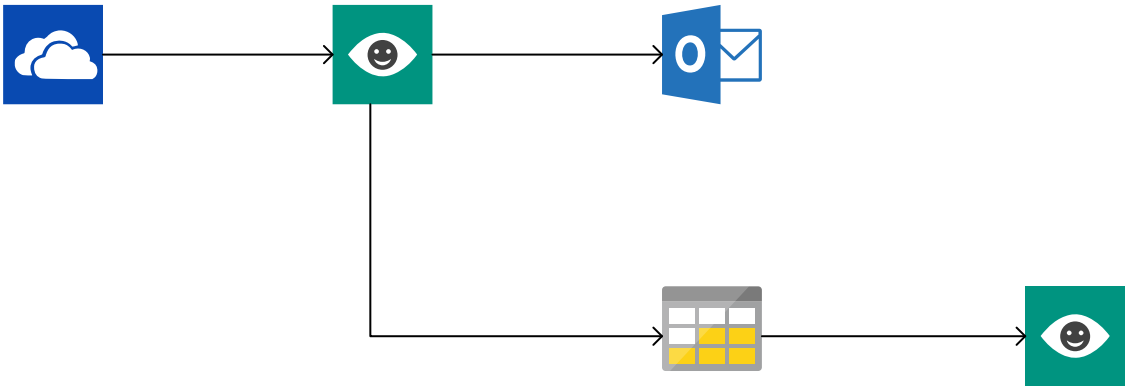
GIBC GLOBAL INTEGRATION BOOTCAMP

Lab- Recognizing people with Cognitive Services Face API

Author: Eldert Grootenboer

Objective

In this lab, we will build a solution for recognizing faces using the Face API. A picture will be uploaded to OneDrive, from where it will be picked up by a Logic App. Here we will call the Face API, and determine if this is a known person. If it is not a known person, we will send it to Azure Table Storage where we can assign a person.

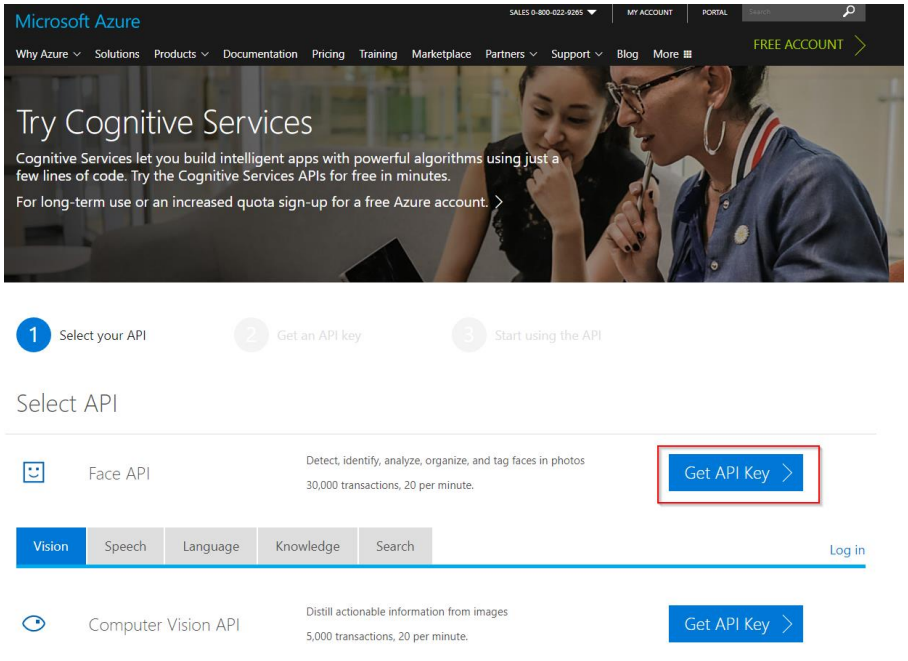


Prerequisites

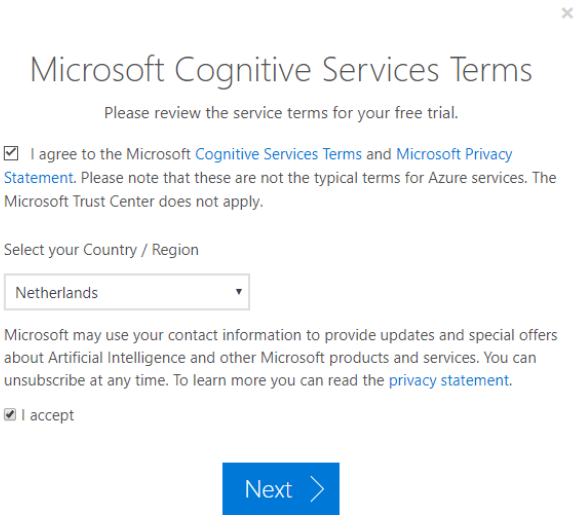
- Azure Subscription
- Azure Storage Explorer: https://azure.microsoft.com/en-us/features/storage-explorer/

Create Face API Account

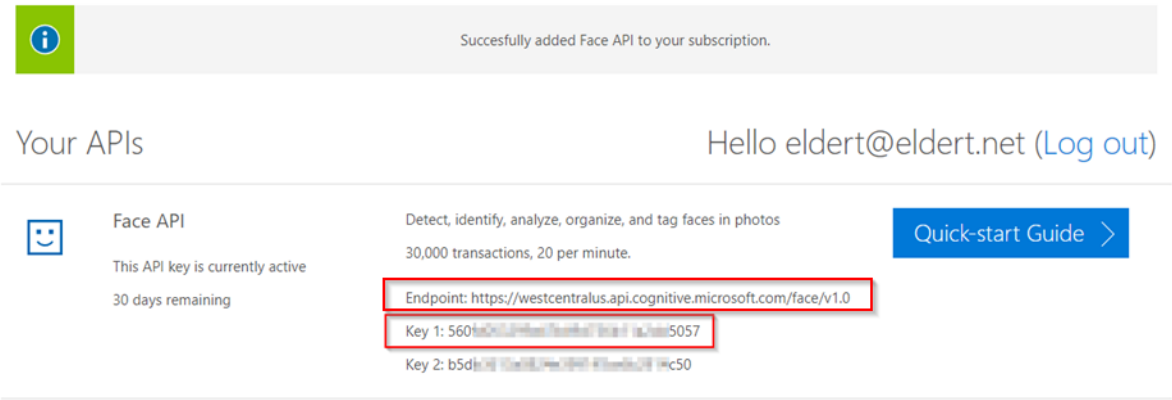
Start by creating a Face API account. Navigate to https://azure.microsoft.com/en-us/try/cognitive-services/?api=face-api and select Get API Key.



Accept the conditions and login using your preferred method.

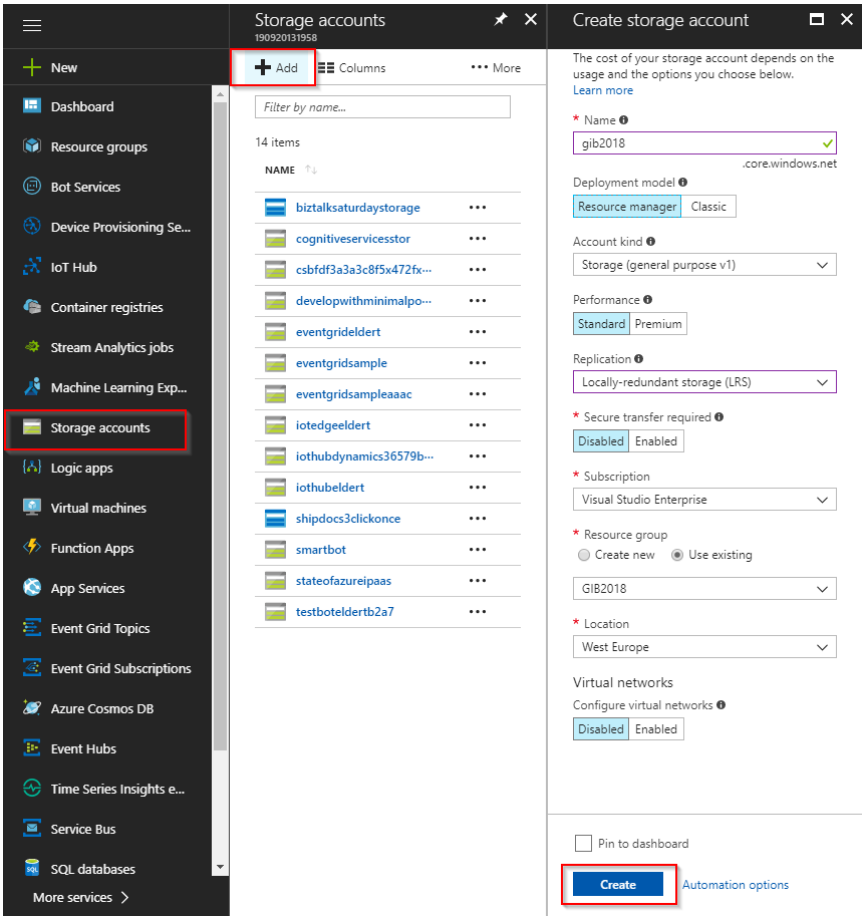


Grab the endpoint and key, you will need this later on.

