

CRS i FormBuilder User Guide

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General Knowledge and Information Management
Humanitarian Response Department

If you have any further inquiries about using iForms, please contact the helpdesk, at helpdesk@crs.org

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Setting up iForm on your Device

Downloading the iForm Client

One of the first steps to using iForm on your device (iOS or Android) is to download the iForm Client. To do this, you need to have internet access on your device and follow the steps below:

1. From the home screen of your device open the web browser. You must be connected to the internet to do this. (For Apple devices, you can connect to the WiFi by going to Settings (cog icon below) and selecting the WiFi option.



2. In the URL type in **<https://tools.crs.org/crsiform>**
3. Complete steps listed to complete the installation:

FOR APPLE DEVICES:

- 1) Install Mobile Provision Profile
 - a) Click on **1. Install Mobile Provision Profile**
 - b) On the Provisioning screen click the **Install** button
 - c) Click **Install Now** on the popup window
 - d) Click **Done** to complete
 - e) Get back to Safari using the task manager
- 2) Install Mobile Configuration Profile
 - a) Click on **2. Install Mobile Configuration Profile**
 - b) On the next screen, click the **Install** button
 - c) On the next screen click the **Install** button again
 - d) On the next screen click **Done**
- 3) Install iForm
 - a) Click on **Tap here to install iForm** link
 - b) Click the **Install** button on the popup window - the program will start downloading
 - c) The Progress indicator will tell you the % downloaded (download time will vary depending on your connection)
 - d) The **CRS iForm** Program icon will appear when download is completed
 - e) Click the icon to run the iForm client

FOR ANDROID DEVICES:

- 1) Install iForm by clicking the link marked "Android Version"
 - a) Click the **Install** button on the popup window - the program will start downloading
 - b) The Progress indicator will tell you the % downloaded (download time will vary depending on your connection)

- c) The **CRS iForm** Program icon will appear when download is completed
- d) Click the icon to run the iForm client

Setting up the CRS iForm Client

Before using the CRS iForm client we have to configure its settings by going to the Settings application:



Find CRS iForm in the list of installed apps in the Settings section (normally the bottom of the left side), and click on it. The settings for CRS iForm will appear.



Verify that the server name is crs.iformbuilder.com

Before collecting data, please adjust the settings below the server name on the CRS iForm client as follows:

- **Sync on start** – If this option is activated, the device will automatically try to sync the device when the application is opened. GKIM/HRD recommends setting turning this option **OFF** for offline data collection.
- **Auto Sync** - If this option is activated, the device will automatically sync after each survey is completed. GKIM/HRD recommends setting turning this option **OFF** for offline data collection.
- **Delete on Upload** - If this option is activated, the device will automatically delete any record uploaded to the server. GKIM/HRD recommends setting turning this option **OFF** for offline data collection for the first 30 days of the project's electronic data collection.
- **Remove Unassigned** - If this option is activated, all records that have been unassigned by the administrator will be deleted. GKIM/HRD recommends setting turning this option **ON** for offline data collection.
- **Download records** - If this option is activated, all assigned records by the admin will be downloaded. GKIM/HRD recommends setting turning this option **ON** for offline data collection.

- **Picture Size** – This option determines the size of the images captured by the device’s camera – the bigger the image the slower the upload of data. For low-connectivity environments, set this option to **SMALL**.

Once these options are set, and you can now run CRS iForm.

Entering logon credentials

To start the iForm client, locate the CRS iForm icon, and click on it:



When you run CRS iForm for the first time you have to provide the logon credentials in order to start using the client. You can enter these credentials by going to the cog icon on the upper right of the screen when you open CRS iForm.

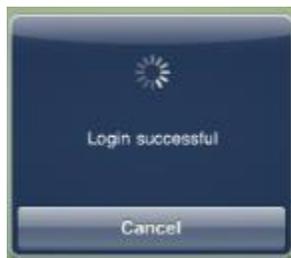


Enter the username & password and click Sync/Login once you’re done.



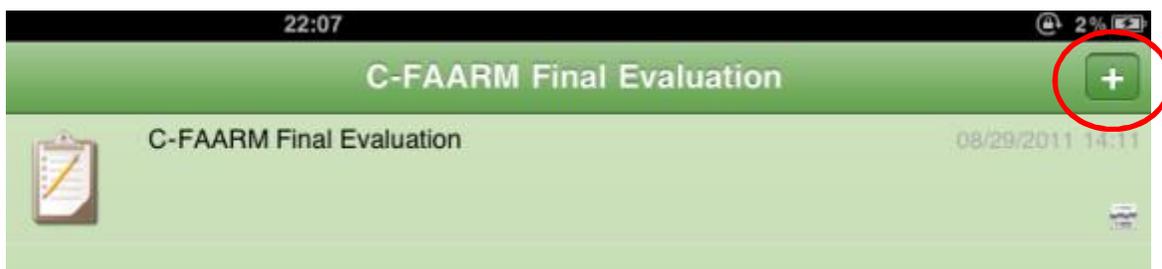
Note: Do not attempt to login without internet access. Internet connectivity is required in order to authenticate the user. Additionally any forms assigned to the user cannot be downloaded when there is no connection.

Once authenticated you will get a Login Successful message (below), and the forms and data assigned to that user will be downloaded. Select the form you want to start collecting information for by clicking on it. That will reveal the questions in the form. *Note: If you are starting the first time, there will be no forms assigned to that username.*



Entering data using CRS iForm

When you open the CRS iForm client, a list of the forms assigned to that device will open. If no form is assigned to the device, the client will be blank. Touch the form that you would like to use to open it. Once a form is selected, you are taken to a preview area, where you can see any entries that were saved, downloaded or assigned. *Note: if no data has been collected previously on the device, the form itself will open.*



To start a new entry, click the "+" icon in the right corner.

To edit an existing entry, click on the entry title that you would like to edit.

Once inside the form, there are different fields requiring different inputs. We will go over some of the different types of inputs and the information they require.

- **Text / numeric** - Text and numeric fields look the same, the difference is that you cannot enter alphanumeric characters in a numeric field. The keyboard automatically displays only numeric characters in a numeric field.
 - To enter data in a text / numeric field, click on the field. The screen will expand to accommodate the keyboard, and you can start entering data in the field. When completed, you can click the Done key on the keyboard, or the Done button in the right corner.
 - To back out of entering data, click the Cancel button in the left corner.



- **Date / date – time / time** – These options are an easy way to enter date, date and time, or just time.



- By scrolling the value wheel up or down you can come to the selected value.
- Once we have the proper value, click the Select button to approve the entry.
- To back out of entering a value, click anywhere on the form, and the widget will disappear.
- **Note:** The value for these elements is in place only when the Select button has been clicked, and the element value filled with the value we selected. If we choose a value, but don't click the Select button, the field will not be populated. Example of a correctly populated Date – Time field:



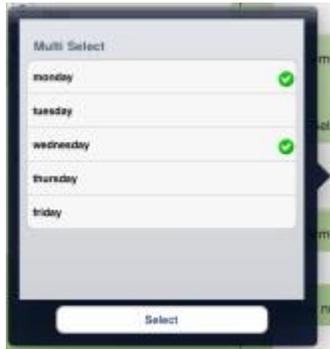
- **Signature fields** - The signature field is used for capturing signatures.



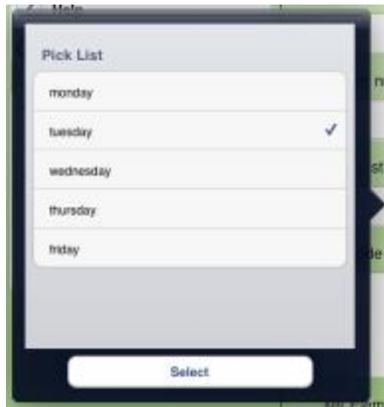
- Once clicked, a drawing board will appear, where the user can enter their signature. Using their finger, the user can draw out their signature. The signature can be replaced by clicking the field again.
- Note: Please do not use any pens or other sharp objects that might damage the surface of your device.
- **Email** - Email fields can come pre-populated with a list of domains, to save users time on typing. Those can be a list of most common domains such as @yahoo.com, @gmail.com, @hotmail.com, @crs.org, etc. Additionally users can provide their own domain, if the domain is not specified in the list of domains.



- **Multi select fields** - Users can choose from multiple pre-populated values.
 - To use simply click on the items you want to select. Like the name suggest, multiple items can be selected.
 - To make the selection permanent, click the Select button, or the selection will be lost.



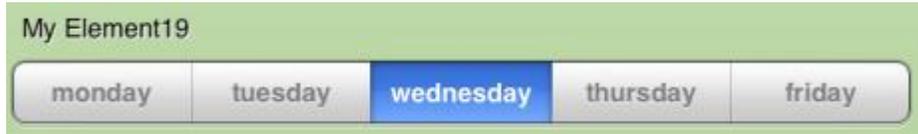
- **Pick list** - Similar to the multi select, allows for a selection from a pre-populated list of values.
 - Unlike the multi-select widget, the pick list allows only one item to be selected.
 - The Select button has to be clicked to apply the selection, or the selection will be lost, and the element left unpopulated.



- **Range widget** - A value from a pre-selected range can be selected by dragging the bar. Once released, the value selected is displayed.



- **Select widget** - Allows for easy selection of pre-populated values by clicking on the button with the value name.
 - Button changes color to indicate it is selected.



- **Drawing widget** - A drawing can be provided as a form of input.
 - Once clicked a drawing board will appear where we can provide the input. Once done, we click the Accept button.



- **Audio widget** - Provides a way or recording audio.
 - Click the Rec button to start recording, and click the same button to stop recording.
 - Click Play to listen to the recorded audio.



- **Text area widget** - Provides a method for entering larger quantities of text.
 - Click to start entering data, and click Done once completed.



- **Toggle widget** - Used as a way to do confirmations with one click. A green checkmark icon in the right corner indicates it has been activated.



Deleting data collected with CRS iForm

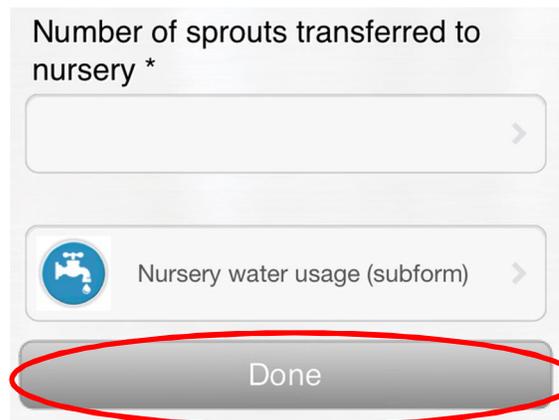
In some cases, it might be necessary to delete data from the devices. In order to do this, go to the preview screen where you can see the data that has been collected, with its corresponding status icon (torn page, hourglass or check mark). Starting at the status icon, sweep your finger to the left along the row you want to delete. A red “Delete” button should appear, which can be selected to confirm deletion. **THERE IS NO UNDELETE IF YOU DELETE THE WRONG RECORD!** If you delete a record with a torn page or an hourglass icon (data that has not yet been uploaded into the database) that data will need to be re-collected. Deleting a record that has already been uploaded (check mark) will have no effect on the database.



Another method to delete is to hold your finger on the record you would like to delete, so the record is highlighted for 2 seconds. You will then be given the option to “Print”, “Duplicate” or “Delete” the record. Undelete still does not exist.

Saving data collected using CRS iForm

There are 2 options for saving information – **Save** and **Done**:



The **Save** button saves the form even if it’s not completed (torn page icon, explained in the following section). **A saved form will not be uploaded when syncing!** A saved form can be re-visited later to complete the form.

The **Done** button is used when the form is completed with all information (hourglass icon, explained in the following section). A form saved with **Done** will upload information when synced.

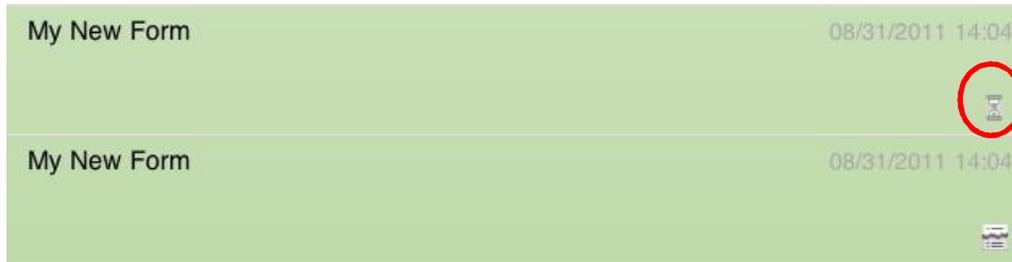
Synchronizing collected data with the server

Once data collection is completed, it is time to synchronize it with the server. **Note:** This step requires internet connectivity, and does not need to be done in the field.

In order to submit data we have to have completed form entries . A form is completed when all required fields are entered and we click the “Done” button. We can also save uncompleted entries to edit later. The status of the record can be identified by the icon next to it:

- Completed and uploaded record 
- Completed and ready for upload 
- Uncompleted – saved record 
- Assigned record 

Only completed entries (the ones with an hourglass icon) will be synchronized with the server.



Synchronizing data is easy. Just click the Sync (Cog icon) button in the left side menu.



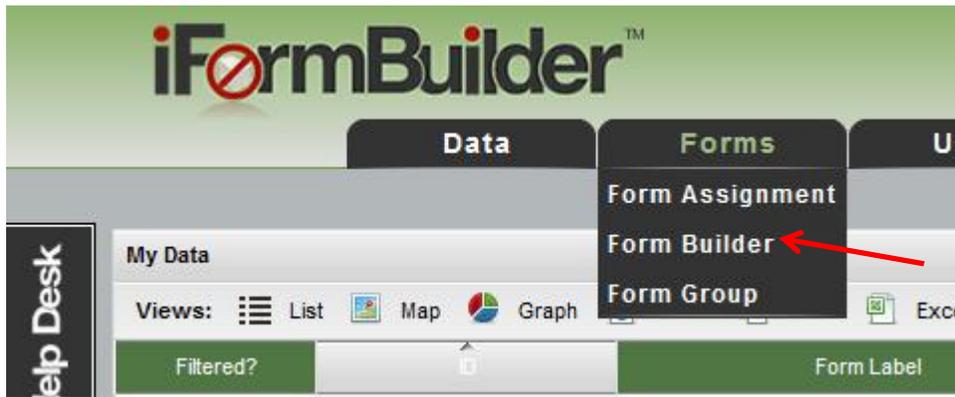
Once the Sync button is clicked, data exchange will begin between the device and the server. Transfer time will depend on the internet speed and quality, the amount of data and data types (image and audio files are big and may take more time). When the data has been synced, a window will pop up notifying of the successful transfer.



