

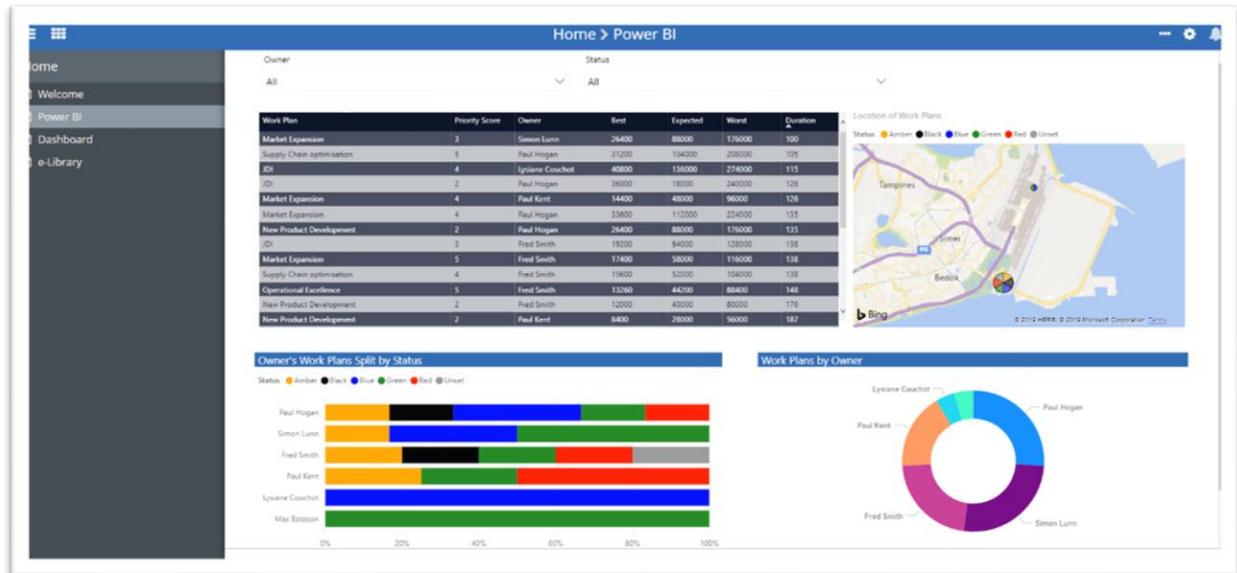
# Softools solution and connection to Power BI

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## 1. Power BI Dashboard in Softools

Power BI is a Microsoft product that allows you to take tables of data from various sources in order to collate the information together in a Report with a series of tables, charts and cards.