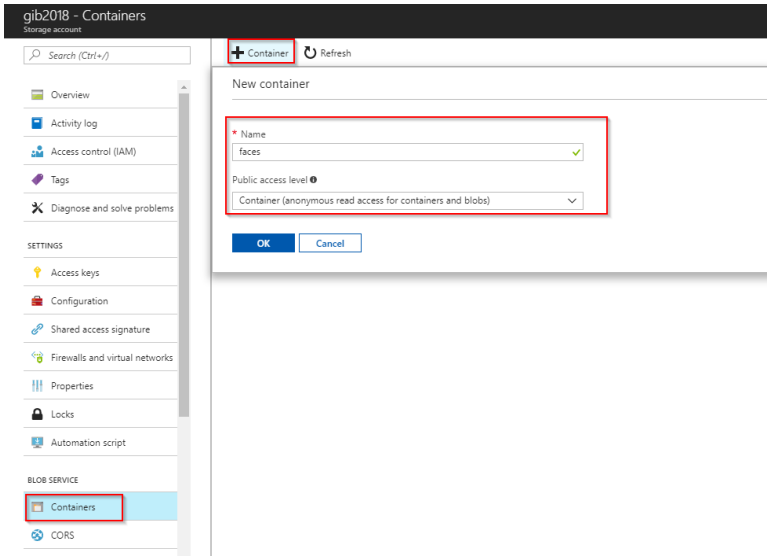

Succesfully added Face API to your subscription.
Your APIs
Hello eldert@eldert.net (Log out)
Face API
This API key is currently active
30 days remaining
Detect, identify, analyze, organize, and tag faces in photos
30,000 transactions, 20 per minute.
Endpoint: https://westcentralus.api.cognitive.microsoft.com/face/v1.0
Key 1: 560
5057
Key 2: b5d
c50
Quick-start Guide

Create storage account

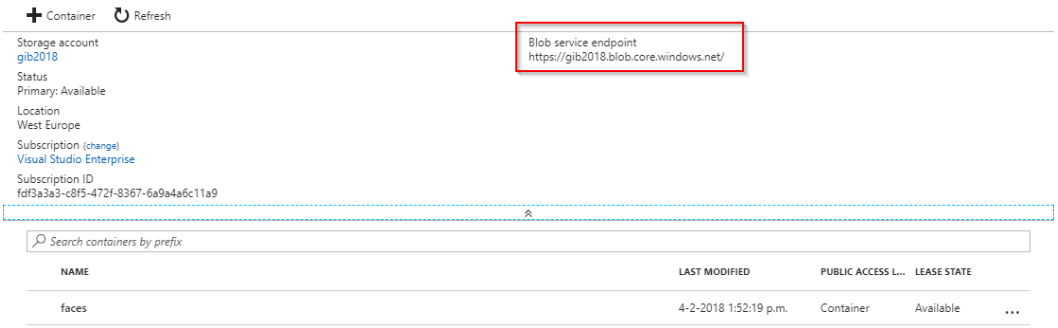
Now navigate to the [Azure portal](), and create a new storage account.



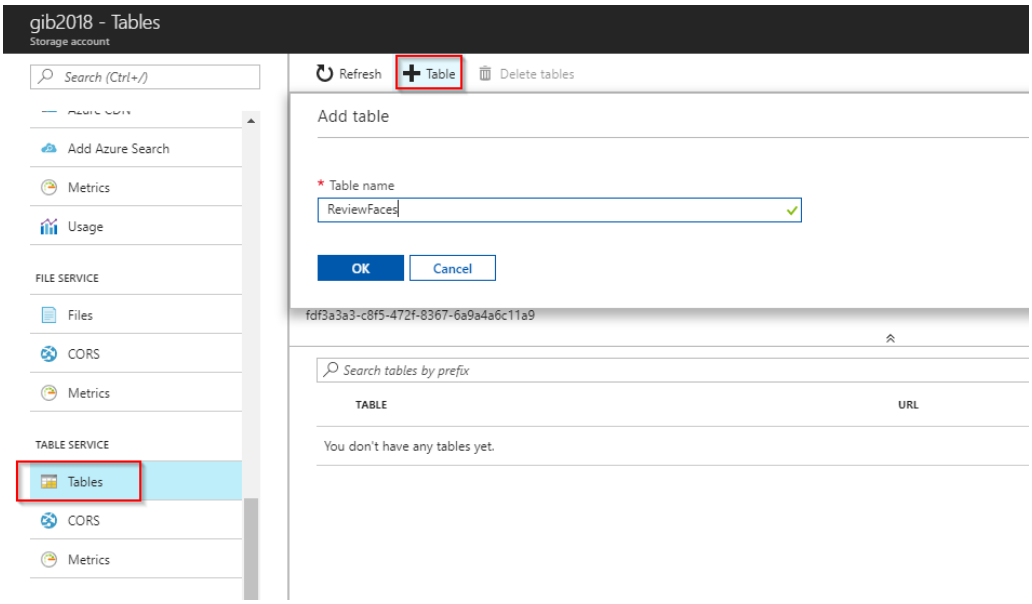
Once created, open the new Storage Account, and create a new blob storage container. Make sure to allow anonymous access.



Grab the endpoint of your storage account, you will need this later on.

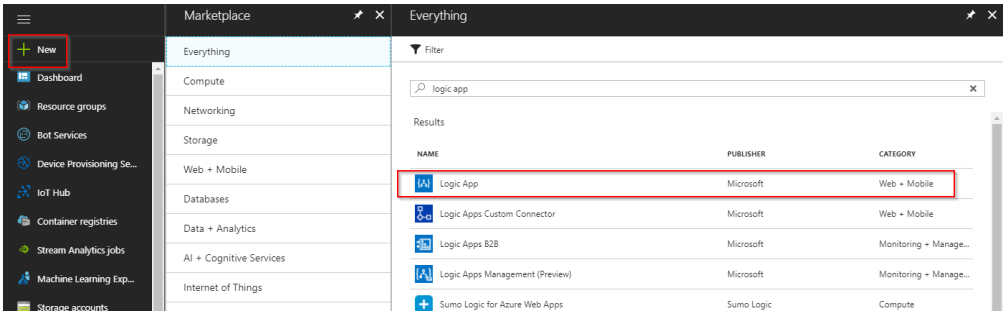


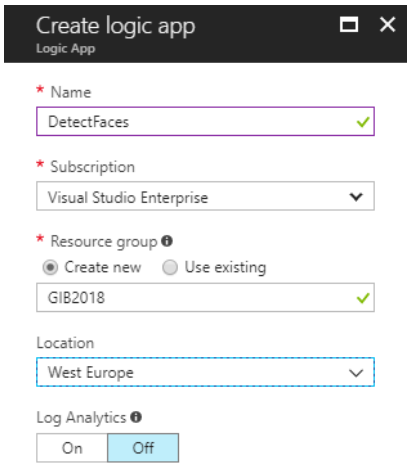
Now in the same storage account, add a Table storage.



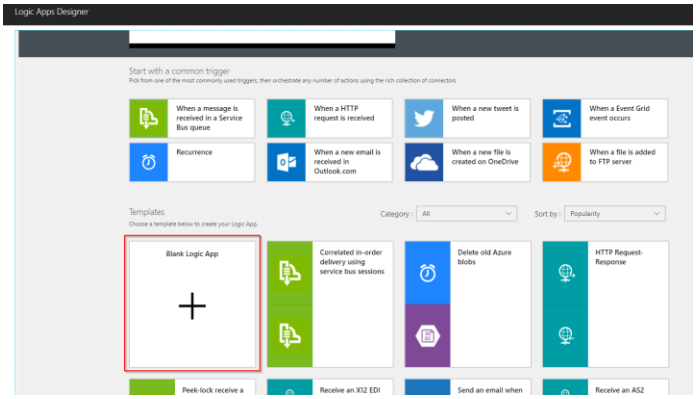
Create Logic App

Now in the portal, create a Logic App, in which we will set up the flow.

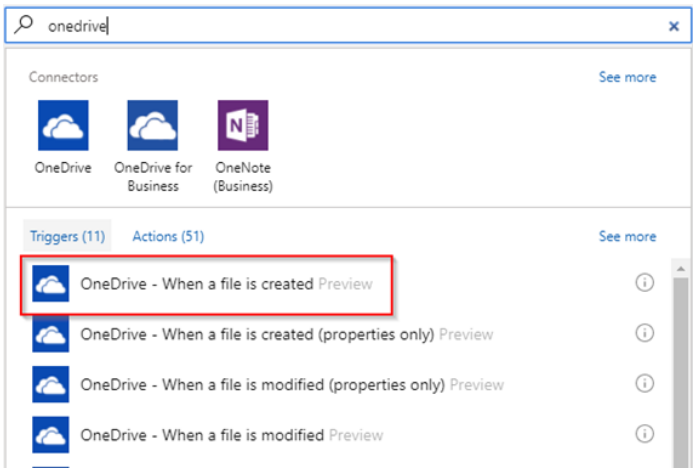




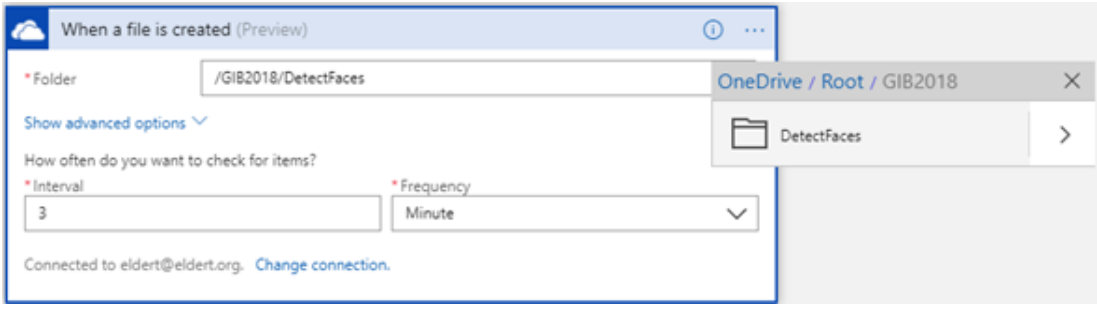
Create a blank logic app.