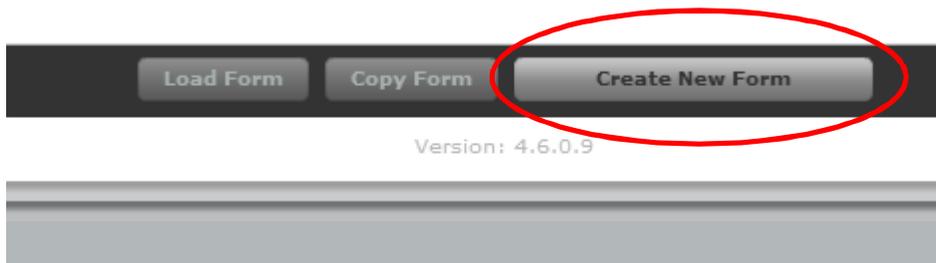
Building simple forms in iFormBuilder

Creating a new form

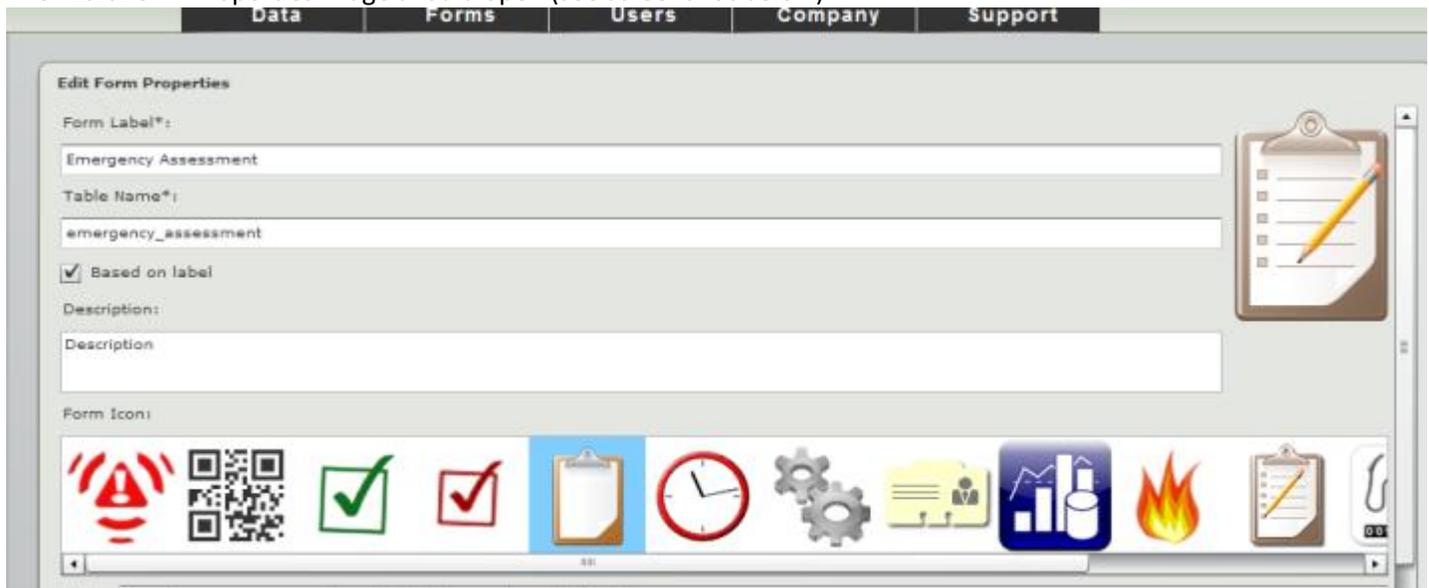
1. Open crs.i FormBuilder.com and enter username and password (*Note: you must use a username that is authorized to create forms in order to follow the steps below.*)
2. On the home screen click on the tab “Forms” and then click on the link “Form Builder”



- At the bottom of this page, click on the link "Create New Form"



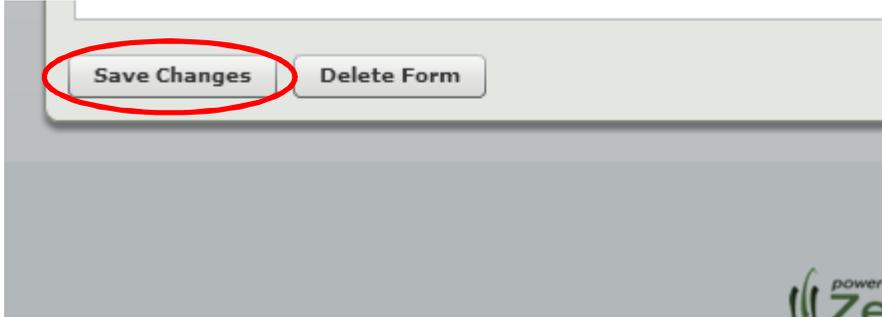
- The "Edit Form Properties" Page should open (see screenshot below)



- Enter the title of the new form in the field marked "Form Label" and make sure the box "based on label" is ticked. This will automatically create a table name. (Note: If you want to create your own table name, table and input names cannot have spaces. For example, "a_new_chart") The label is the form name that the data collector will see on the device, so make sure it is short and clear. It is also recommended that sectors follow naming conventions, with "Shelter", "Ag" or "WASH" appearing in forms for easy identification.
- Choose an Icon (www.iconfinder.com is a good source of interesting free (and not free!) icons) – when you find an icon you like, select it so it is the only icon on the screen, right click on its picture and select the "copy URL" option (alternatively, you can go to the image "Properties" through the right click and copy the address there) then paste

the URL in this field. You can test if you have the right URL by pasting it in your browser to see if the icon appears. *Note: Icons are recommended, as they help easily distinguish different forms from one another.*

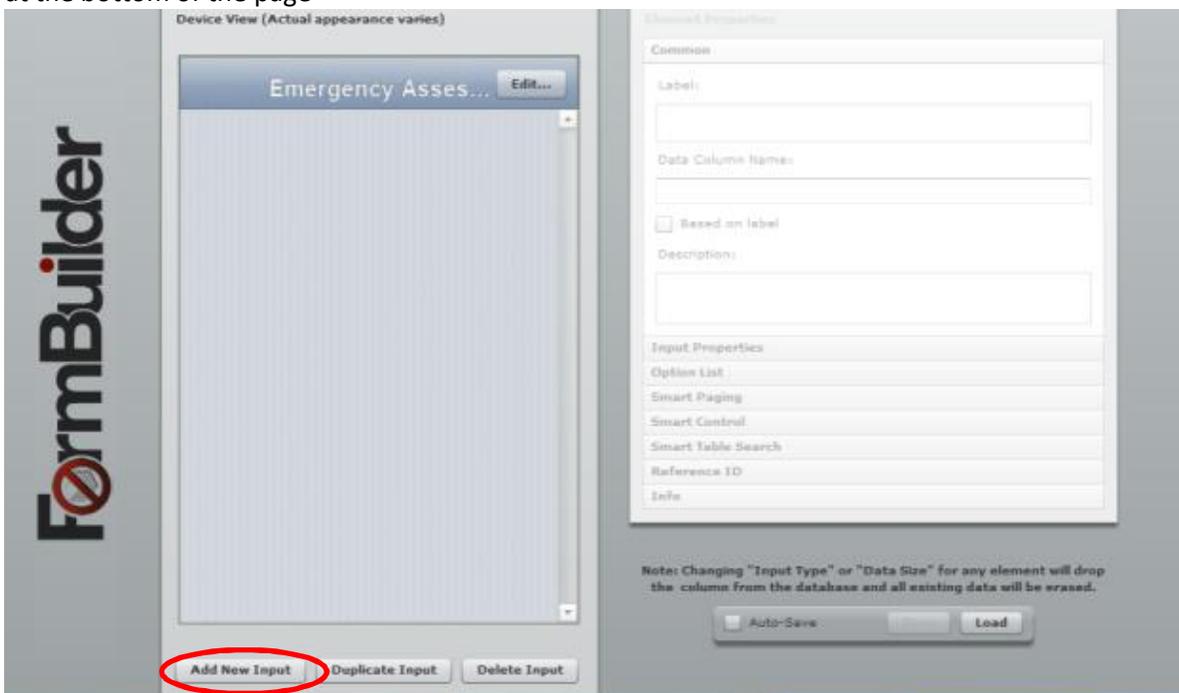
7. Click on “Save Changes” at the bottom of the page (All other fields on this page are not mandatory in order to create a new form).



8. Please read through this page for more information. <http://wiki.iformbuilder.com/iformbuilder-user-guide/form-builder>

Adding Fields to the New Form

1. Once you have created and saved your new form, a new page will appear (screenshot below). Click on “Add Input” at the bottom of the page

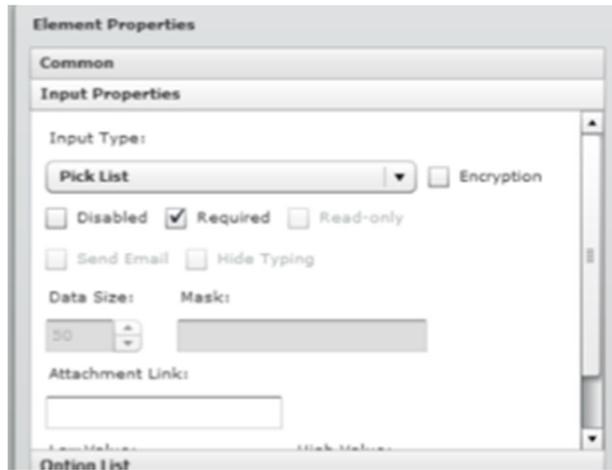


2. The most common elements used are described below and in the following sections. Alternatively, follow the link <http://wiki.iformbuilder.com/iformbuilder-user-guide/form-builder#TOC-Element-Properties>
 - Common - Define element Label and data column name. (Description will be displayed to end user.)
 - Input Properties - Define the element type, and specific element properties.
 - Option List - Create/Manage lists for specific elements (Select, Pick list, Multi-Select, E-mail).
3. Common Properties <http://wiki.iformbuilder.com/iformbuilder-user-guide/form-builder#TOC-Common-Properties>
 - Label – This is where you enter the question you would like to appear on the form.

- Data Column Name – This is the name of the element that is stored in the database. Certain names that appear frequently in databases, such as “date”, “location”, “time”, etc. are not acceptable as column names. If you would like to label a field with a reserved name, such as “Date”, simply change the column name to include an identifier, such as workshop_date or date1. To make the column name unique you have to untick the box “Based on label”. Also, data column names must be database friendly:
 - a) Preferably all lower case
 - b) Cannot start with a number
 - c) Contain_no_spaces
- Description - The element description is a note that will be displayed to the end user when they interact with that element. For example, “Please provide value in meters” or “Please enter only one product”.

The image shows a screenshot of the 'Element Properties' dialog box. It has a 'Common' tab selected. The 'Label' field contains the text 'What is the name of the village?'. The 'Data Column Name' field contains 'name_of_the_village'. Below this is a checkbox labeled 'Based on label' which is currently unchecked. The 'Description' field contains 'My description'.

4. Input Properties – The type of question you will enter <http://wiki.iformbuilder.com/iformbuilder-user-guide/form-builder#TOC-Input-Properties>
 - Input Type - Check out all of the different input types in Element Details or by scrolling your mouse over the input type on your screen
 - Encryption - Encrypt specific element data using your public/private key pair (Requires iForm ES)
 - Required - Elements set to required will be enforced if they are showing on the client and have not been satisfied when the user presses "Done".
 - Read-Only - A field marked with this flag will appear similar to a text label (Suggest using a Read-Only element instead, since many calculation functions do not work when this box is ticked.)
 - Send Email - Set this flag on an E-mail element to send a copy of the data to the addressee in an HTML formatted e-mail once the record is uploaded to the server.
 - Hide Typing - Password style masking for text input.
 - Data Size - Controls the amount of characters that can be entered for that particular element.
 - Mask - Use JavaScript masks to further control the data that is entered into fields that support masking (Phone Number, SSN, Zip).
 - Attachment Link - Define the path of the attachment that will load (local or external).
 - The Low and High Value parameters are used to establish the upper and lower bounds of controls with the Range element. By default, the low value is set to 0, but this can be changed to any number you choose.

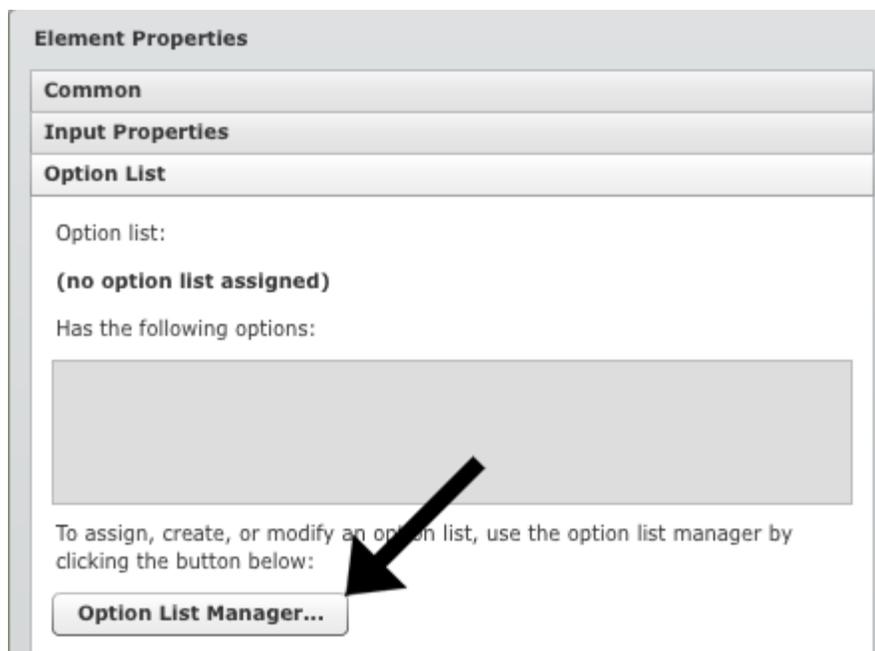


5. This page explains the different types of inputs available <http://wiki.iformbuilder.com/iformbuilder-user-guide/iFormBuilder-element-detail>.

Creating Option Lists

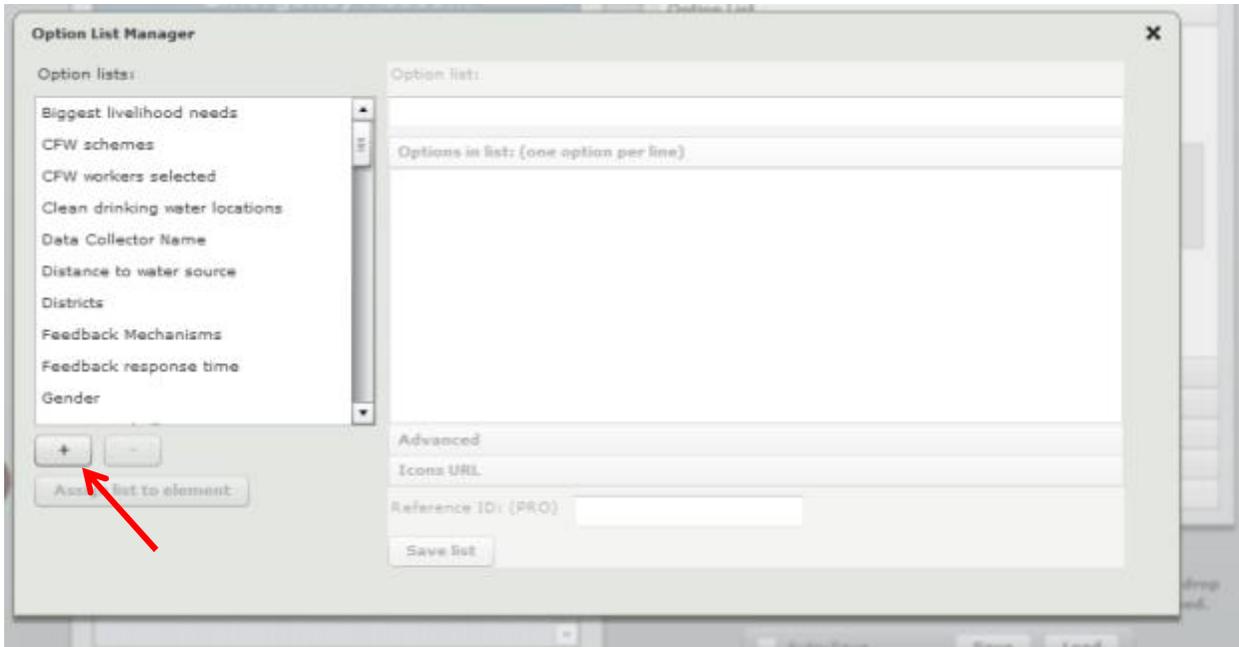
Option lists are a useful iForm function that allows pre-defined lists to be saved, and re-used in other forms. **Since Option Lists can be shared by various forms, it is important not to delete or modify any existing lists, since they might be used in other forms.**

1. When you choose “Select” or “Multi-Select” or “Pick List”, you will need to create a list for data collectors to choose from. <http://wiki.iformbuilder.com/iformbuilder-user-guide/form-builder#TOC-Option-List-Properties>
2. To create a list for data collectors to choose from, select the element “Option List” and then select “Option List Manager”