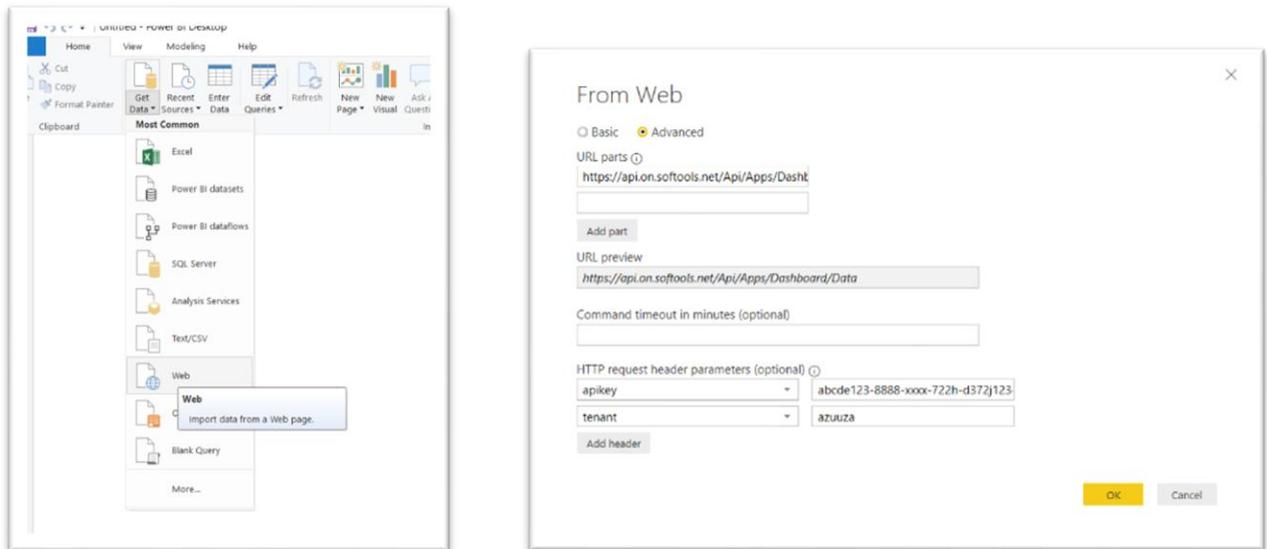


These instructions will enable you to take data from a Softools Application, use Power BI to build Reports and then display the Reports back in Softools.

## 2. Getting Data from Softools into Power BI

The data from a Softools Application can be used in Power BI by making an API Web Call to receive the collection of Records from the App.

First open the Power BI desktop App and start a new working model. Click on the Get Data dropdown and then select Web to get data from a web source. In the modal that opens, select Advanced and then fill in the following properties to make the data call.

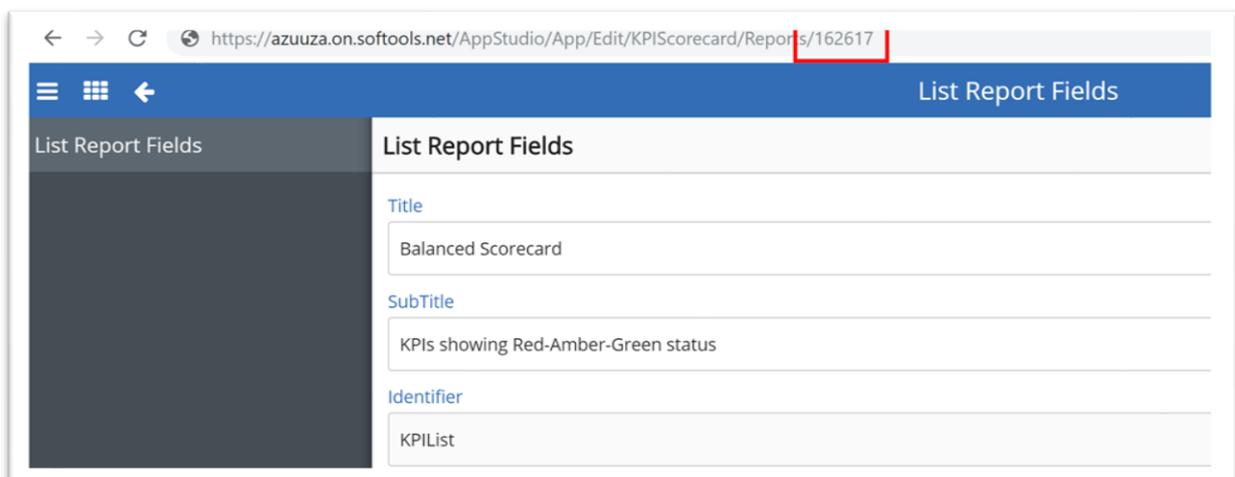


**URL Parts** - This is the call to get data. It is in the form:

`https://api.on.softools.net/Api/Apps/{AppID}/Data`

e.g. `https://api.on.softools.net/Api/Apps/KPIScorecard/Data`

Tip: If the App that the data is coming from contains a lot of Fields and Records the size of data returned can be reduced by building a List Report and then using the ID of the Report from App Studio.



This would be in the form:

