

Connecting Microsoft Power BI with Sage Intelligence Reporting

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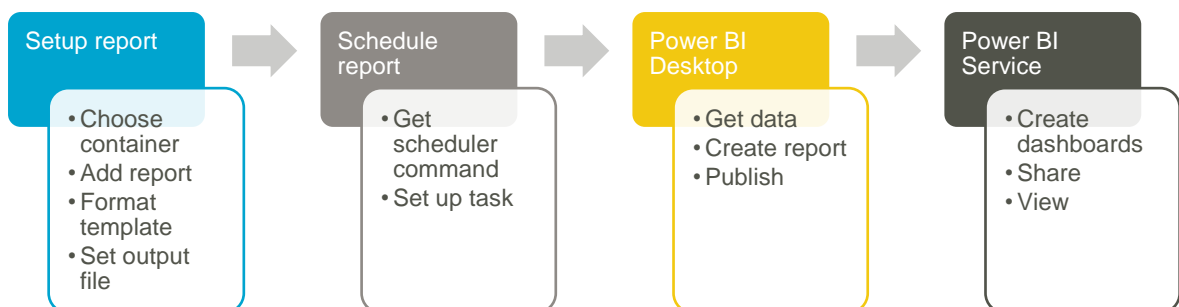
1.0 Introduction

In the last several years, there has been a growing demand for self service Business Intelligence with a focus on savvy data visualisation. Microsoft, initially, have responded to this by adding new data analysis and visualisation features like Power Query, Power View and Power Map to Excel. But all this has culminated in the release of a single application for this which is Power BI.

Like Excel is the ubiquitous solution for spreadsheet based work, Power BI is poised to become the same for powerful data transformation and presentation. As such, it makes sense that it be used in addition to Excel, as the front end for Sage Intelligence, giving you a further means to effectively represent your financial and operation data.

This document explains the process of connecting Power BI with Sage Intelligence to be able to create attractive and interactive reports and dashboards from your Sage accounting package or business solution data. The high level steps involved include:

- Adding a report in the Report Manager for the data you want to report on.
- Formatting the template for the report in a way that can be consumed by Power BI.
- Scheduling the running of it using the Windows Task Scheduler.
- Connecting Power BI Desktop to the output workbook.
- Adding your visualisations and then publishing them to the Power BI Service.
- Creating your dashboards, sharing them and viewing them through mobile devices.

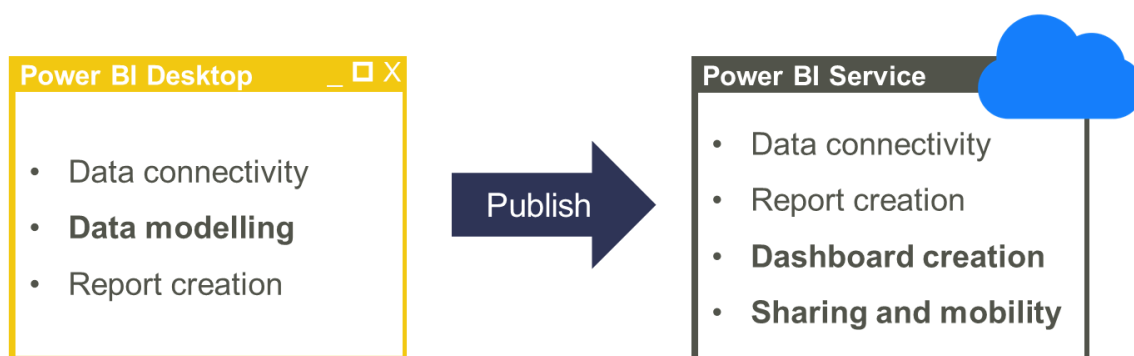


Before working through the process using an example, an introduction to Power BI is given and the requirements for it will be discussed. It is assumed that you are already using Sage Intelligence and have a basic understanding of working with reports in the Report Manager.