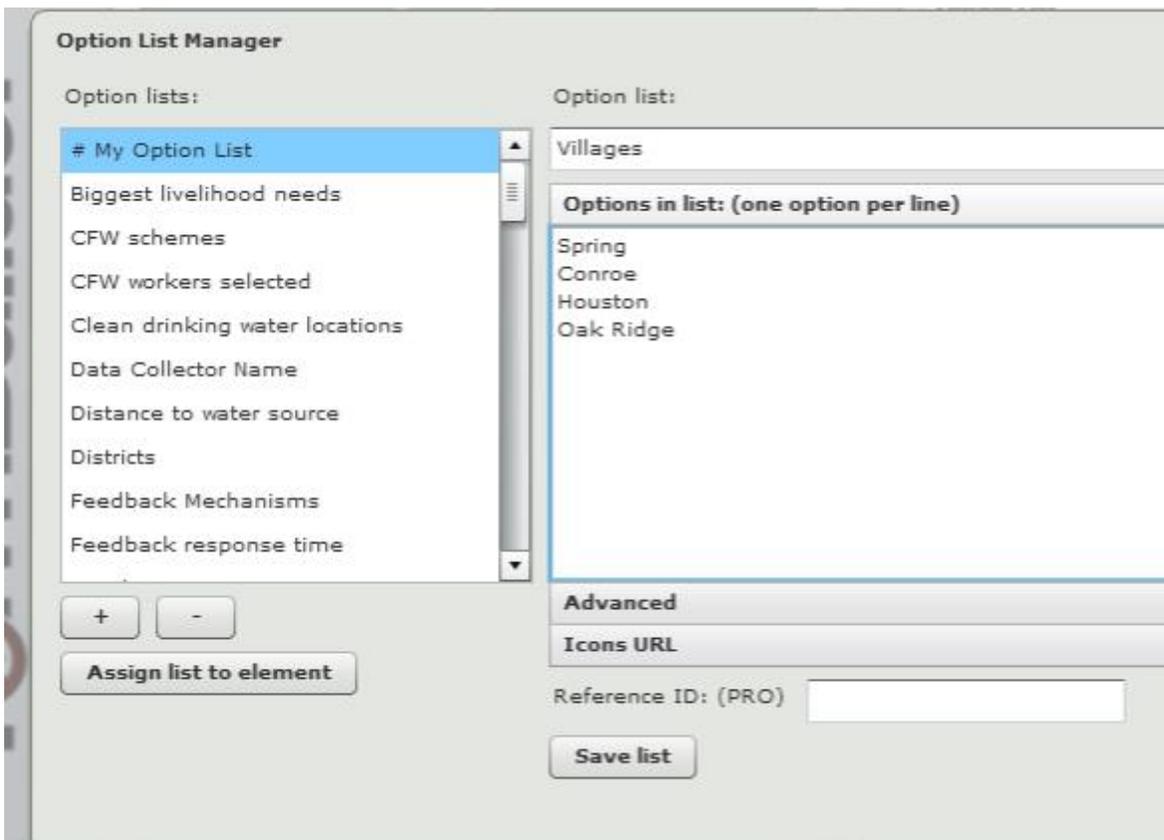


3. First, view the option lists already created to see if there is one that already exists that could be used for your survey. (Note: DO NOT delete or modify any existing lists, as they could be used by other forms that you do not want to touch, and you could break the logic in those forms by modifying their option lists).

4. If you need to create a new list, click on the “+” symbol (The “-” symbol will delete a selected list.):

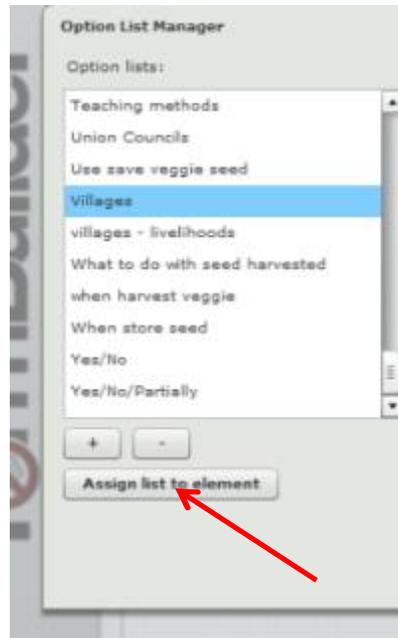


When you select the “+” symbol, a new Option List will appear “# My Option List”, which appears at the top of the list of Option Lists:

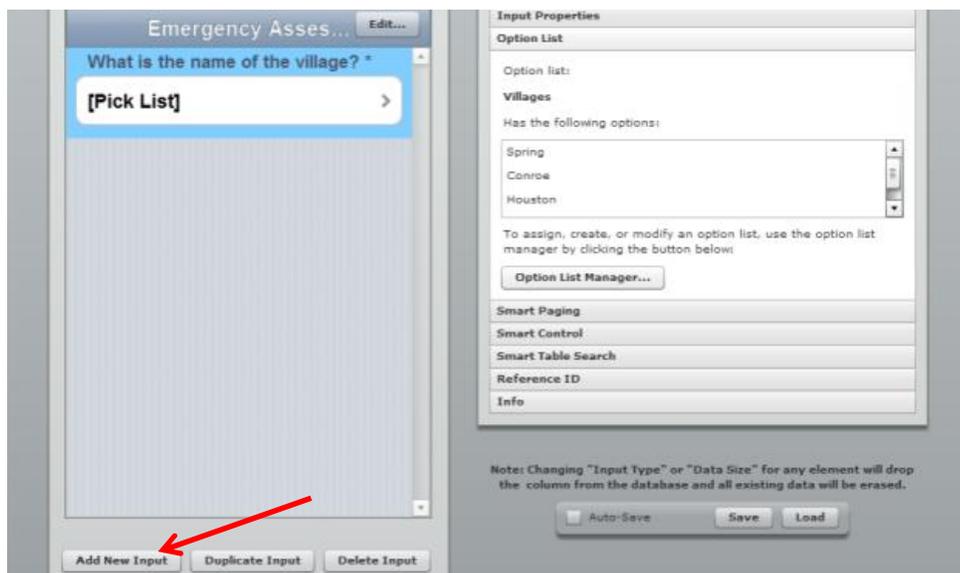


If you click the “+” multiple times, multiple Option List will be created “# My Option List 1/2/3....” Pick one of the new Option Lists, making sure that it does not have values inside, give it a descriptive name that you can easily make out for reuse in other forms (Gender, Regions, Villages, etc).

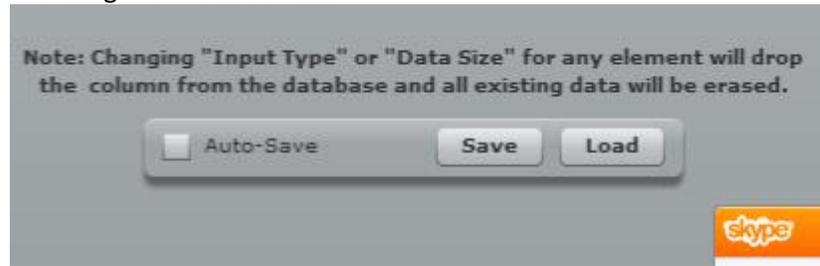
- Then type in the different options below the title and click on “Save list”. When populating your Option List, bear in mind that the values inside must be unique. You cannot have 2 entries with the same name. Also, mind the capitalization for the end user. If you capitalize the first entry, make sure all entries are capitalized.
- After the list is saved, you must find your Option List under its new name in the Option Lists. Select the newly created so it turns blue, and click on “Assign to element” (Note: make sure that the name of your option list has been modified to something easy to recognize.) You have now assigned the option list to the element.



- To enter a new question, click on “Add Input” and repeat the entire process to enter another question. Repeat this process until the survey is complete



8. At the end click “Save” and assign forms to devices.



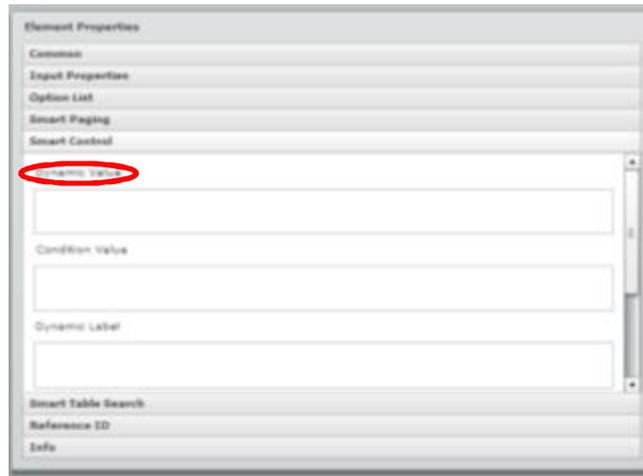
Building Complex Forms

Smart Control Element

The Smart Control Element allows more complex operations to take place in iFormBuilder. In this section we will go through some of the more commonly used functions. A more complete description of this element can be found at: <https://iformbuilder.zendesk.com/hc/en-us/articles/201699410-Smart-Control-Overview>

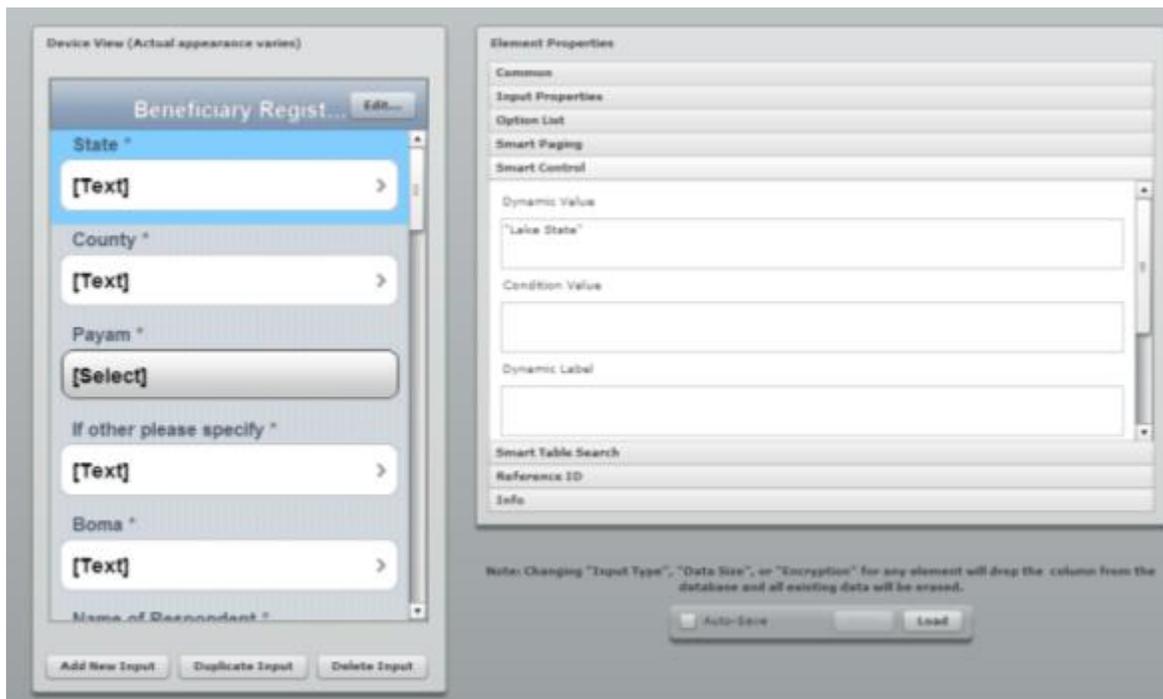
Dynamic Value

The Dynamic Value element is used to apply a value to a field based on specific conditions.

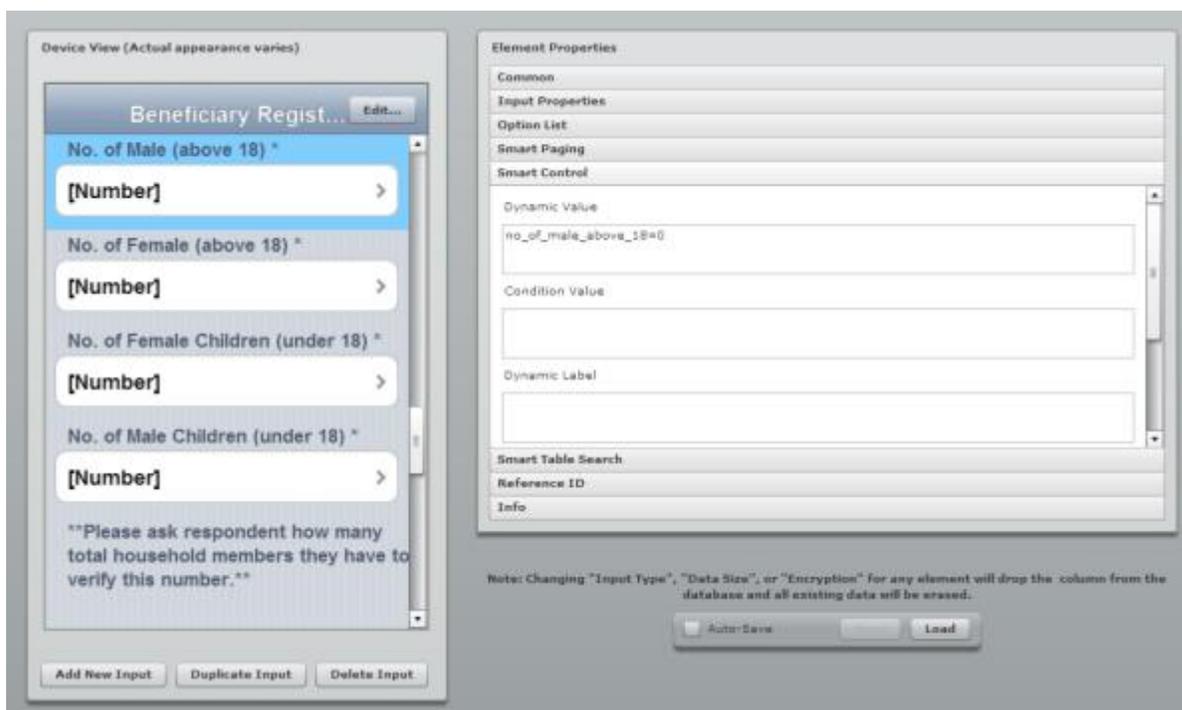


Examples of how to use the “Dynamic Value” field:

1. ***To give a field a set, unchanging value*** - If you have a field that will always be a specific value and there is no need to have any other option (i.e. Distributions are always done in the same state) you can fix the value of the text field using the Dynamic Value field. In the example below “Lake State” will always appear in the form for the State widget.

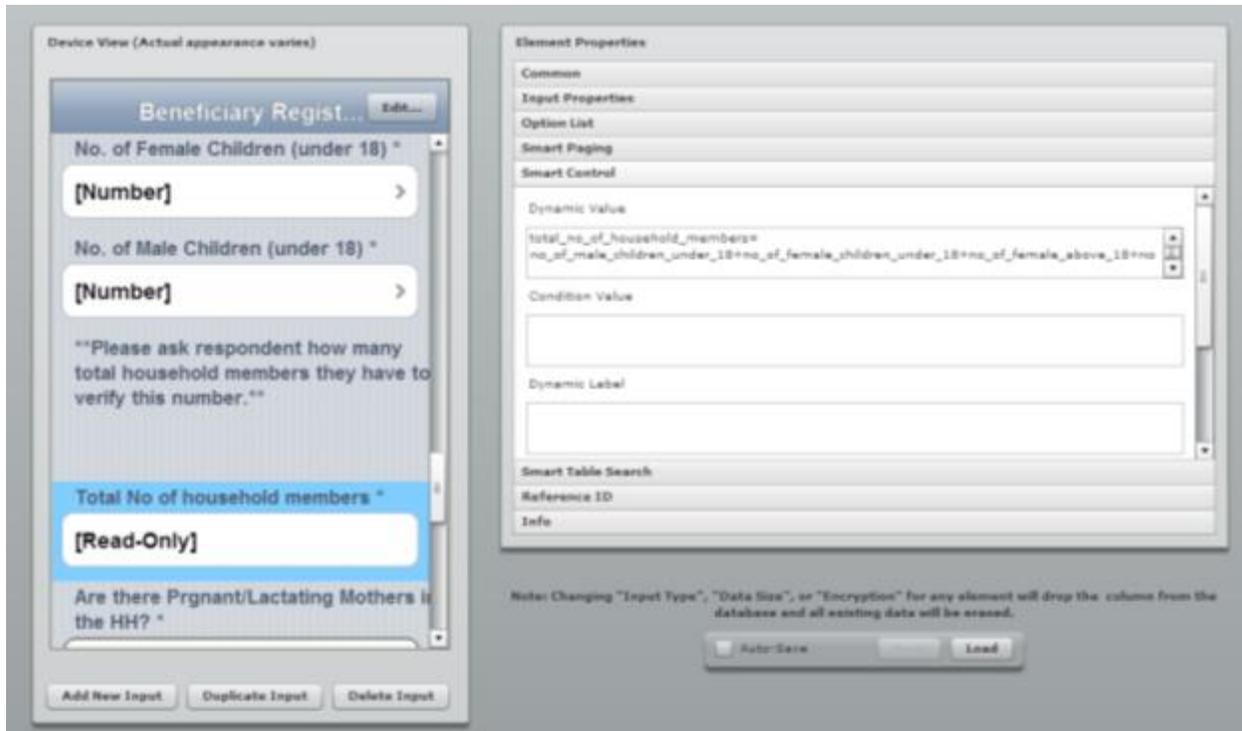


2. **To Initialize a Variable** - The Dynamic Value element can also be used to initialize a variable that might be used later in a calculation. Sometimes forms will “remember” the last value entered in a field, even though a new survey has been opened. One way to avoid this error is to initialize variables, essentially resetting their value. To do this, take the data column name of the widget you would like to initialize from the “Common” element, and then paste it in the Dynamic Value section of that same widget. Initialize Number widgets by setting the data column name equal to 0 (see screenshot below) and Text widgets by setting the data column name equal to blanks (i.e. text_field=“”). (Note, it is good practice to initialize all fields that will be involved in calculations.)



