**Admin Guide - Creating Custom Application Types**

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Steps to Extend Government CDM by creating new application types:

1. Create a New Solution:

For Reference: [Create a solution in Power Apps - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/power-apps/maker/data-platform/create-solution)

Create new solution in the environment. **E.g.: ‘Vehicle Permit Solution’**.

Navigate to ***Solutions -> New Solution***.

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1. Create New Custom Table

For Reference: [Create a custom table (contains video) - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/power-apps/maker/data-platform/data-platform-create-entity)

1. Create a new Entity with essential fields. E.g.: Created a ‘**Vehicle Permit’** Entity as shown below.

Navigate to ***Solutions -> Vehicle Permit Solution -> Add Table***

**Note**: Enable Notes while creating entity.

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1. Create New Columns in this entity. These columns are the “Questions” which will be available Application for this Application Type.

For Reference [How to create and edit columns for Microsoft Dataverse(contains video) - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/power-apps/maker/data-platform/create-edit-fields)

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1. Customizations in New Table

Below customizations are required to be done for the table created in step 2:

* 1. Design “Information” main form with custom columns.

Navigate to ***Solutions -> Vehicle Permit Solution -> Tables ->Vehicle Permit -> Forms -> Information (Main form)***

For Reference:[Create, edit, or configure forms using the model-driven form designer - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/power-apps/maker/model-driven-apps/create-and-edit-forms)

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* 1. Create “Quick view form” with relevant attributes.

Navigate to ***Solutions -> Vehicle Permit Solution -> Tables ->Vehicle Permit -> Forms -> Add form (In ribbon) -> Quick View Form***

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1. Update Polymorphic lookup (msgov\_ApplicationRecordTypeId) in “Application” Table

A Polymorphic lookup (msgov\_ApplicationRecordTypeId) is already available in Application Table. The new table must be added in this Polymorphic lookup. This can not be done directly from Powerapps. It requires a WEB API call to be send to Dataverse using Postman

Follow below steps to Add new table created in step 2 (Vehicle Permit entity) to Polymorphic lookup (msgov\_ApplicationRecordTypeId) in Application Table:

* 1. Use ***Postman*** to send Web API requests to Power Platform. Please refer link - [Use Postman with Microsoft Dataverse Web API (Developer Guide for Dataverse) - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/powerapps/developer/data-platform/webapi/use-postman-web-api) for the same.

Refer the [steps](#_Steps_to_send)  to connect Postman and test connection.

Refer MS docs [Use multi-table lookup columns (Microsoft Dataverse) - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/powerapps/developer/data-platform/webapi/multitable-lookup).

**Request :** POST [OrganizationUrl]/api/data/v9.0/RelationshipDefinitions

* 1. Below is the Sample Payload for reference. Copy and paste below Payload in ***Postman(Refer step a)***.

Update highlighted values for the columns as per your new table.

{

"SchemaName": "msgov\_msgov\_application\_msgov\_vehiclepermitapplication\_msgov\_ApplicationRecordTypeId", ***-----> Replace with custom schema name***

"@odata.type": "Microsoft.Dynamics.CRM.OneToManyRelationshipMetadata",

"CascadeConfiguration": {

"Assign": "NoCascade",

"Delete": "RemoveLink",

"Merge": "NoCascade",

"Reparent": "NoCascade",

"Share": "NoCascade",

"Unshare": "NoCascade"

},

"ReferencedEntity": "cr71c\_vehiclepermit", ***-----> Replace with new entity schema name***

"ReferencingEntity": "msgov\_application",

"Lookup": {

"AttributeType": "Lookup",

"AttributeTypeName": { "Value": "LookupType" },

"Description": {

"@odata.type": "Microsoft.Dynamics.CRM.Label",

"LocalizedLabels": [

{

"@odata.type": "Microsoft.Dynamics.CRM.LocalizedLabel",

"Label": "Checkout Polymorphic Lookup Attribute",

"LanguageCode": 1033

}

],

"UserLocalizedLabel": {

"@odata.type": "Microsoft.Dynamics.CRM.LocalizedLabel",

"Label": "Checkout Polymorphic Lookup Attribute",

"LanguageCode": 1033

}

},

"DisplayName": {

"@odata.type": "Microsoft.Dynamics.CRM.Label",

"LocalizedLabels": [

{

"@odata.type": "Microsoft.Dynamics.CRM.LocalizedLabel",

"Label": "Vehicle Permit", ***à Change Label names as per New table***.