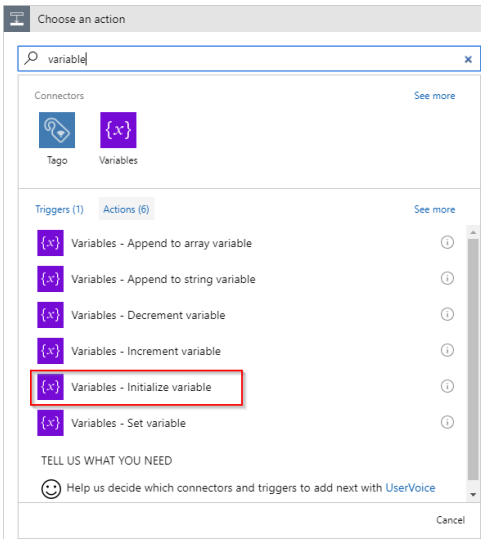
We will start with a OneDrive trigger, which will check for a file being created.

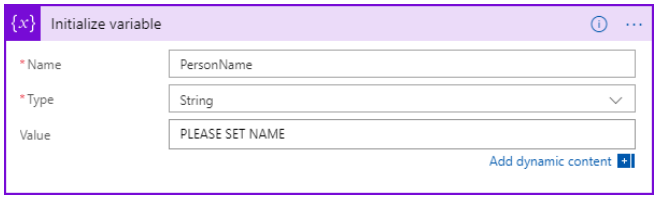


Sign in using your onedrive account, and select the folder from which you will want to pick up the images. Set the interval to 1 minute.

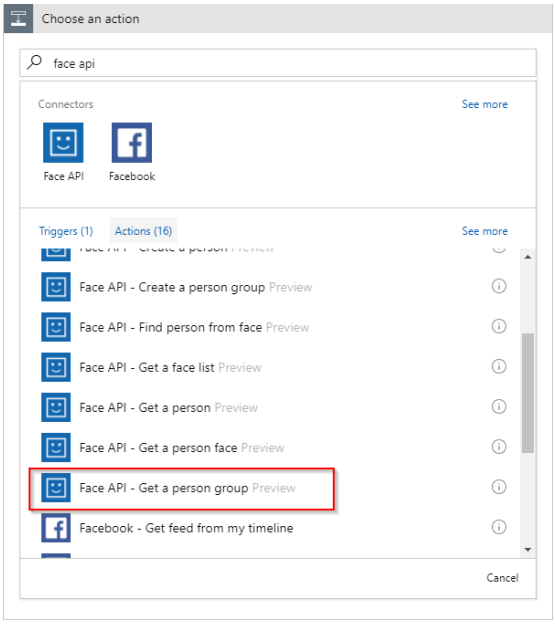


Next we will add a string variable which will be used to hold the name of the person. Initialize the variable with the value PLEASE SET NAME.

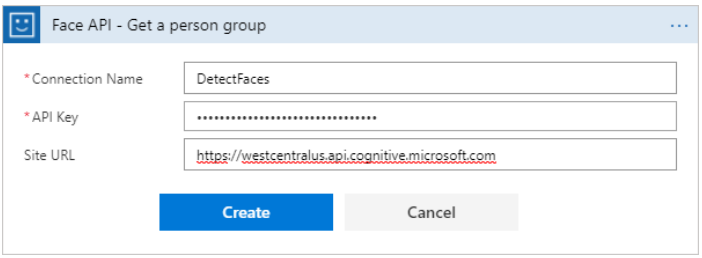




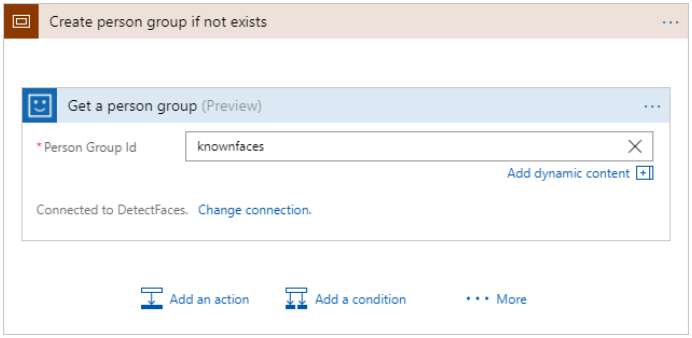
Create a scope and name it Create person group if not exists. Inside this scope, add an action to get a person from the Face API.



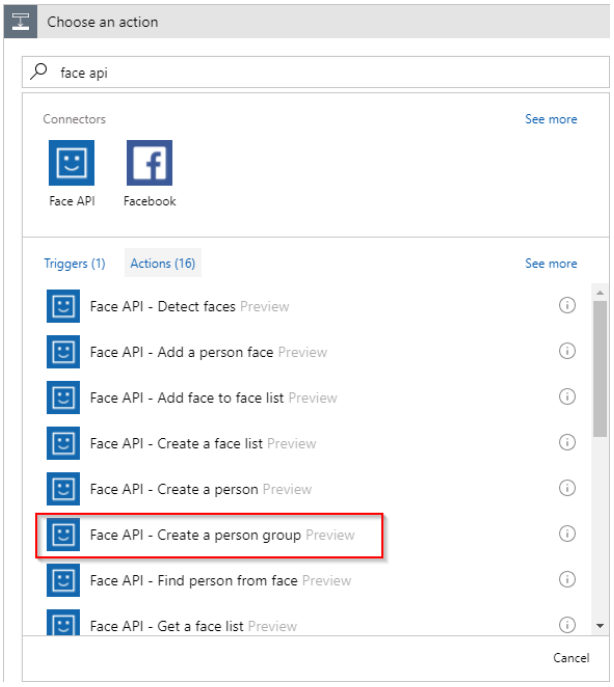
Set up the connection using the site url and API key you got by creating your Face API account.

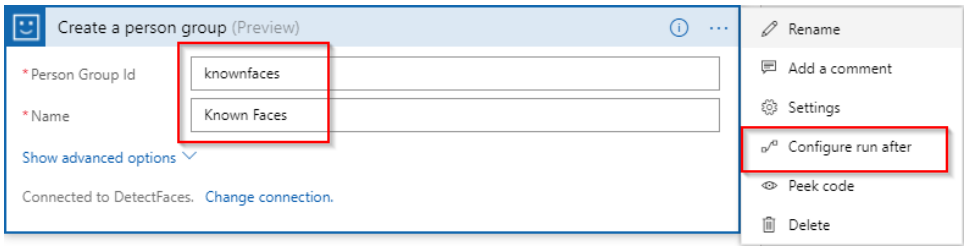


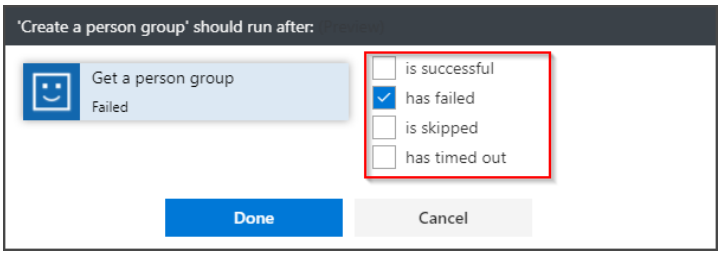
The person group will be called knownfaces.



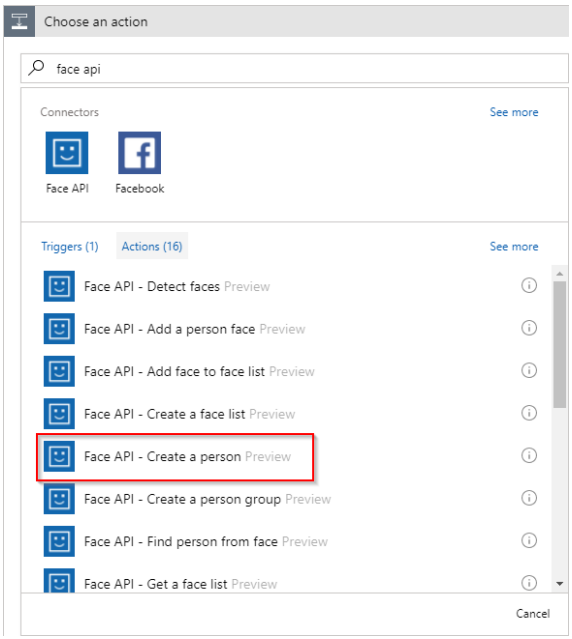
Now in case the person group does not exist, we will need to create it. For this, add a Create a person group action, and configure the run after for this action to has failed. This will make sure that if the person group is not found, throwing an error, this action is called to create the person group.