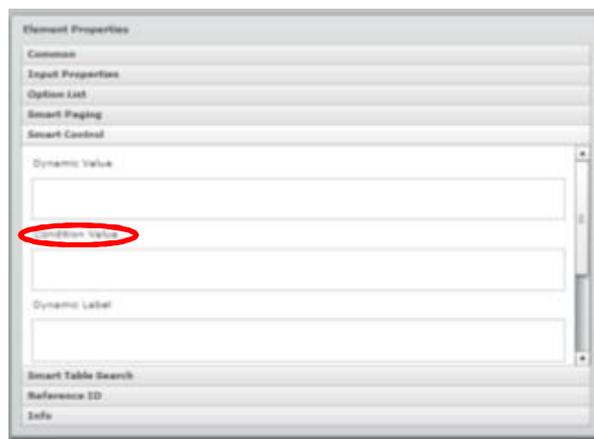
3. **Calculations** - The Dynamic Value can also be used to carry out calculations on elements and display the total. (Note: it is good practice to initialize any variable that will be used in a calculation.) In the screenshot below, the

widget “Total No. of Household Members” will show the sum of the four previous fields, number of male and female children and number of males and females over 18 in the household. The calculation is done by summing the data column names of the fields in question in the Dynamic Value element (total_no_of_household_members=no_of_male_children_under_18+ no_of_female_children_under_18+ no_of_males_over_18+ no_of_females_over_18). Since the Total Household No. field is “Read-only” the number will not be able to be modified without adjusting the household numbers previously entered. A video of doing calculations can be seen [here](#).



Conditional Value

The Conditional Values determine whether the element containing the conditional statement will be visible. If the expression in the conditional value is evaluated to true at runtime, the element will appear on the form. These conditional values are used to create simple or complex skip logic. (For example, if 'No', skip to question 10.) This should not be confused with iFormBuilders "disable" feature. Using the disable feature will prevent the element from being visible on the device regardless of conditional value. Go to <https://iformbuilder.zendesk.com/hc/en-us/articles/201699410-Smart-Control-Overview#TOC-Conditional-Values> for a complete description of the Conditional Value element.



Examples of how to use the “Conditional Value” field:

1. **Single Conditions (Pick List, Select input types)** – Single conditions can be used to create a skip logic that allows certain questions to appear only when a given condition is met. In this case, the data_column_name of the dependant field should be put in the Conditional Value field, with the appropriate condition in JavaScript.

These are examples of acceptable conditionals:

data_column_name == 1 (equal)

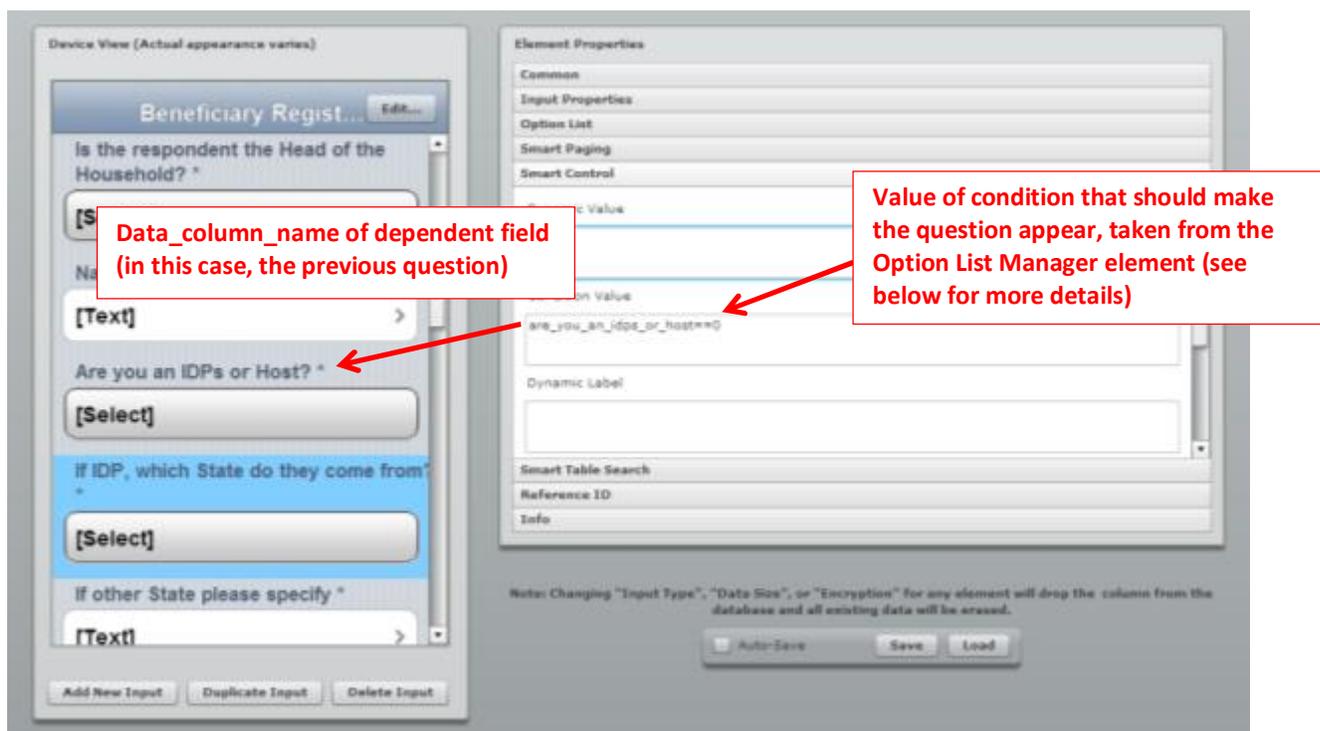
data_column_name != 1 (not equal)

data_column_name >= 1 (greater than or equal to)

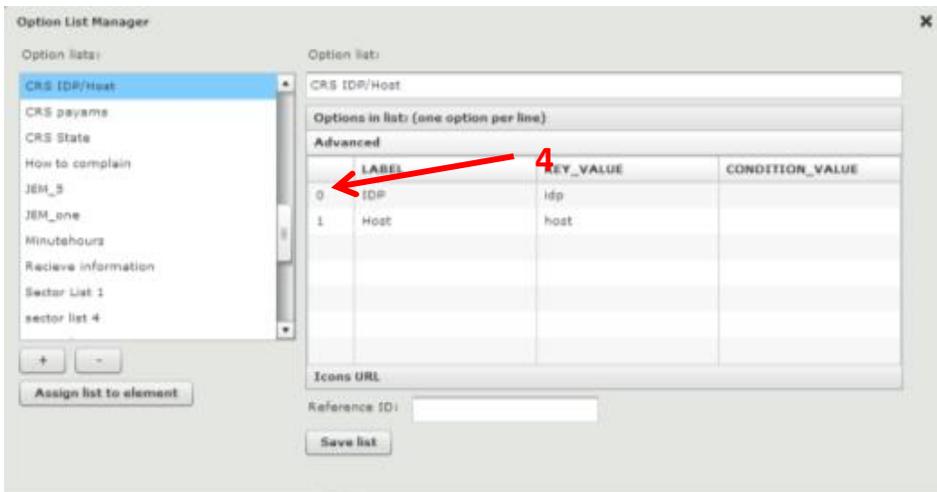
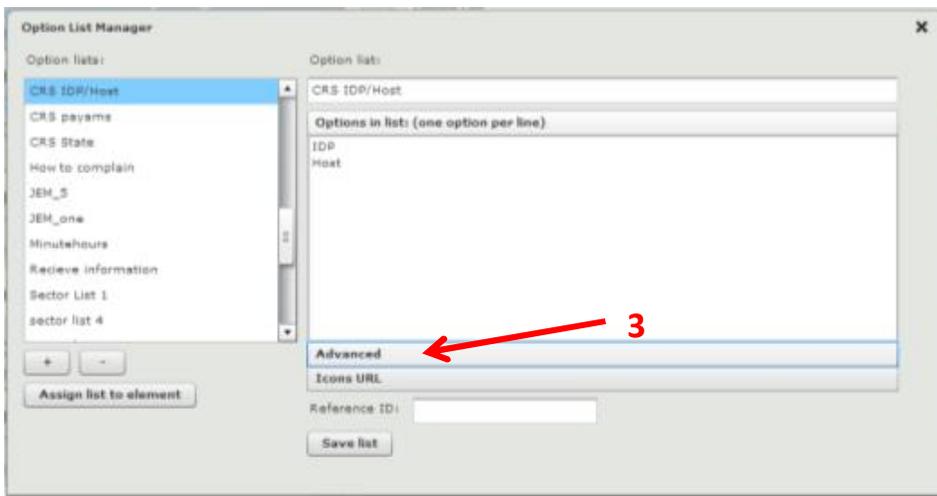
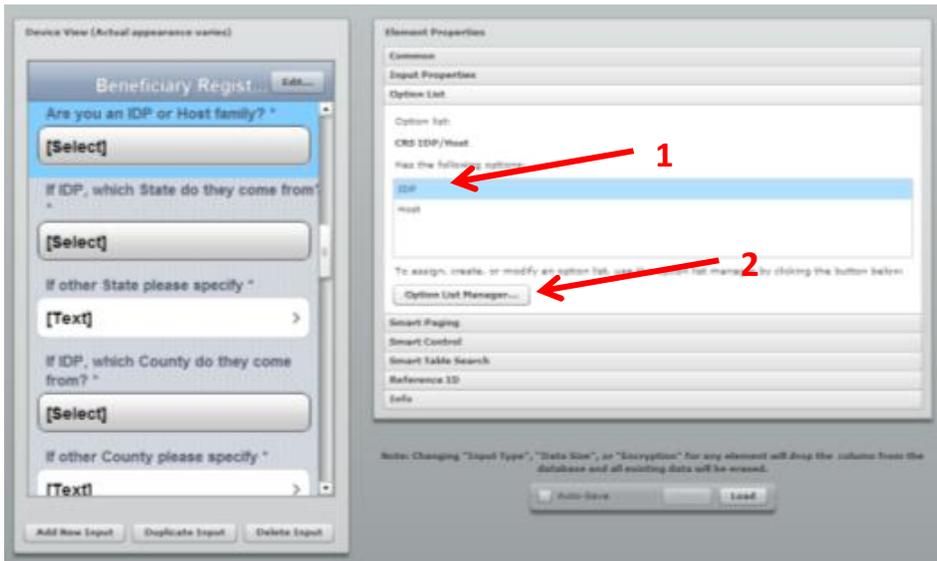
data_column_name <= 1 (less than or equal to)

data_column_name > 1 (greater than)

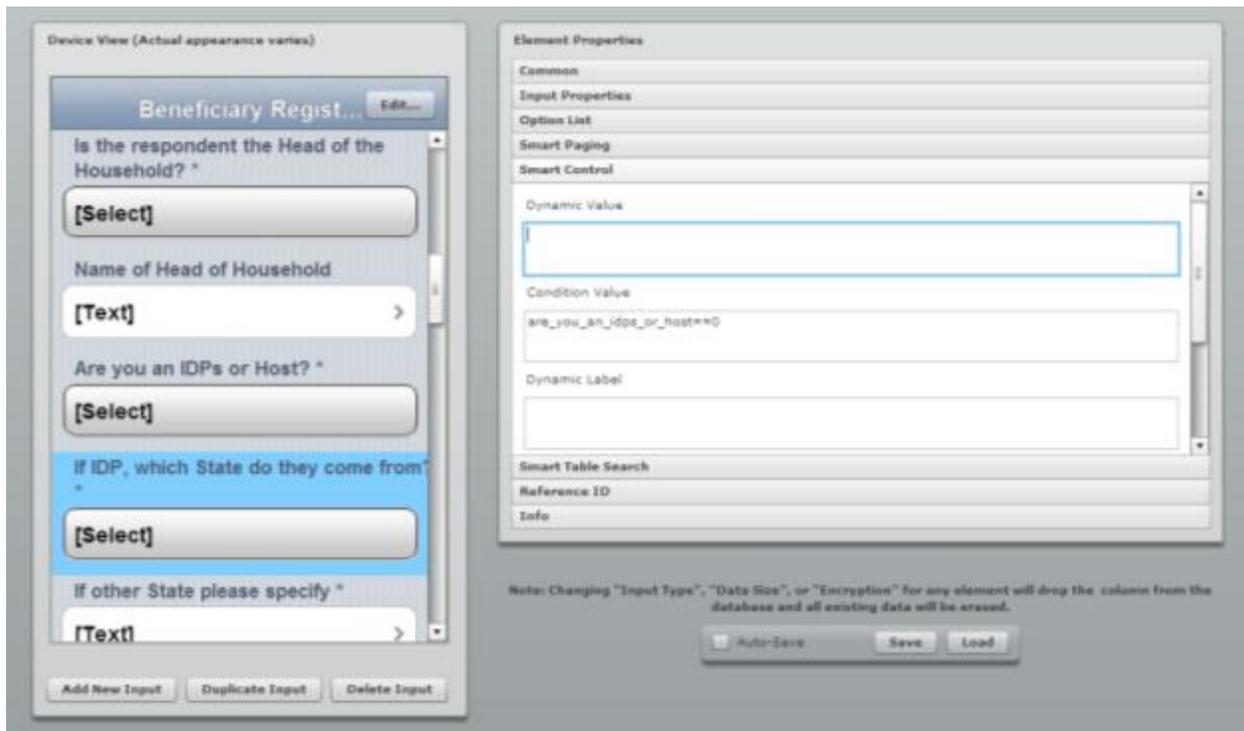
data_column_name < 1 (less than)



Option lists use index values and always start with 0. You can find the index value of the option list in your condition by accessing the Option Lists element, going to the Option List Manager of that element and then accessing the “Advanced” tab (see string of screenshots below).



So, according to our example, the question "If IDP, which State do they come from" will only appear when the answer to the previous question "Are you an IDP or a Host?" is "IDP", which is 0. When this condition is true, the field will be shown. If it is false, the field will not be shown.



2. **Multiple Conditions (Pick-list, Select input type)** - It is also possible to use the Condition Value element to only show certain questions when multiple values coincide.

Example 1 (value 1 AND value 2) - This statement will evaluate both conditions together and only show the element if both are true.

```
[data_column_name1] == [pick list value] && [data_column_name2] == [pick list value]
driver_name==1 && driver_skill==5
```

Example 2 (value 1 OR value 2): This statement will evaluate both conditions separately and show the element if either are true.

```
[data_column_name1] == [pick list value] || [data_column_name2] == [pick list value]
driver_name==1 || driver_skill==5
```

3. **Multi-select Conditionals (Multi-Select input type)** - iFormBuilder uses bitwise operation for multi-select elements so a multi-select creates a binary number. Let's say you have four options ABCD. If all are off (unselected) it would be 0000. If A,C is selected it would be 1010, if only D is selected it would be 0001 and so on...

