



QUERY DB WITH USER KEY

Office 365 (O365) browser forms don't support forwarding authentication credentials to external Web sites. To use your O365 forms with Qdabra's DBXL service installed on a separate site (e.g. Azure), QueryDBWithUserKey is the solution.

To use this new service, there are two approaches:

- A. Manually: you request a key for a specific user by querying GetUserKey service. Once you have the key, the form can hardcode it to query QueryDBWithUserKey. Please note: since the credential is stored in the form, there is a security risk if the users have access to the form template.
- B. Dynamically: the form queries GetUserKey using the username. We recommend this approach because it provides less security risk.

This new service leverages a custom, secure user key to identify and grant permissions to users for data queries.

CREATE USER KEYS

In order to use QueryDBWithUserKey, users must generate a key.

1. DBXL Admins can create keys for other users
2. Users can create their own keys
3. Keys are not stored in the DBXL DB – so users must keep track of their keys
4. If you lose your key, you can create a new one

The DbxlKeyService's GetUserKey method is used to create user keys. This can be performed on the server where DBXL is installed, or you can create an InfoPath form for the purpose of key creation.

The two approaches are explained below:

A. ON THE SERVER

- Open the DbxlKeyService:
<http://yourserver/QdabraWebService/DbxlKeyService.aspx>

DbxlKeyService

The following operations are supported. For a formal definition, please review the [Service Description](#).

- [GetUserKey](#)
Returns a key for the current user with the requested permissions
- [InvalidateUserKey](#)
Invalidates a previously generated key

- Click on the link to the GetUserKey operation:

DbxlKeyService

Click [here](#) for a complete list of operations.

GetUserKey

Returns a key for the current user with the requested permissions

Test

To test the operation using the HTTP POST protocol, click the 'Invoke' button.

Parameter	Value
username:	
overwrite:	

- If you are creating a key for yourself, and do not currently have a key, simply click "Invoke", and your key will be returned in the string node in the response:

```
<?xml version="1.0" encoding="UTF-8"?>
<string
  xmlns="http://qdabra.com/databaseservice">eyJhbGciOiJIUzE1IiwiaXNjaWkiOiJ1b3RlbnV1aWRfMDkyNzY0MDktNTI5OC00NDhhLTNmZGUtZTU0YWYxOWFhOWMyIiwidXN1
```

- If a key already exists for the user, and overwrite is not set to true, the string node will be empty in the response:

```
<?xml version="1.0" encoding="UTF-8"?>
<string xmlns="http://qdabra.com/databaseservice" xsi:nil="true" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"/>
```

- To create a key for another user, simply enter the user's name for the username parameter, set overwrite to true (if the user already has a key) and click Invoke:

GetUserKey

Returns a key for the current user with the requested permissions

Test

To test the operation using the HTTP POST protocol, click the 'Invoke' button.

Parameter	Value
username:	bhuston
overwrite:	true x
Invoke	

- There is also a method to invalidate a user key, if you want to remove the user's ability to access data with her key:

InvalidateUserKey

Invalidates a previously generated key

Test

To test the operation using the HTTP POST protocol, click the 'Invoke' button.

Parameter	Value
username:	bhuston x
Invoke	

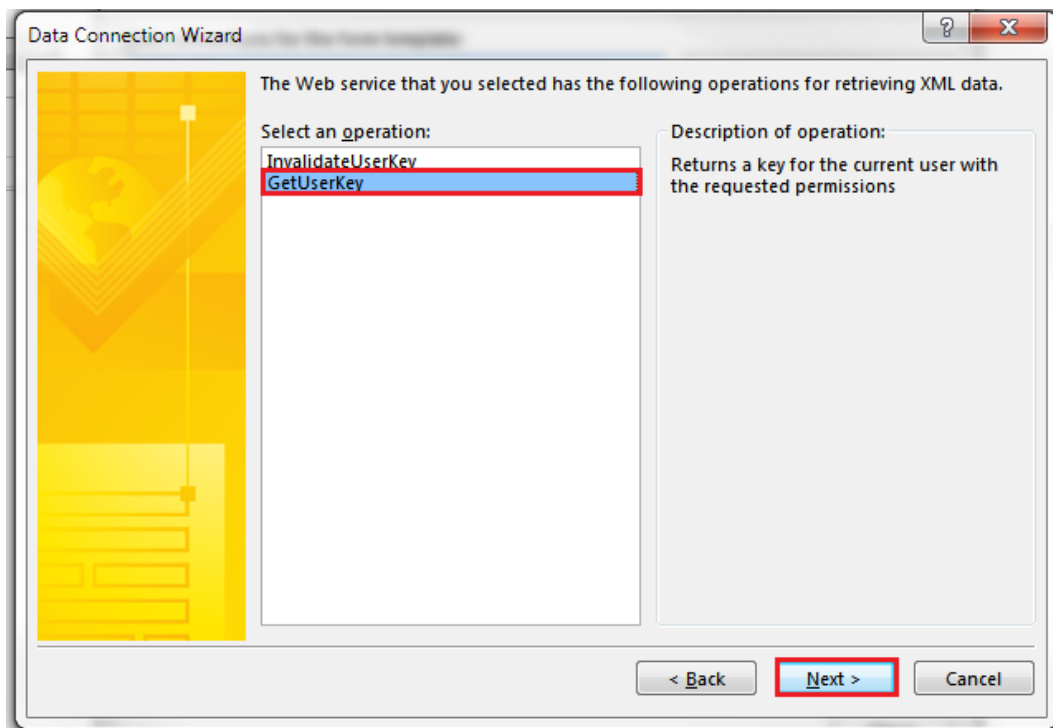
- Upon clicking Invoke, you should receive a success message:

```
<?xml version="1.0" encoding="UTF-8"?>
- <StatusInfo xmlns="http://qdabra.com/databaseservice" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  <Success xmlns="http://qdabra.com/webservices/">true</Success>
  <Errors xmlns="http://qdabra.com/webservices/" />
</StatusInfo>
```