<https://api.on.softools.net/Api/Apps/{AppID}/Data/Report/{ReportID}>

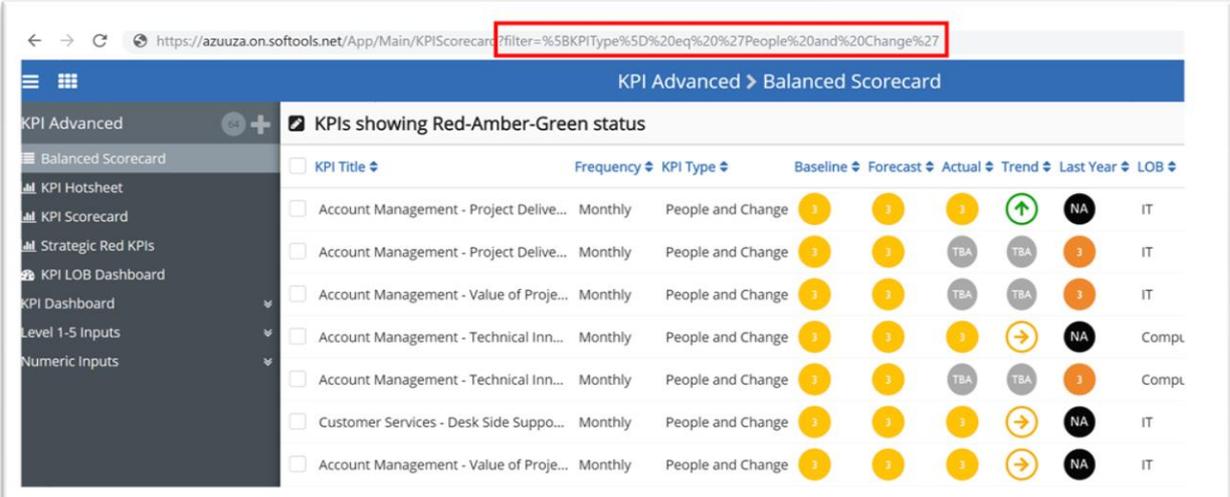
e.g. <https://api.on.softools.net/Api/Apps/KPIScorecard/Data/Report/162617>

The data can further be reduced if needed by adding a filter so that only Records meeting certain Field criteria are returned.

e.g. To only return Records from the KPI Scorecard App where Field with ID 'KPIType' is value 'People and Change' you could use the following. The quickest way to get the syntax is by applying the filter in the UI and copying this from the URL. Please note that a \$ symbol will need to be added between the ? and the word filter.

e.g.

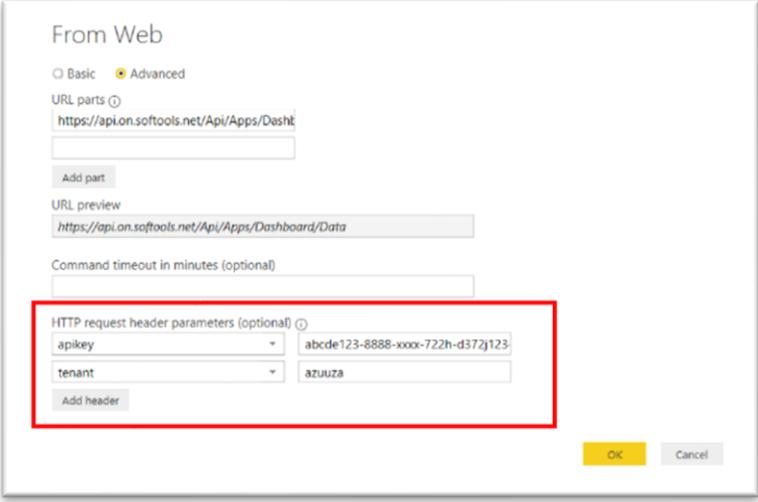
[https://api.on.softools.net/Api/Apps/KPIScorecard/Data/Report/162617?\\$filter=%5BKPIType%5D%20eq%20%27People%20and%20Change%27](https://api.on.softools.net/Api/Apps/KPIScorecard/Data/Report/162617?$filter=%5BKPIType%5D%20eq%20%27People%20and%20Change%27)



The screenshot shows a web application interface for 'KPI Advanced > Balanced Scorecard'. The browser's address bar contains the URL: `https://azuza.on.softools.net/App/Main/KPIScorecard?filter=%5BKPIType%5D%20eq%20%27People%20and%20Change%27`. The filter part of the URL is highlighted with a red box. The main content area displays a table titled 'KPIs showing Red-Amber-Green status'.