To have an element show if a particular choice is selected you would use the following code to show this element if the 5th choice in a 5 option multi-select is chosen. :

```
((data_column_name & parseInt("00001", 2)) == parseInt("00001", 2))
```

This is saying show this element if the 3rd choice in a 6 option multi-select is chosen.

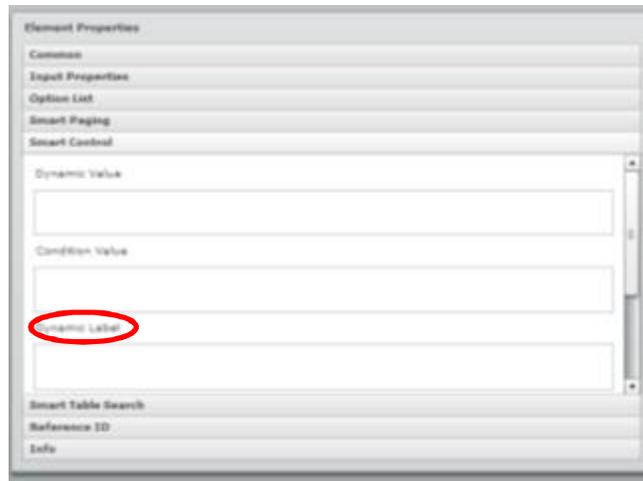
```
((data_column_name & parseInt("001000", 2)) == parseInt("001000", 2))
```

If you want to have an "Other" choice as the last option in a multi-select or want to put a conditional on the last option the conditional logic would be

```
((data_column_name & 1) == 1)
```

(Note: This last example says we only care if the last bit is on, and we do not care about any other bits. For more information about bitwise operation, look [here](#))

Dynamic Label

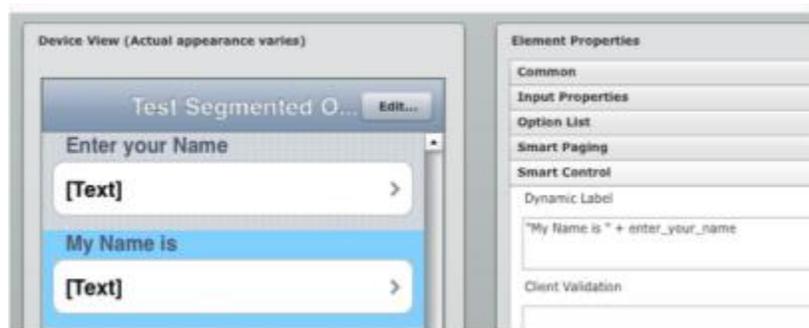


The Dynamic Label field is used to change the label text of any element based on specific conditions. To utilize Dynamic Label you must navigate to the Smart Control section in FormBuilder.

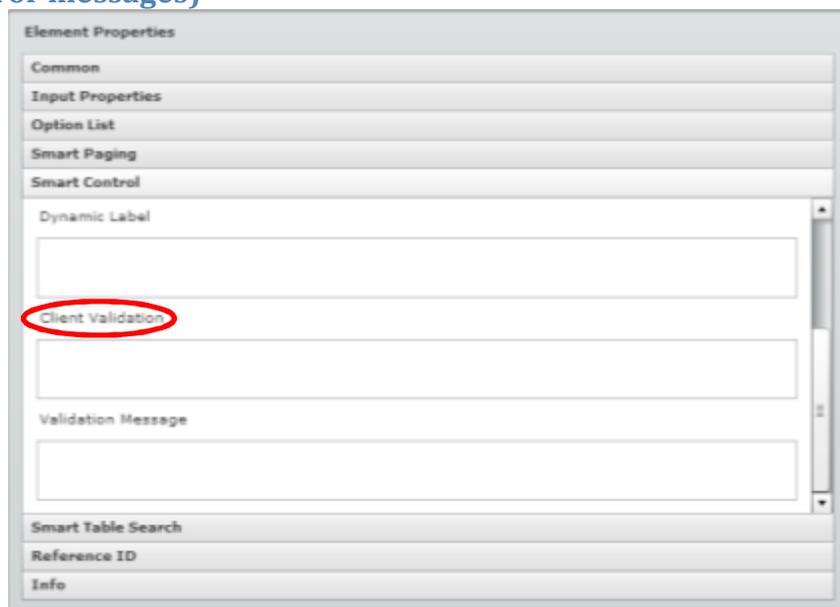
For example, let's say we have two elements on the form. In this example the Data that is entered in the first element will be populated into the Label of the second element. The First element is called: **Enter your Name**. The second element is a Label that is called: **My Name is**. To utilize Dynamic Label place the following code in the My Name is elements Dynamic Label: **"My Name is " + enter_your_name**

If you enter **Joe Smith** in the **Enter your Name** Element the Dynamic Label will say **My Name is Joe Smith**.

A video of the use of the Dynamic Label can be found [here](#).



Client Validation (Error messages)



The screenshot shows the 'Element Properties' dialog box with several tabs: Common, Input Properties, Option List, Smart Paging, Smart Control, Dynamic Label, Client Validation, Validation Message, Smart Table Search, Reference ID, and Info. The 'Client Validation' field is highlighted with a red circle.

The Client Validation element works like an error message; the client validation value must be true for a particular element to pass validation. Unlike Dynamic Value and Conditional Value where the content usually references other elements, the client validation content usually references the name of the element that it is set for.

An example would be a validation that the number of household members for a family being registered is larger than 0, unless an error message will appear on the screen. You can customize the error message to fit your needs, in this case “No. of Household Members must be greater than 0”



The screenshot shows the 'Element Properties' dialog box with the 'Client Validation' field containing the expression `total_no_of_household_members >= 0` and the 'Validation Message' field containing the text `"No. of Household Members must be greater than 0"`.

Please note, that validation message must be wrapped in quotation marks in order to display on the device

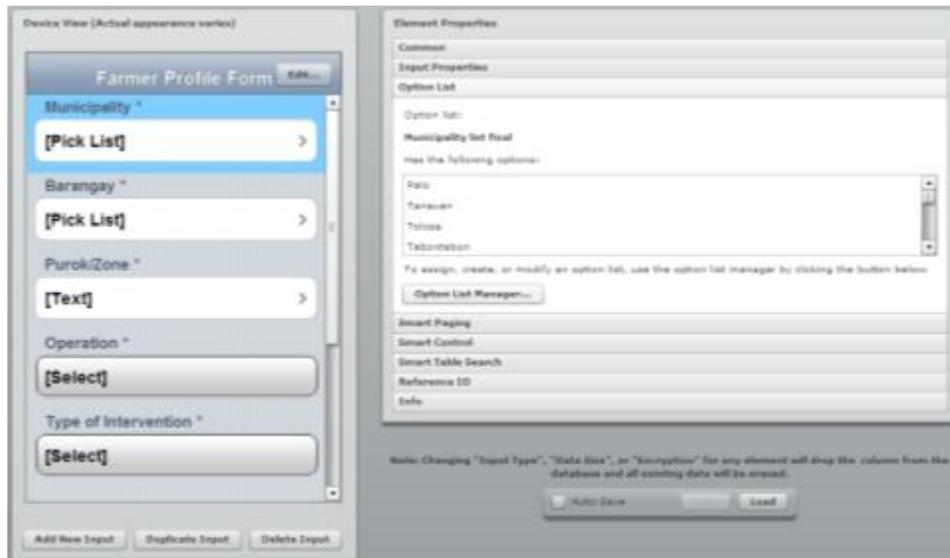
Smart Option Lists

Note: Option lists are universal. So if you have 2 forms using the same option list, editing one option list in one form will affect the other. For example, if you copy a form, they will share option lists. If you change the copied form option list values, it will change the original as well.

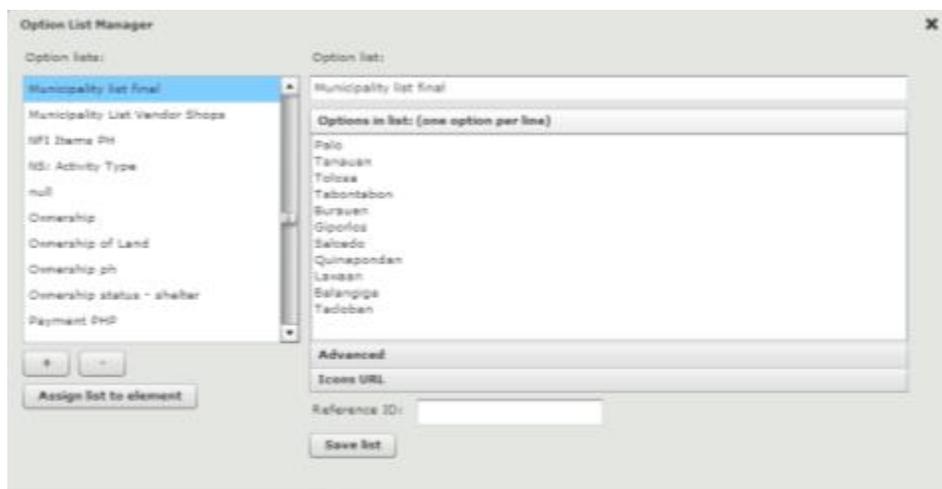
Option lists that contain smart controls can populate elements based on user responses. Selecting a specific item from one list can auto-populate another list elements option list. This function can be especially useful in project registration forms, where the district where a respondent's district of origin depends on the municipality of origin.

EXAMPLE:

For this example, the data collector will first select a Municipality from the Pick List. Based off of the Municipality selection, the following list: Barangay (District) will only show options of barangays in the chosen Municipality.



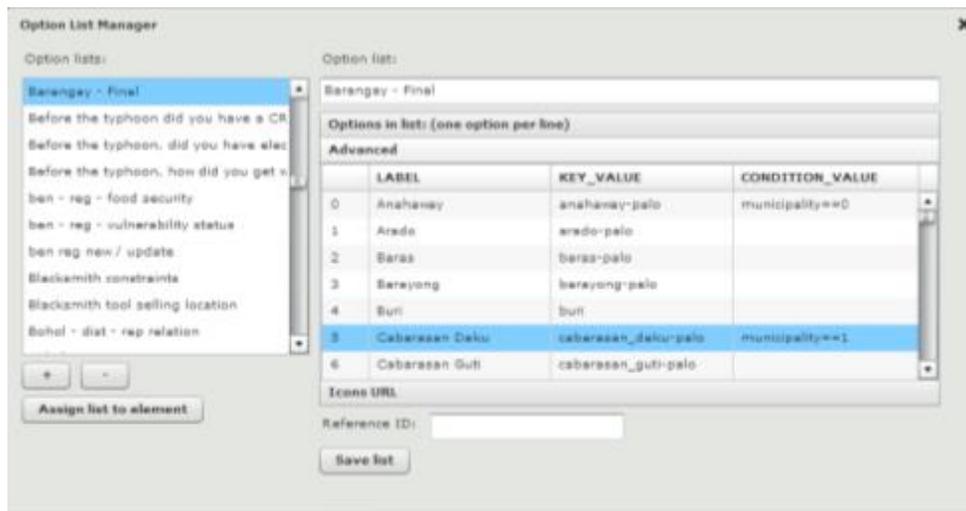
Start by creating the first (in this case, Municipality) Pick List. Set up your option list as normal, as shown below.



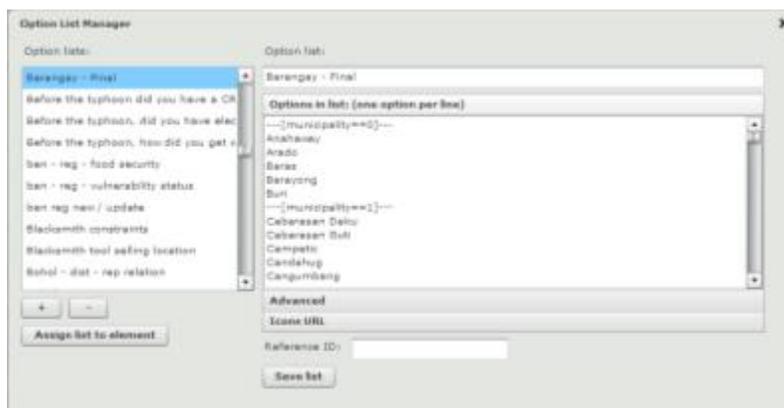
Create the second Pick List (Barangay, in this case). Within this option list, you can define what items from the list are displayed to the user based on their selection of a previous question (in this case, Municipality). In order to accomplish this, the conditional logic must be entered into the advanced tab as shown in the screenshot below. This is the data column name from the previous element Pick List, **municipality==0** must be entered exactly as shown. *Please note, use the*

data_column_name, not the option list name of the previous pick list! The order of the options in the second Pick List should be grouped by how they will appear based on the selection in the previous question (in this case, all the barangays in a given municipality should be grouped together) and only the first option of the second Pick List needs the Condition_Value specified. All options that come after the option with the specified Condition Value will follow the last condition, until another Condition_Value is specified.

There are many conditions further down the list that are not shown here, but the idea is, if the user selects the first choice for the element municipality, the items including and beneath this statement ---[municipality==0]--- will be shown as choices to the user. If the user selects the second option in the element Pick List Municipality the options including and beneath ---[municipality==1]--- will be shown as choices.



Once you have entered this condition, click on the "Options in list" tab to make sure your condition was entered in correctly.



Note: The syntax must be exactly as shown, `data_column_name==0`

Subforms

For a complete guide on Subforms and how to use them, go to the [iFormBuilder HelpDesk article](#) on the topic.

Overview of Subforms

When forms are too big and complex, sections are broken into subforms (see sections A – D below for an example of what subforms look like). Subforms also allow for collecting data that requires multiple values. Subforms (just other forms that you link to a parent form) separate the data collected into different tables.

Category of Vulnerability

Vulnerable but Viable >

Name of Enumerator

Enumerator name >

Name of Supervisor

Supervisor name >

A. Household Demographics (1) >

B. Changes in Household Composition (1) >

C. Household Income & Expenditure (1) >

D. Agricultural Production (1) >

Creating Subforms

Let's say we have an existing form called "Household Registration" that will be used as the Parent Form. This form will utilize a Subform to list the different family members that make up the household. To create a Subform and attach it to a parent form, follow these easy steps:

1. First create a new form by selecting "Create New Form" from the FormBuilder Home. Give the form a Label of Family Members Registration and the Database Table Name of family_registration_subform.
2. Now it's time to create the content inside the subform by adding elements inside the form (perhaps Name, Male/Female, Age, Education level of each family member). Save the newly created form.
3. After you have finished creating the form the next step is to link the Subform to the Parent Form. At this point go back into FormBuilder by Clicking Forms > FormBuilder. Note: After Creating a subform do not go back to the FormBuilder Home by clicking Load at the bottom right, instead go through the Top Navigation by clicking Forms > FormBuilder or your newly created form will not appear on the Smart Paging Tab.
4. Open up your Parent form ie household_registration and add a new Subform Element (Data type) to the form. The Subform element requires that you select a Subform for the element to be pointing to.
5. Make sure the Subform data type is selected and click the Smart Paging Tab under Element Properties. Select the form that you just created ie family_registration_subform, then select a Link Mode and check the Separate Table View Checkbox to view subform records in a different fashion. Refer to the Subform Record View Below for more information on Link Modes and Separate Table View. When you are finished Save your form.

6. Next you will want go into the Forms > Form Assignment tab and select the form that is being used for the subform ie family_registration_subform and uncheck the Collect checkbox for all users so that the Form will not appear on the device in the form menu but will still appear as a subform under the household_registration form.

Generating Random IDs

Sometimes you may want to generate a random ID in iForm – for a beneficiary ID, for a water sample, ect. There are two steps to create a random alpha-numeric ID.

Step 1: Go to the Title page of the form where you need the ID generated (use the “Edit” button next to the name of the form when in iFormBuilder). At the very bottom of that page, put the following text in the “page level javascript” area:

```
var genguid = function b(a){return a?(a^Math.random()*16>>a/4).toString(16):([1e6]+").replace(/[018]/g,b)}
```

*Please note: The number in **bold** tells you how long your random alpha-numeric ID will be – the length of the random ID will be that number +1 (in this case, it will be 7).*

Step 2: Go to the field where you want to ID to be generated. It should be a Read-Only text input, so no modifications can be made. In the Smart Page, put **genguid()** in the Dynamic Value field (no quotes necessary). If you want to put text before the number, put “**CRS-** + **genguid()** and the text “CRS-“ will appear before the number (Of course, you can put any text, it does not have to be CRS. ☺). The same goes for text after the number as well.