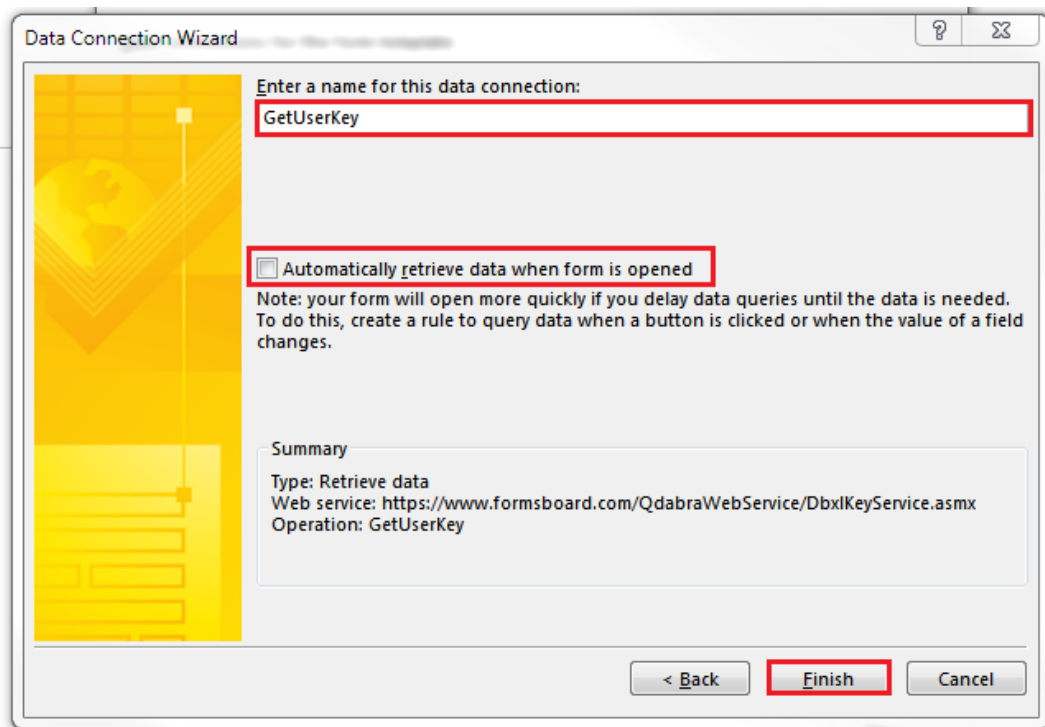
B. IN INFOPATH:

You can also use an InfoPath form to create or invalidate user keys.

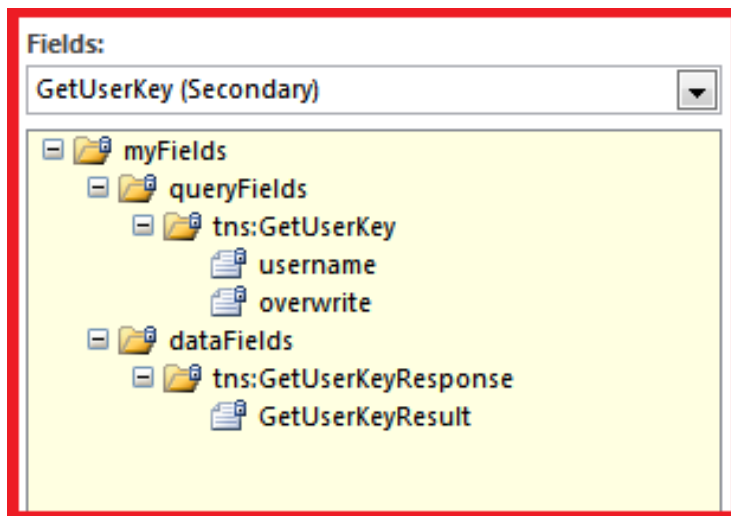
- Add a receive data connection to a SOAP service, with the URL:
<http://yourserver/QdabraWebService/QueryDBWithUserKey.asmx>
- And select the GetUserKey operation:



- Deselect the “Automatically retrieve data when form is opened” checkbox:



- The schema will have query fields for the username and overwrite parameter. The key will be returned to the GetUserKeyResult node in the data fields.



- You can add controls to the form for entering username and overwrite, and add a button that will execute the query:

USING THE QUERYDBWITHUSERKEY SERVICE:

Once you have a key, you can use the QueryDBWithUserKey service. The same operations are available as you'll find in the standard QueryDB service:

<http://yourserver/QdabraWebService/QueryDBWithUserKey.aspx>

QueryDBWithUserKeyService

The following operations are supported. For a formal definition, please review the [Service Description](#).

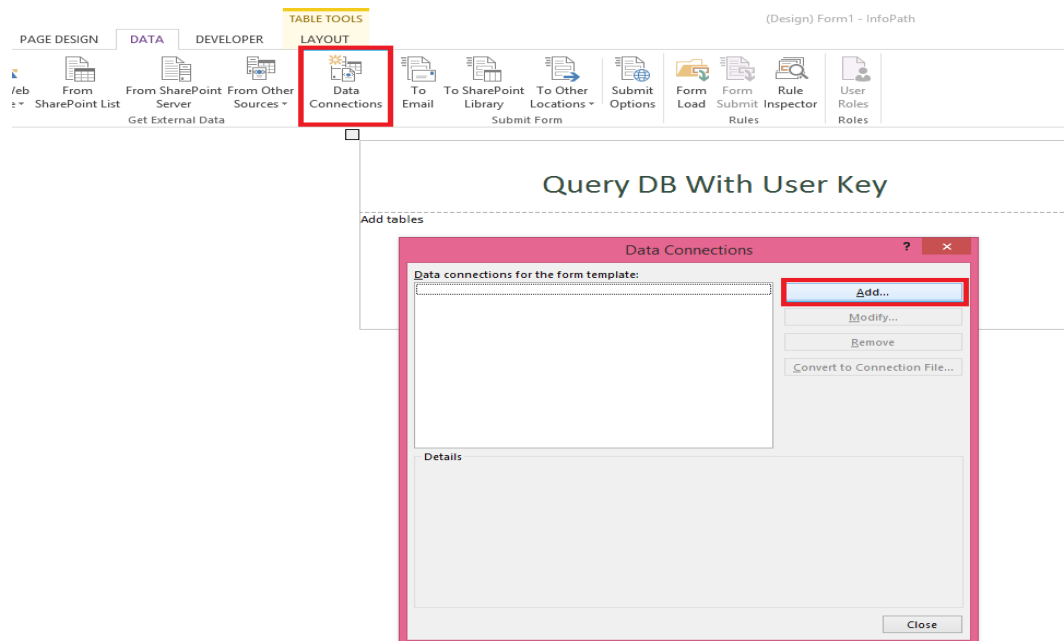
- [DescribeDatabaseSchema](#)
Scans the schema in the specified connection string and returns an XML Document describing it. The dataSource parameter should be a connection string as passed to the SqlConnection constructor the .NET framework.
- [DescribeDatabaseSchemaFromDatabaseName](#)
Scans the schema in the specified database and returns an XML Document describing it.
- [GetColumnsXMLQuery](#)
Returns the result of the query specified by the queryXml parameter. This method accepts unescaped XML for the queryXml parameter.
- [GetColumnsXMLStrQuery](#)
Returns the result of the query specified by the queryXml parameter. The XML representing the queryXml parameter must be escaped for this method.
- [GetDropdownEntries](#)
Returns a list of values and optionally display values to easily bind with a dropdown control. Default sort is ascending by valueColumn (displayColumn if specified).
- [GetLicenseInfo](#)
Returns information on the license usage for this WebService. Returns -1 for maximum and remaining if the license is unlimited.