KPI Title	Frequency	KPI Type	Baseline	Forecast	Actual	Trend	Last Year	LOB
Account Management - Project Delive...	Monthly	People and Change	3	3	3	↑	NA	IT
Account Management - Project Delive...	Monthly	People and Change	3	3	TBA	TBA	3	IT
Account Management - Value of Proje...	Monthly	People and Change	3	3	TBA	TBA	3	IT
Account Management - Technical Inn...	Monthly	People and Change	3	3	3	→	NA	Compl
Account Management - Technical Inn...	Monthly	People and Change	3	3	TBA	TBA	3	Compl
Customer Services - Desk Side Suppo...	Monthly	People and Change	3	3	3	→	NA	IT
Account Management - Value of Proje...	Monthly	People and Change	3	3	3	→	NA	IT

## HTTP Request Header Parameters

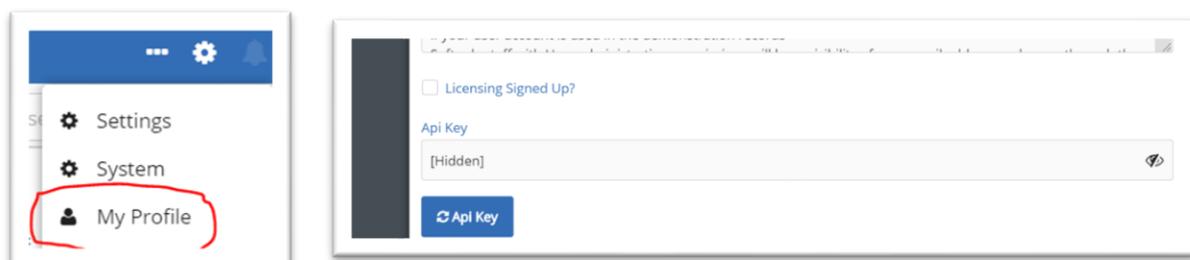


There are two Headers that are needed to authenticate the call for data. The credentials here the API Key for the User that the call will be made from and the Tenant that the data is being returned from. The User Account needs to have visibility of the records that need sending to Power BI. This would normally mean belonging to a Team that has access to the App and Record Read Only or Full access permissions.

**apikey: “abcde123- xxxx-...”**

The API Key can be found in the User Profile. Click on the Cog menu and select My Profile. Then scroll down to API Key where you can set. Please Note if you refresh the API Key it will cause any calls authenticated against the previous API Key to fail until updated to the new key.

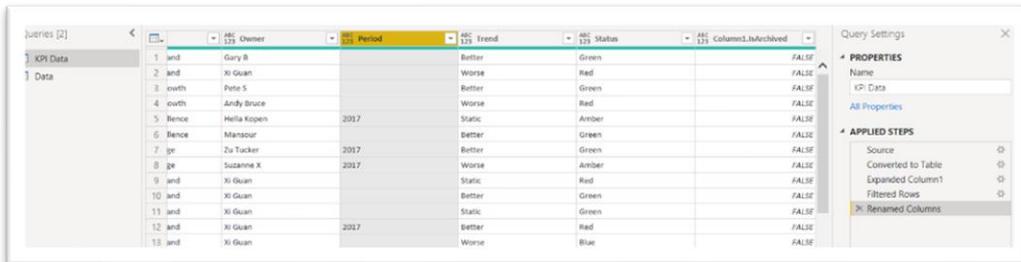
Note: the API Key can only be accessed via the owner of the User Account.



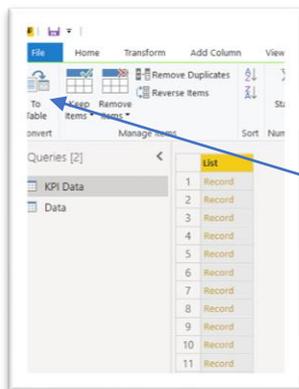
**tenant: e.g. “azuuza”**

The Tenant is usually the first part of the URL for your site. In this case the URL for the azuuz platform is <https://azuuza.on.softtools.net> in the form <https://{tenant}.on.softtools.net>. If an alias has been used for the URL then it will be necessary to contact your system administrator for your tenant

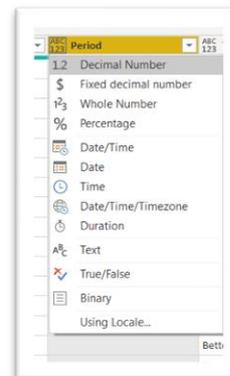
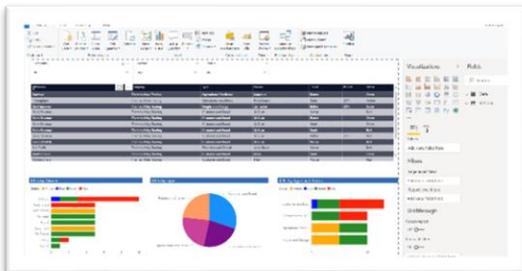
Having made this call you should result in a table of data in Power BI that you can then use to construct Reports. Multiple Web Get Data sources can be added to give data from multiple Apps as well as in conjunction with data sources from other Applications. You can then use table manipulation in Power BI including Convert to Table, Expand Columns, Rename Columns and Setting Data Types. For numeric data ensure the data set has been set to numeric in case cumulative values are used in the Power BI Reports.