"LanguageCode": 1033

}

],

"UserLocalizedLabel": {

"@odata.type": "Microsoft.Dynamics.CRM.LocalizedLabel",

"Label": "Vehicle Permit", ***à Change Label names as per New table***.

"LanguageCode": 1033

}

},

"SchemaName": "msgov\_ApplicationRecordTypeId",

"@odata.type": "Microsoft.Dynamics.CRM.LookupAttributeMetadata"

}

}

1. “Application” Table changes

For Reference: [How to create a solution in Dynamics 365 Customer Engagement (on-premises) | Microsoft Docs](https://docs.microsoft.com/en-us/dynamics365/customerengagement/on-premises/customize/create-solution?view=op-9-1)

* 1. Add “**Application**” table to solution created in step 1 (vehicle permit solution).
  2. Update **Quick View control** in ***Questionnaire*** Tab of **Main form** with newly created **Quick View Form** of child table (in step 3)
     1. Add **Information** **Main form** to new solution created.

Navigate to ***Solutions -> Vehicle Permit Solution -> Tables -> Application -> Forms -> Add Subcomponents (in ribbon) -> Select Information form(Main form type)***

* + 1. Navigate to **Questionnaire** tab and select **Quick view** form created.

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1. Add record to “Application Type” table
   1. Navigate to **Apps -> Government Services (Model Driven App) -> Application type.**
   2. Create a new **Application Type** Record by giving Name and Code Number.

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* 1. **Note:** It is mandatory to associate this application type to either service or program to create applications under this type.

**Steps to associate:** Navigate to Related tab and select either Program or service.

Click on Add existing Program/Service and select appropriate record.

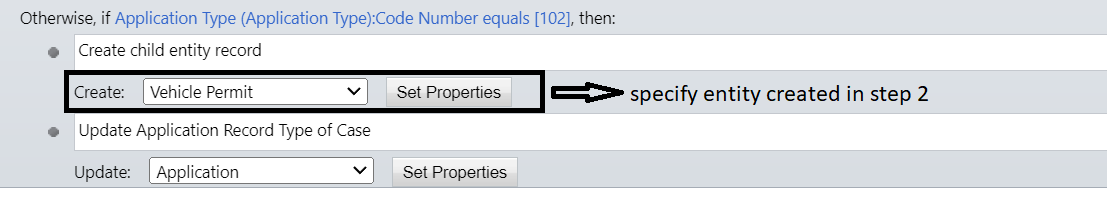
1. Process/Workflow changes

Update existing process/workflow to create child table record based on **Application Type**.

* 1. Add existing process with name - ***Create Application Child Entity Record Based on Application Type*** to solution created in step 1 (Vehicle Permit Solution)

Navigate to ***Solutions -> Vehicle Permit Solution -> Processes -> Add Existing (In ribbon) -> Process -> Create Application Child Entity Record Based on Application Type***

* 1. Deactivate the workflow.
  2. Add condition in the workflow to check for **Application Type** and then create record (of new entity created in step 2 – Vehicle Permit). Below step should be added as last step in the process.



* 1. Click on Set Properties beside ***Create Vehicle Permit*** entity.

Name: {Subject(Application)}-{Application Type(Application)}

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* 1. Click on Set Properties beside ***Update Application*** entity.

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* 1. Activate the workflow.