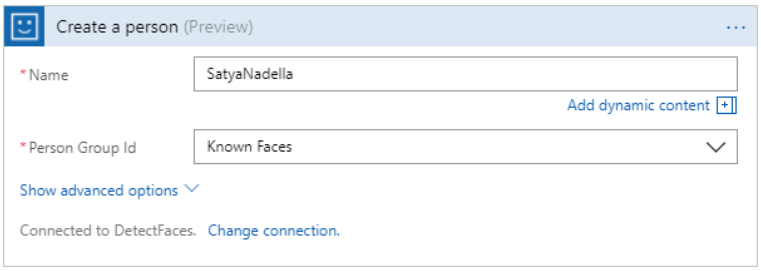




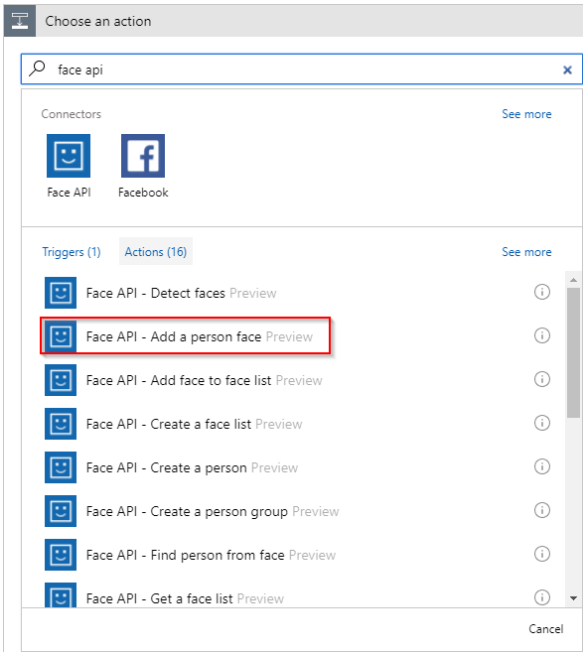
Now that the person group has been created, we will add a new person. This is needed to be able to work with the person group.



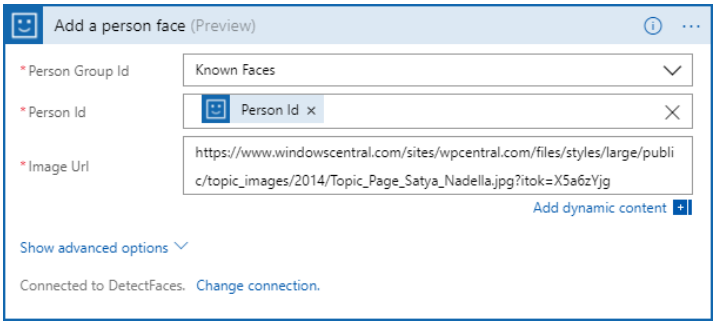
As we don't have a person yet, we will add a random person, in this case Satya Nadella.



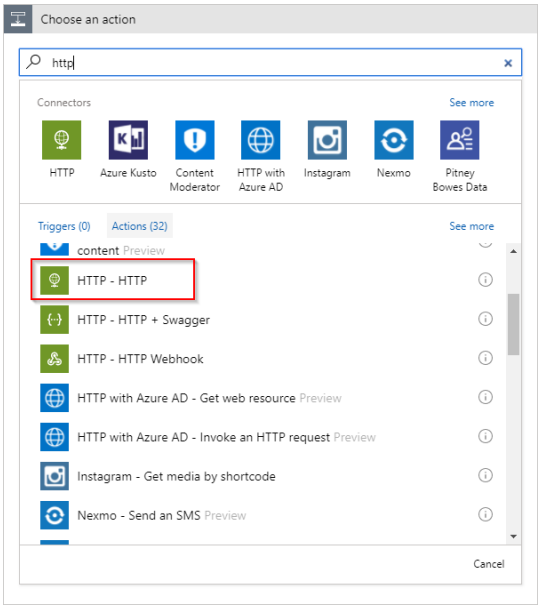
And finally we add a face to our new person.

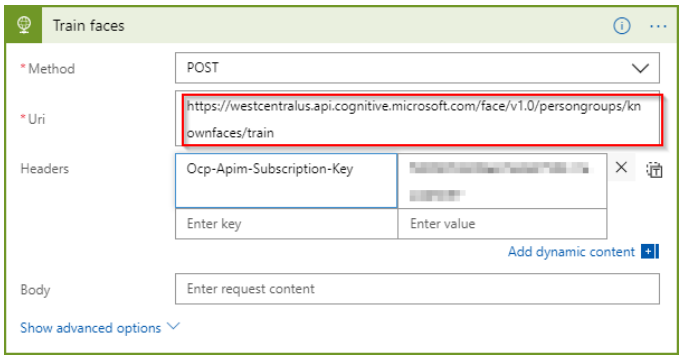


Set the image url to the following:
https://www.windowscentral.com/sites/wpcentral.com/files/styles/large/public/topic_images/2014/Topic_Page_Satya_Nadella.jpg?itok=X5a6zYjg

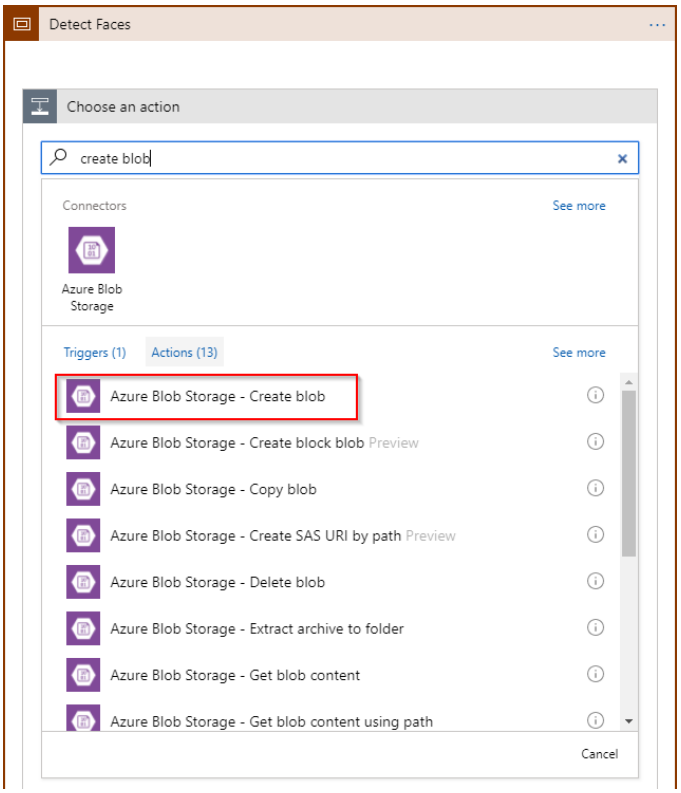


Now that we have created our person group and added a person with a face to it, we need to train the Face API. This makes sure that this person can be recognized in the future. As there is no out of the box action for this in Logic Apps yet, we will call the endpoint (https://westcentralus.api.cognitive.microsoft.com/face/v1.0/persongroups/knownfaces/train) directly from a HTTP action. Make sure to use the endpoint you got while creating your Face API account. The header Ocp-Apim-Subscription-Key should be set to the API Key for your account.

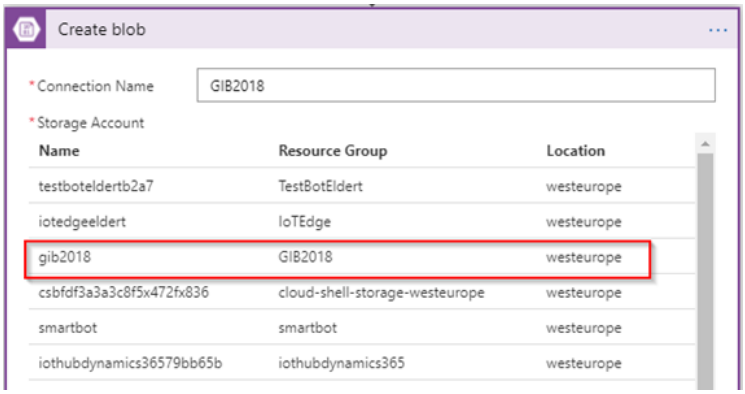




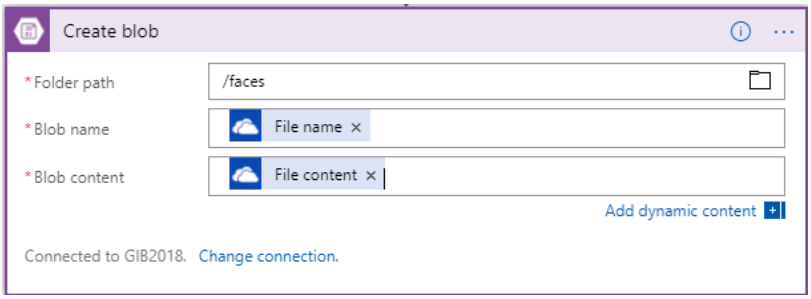
Now add a new scope after the Create person group scope, and name it Check faces. Inside this new scope, create an action to create a blob.



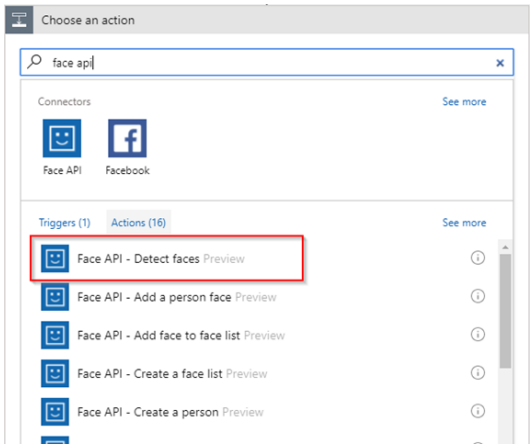
Select the storage account we created earlier on.



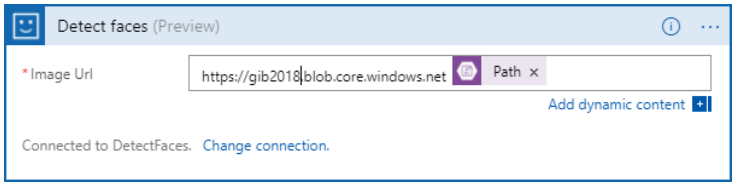
Send the file we received from OneDrive into the storage account.