Owner	Period	Trend	Status	Column1	Archived
and		Better	Green		FALSE
and		Worse	Red		FALSE
outh		Better	Green		FALSE
outh		Worse	Red		FALSE
ence	2017	Static	Amber		FALSE
ence		Better	Green		FALSE
pe	2017	Better	Green		FALSE
pe		Worse	Amber		FALSE
and		Static	Red		FALSE
and		Better	Green		FALSE
and		Static	Green		FALSE
and	2017	Better	Red		FALSE
and		Worse	Blue		FALSE



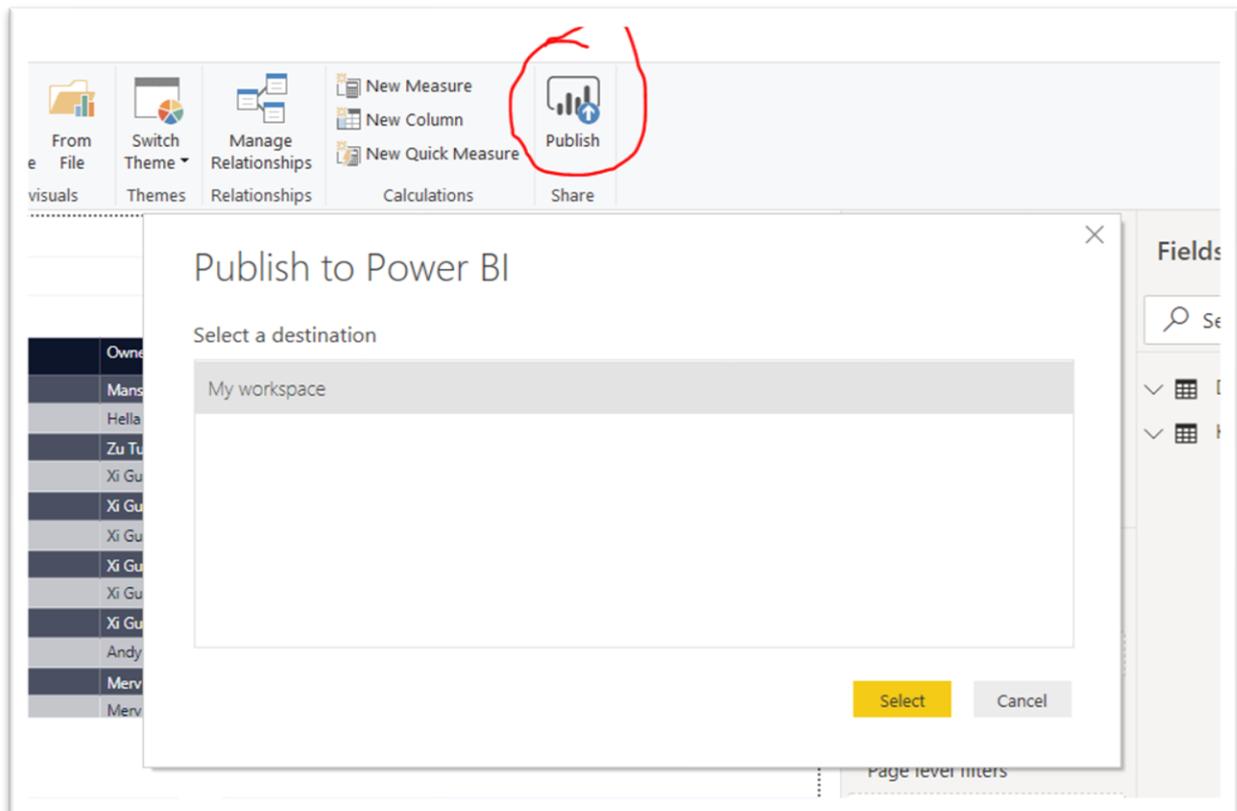
Click on To Table to convert the Record List data to a Table format