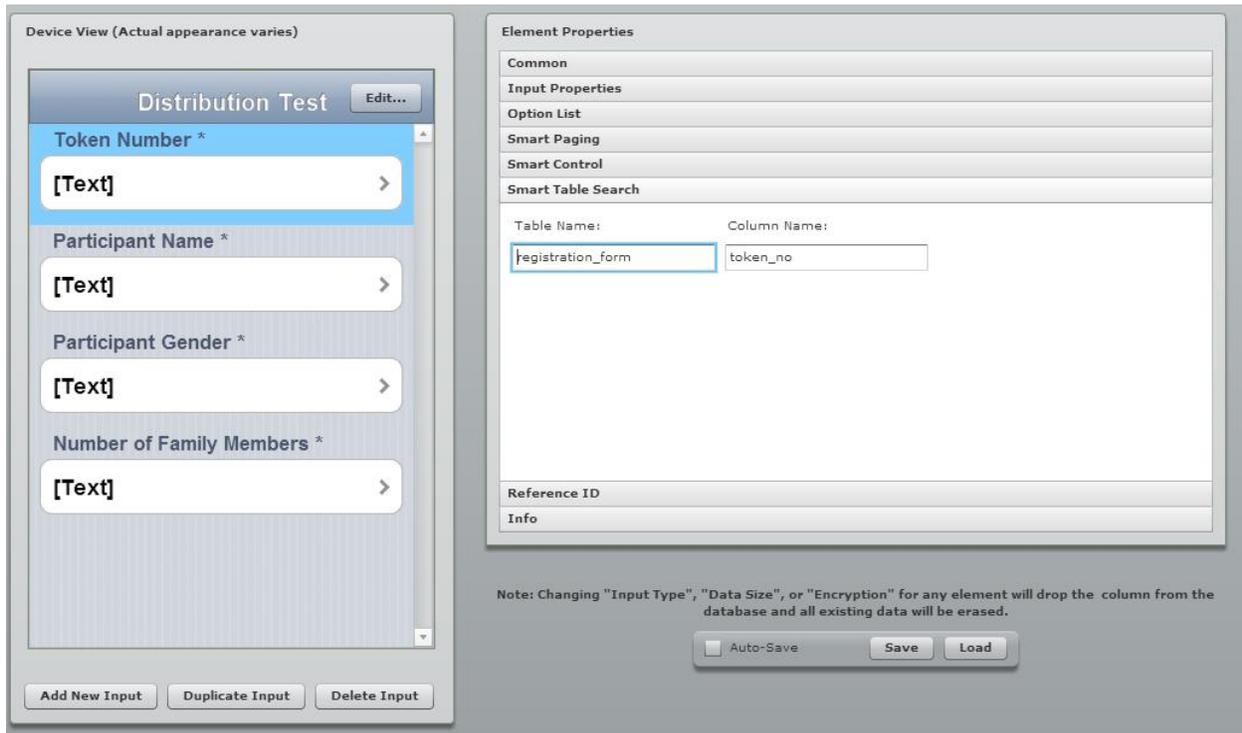
Smart Table Search – iForm’s Look-up function

One interesting function that iForm supports is the ability to look up unique numbers that are stored in other tables and return data linked to them. This functionality can be particularly useful during events like distributions, where beneficiary registration data might have been captured and uploaded on a previous day, and needs to be verified on the day of distribution. As long as there is a unique ID that can be looked up in the existing AND UPLOADED INTO iFORM database, you should be able to retrieve data based on that ID.

If you have a beneficiary registration list that is not uploaded into iForm, the lookup function can still work, you just have to upload the data into iForm (explained in the chapter [How to upload existing data into iFormBuilder](#)).

If you have the data that you want to reference uploaded into iFormBuilder, then the next step would be to create the form that needs to reference that data. One simple example is at a distribution, where participants have a token number that is presented upon check-in. The Distribution Form captures the token number, the participant’s household information, and their signature acknowledging that they received the goods distributed. Once that Distribution Form is created in iFormBuilder, the token number can be linked to the Registration Form, and the household data linked to that token number can be retrieved from the database when the person running the check-in either scans the token number using a barcode scanner (if the token is barcoded) or types in the number manually.

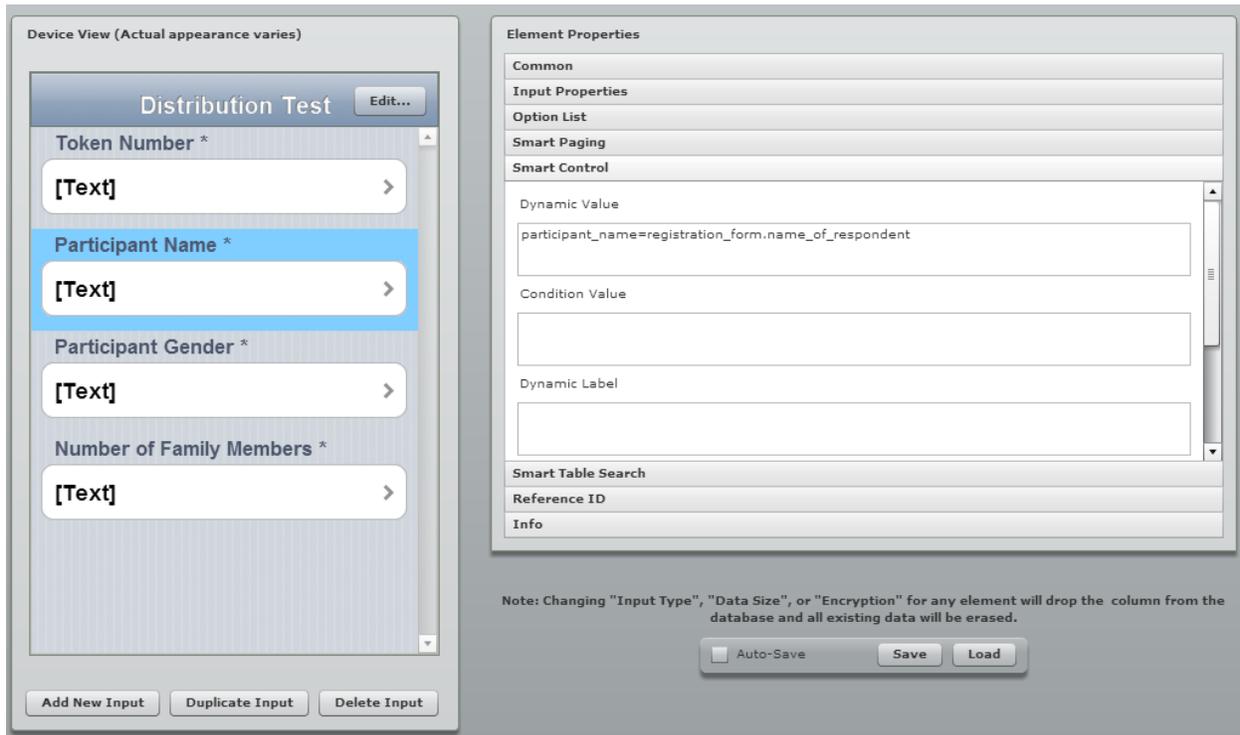
Once the Distribution form is created, select the field that will be used to look up data from another form within the iForm profile. In our example, the token ID from the Distribution Form would need to reference the token ID in the Registration Form. In this case, the Distribution Token ID would be selected – go to the **Smart Table Search Function** and put the table name and data column name of the field you would like to reference. In our example, we would put registration_form (referencing the table name found on the Title page of the Registration Form), and the data column name of the token number in the Registration Form. (Note: the field doing the look-up should be Text, the look-up doesn’t work on a Number field.)



Once we have linked the token numbers of the two forms, we can retrieve information from the registration form and include that information in the distribution form. To pre-populate fields with information from another form, select the field where you want the data to appear and go to the Smart Control tab. In the Dynamic Value tab, enter the `table_name.data_column_for_retrieval`.

Example: In our example of a Distribution Form retrieving information from a Registration Form, in the field for participant's name, we referenced the participant's name field from the Registration Form (`registration_form.participant_name`).

In order for the look-up to function properly, please make sure that all devices have synced to the upload the latest list. This could mean syncing all the devices various times.



The 3 Golden Rules of iForm

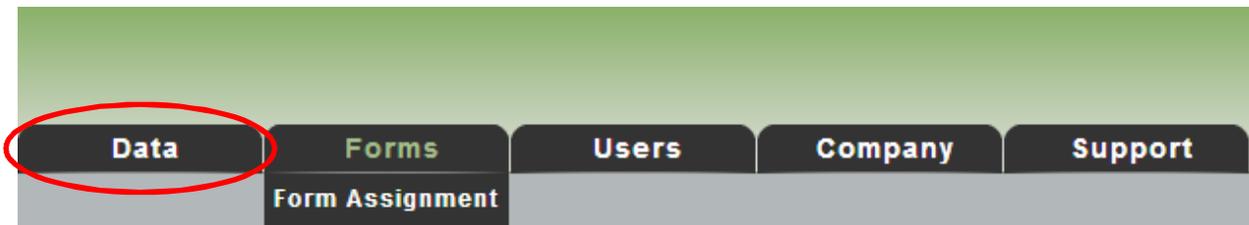
- 1) **Test before going live.** Never break this rule, you will be glad you spent the extra time. iFormBuilder is a very powerful and flexible platform. As such, there are sometimes more than one way to accomplish the same thing. Once you put your forms together, please run a few end-to-end tests before going live.
- 2) Data Column Names must be unique to the page they belong to and database friendly. They cannot begin with a number, there can be no spaces and no special characters.
- 3) **DO NOT** change Input Type, Data Size, or Encryption for an element on a live form. You will erase all of the data captured for this input in doing so. If you must change an input type, please consider disabling the old element and adding a new one to take its place moving forward.

iFormBuilder Form Administration

Data Management

Viewing Data

After data is collected, it can be viewed and analyzed using the Data tab.



There are multiple views / formats you can view your data in:

- List View
- Map view (if GPS data embedded)  Map
- Graph View (if numeric data collected)  Graph
- HTML view  HTML
- Excel  Excel
- Excel flat (subforms embedded)  Excel Flat

iForm also allows for data feeds, which you can tap into using development tools to get data on regular intervals

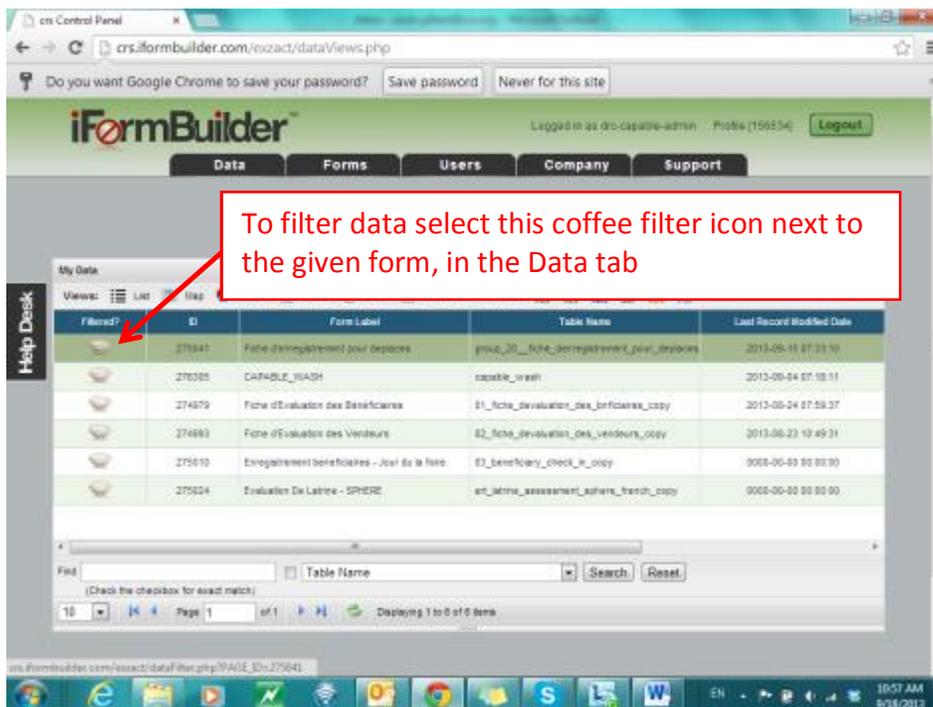
- Excel 
- Excel + 
- XML 
- JSON 
- RSS 
- Atom 

If you want to get data using the feeds, select the data format that your development tools support. There is no best way or best data feeds. It depends on the tools you use or the method the developer knows.

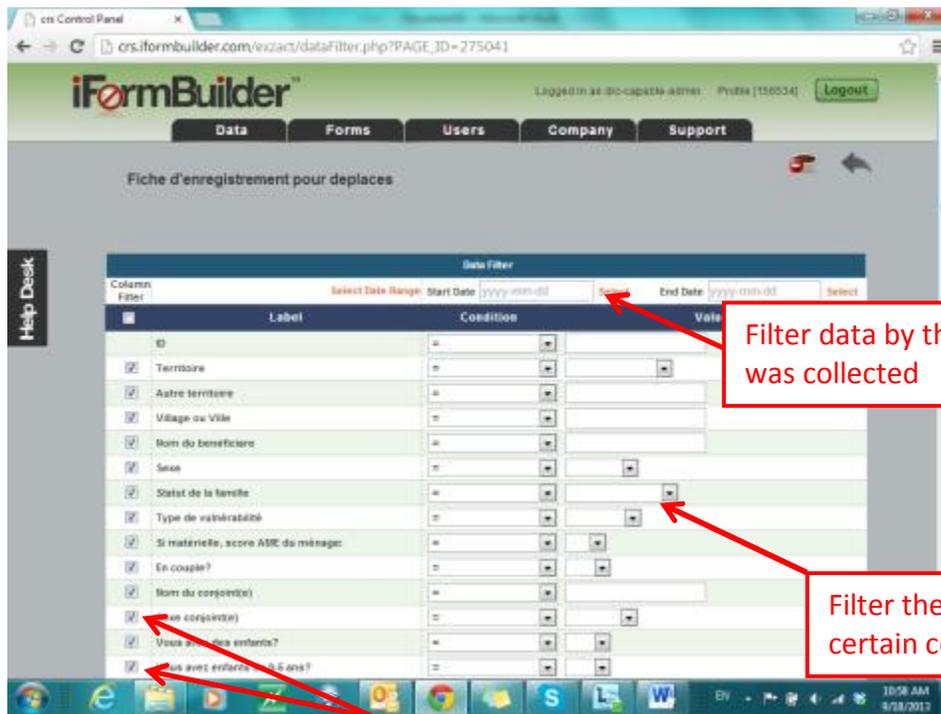
Filtering Uploaded Data in iFormBuilder

Once data is uploaded, it is possible to filter it in iFormBuilder

. This function can make downloading data faster in low-connectivity environments, or simply easier to analyse if the data set is very large. Additionally, if the data set has photos, or signatures, which tend to be very large when downloading, these fields can be eliminated from the download.