If you want to query the database using GetColumnsXMLStrQuery service via InfoPath, create a receive data connection to a SOAP service with the URL:

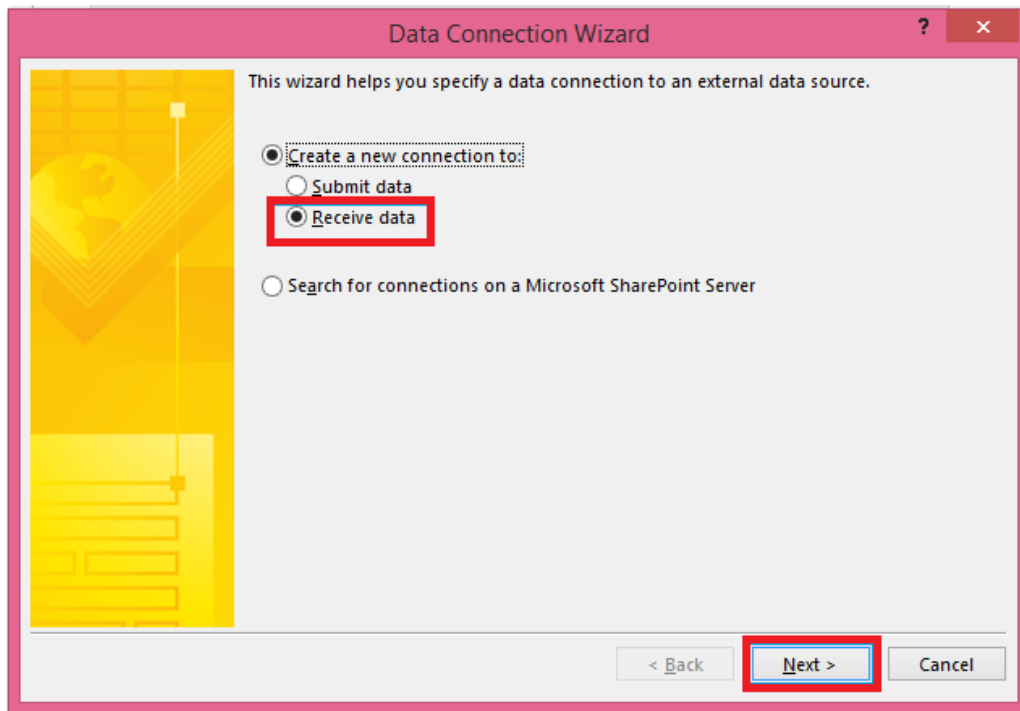
<http://yourserver/QdabraWebService/QueryDBWithUserKey.asmx>

Please follow the steps below:

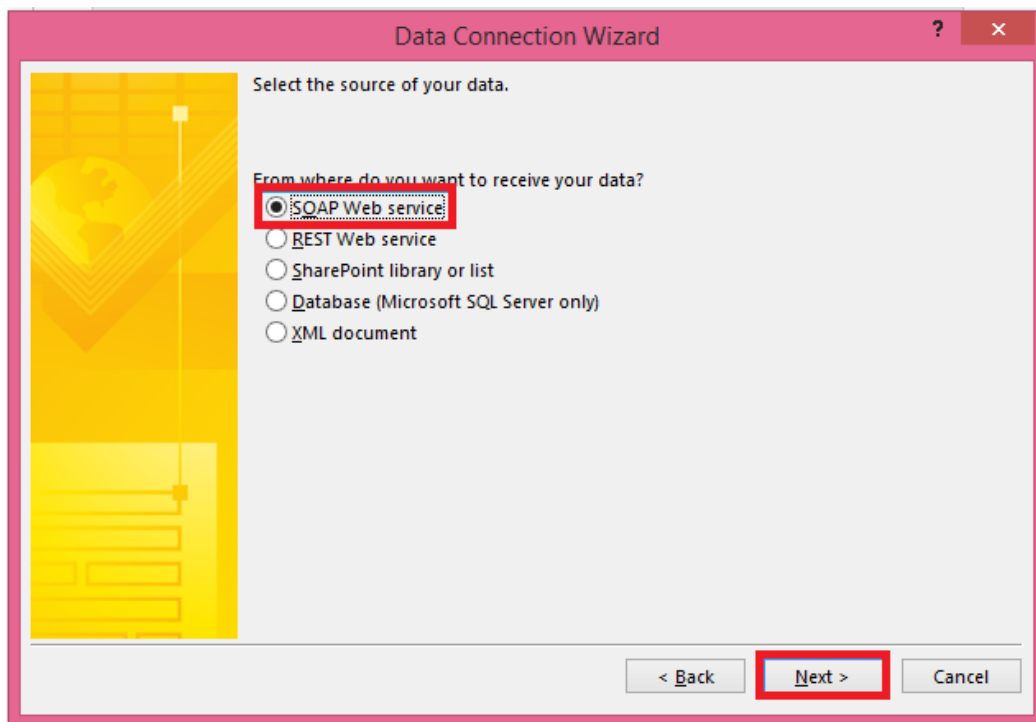
- Open InfoPath designer and open a blank form.
- Go to the form options and Change the Security to Full trust because we are going to run this service on the server and it is going to be cross-domain.
- Go to File → Form Options → Security & Trust → Full Trust → OK
- Go to the **Data Connections** and on the Data Connections window, click on **Add**.