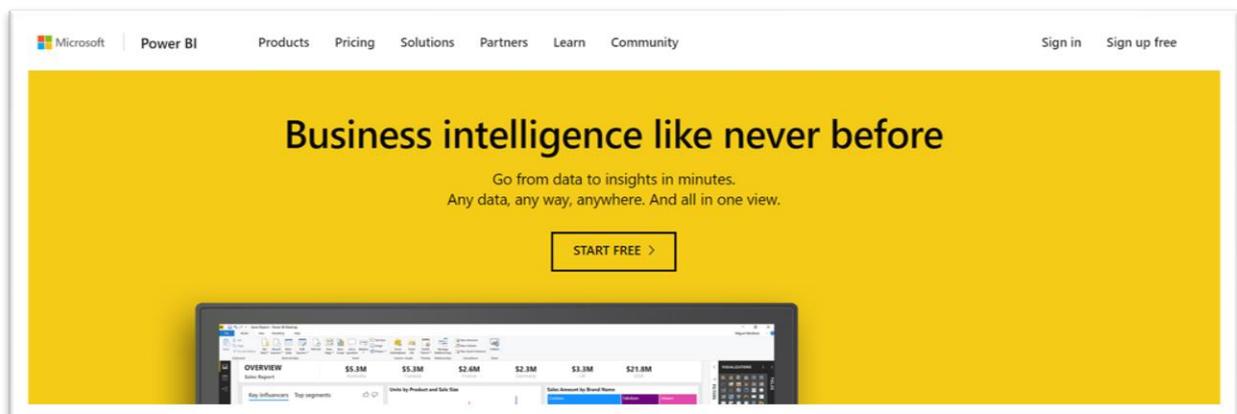
### 3. Publish to Web

There are two steps to getting the Power BI Report constructed in the Desktop App published back into Softtools or to another Web location. First Publish the Power BI model to the Power BI Server and then get a weblink that can be used to access the Report.

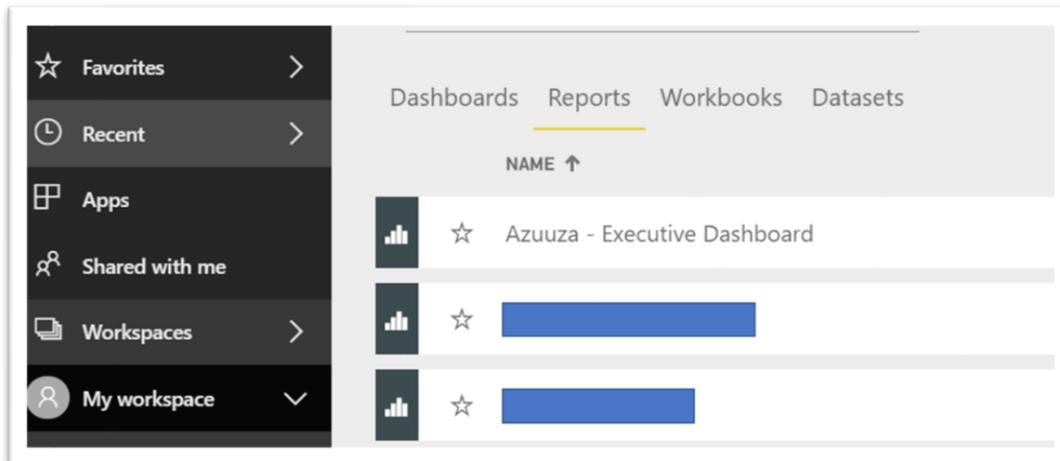
1. Click on Publish to upload the Power BI Model to the Power BI Server.



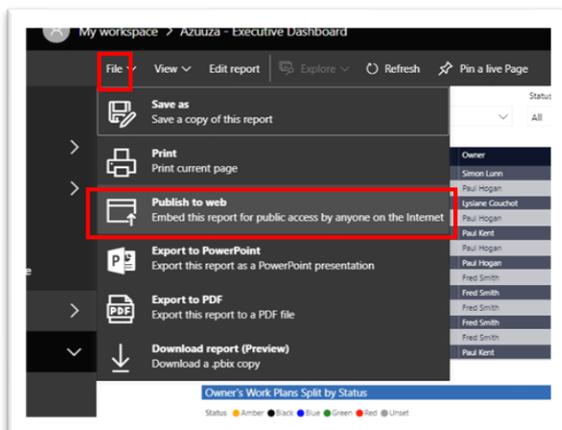
2. Once this is complete go to <https://powerbi.microsoft.com> and Sign In.