1. JavaScript Web Resource changes

Update JavaScript Web resource to add condition to check newly created **ApplicationType** and open corresponding **Questionnaire**

* + 1. Add existing web resource - **msgov\_UpdateApplicationQuestionnaire** to solution

Navigate to ***Solutions -> Vehicle Permit Solution -> Web Resources -> Add Existing (In ribbon) -> Process -> msgov\_UpdateApplicationQuestionnaire***

* + 1. Edit Web resource in classic view.
    2. Navigate to Javascript function with name - ***ShowPanel***(result)
    3. Changes needs to be done in if condition:
       1. Add condition as last condition for the first if statement and assign values as below.

*else if (result.msgov\_ApplicationType.msgov\_codenumber == "102") {*

*entityName = "cr71c\_vehiclepermit";*

*formId = "77872c-38e8-4857-aaef-49ad28291b44";*

*}*

**Note: Below steps will help to get custom entity formid**

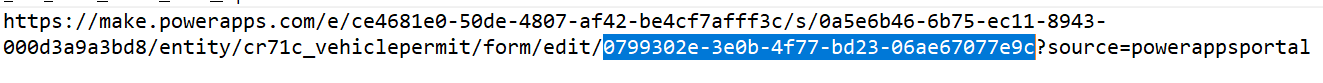
entityName = "schema name of child table created";

formId = "guid of Main form (customized in step 2)";

Steps to get Guid of Main form.

Navigate to ***Solutions -> Vehicle Permit Solution -> Tables ->Vehicle Permit -> Forms -> Information (Main form)***

* + - * 1. Copy browser URL and paste it in notepad and take formid as below.



Steps to Extend Government Portal by adding new application type entity:

Create New portal form

Design “**Vehicle Permit Portal Form**” main form with custom attributes.

Navigate to ***Solutions -> Vehicle Permit Solution -> Tables ->Vehicle Permit -> Forms -> Add form (In ribbon) -> Main Form***

Create Portal components

* + 1. Navigate to ***Apps -> Portal Management.***
    2. Create below Basic Forms: Navigate to Basic forms in left navigation

Refer MSDocs - <https://docs.microsoft.com/en-us/powerapps/maker/portals/configure/entity-forms#add-a-form-to-your-portal>

for creating basic forms.

Questionnaire Form:

Name: Gov/Questionnaire/<<entity schema name>>

Mode : Edit

On Success settings: Redirect to Web Page.

Append Existing Query String : True

Web Page : Gov/ApplicationSuccessPage

Chart

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Add additional settings to enable notes.

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Click on Advanced settings in Additional Settings tab and add below configurations for submit button.Graphical user interface, text, application, email

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View Questionnaire Form:

Name: Gov/Questionnaire/View/<<entity schema name>>

Mode: Read-only

Record source type : Query string.

Website – Select Government services.

1. Create Table permissions

Create below table permissions.

***Name: Gov - <<Entity Name>> Entity Permissions***.

Previliges : Read/Write/Create/Append/Append To

Web Roles : Administrations & Authenticated Users

Access type: Parent.