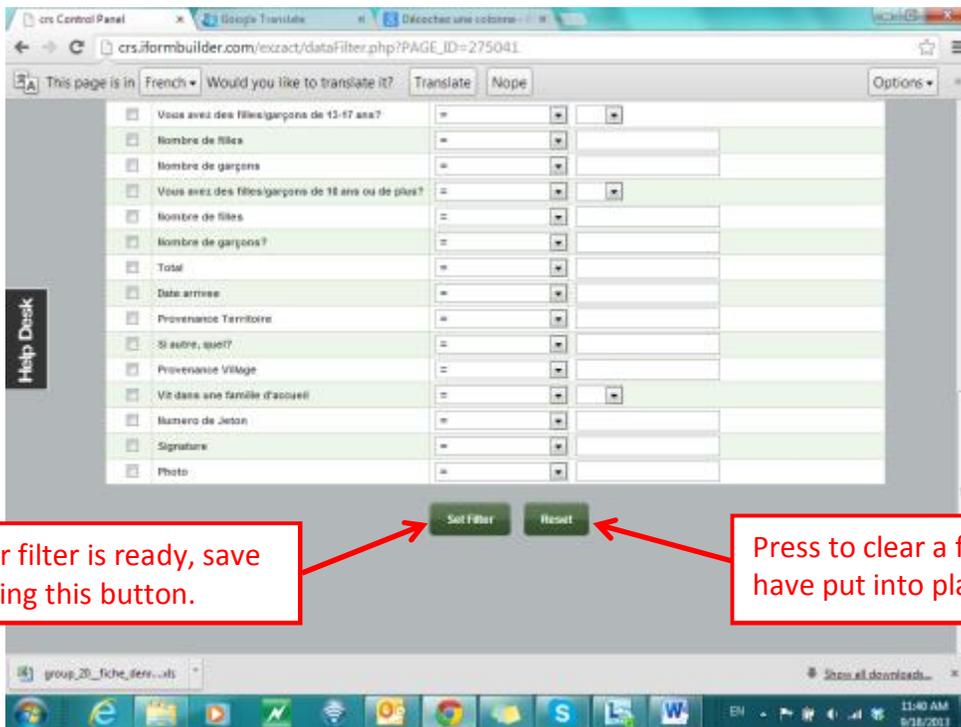
When you click the "filter" icon, the screen below should appear and you can choose what data you want to download.



Filter data by the date it was collected

Filter the data by the value of a certain column

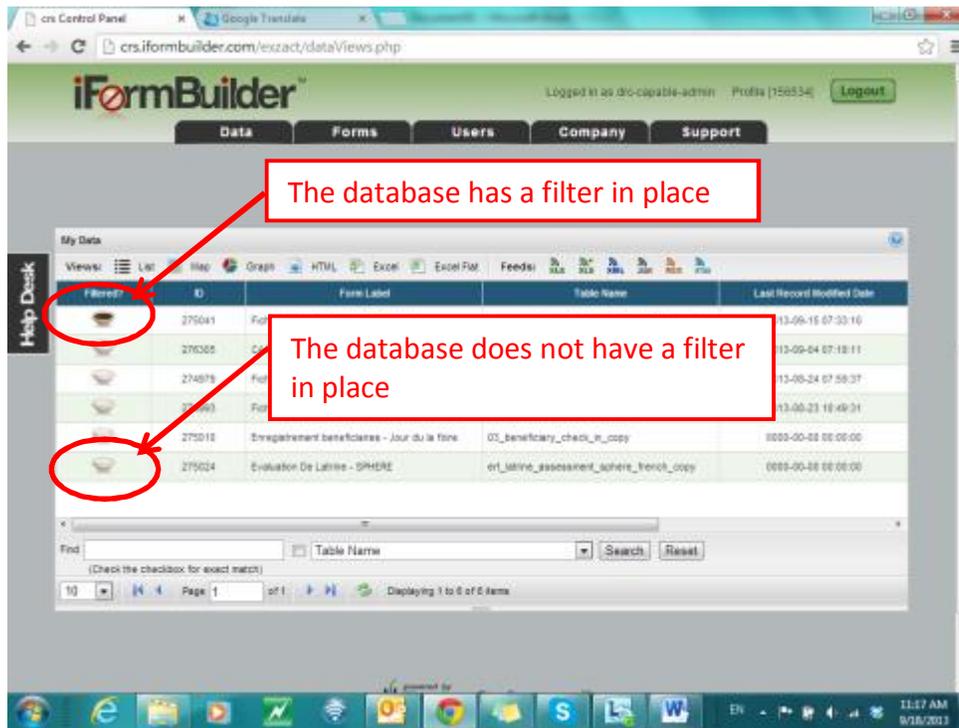
Mark only the columns you need to download (If you do not need the photo, signature or family members, the size of the data set to download will be much smaller)



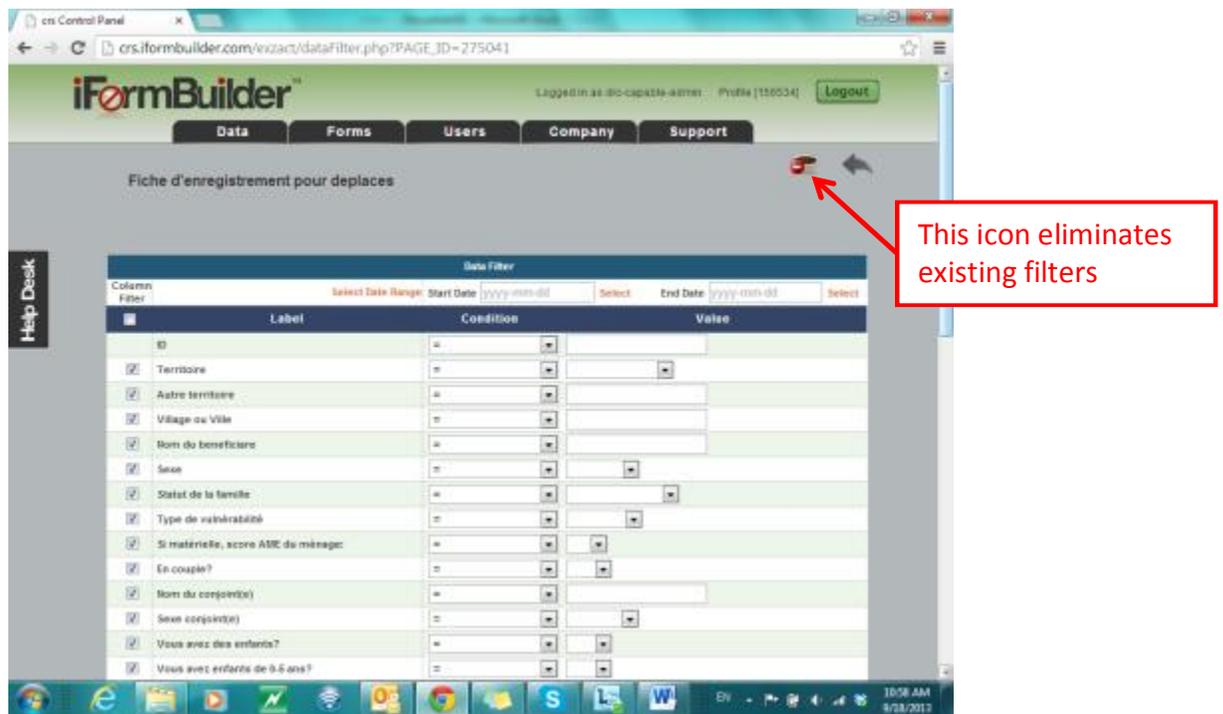
When your filter is ready, save it by pressing this button.

Press to clear a filter that you have put into place.

Note: When the filter is in place, it affects all views of data (Excel, iFormBuilder, graphics).



To remove the filter, click on the “Remove filter” icon on the screen below:



How to upload existing data into iFormBuilder

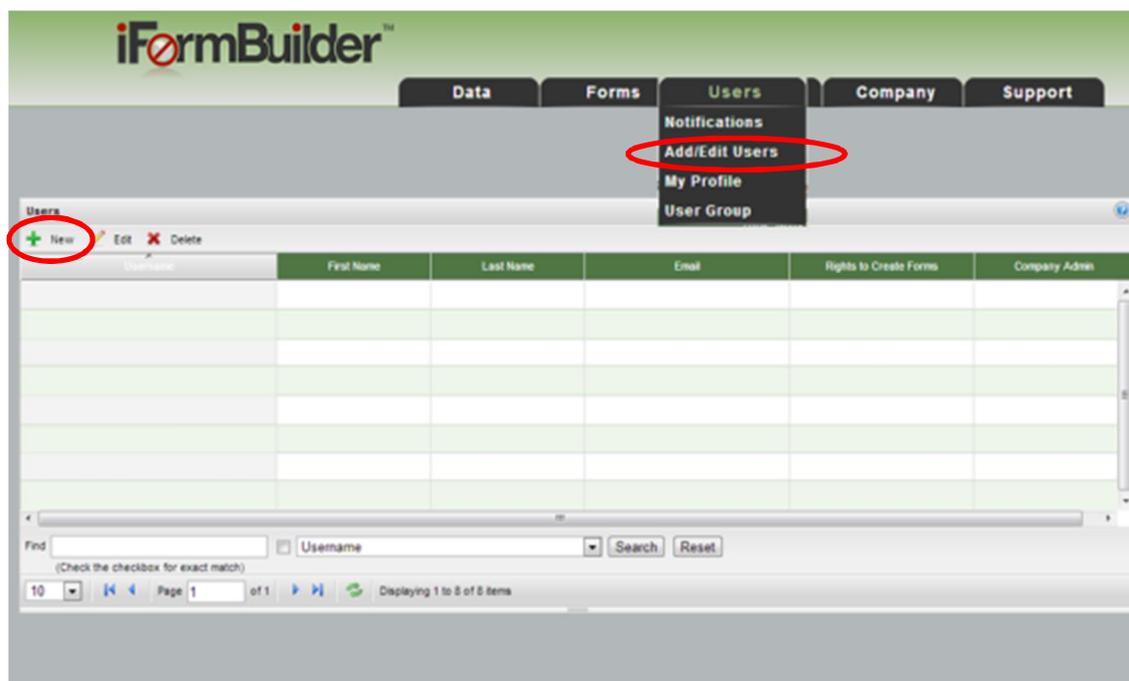
One frequently asked question from different country programs is if an existing database can be uploaded into iFormBuilder. For example, maybe a portion of the program registration has been done on paper, and the program manager would like to add that data to the existing iForm beneficiary registration database.

To upload existing data, follow the steps below.

1. Design the form where the data will be uploaded in iForm
2. Create 1 record so the excel data feed can be downloaded – the column headers need to be captured
3. Download the **XLS** file of the record you created in Step 2.
4. Paste the data you would like to upload into the appropriate rows of the sheet you just downloaded in step 3
5. Save this file as a CSV
6. Upload CVS to the form (The “Upload CVS file” option can be found in the “List” view of the form where the data will be uploaded.
7. Voila! The data should be able to be seen in the iForm database.

Form Administration and Management

iForm User Management

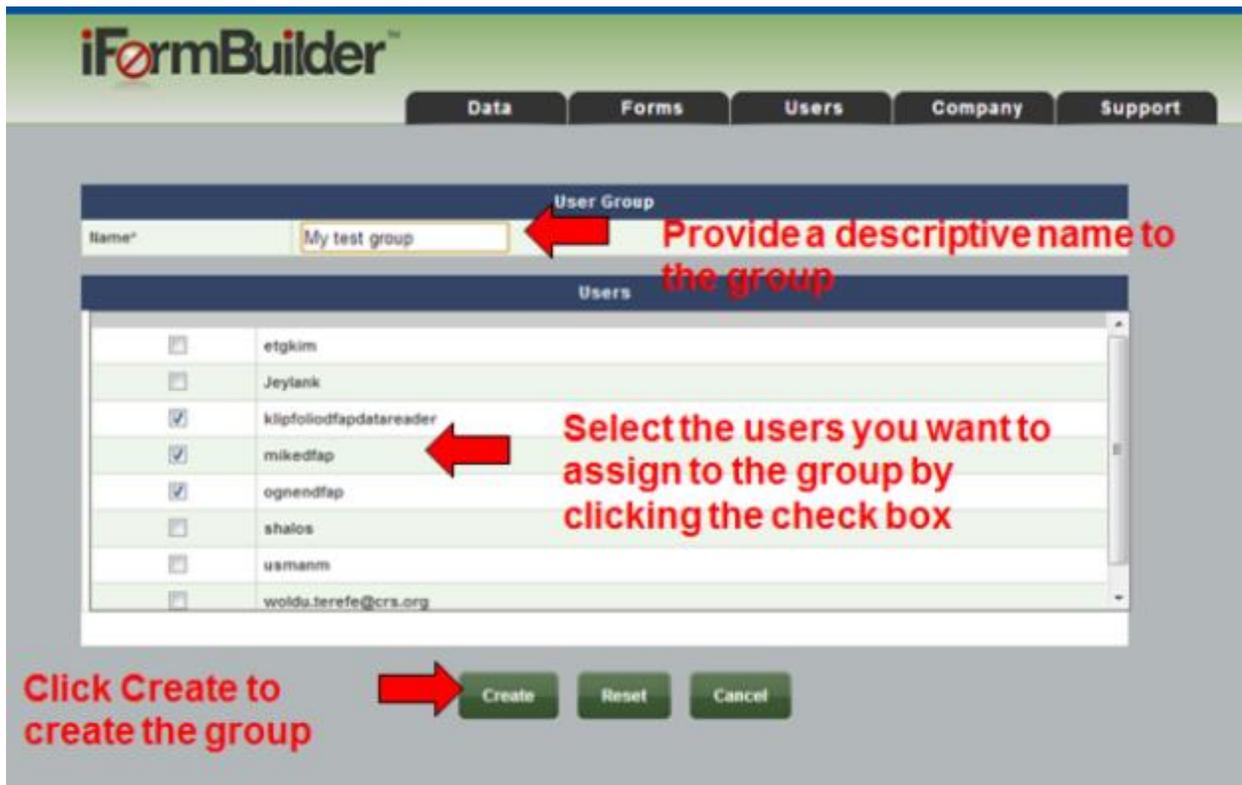


- “ Add the users that need access to your system. Under the **Users** Menu select **Add/Edit Users**. To add a user click the **+ New** button
- Start with the admin accounts, proceed with the form builders, then last add the data collector accounts
 - Populate fields in the **Create User** form:
- Required fields:
- Enter the **Username** that the user will use to authenticate to iForm
 - Enter their **Email** (can be admin person email)
 - Enter Initial **Password**
 - Confirm **Password**
- Optional fields:
- Enter the **First** and **Last Name** of the user

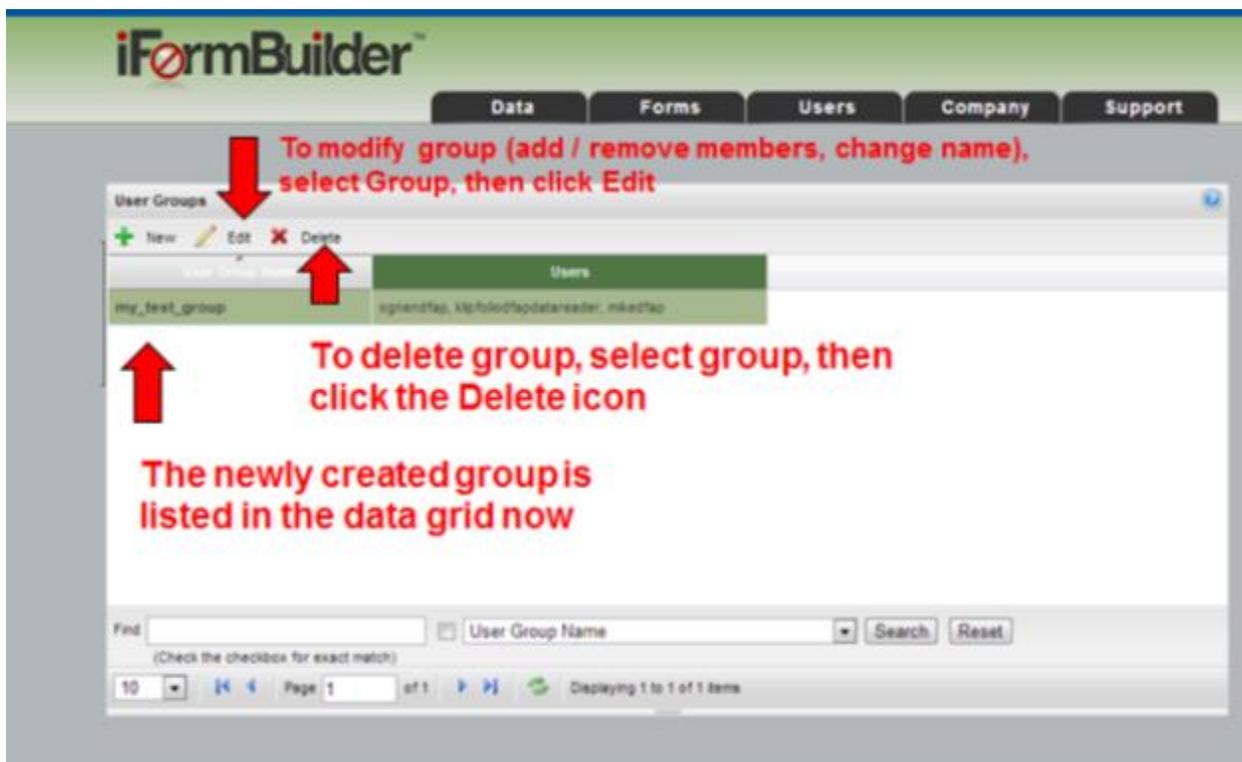
- Select level of access: Right to create forms for any user who will create forms; Admin for the administrator of the account (GKIM does not recommend more than 2 admin); Right to Sync Thunderplug for the users who will be able to sync the mini-server. *NOTE: enumerators should not have form creation or admin rights. They can be assigned forms for data collection without giving them this type of access.*