2.0 Starting out with Power BI

2.1 The fundamentals

Power BI is made up of two main components, Power BI Desktop and the Power BI Service. Power BI Desktop is an application that you download and install on your local machine. The Power BI Service is a cloud based application that you access through your web browser.



Both provide the ability to connect to different types of data sources and design reports. However, the Desktop's strength lies in its data transformation capabilities whereas the Service is intended for the creation and sharing of dashboards.

Working together, the desktop is typically used to connect to data, massage it and then define reports from it. They are then published to the Service where dashboards can be created and shared as well as view on mobile devices.

2.2 Licensing

Two license models are provided by Microsoft, one free (Power BI) and the other paid for (Power BI Pro). A comparison of the two can be found [here](#). The paid for version can also be purchased through this link.

The example in this document makes use of the free version and the Desktop program can be downloaded [here](#). To make use of the Power BI Service you need to sign up for it and this can also be done through the same link. Take note that a work email address needs to be used for this. Microsoft doesn't support registration using public email service addresses like Gmail, Yahoo or Outlook.

Once signed up, you can access the Service by going to app.powerbi.com and signing in with the same credentials. Also, in order to publish your content from the Desktop to the Service you need to be signed in on the Desktop using the same account. If you're already using or intend using Power BI Pro, the process of connecting to Sage Intelligence is still the same.

2.3 Power BI Desktop System Requirements

- Windows 7 / Windows Server 2008 R2 or later
- Microsoft .NET 4.5 installed
- Internet Explorer 9 or later installed
- Processor: 1 GH or faster x86 or x64 bit processor
- Memory: At least 1 GB of RAM, 1.5 or more is recommended
- Display: At least 1440x900 or 1600x900 (16:9) resolution. Lower resolutions such as 1024x768 or 1280x800 are not recommended, as certain controls (such as closing the startup screen) cannot be seen.

2.4 Power BI Service Requirements

Supported browsers include:

- Microsoft Edge and Internet Explorer 11
- Latest versions of Chrome, Firefox and Safari

3.0 Process

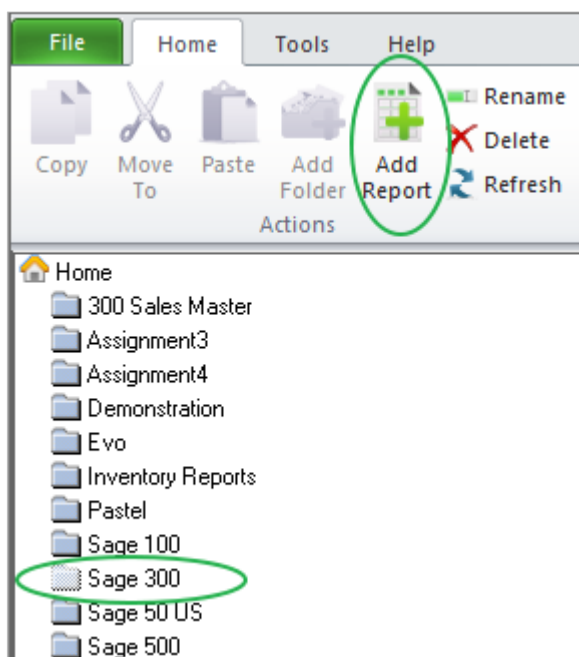
3.1 Defining your container

The starting point for your Power BI report begins with a container in the Connector linking to the data you would like to report on. As you're most probably aware, if you have a Connector license, you are able to define your own containers. Otherwise you can make use of the standard ones provided for your accounting package / business solution through the Report Manager.

3.2 Adding your report in the Report Manager

The next step is to create a report off the container you would like to use. In this example I'll make use of Sage 300, reporting on my purchases data.