Parent Table Permission: Gov – Applications Entity Permissions

***Name: Gov - <<Entity Name>> Note***

Previliges : Read/Create/Append/AppendTo

Access Type: Parent

Table Name: Note

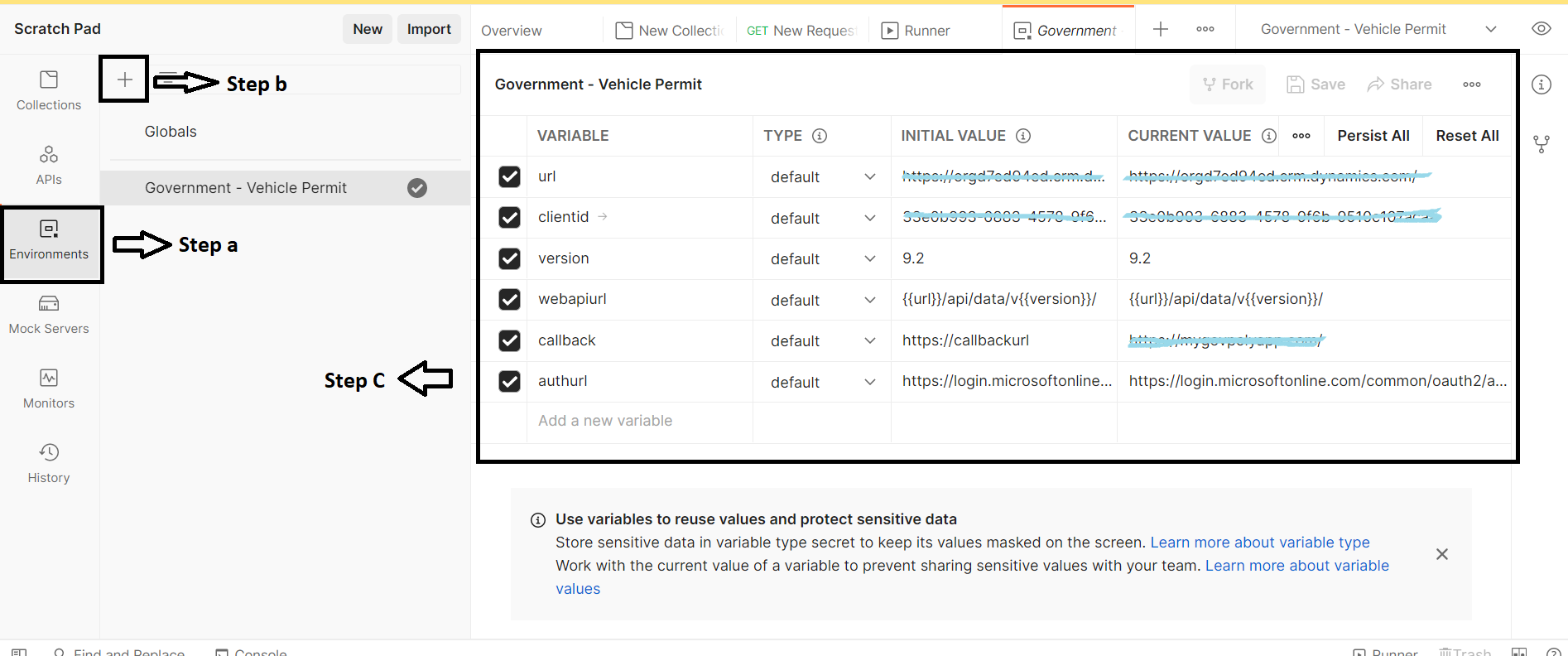
Parent Table Permission: Select Table Permission created in above step.

References:

### Steps to send post request in Postman.

Download Postman app from this link. (https://www.getpostman.com/apps)

* + - 1. Open downloaded Postman app from desktop.
      2. Set up environment:
         1. Click on environments in side navigation
         2. Click on + button
         3. Create new environment by entering proper values. Refer this link for more details ([Set up a Postman environment (Microsoft Dataverse for Apps) - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/power-apps/developer/data-platform/webapi/setup-postman-environment))



* + - * 1. Steps to Register app in application registration and get client Id:

Follow this link to Register app in application registration and get client id and callback url (Redirect url): [Tutorial: Register an app with Azure Active Directory (Microsoft Dataverse) - Power Apps | Microsoft Docs](https://docs.microsoft.com/en-us/power-apps/developer/data-platform/walkthrough-register-app-azure-active-directory)

Enable access token for implicit grant and hybrid flows (Appregistrations -> Authentication)

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* + - * 1. Generate an access token and test your connection to the environment using steps in the link - <https://docs.microsoft.com/en-us/power-apps/developer/data-platform/webapi/setup-postman-environment#generate-an-access-token-to-use-with-your-environment>