We will now use the URL to the blob to detect the face in the Face API.

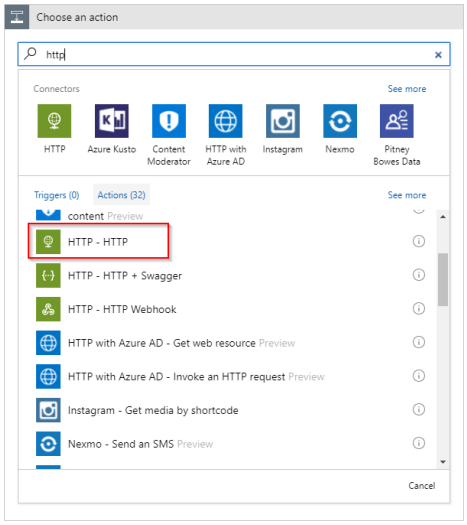


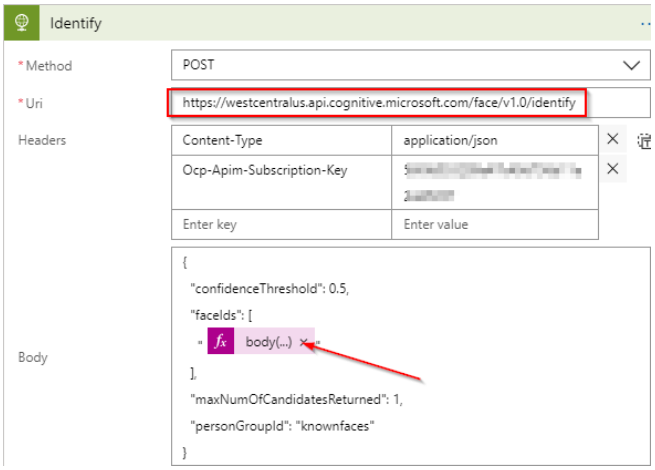
Set the URL to the blob storage (https://<yourstorageaccountname>.blob.core.windows.net) as following.



This will give us a back a face id, which we can then use to identify the person with this face. Again, we will need to call the URL directly for this using a HTTP action, where the URL in this case is https://westcentralus.api.cognitive.microsoft.com/face/v1.0/identify. Use the following JSON as the body. The text in red is an expression which should be set using the expression editor.

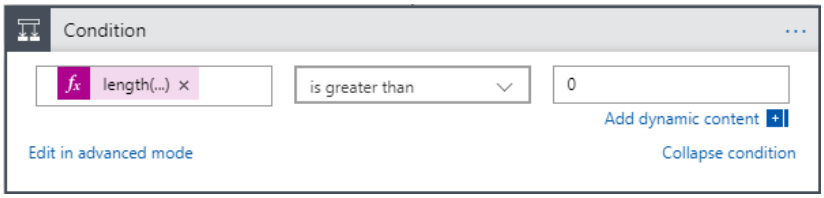
```
{
 "confidenceThreshold": 0.5,
 "faceIds": [
  "body('Detect_faces')[0]?['faceId']"
 ],
 "maxNumOfCandidatesReturned": 1,
 "personGroupId": "knownfaces"
}
```



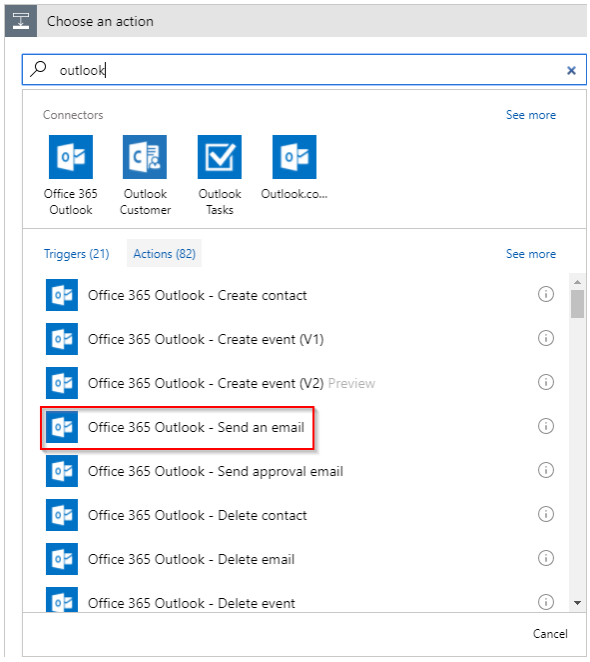


We will now check the response of the identify call by adding a condition to the Logic App. Use the expression editor to set the following expression. The Identify in the expression should be name of the HTTP action used to do the identification.

length(body('Identify')[0]?['candidates'])



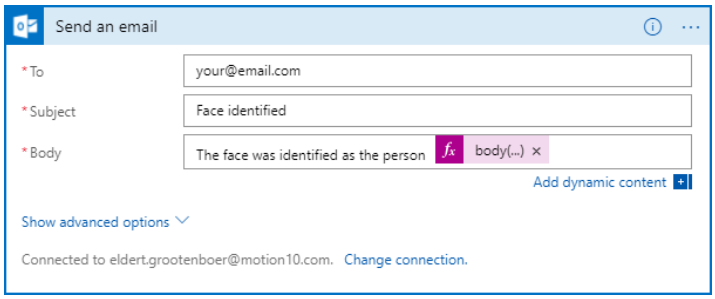
In the true branch of the condition, which means the person was successfully identified, we will send an email indicating which person was identified.



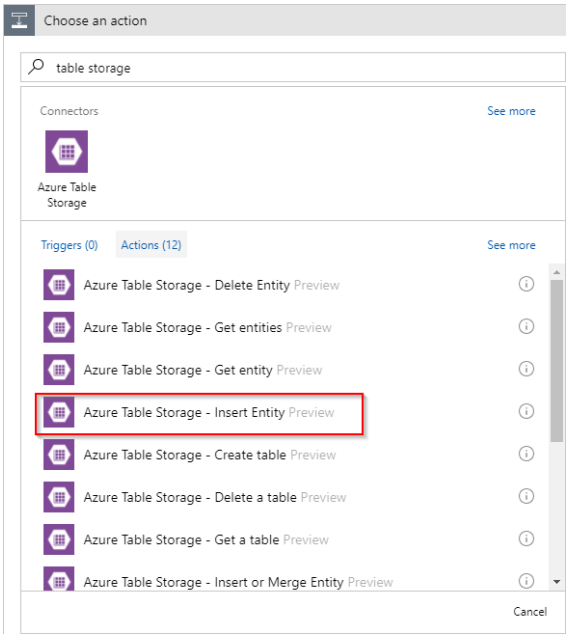
Sign in with your Office 365 account (in case you don't have an Office 365 account, use one of the other possibilities to send an email).

The expression being used here is as following.

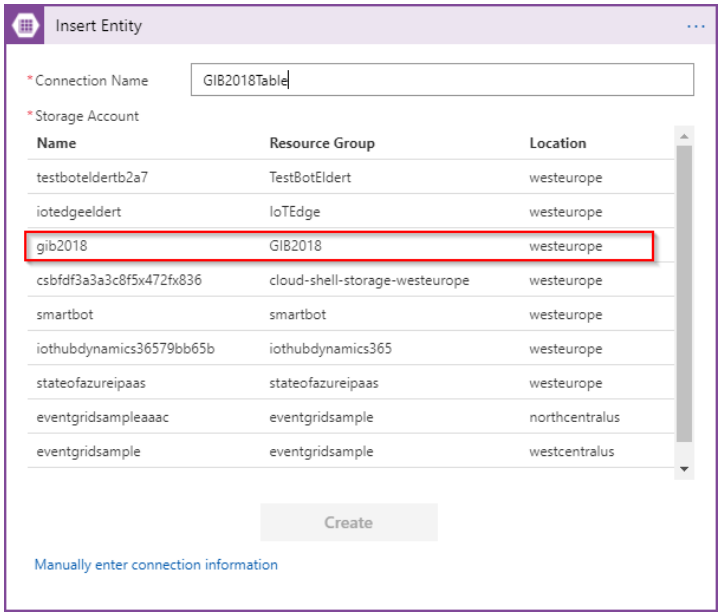
body('Identify')[0]?['candidates'][0]?['personId']



In the false branch, which means the person was not identified against the Face API, we will create the person against the Face API. To do this, we will create an entry in the Table storage we previously created, which can then be used to set the correct person for the uploaded face.

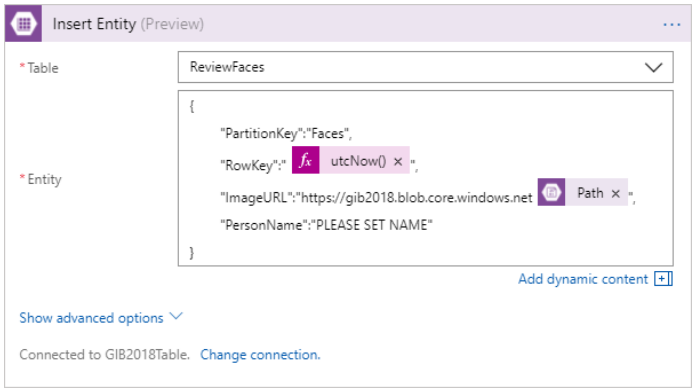


Create a new connection against the Table storage we previously created.