- On the Data Connection Wizard, select **Receive data**. Click **Next**.

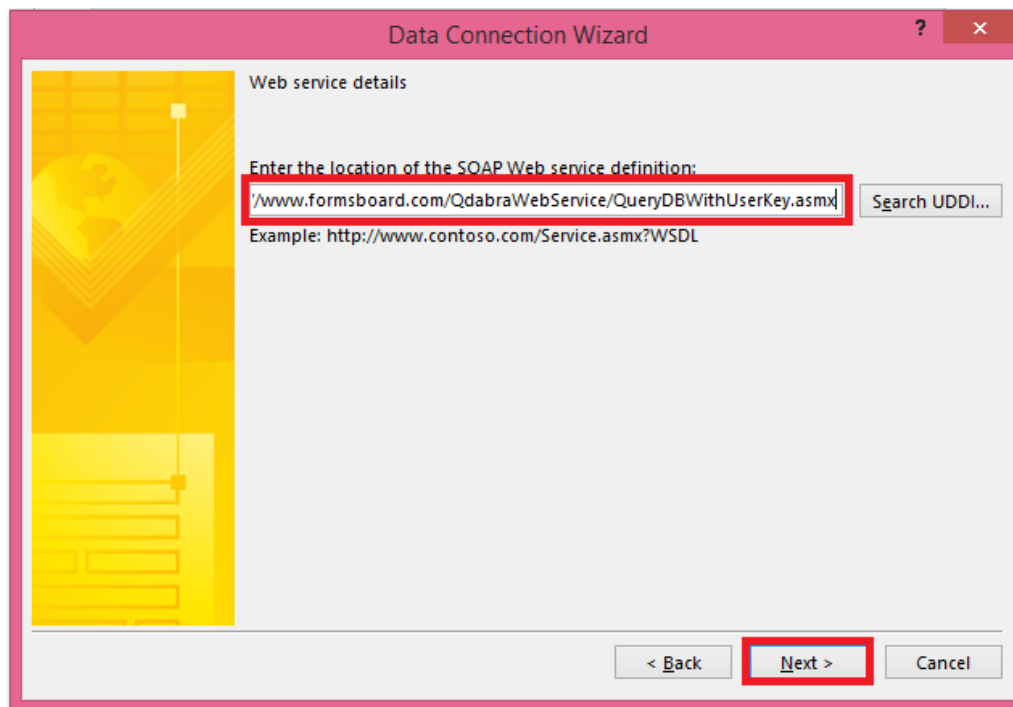


- Select **SOAP Web Service** on the next window. Click **Next**.

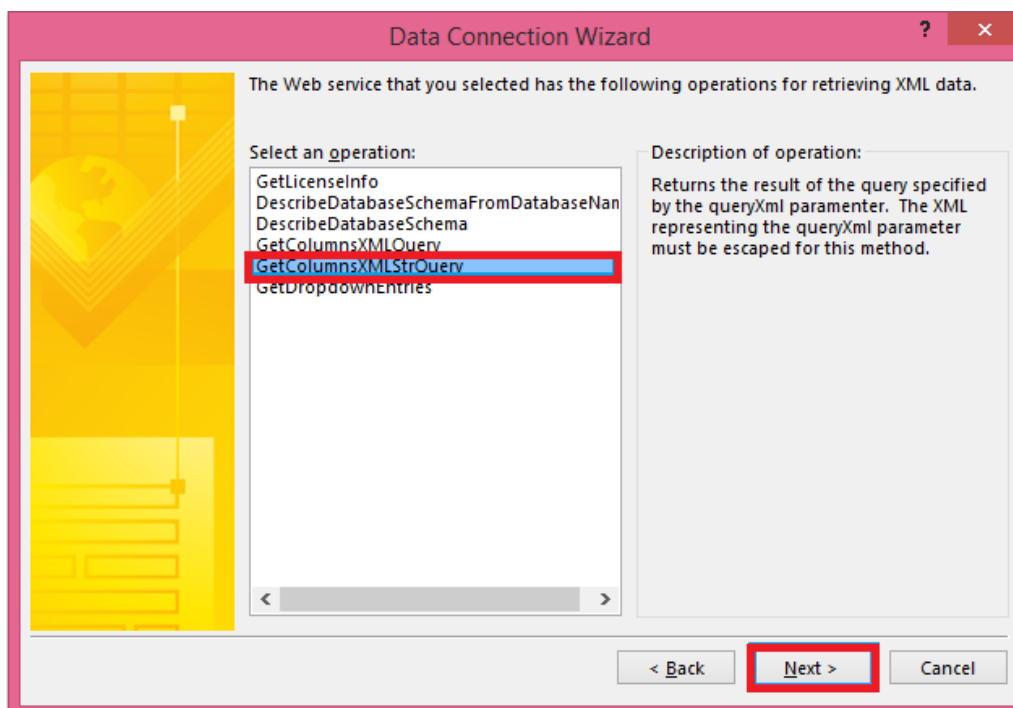


- Enter the server URL with the **QueryDBWithUserKey.aspx** and click **Next**.