1. Select the folder you would like the report placed in and then click Add Report on the Home tab on the menu ribbon.



2. The following screen will be displayed. Select Standard Report and click OK.

Please select the type of report to create

Standard Report

Union Report

Cube Report

OK Cancel

3. Next, give your report a suitable name and click OK.

Enter a name for the Report

RawData300

OK Cancel

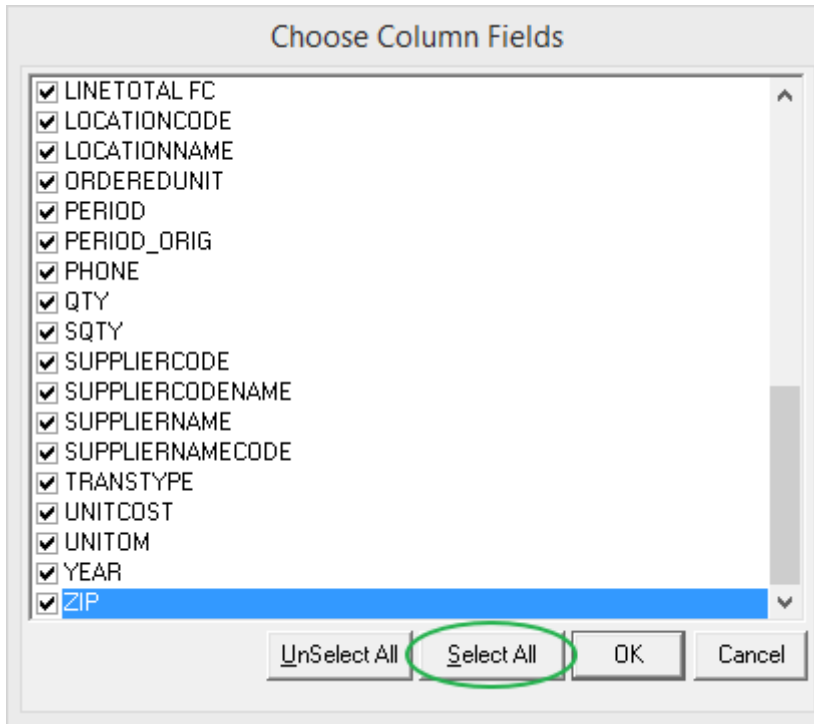
4. You must then select the container you want to use and click OK.

Select Data Container

Name	Description	Parent Connection
PJC Contract Summary S300 SQL(C83-...		S300_Powerview
PJC Detailed Costs S300 SQL (C82-0-1)		S300_Powerview
PJC Over Under Billing S300 SQL(C85-...		S300_Powerview
PJC Profit Analysis S300 SQL(C84-0-1)		S300_Powerview
PJC Stored Material Audit S300 SQL(C...		S300_Powerview
Project and Job Costing Summary (C1-...		S300_Powerview
Purchase Master 3-2 (AE-SQL)	Purchase Invoices, Credit and ...	S300_Powerview
Purchase Master 4-2 (SL50)	Purchase Product Details	Sage Line 50
Purchase Master 4-2 (SL50)	Purchase Product Details	Sage Line 50
Purchase S300 SQL (C73-0-1)	Purchase Invoices, Credit and ...	S300_Powerview
Purchases Analysis 1-0	Data from purchasing tables	Sage50US
Purchases Analysis 1-2	Data from purchasing tables	Sage50US
Purchases Dashboard S300 SQL (C77-...	Purchase Invoices, Credit and ...	S300_Powerview
PV Purchases Dashboard S50 US (C55...	Data from purchasing tables	Sage50 US

OK Cancel

5. You'll then be asked to pick the columns/fields you want to include. In this example, all have been chosen. You can then click OK.