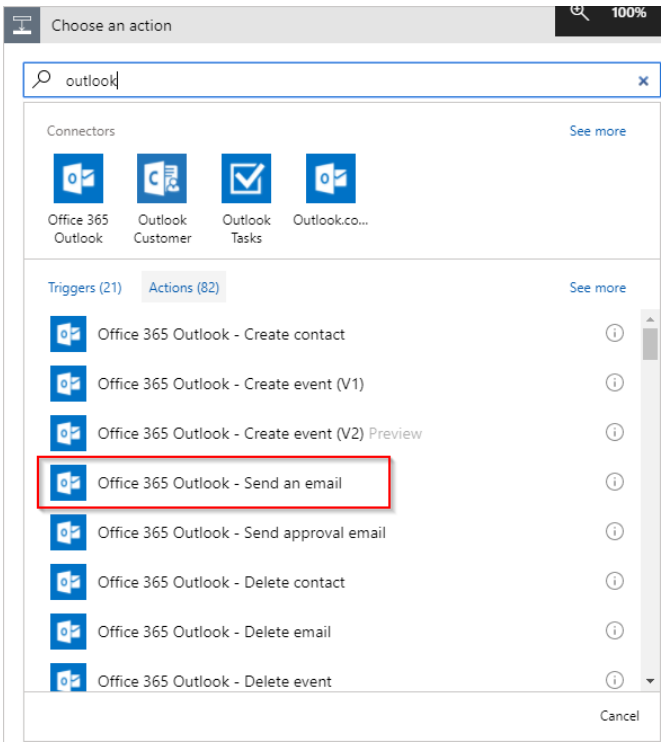


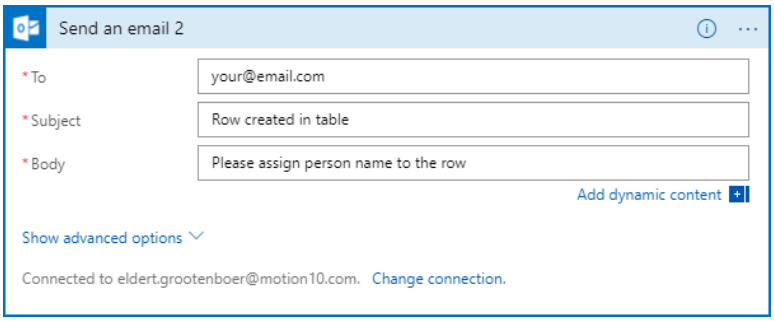
Use this JSON to create the entry. The utcNow in red can be set from the expression editor.

```
{
        "PartitionKey":"Faces",
        "RowKey":"utcNow()",
        "ImageURL":"https://gib2018.blob.core.windows.net@{body('Create_blob')?['Path']}",
        "PersonName":"PLEASE SET NAME"
}
```

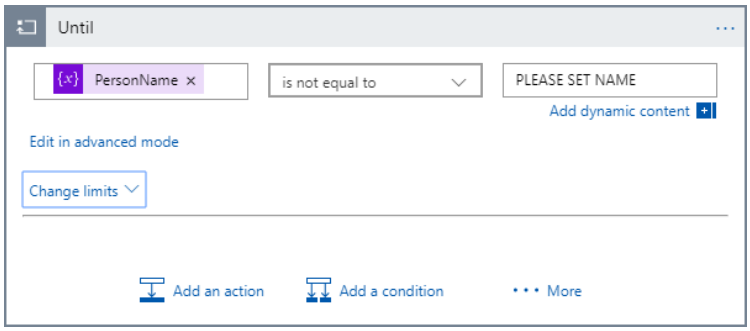


As we will want to notify the user he has to assign a person to the face, we will send out an email.

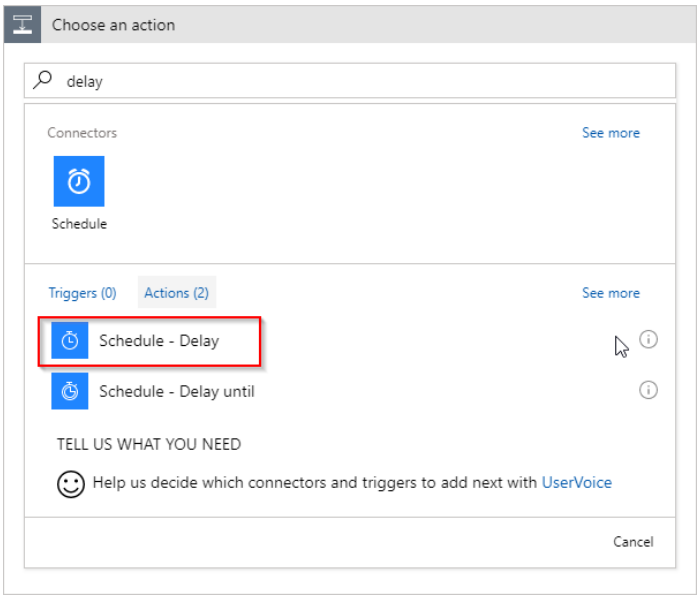


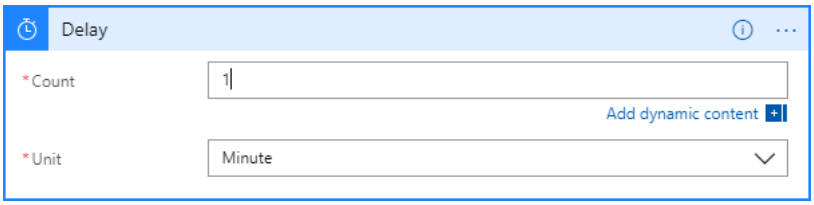


Now add a Do until shape to the Logic App, which will be used to check if the name has been set on the row we just created. To do this, we will check the value of the PersonName variable we initially created.

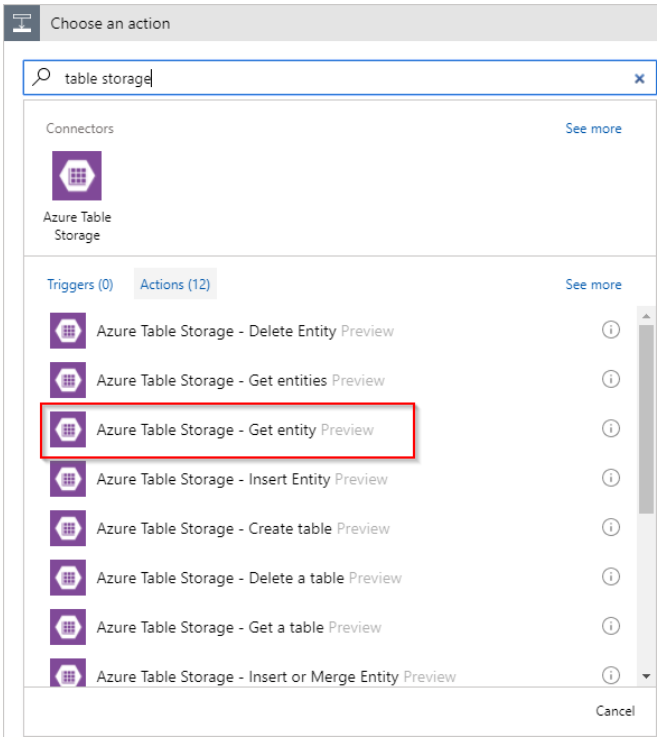


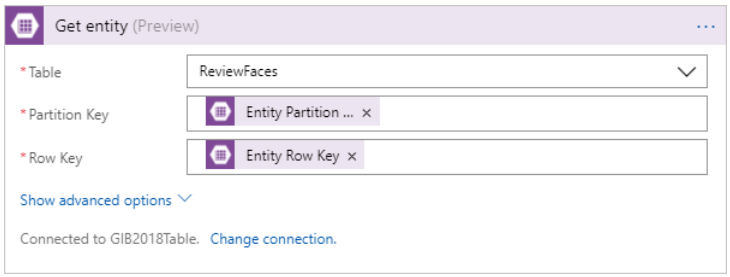
In the Do until shape, add a Delay action, and set it to 1 minute.





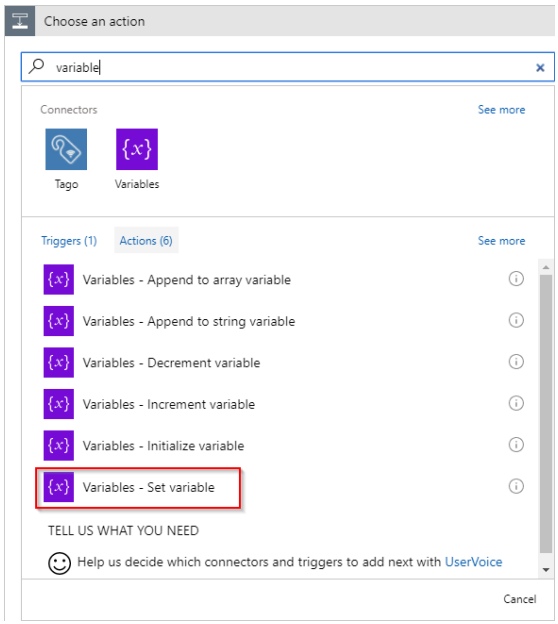
Next add a shape to retrieve the entity we just created, to check if it has been updated already.