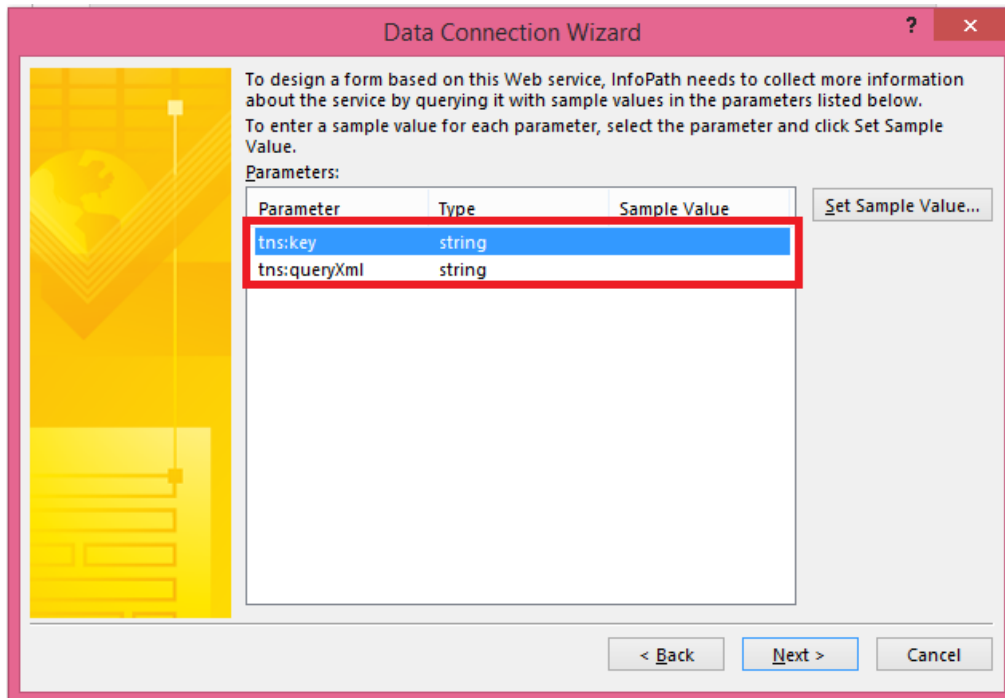
Syntax: <https://dbxl365.formsboard.com/QdabraWebService/QueryDBWithUserKey.aspx>



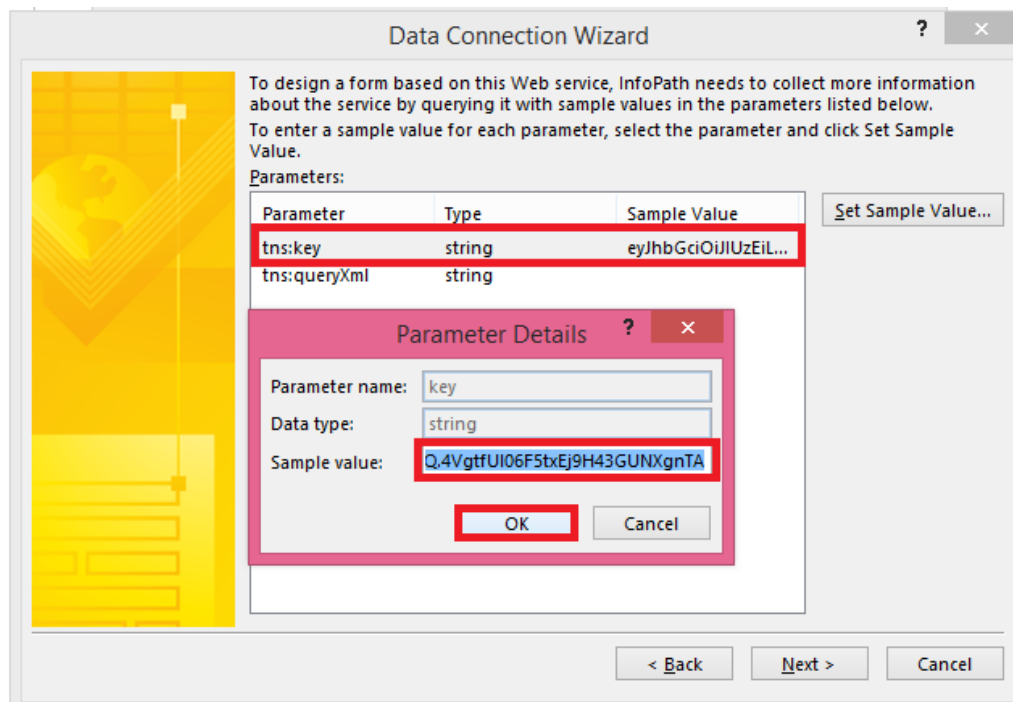
- Select ***GetColumnsXMLStrQuery*** and click **Next**.



- Set values for the key and queryXML that you wish to use.



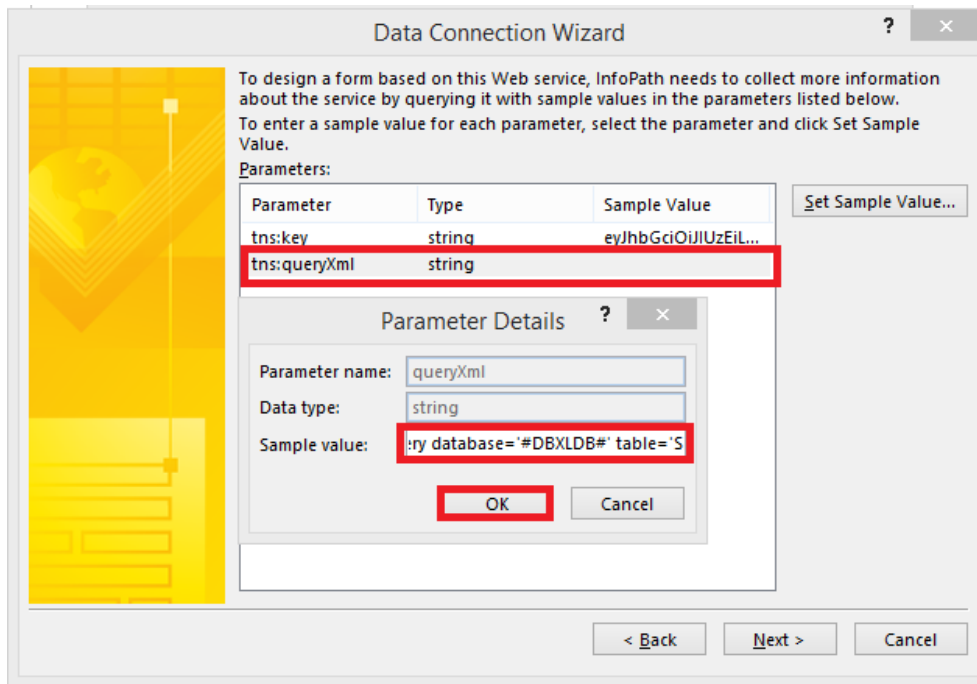
- Double-click on **tns:key**, enter the Sample key value and click **OK**.