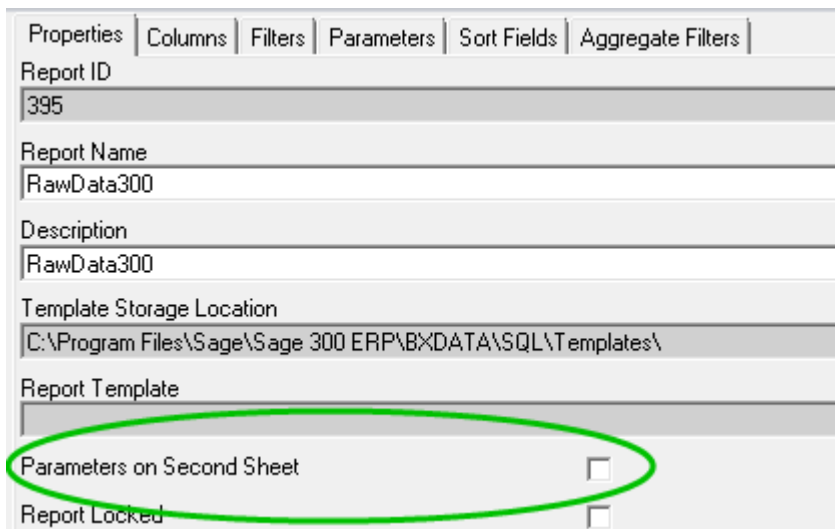


6. Your report will be created and added to your folder. You may want to modify it further using the options in the Report Manager like filters or parameters, etc.

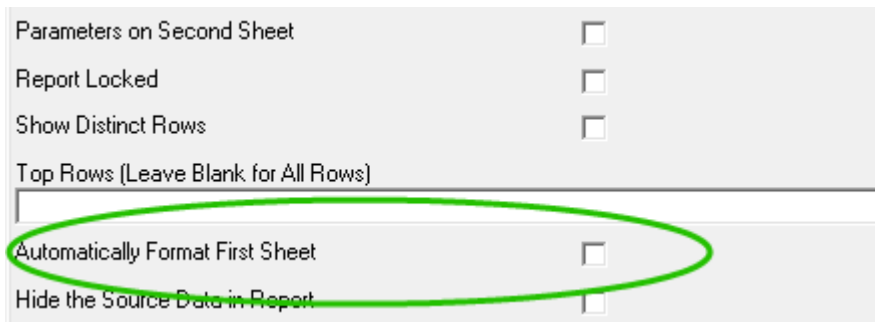
3.3 Formatting your report template

Before running out your report and editing the template in Excel, a few properties should be considered. Some of these are advanced options so make sure that Show Advanced is checked at the bottom of the Properties tab.

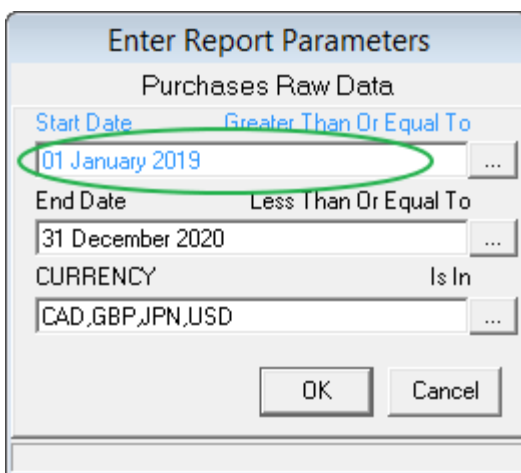
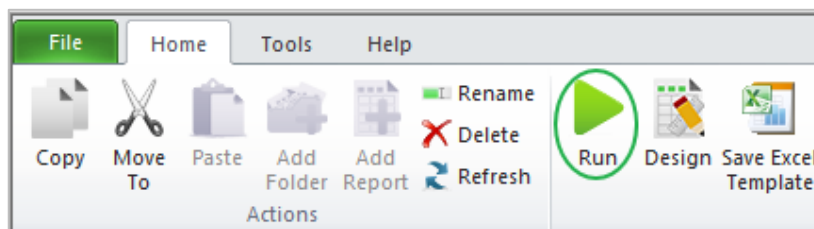
1. Although you can include parameters on the second sheet if you would like to make use of them in your Power BI reports, I'm going to exclude mine from my report.



