submission using the Web API Service you cannot send anything back when using the Upload element. This is the expected functionality.
Interact Form	Priority and SLA	Though the Priority and SLA can be set in the Interact Form creator, they have no significance in this release as IADA 'Get Next Prioritized Item' (GNPI) function is not available in an on-premise configuration. Expected functionality for this release.
Interact Forms	Rules	Rules are not enforced when updating Interact Forms from Blue Prism. For example, a rule that reveals a hidden field when a flag is set, will not be initiated if the flag is set correctly when updated. If the field is not read-only a user can click in the field and then click elsewhere in the Form to see the Rule applied. You can use Update Config to replace some rules.
Interact Forms	Verification	Regex and other verification such as character string lengths are not enforced when updating Interact Forms from Blue Prism. If the field is not read-only a user can click in the field and then click elsewhere in the Form to see the Rule applied. No workaround available.