- Similarly, double-click on **tns:queryXml** and enter Sample value to set the queryXml to the query string. Click **OK**.

Note- Here is the link to download the latest Query Builder tool with instructions on how to install the form:

http://www.infopathdev.com/files/folders/other_subjects/entry81626.aspx



Data Connection Wizard

To design a form based on this Web service, InfoPath needs to collect more information about the service by querying it with sample values in the parameters listed below. To enter a sample value for each parameter, select the parameter and click Set Sample Value.

Parameters:

Parameter	Type	Sample Value
tns:key	string	eyJhbGciOiJIUzEi...
tns:queryXml	string	

Set Sample Value...

Parameter Details

Parameter name: queryXml

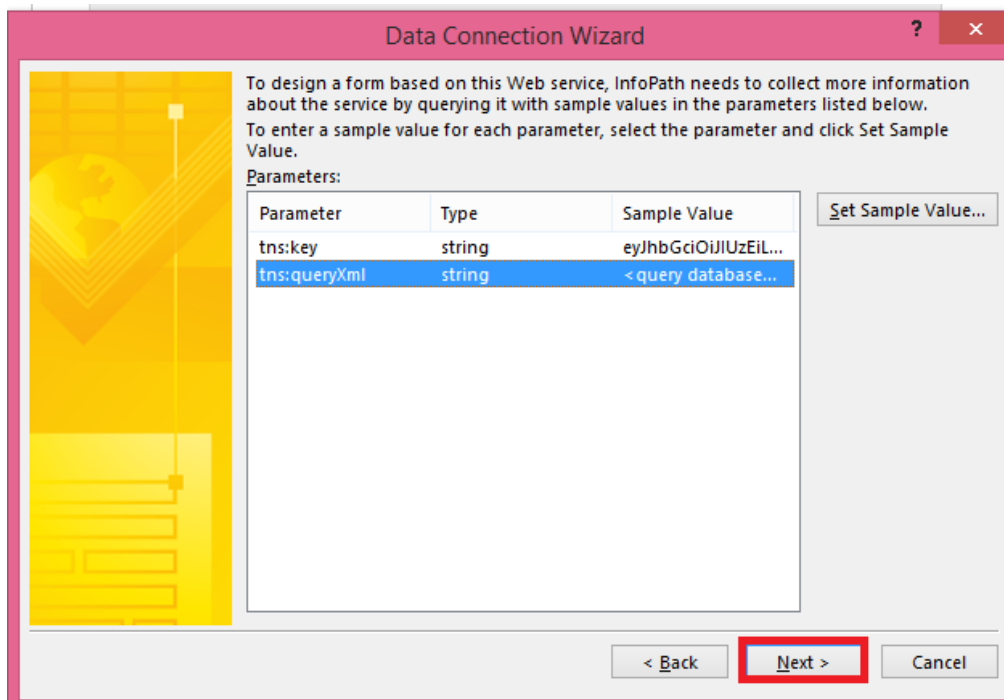
Data type: string

Sample value: ry database= '#DBXLDB#' table='S'

OK Cancel

< Back Next > Cancel

- Click **Next**.



Data Connection Wizard

To design a form based on this Web service, InfoPath needs to collect more information about the service by querying it with sample values in the parameters listed below. To enter a sample value for each parameter, select the parameter and click Set Sample Value.

Parameters:

Parameter	Type	Sample Value
tns:key	string	eyJhbGciOiJIUzEi...
tns:queryXml	string	< query database...

Set Sample Value...

< Back **Next >** Cancel

- In the next window, repeat the steps for entering Key sample value.

The operation for the Web service requires values for the parameters listed below. The current values match the sample values you entered previously. If you want to change a value, select the parameter and click Set Value.

Parameters:

Parameter	Type	Value
tns:key	string	
tns:queryXml	string	

Set Value...

Parameter Details

Parameter name: key

Data type: string

Sample value: Q.4VgtfUI06F5txEj9H43GUNXgnTA

OK Cancel

< Back Next > Cancel

- Repeat the steps for entering queryXml sample value.

The operation for the Web service requires values for the parameters listed below. The current values match the sample values you entered previously. If you want to change a value, select the parameter and click Set Value.

Parameters:

Parameter	Type	Value
tns:key	string	eyJhbGciOiJIUzEiLC...
tns:queryXml	string	

Set Value...

Parameter Details

Parameter name: queryXml

Data type: string

Sample value: 'BXLDDB#' table='SystemConfig' />

OK Cancel

< Back Next > Cancel

- Click Next.

Data Connection Wizard ? x

The operation for the Web service requires values for the parameters listed below. The current values match the sample values you entered previously.
If you want to change a value, select the parameter and click Set Value.

Parameters:

Parameter	Type	Value	Set Value...
tns:key	string	eyJhbGciOiJIUzE1LCJ...	
tns:queryXml	string	< query database= '...	

< Back **Next >** Cancel

- Click **Next**.