- It's important to uncheck Automatically Format First Sheet. This is so that any formatting Intelligence Reporting would otherwise apply when a report is run out, doesn't interfere with the formatting that needs to be added to the template shortly.



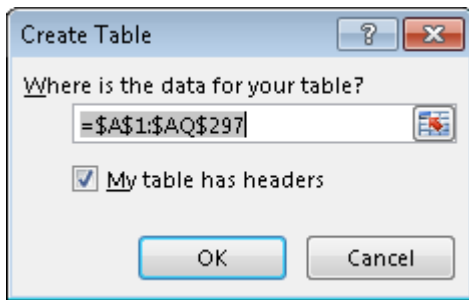
- Once complete you need to run out your report, entering any values for parameters you may have added. These don't need to be values for an actual set of data you want to work with but must be such that the report returns data.



Your data will be run out into Excel and placed in Sheet 1.

ADDRESS	AUTODATE	AUTOTIME	AUSER	CITY	COMPANY	CONTACT	COUNTRY	CURRENCY	DATE	DOCNO	FAX	INACTIVE	INVLEN	INVLENES	ITEM	CTE
927 Waref	2019-03-18	SAMINC	10202393	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-03-09	RCP00000	616555334	0	2	3180	A1	Ac
927 Waref	2019-08-18	SAMINC	10202569	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-03-09	CC485-226	616555334	0	4	3180	A1	Ac
927 Waref	2019-08-18	SAMINC	10223554	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-04-13	RCP00000	616555334	0	3	4471	A1	Ac
927 Waref	2019-08-18	SAMINC	10222595	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-04-13	CC485-226	616555334	0	4	4471	A1	Ac
927 Waref	2019-08-18	SAMINC	10262617	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-07-03	RCP00000	616555334	0	1	5128	A1	Ac
927 Waref	2019-08-18	SAMINC	10262770	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-07-03	CC485-226	616555334	0	2	5128	A1	Ac
927 Waref	2019-08-18	SAMINC	10262901	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-07-03	RCP00000	616555334	0	3	5132	A1	Ac
927 Waref	2019-08-18	SAMINC	10262918	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-07-03	CC485-226	616555334	0	4	5132	A1	Ac
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927 Waref	2019-08-18	SAMINC	10340569	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-10-06	CC485-226	616555334	0	2	5778	A1	Ac
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927 Waref	2019-08-18	SAMINC	10380553	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-12-07	CC485-226	616555334	0	2	7133	A1	Ac
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927 Waref	2019-08-18	SAMINC	10380708	ADMIN	Kansas OT Sample C	Mr. Carl J	USA	USD	2019-12-07	CC485-226	616555334	0	4	7137	A1	Ac
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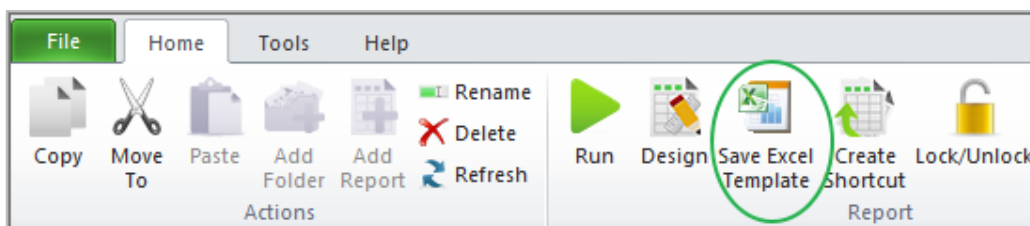
- You then need to create a table from the source data. You can do this by first clicking anywhere in it and then either pressing CTRL + T on your keyboard, or by going to the Insert tab and selecting Table.
- When the data selection dialogue appears, click OK to accept the full range.



- The table will be given a default name of Table 1 and you can change this to something more personal if you like.