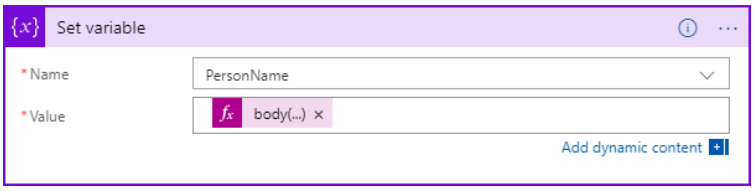




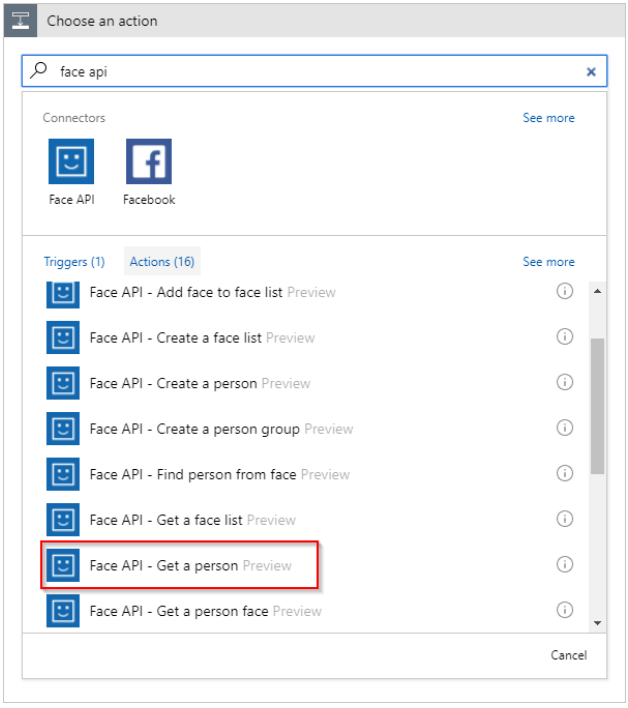
And as a final action inside the Do until shape, update the PersonName variable with the name which is currently set in the table. The expression to be set for this is as following, where the Get_entity name is the name of the previous action.

body('Get_entity')?['PersonName']



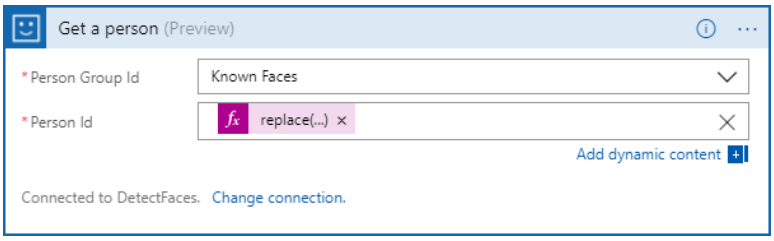


After the Do until shape, add a new action to the person from the Face API corresponding with the name set on the row in the Table storage.

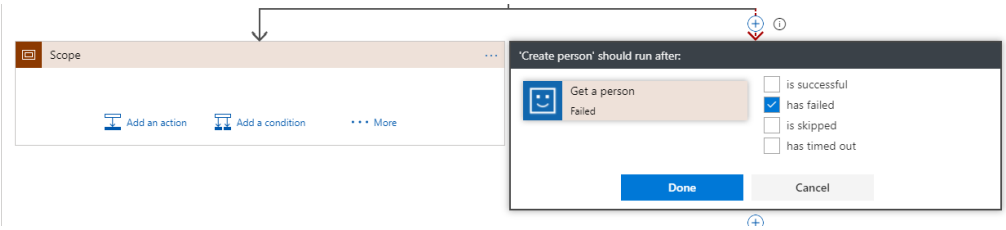


The expression that will be used here is the following.

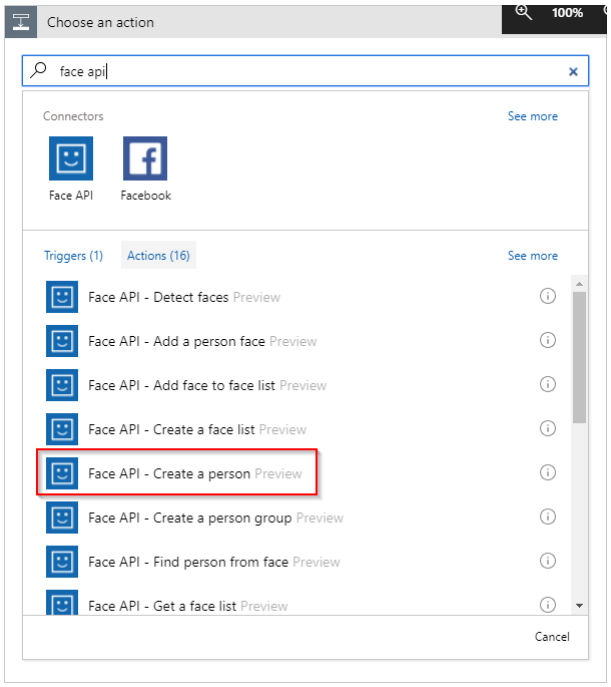
replace(variables('PersonName'), ' ', '')



Now add two parallel scopes after the Get person shape, one which will remain empty (in case the person was found), and the second which will create a new person in the Face API (if the person was not found, and thus an error was thrown). The run after for this second scope needs to be set to Has failed, and its name set to Create person.

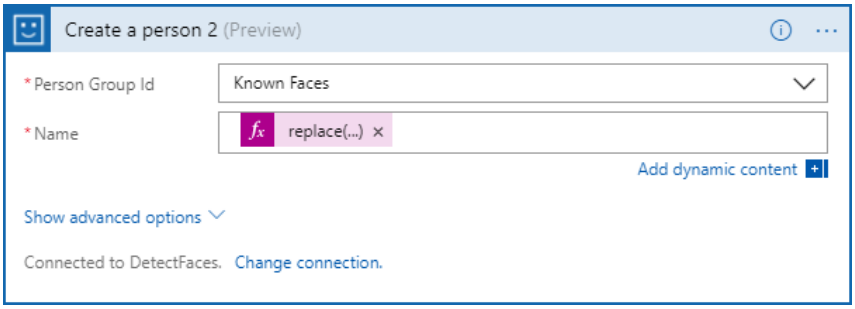


In the Create person scope we will now create a new person in the Face API.

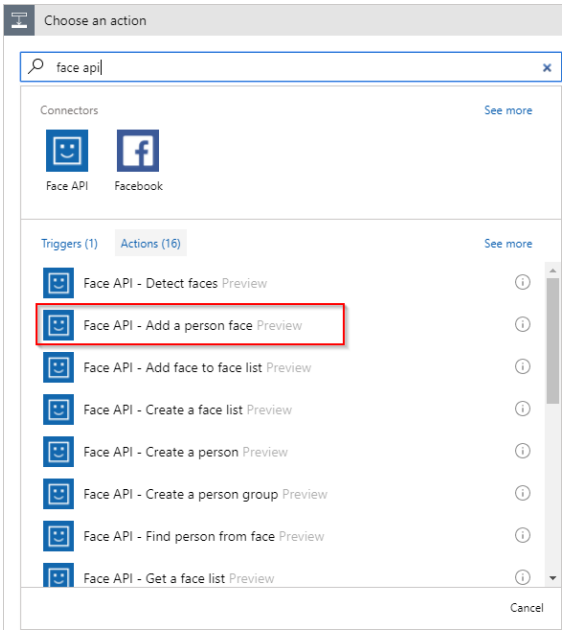


The expression to be used here is the following.

replace(variables('PersonName'), ' ', '')

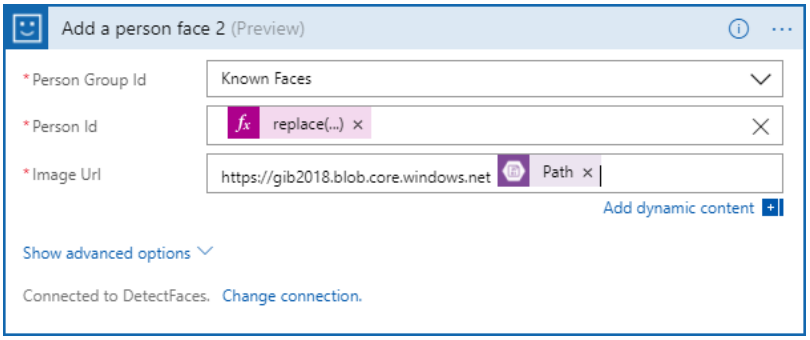


Now after the scopes, add an action which will add the face to the person which was either retrieved or just created.