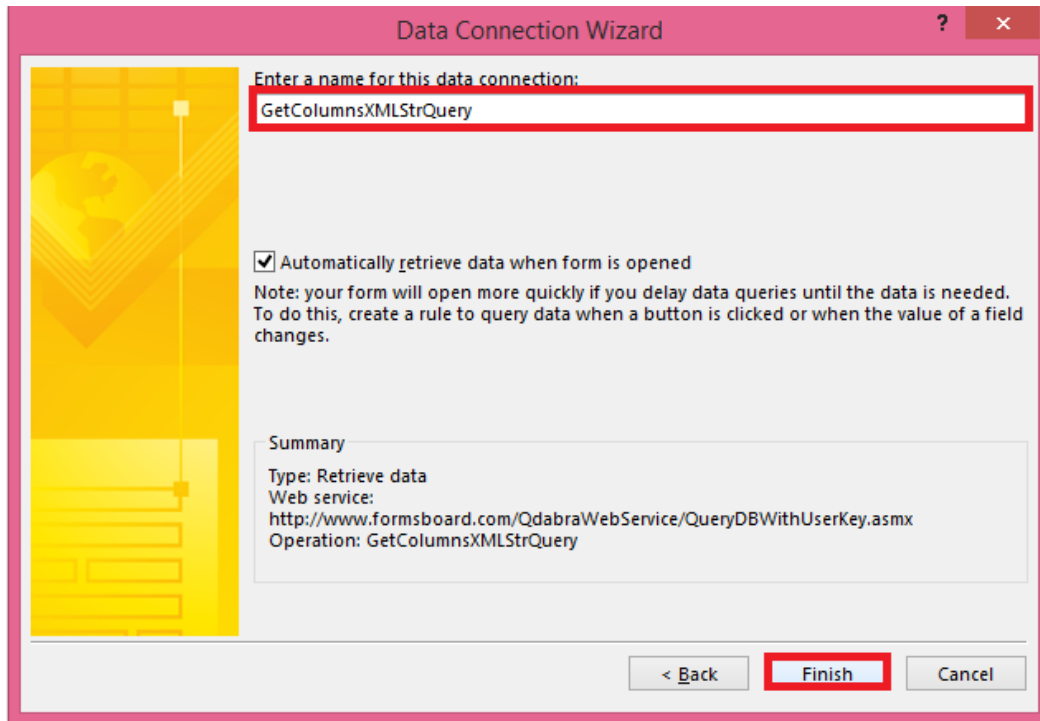
Data Connection Wizard ? x

When a query occurs while working with the form in InfoPath, the returned data is stored locally for use in Offline Mode.
InfoPath can connect to this data source now and store the results in the form template for offline use. This will enable users to access the data if they are working with the form for the first time and there is no previously stored data available.
Offline data is accessible to all users who fill out this form. This option should not be selected if the data source contains sensitive information.

☐ Store a copy of the data in the form template

< Back **Next >** Cancel

- You can enter a name for this data connection. By default the connection name is: *GetColumnsXMLStrQuery*. Click on **Finish**.



Data Connection Wizard

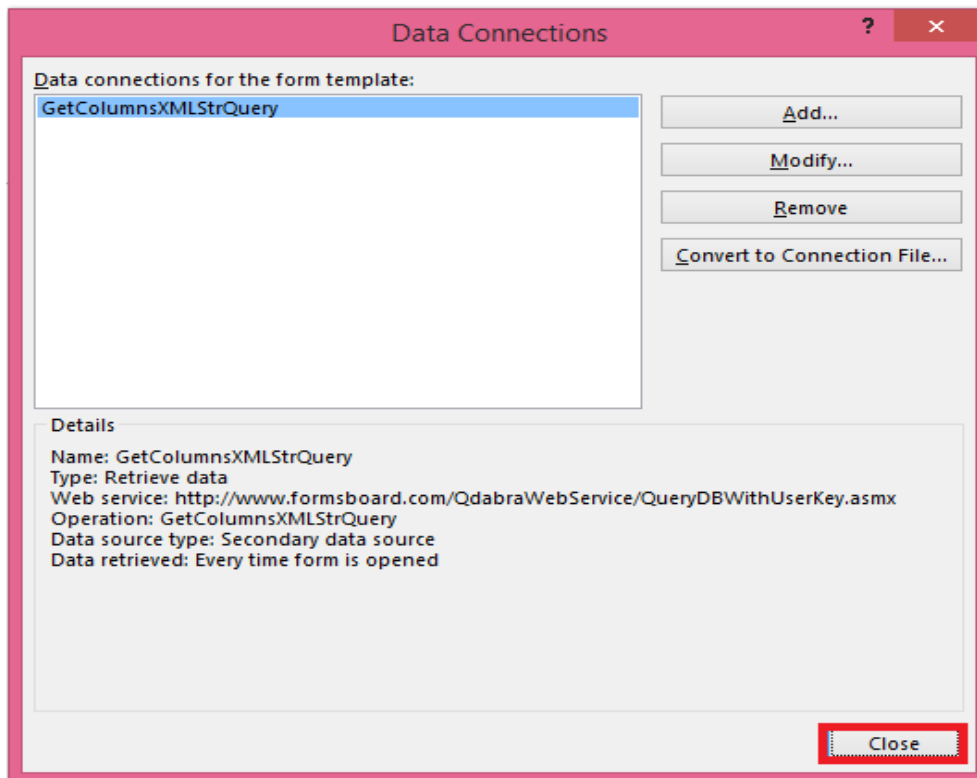
Enter a name for this data connection:

☒ Automatically retrieve data when form is opened
 Note: your form will open more quickly if you delay data queries until the data is needed. To do this, create a rule to query data when a button is clicked or when the value of a field changes.

Summary
 Type: Retrieve data
 Web service: <http://www.formsboard.com/QdabraWebService/QueryDBWithUserKey.asmx>
 Operation: GetColumnsXMLStrQuery

< Back **Finish** Cancel

- Now, a secondary data connection has been added to your InfoPath form. Click on **Close**.



Data Connections

Data connections for the form template:

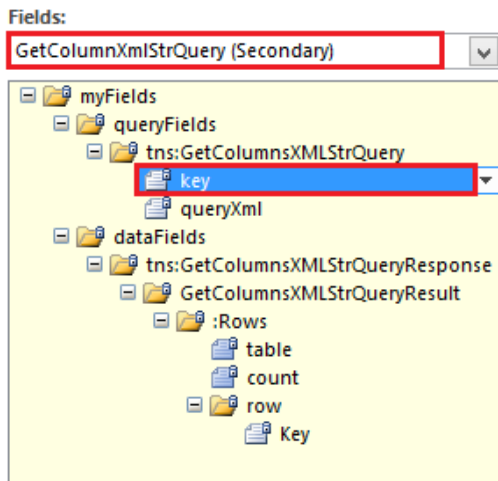
Name	Type	Web service	Operation	Data source type	Data retrieved
GetColumnsXMLStrQuery	Retrieve data	http://www.formsboard.com/QdabraWebService/QueryDBWithUserKey.asmx	GetColumnsXMLStrQuery	Secondary data source	Every time form is opened