- “ Create a separate account for each user! This will allow for accountability in the event that something goes wrong.
- “ Group your users by role so you can easily assign forms / tasks to them

Creating and Managing User Groups



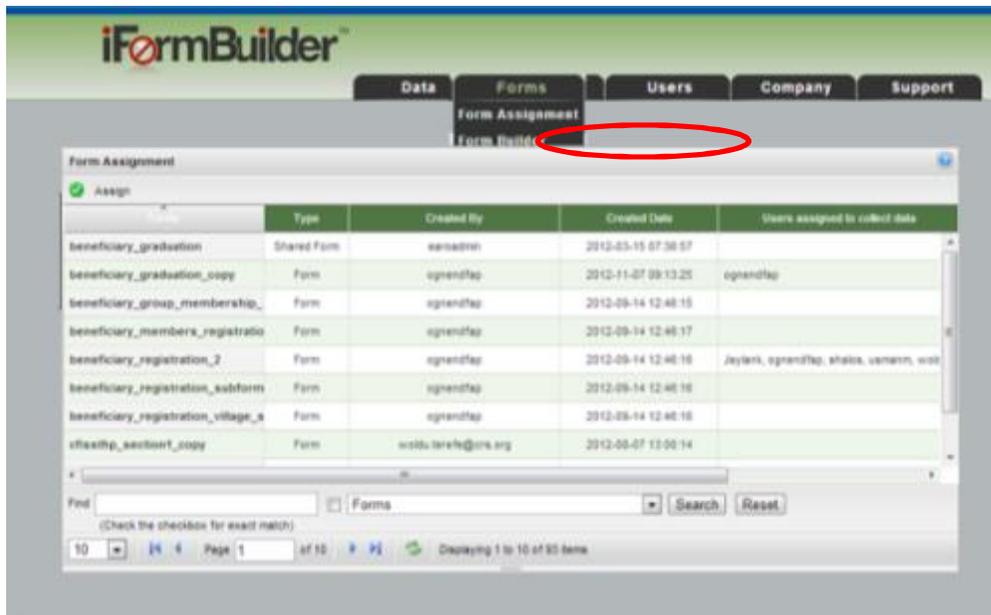
User group names are universal across profiles in CRS iForm, so GKIM recommends creating names that begin with a project prefix.



Assigning Forms

Before a form can be seen on a device, it needs to be assigned to the username used by the device. Form assignment can only be carried out by the system administrator.

1. Click on the tab “Forms” and then click on the link “Form Assignment” (The Form Assignment option will only appear to users with Admin rights)
2. A list of every form in that Profile will appear. Click on the desired form title and then click on the little green tick mark “Assign” at the top of the list
3. Collect = when this box is checked, the form will appear on the device of the selected user so data can be collected.
View = People who can view the database online. ONLY the admin user should be able view the data.
4. Scroll down and click on “Update”
5. Sync the devices
6. Check that all of the questions are working properly on the device.



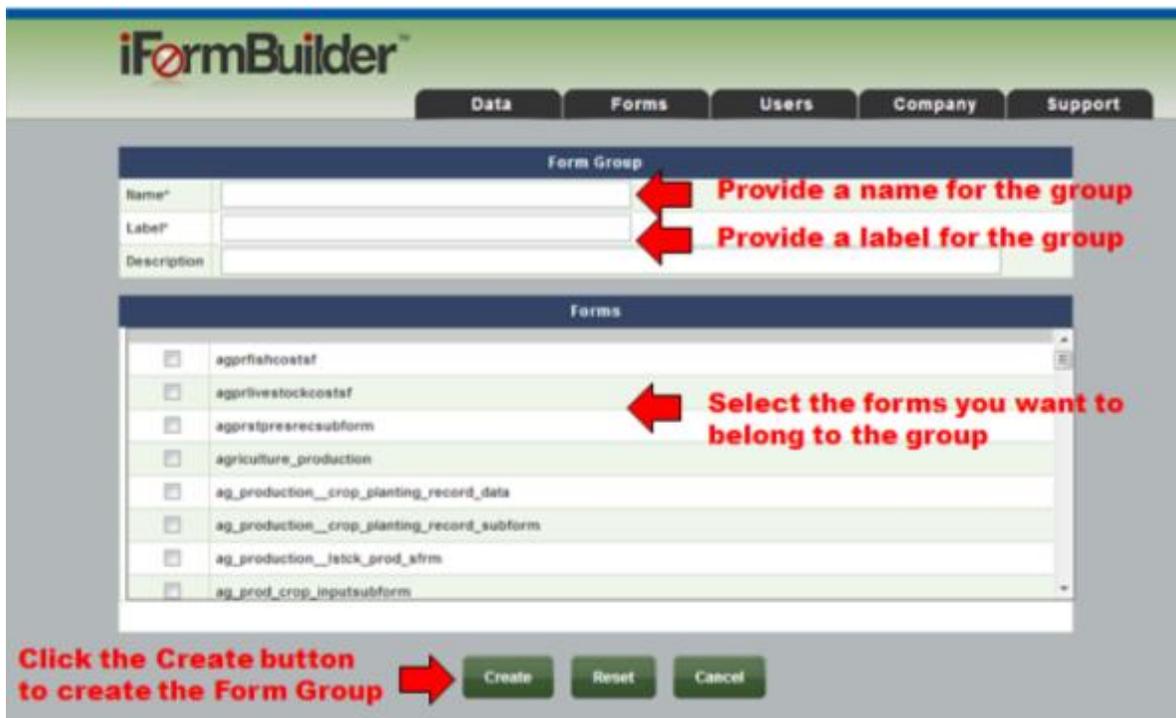
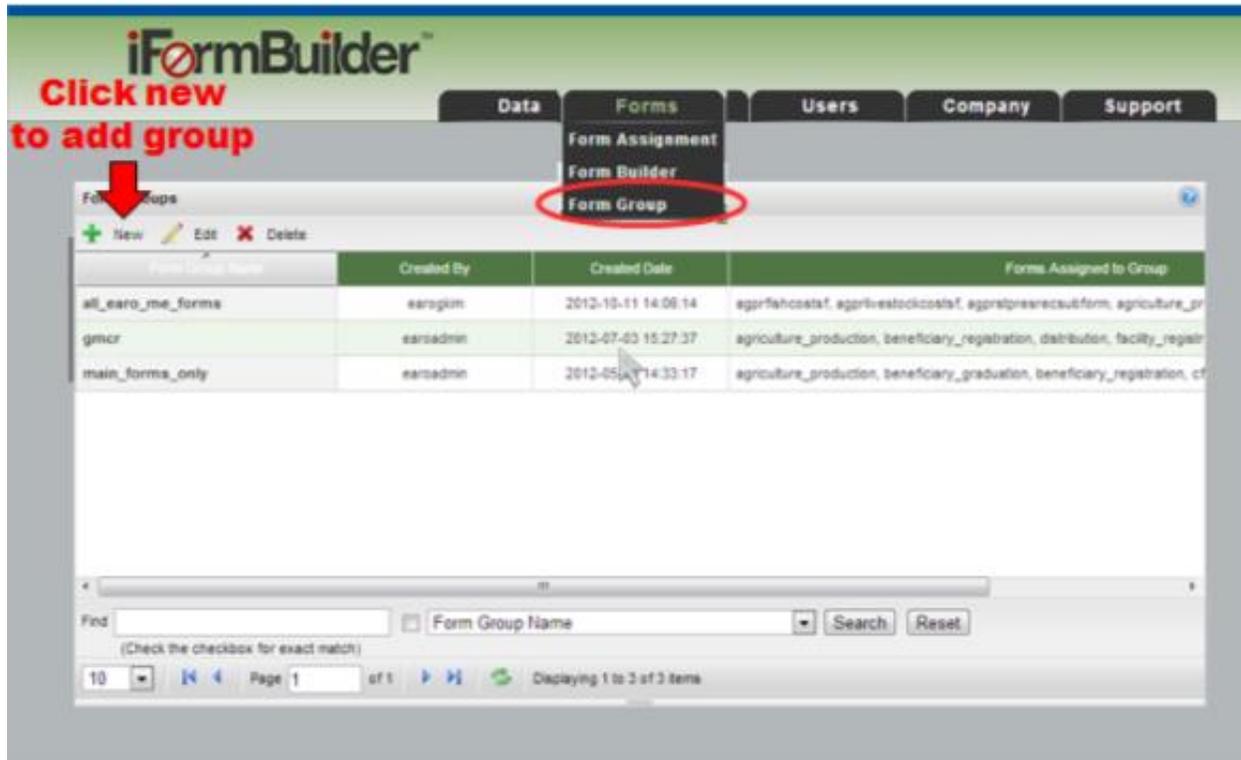
Tips for assigning forms:

- “ Define your users early:
 - Who need to collect the data,
 - Who will view / edit the collected data
- “ M&E Managers should be in charge of viewing the data
- “ Assign main forms ONLY to data collectors
- “ Remove sub-forms (do not assign collect to data collectors) to avoid confusion
- “ Shared forms are forms that are shared from another iFormBuilder profile (account). Shared forms can be used to collect data, but cannot be modified
- “ Normal forms are forms that are located in YOUR account, and the data will be collected in your account. You can modify these forms at any time.
- “ Create Form Groups to facilitate and expedite the assignment of forms

Form Grouping

- Forms that are frequently used can be grouped together
- Forms can be grouped by function, sector, enumerator type, etc.
- Example:
 - Agriculture forms
 - Microfinance forms
 - Project registration forms

- Beneficiary registration forms
- Health forms



Managing iForm Licenses

- “ An iForm license is used per user, per device
- “ If you use 1 username (ex. Drcdemo) on 2 devices, you are using 2 licenses, even though you are using 1 username
- “ If you remove a license, the device cannot log on to the same profile for 7 days

Troubleshooting

Preserving Battery Life

One main concern of electronic data collection is how long the device's battery will last before needing to be recharged. These simple tips will help your devices last as long as possible:

4. If you are collecting data offline, make sure the device is in **airplane mode**.

Open settings:



The first setting is Airplane Mode:



5. **Wireless connectivity** consumes much of the device battery power. Even though there may not be wireless connectivity in the area where the people using the devices will operate, the device will constantly be searching for a connection, and the batter will be drained faster.

Open settings to deactivate the WiFi:



6. **Reduce brightness to preserve power** - Brightness on the device can be regulated per need. If the data collection is conducted inside, the device can operate in lower brightness. If the data collection is happening in direct sunlight, a brighter setting may be required in order to see the display.
 - o To set brightness on the device, go to Settings -> Wallpaper and Brightness. Slide it to the lowest value that allows you to view the display clearly.
7. **Reduce the number of background applications** - The number of background running applications can influence the speed, performance of the device, as well as the amount of available memory. Regardless of the storage capacity of your device, this memory is used to run programs. The more programs running, the less memory there is. To reduce the number of programs, we have to close them.
 - o For iOS6 devices: Press the home button (the round button in the middle of the device) twice fast. A bar with all the active applications will appear.



- To turn off an application, hold your finger over an application for a few seconds. All the application icons will start to wiggle, and a close icon will appear in the top right corner of each application.



- Click the close icon (red circle with – sign) and the application will close.
 - Close all applications except iForm, to ensure maximum memory is available for data collection.
- For iOS7 devices: Press the home button (the round button in the middle of the device) twice fast and the task manager will open revealing each running task



- To terminate an application, drag it from the center of the application in the middle of the screen to the top of the screen.
- Terminating an application releases the memory that application uses
- Terminate all other application except iFormBuilder for an optimum experience

Common ICT errors and how to troubleshoot them

Internal GPS not working

Problem – my device has cellular capability and should have an internal GPS, but when I try to capture a GPS point in iForm, it always comes up as all 0s (does not capture the GPS coordinates).

Solution – Go to the Location Services setting (Settings -> Privacy) and make sure that Location Services is turned “ON”. If it is turned ON, verify within the Location Services settings that the functionality is activated for the CRS iForm client. Location Services should be set to ON and the CRS iForm client should be ON within the Location Services settings.

Crashing iForm client

Problem - iForm crashes (the program closes) every time I try to open it.

Solution – Make sure that the wifi for the iPad is turned off. Go to Settings and then CRS iForm (bottom of the right-hand column) and make sure that the options for AutoSync and Sync on Start are turned **off**.

Problem – I did all those things and the CRS iForm application keeps crashing!!!

Solution – Reboot the device. Hold the power button till the slide to power off appears on screen. Slide it and it will power off. Hold the power button to start up again.

Problem – I did that too CRS iForm application keeps crashing!!!

Solution – Give the device to the device manager and ask them to delete the CRS iForm application and reinstall it. This can only be done by the person who knows the restriction code for the devices, since the option to delete applications has been disabled. (We’ve had people delete the iForm app, with data still waiting to be uploaded). The CRS iForm app can then be re-installed by opening Safari and accessing tools.crs.org/crsiform. Please only do this if connectivity is strong enough to open Safari.

Strange error messages

Problem – I keep getting strange errors (check network server name, unable to parse request XML, session timeout) when I try to sync.

Solution – This is probably due to connectivity. Just keep syncing until the signal is strong enough to complete the sync.

Problem – Low memory warning

Solution – close all applications that are not needed. If this does not work, close iFormBuilder. If that doesn’t work, restart the iPad.

Problem – My device is giving the error “Provisioning Profile Expiration”.

Solution – This is a minor error with HQ licensing and can be ignored. If you do encounter it, please email Stephane to let him know that it is happening.

Problem – My device gives an error “maximum number of records reached”

Solution –

1. Upload all data on the device. Make sure there are no uncompleted records
2. Under the cog icon, scroll to the bottom, click Clean Local Database BE AWARE THAT THIS OPERATION WILL DELETE ALL FORMS AND ALL DATA IN THE FORMS, SO MAKE SURE ALL DATA IS UPLOADED!
3. Sync the device to re-download forms

Survey tools downloaded incorrectly

Problem – My form is missing its picture, option lists and/or subforms inside the form. These subforms appear on other iPads when they are synced, but not on mine.

Solution – This sometimes happens if there was a break in the connectivity when the forms were downloading. First try re-syncing. If the form is still wrong after a successful sync, do the following:

1. Upload all data on the device. Make sure there are no uncompleted records
2. Under the cog icon, scroll to the bottom, click Clean Local Database
 1. BE AWARE THAT THIS OPERATION WILL DELETE ALL FORMS AND ALL DATA IN THE FORMS, SO MAKE SURE ALL DATA IS UPLOADED!
3. Sync the device to re-download forms

Inability to sync the device

Problem – My device can't connect to the Wi-Fi

Solution – Turn off wifi, and wait 5 seconds. Turn it back on and try again. If that doesn't work, perhaps the WiFi is full of users, they have limits to the number of devices they can handle. See if someone can disconnect.

Problem – My device is connected to [CP cell provider] 3G or E network but I cannot sync

Solution – Remove the simcard, and put it in a phone. Look at the current balance, and check the validity of the internet package. If internet is expired, and no funds remain, topup, then activate the internet subscription.

Device locked by restriction code

Problem – I've entered the incorrect restriction code 3 times and my device is locked and it says I have to wait 30 min to unlock it

Solution – Do not try to unlock the restrictions without the code. This will only result in locking the device. Wait the 30 minutes and try again.

Device has fallen into water

Problem – My device fell in the pool / puddle / river / ocean and it's not working

Solution – Remove device from cover. Shake furiously until no more water is coming out of it. Put it in a bag of rice for 2 days. Make sure the rice covers the entire surface of the device. If your device fell in salty water like the ocean, first you will have to wash it down / soak it in regular water to remove the salt, or the internal electronics will rust away. Then repeat steps above. No not try to turn the device on before 2 days.