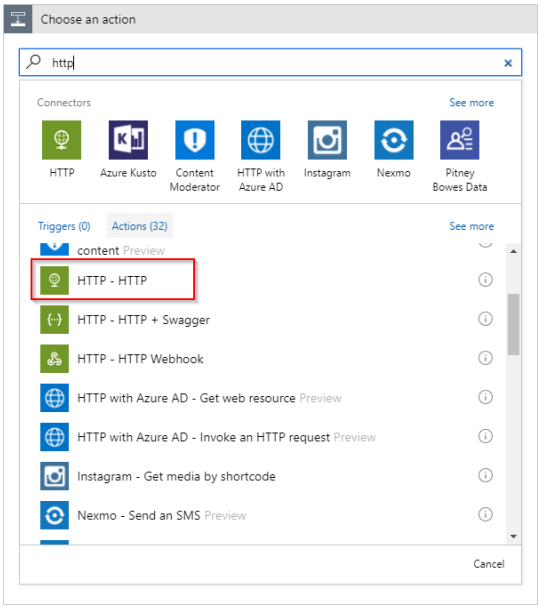


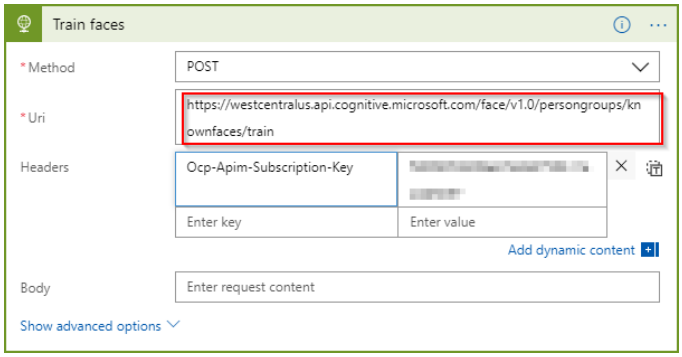
Once again, use the following expression.

replace(variables('PersonName'), ' ', '')

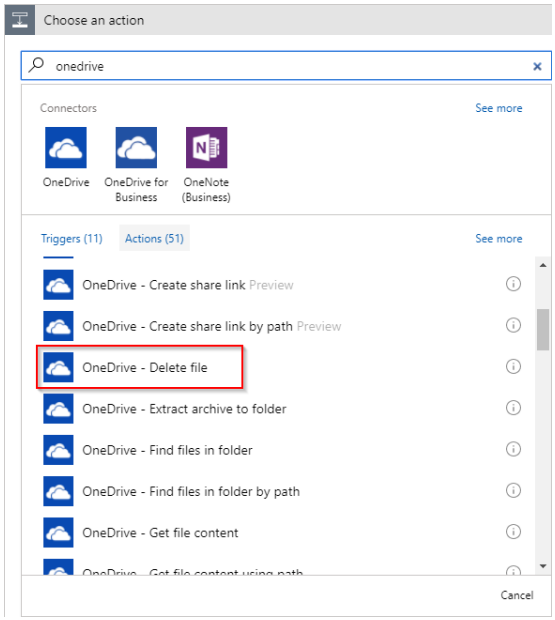


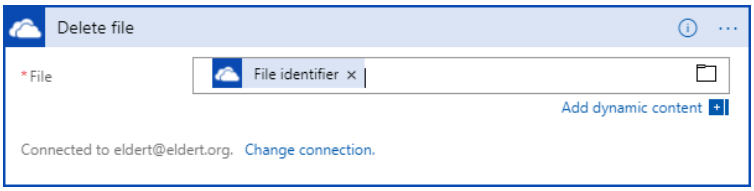
And as a final action in this scope, we need to train the Face API with the new face we just added.



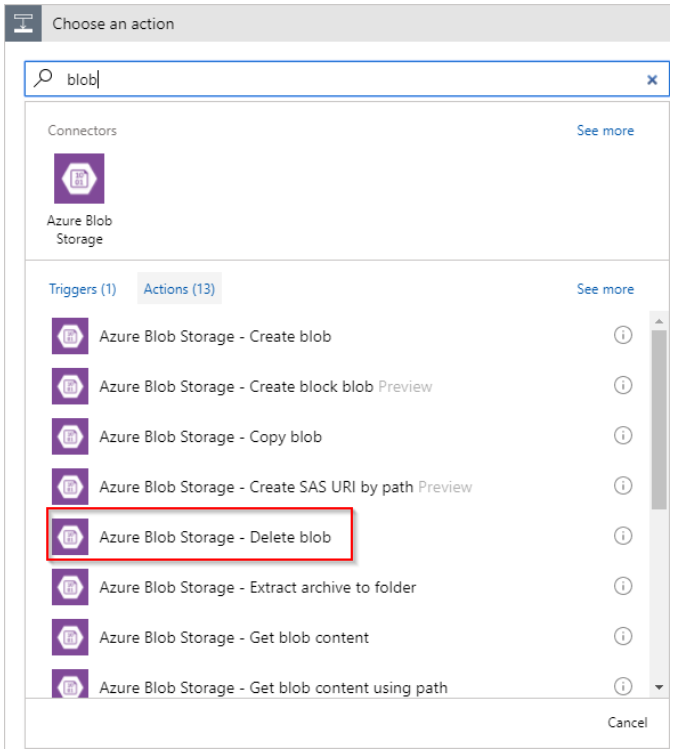


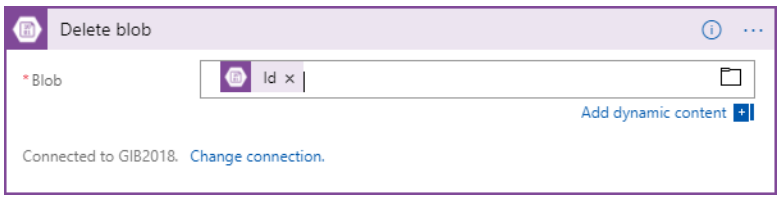
Add a new scope after the Check faces scope, and call this scope Clean up files. Inside this scope, add an action to delete the file we received from OneDrive.



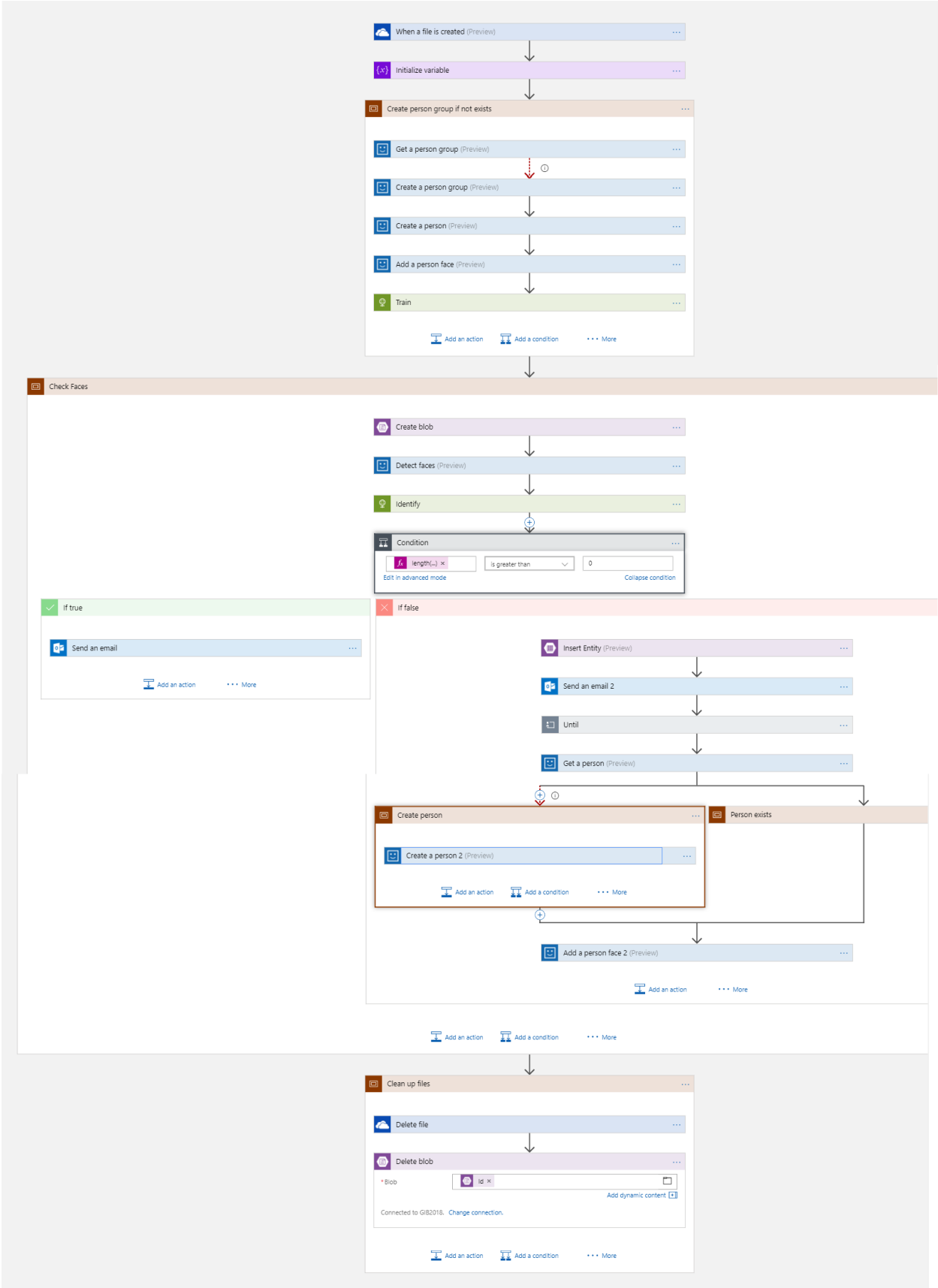


And add an action to delete the file from blob storage as well.





The full solution in the Logic App should now look as following.


When a file is created (Preview)
Initialize variable
Create person group if not exists
Get a person group (Preview)
Create a person group (Preview)
Create a person (Preview)
Add a person face (Preview)
Train
Add an action
Add a condition
More
Check Faces
Create blob
Detect faces (Preview)
Identify
Condition
length(...)
is greater than
0
Edit in advanced mode
Collapse condition
If true
Send an email
Add an action
More
If false
Insert Entity (Preview)
Send an email 2
Until
Get a person (Preview)
Create person
Create a person 2 (Preview)
Add an action
Add a condition
More
Person exists
Add a person face 2 (Preview)
Add an action
More
Add an action
Add a condition
More
Clean up files
Delete file
Delete blob
*Blob
Id
Add dynamic content
Connected to GIB2018. Change connection.
Add an action
Add a condition
More

Test the solution

To test the solution we just built, upload a file to the correct folder in your OneDrive. Whenever you upload an image with the face of a new person, a row will be created in the Table storage. To update this row with a person's name, use Azure Storage Explorer to update the row.