3. From the Workspace select the Report that you have published to the Power BI Server



4. Under File, there is the option to Publish to Web. Select this and it will give you the iframe code that you can embed into a Web Page in order to share the Report with groups of Users.



If you would like to display the content of the Report in Softools then there are two options. One is as a homepage and one as a Dashboard Report for an App using a Template.

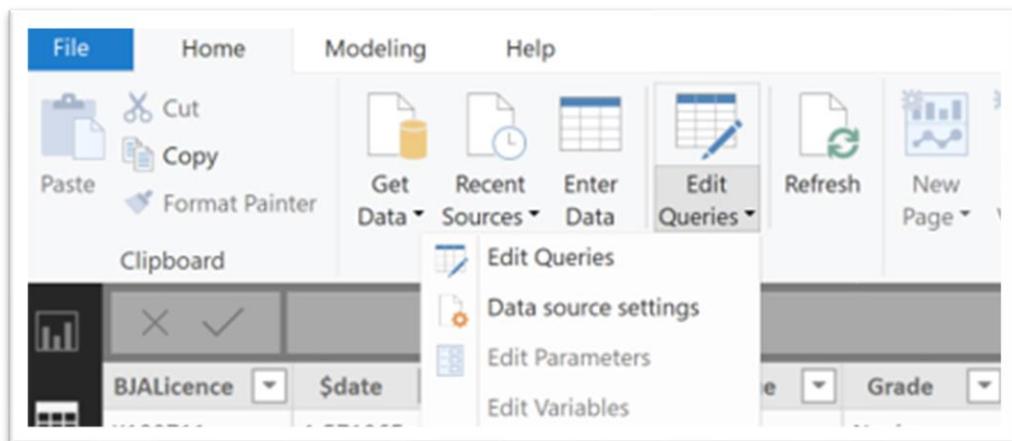


## 6. Updating the Web Call to allow for Schedule Refresh of the Data

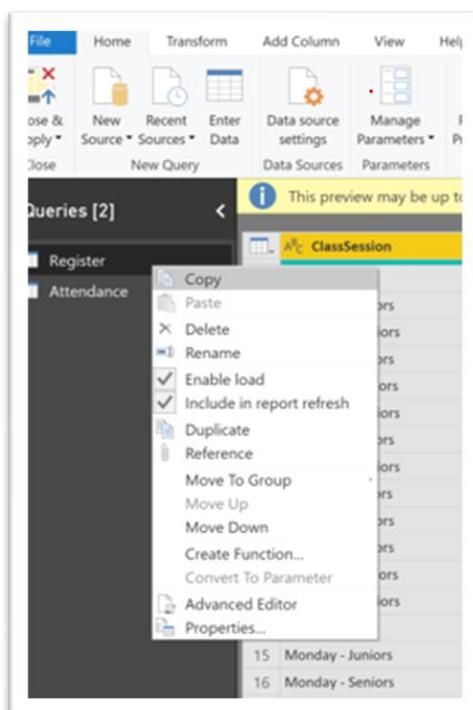
In Power BI there is the option to use Schedule Refresh for a Web Source in order to pull in the data from the source up to eight times a day. To take advantage of this feature we need to edit the API Call for data in order to authenticate properly against <https://api.on.softtools.net>.

In the Power BI desktop App open the data model:

1. Click on Edit Queries.



2. Right-click on the data source and select Advanced Editor



### 3. Update the call from:

Source =

```
Json.Document(Web.Contents("https://api.on.softtools.net/Api/Apps/Dashboard/Data",
Headers=[apikey="abcde123-xxxx-....", tenant="azuuza"]))
```

to:

```
Source = Json.Document(Web.Contents("https://api.on.softtools.net",
[Headers=[apikey="abcde123-xxxx-....", tenant="azuuza"],
RelativePath="/Api/Apps/Dashboard/Data"]))
```

By adding the Relative Path it means the Schedule Refresh will be granted successfully authenticating against the root https://api.on.softtools.net domain.

Note: this action is required for each data set that requires a Schedule refresh.

4. Publish your changes
5. Open the Power BI Server and go to My Workspace / Datasets / select your data Set, select Schedule refresh and switch this feature on to update the data as often as Power BI will allow.