Details
 Name: GetColumnsXMLStrQuery
 Type: Retrieve data
 Web service: <http://www.formsboard.com/QdabraWebService/QueryDBWithUserKey.asmx>
 Operation: GetColumnsXMLStrQuery
 Data source type: Secondary data source
 Data retrieved: Every time form is opened

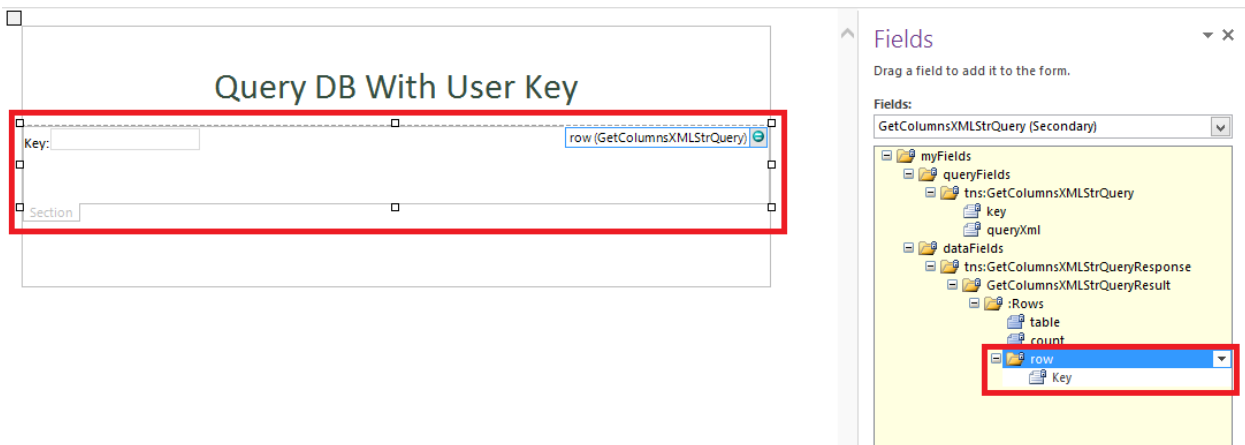
Add...
 Modify...
 Remove
 Convert to Connection File...

Close

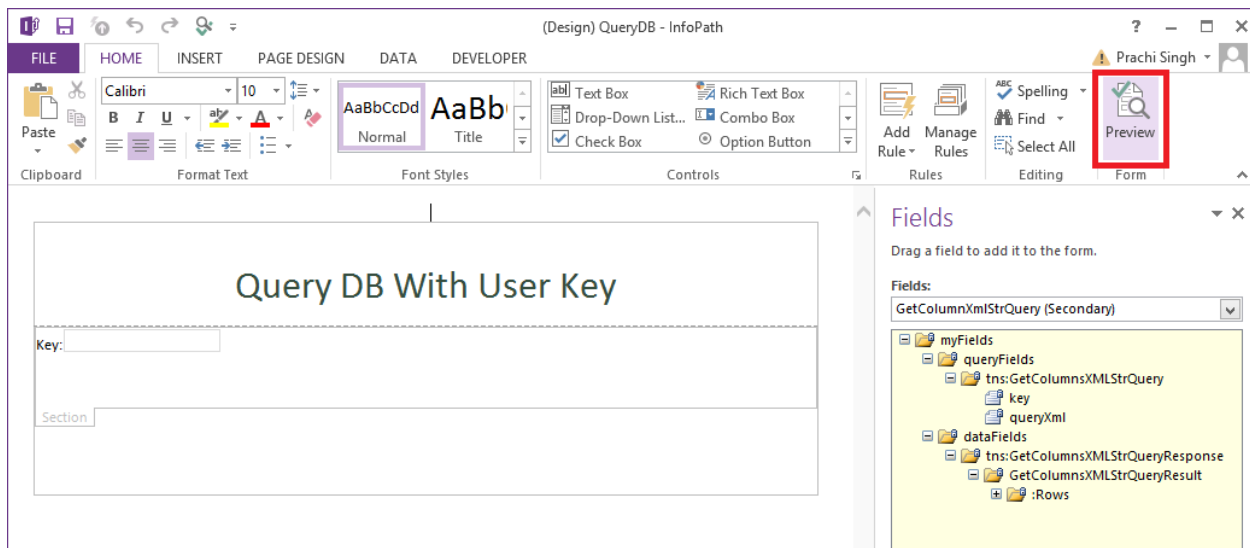
- The key and queryXml will be in the queryFields in the secondary data connection. The key can be set to a different user's key prior to querying.



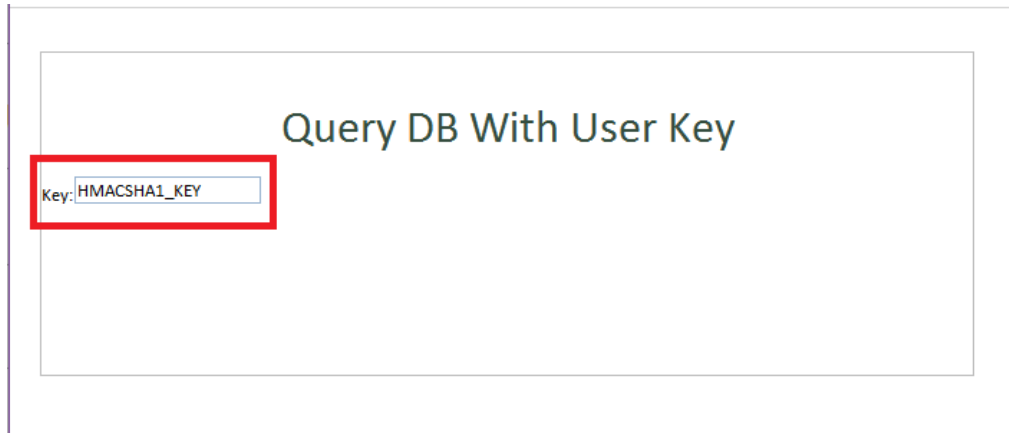
- The key is stored in the dataFields in the data connection and it can be retrieved by dragging the field on the form.



- Click on **Preview** option to retrieve the key value.



- You will get the custom, secure user Key that will identify and grant permissions to users for data queries.



CONTACT INFORMATION

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