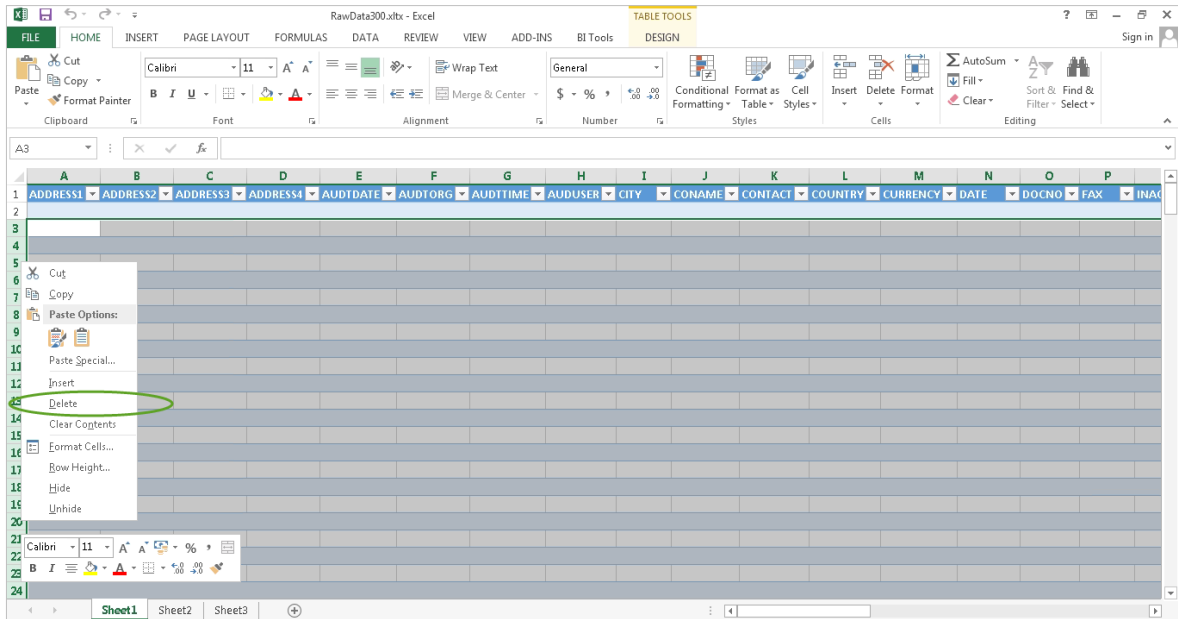
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4	927 Warehou				2010-08-18	SAMINC	10223554	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2019-04-13	RCP000000	816555334		
5	927 Warehou				2010-08-18	SAMINC	10223585	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2019-04-13	CC485-228	816555334		
6	927 Warehou				2010-08-18	SAMINC	10262617	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2019-07-03	RCP000000	816555334		
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15	927 Warehou				2010-08-18	SAMINC	10380553	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2019-12-07	CC485-228	816555334		
16	927 Warehou				2010-08-18	SAMINC	10380691	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2019-12-07	RCP000000	816555334		
17	927 Warehou				2010-08-18	SAMINC	10380708	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2019-12-07	CC485-228	816555334		
18	927 Warehou				2010-08-18	SAMINC	10420805	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2020-01-14	RET000000	816555334		
19	927 Warehou				2010-08-18	SAMINC	10420944	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2020-01-14	CL1501	816555334		
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23	927 Warehou				2010-08-18	SAMINC	10572723	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2020-05-10	IN120121	816555334		
24	927 Warehou				2010-08-18	SAMINC	11061124	ADMIN	Kansas Crt Sample Com	Mr. Carl Jenr	USA	USD	2020-06-23	RCP000000	816555334		

- Once finished, link the workbook/template back to your report in the Report Manager using Save Excel Template. If you have multiple workbooks open, make sure that you select the right one to save.

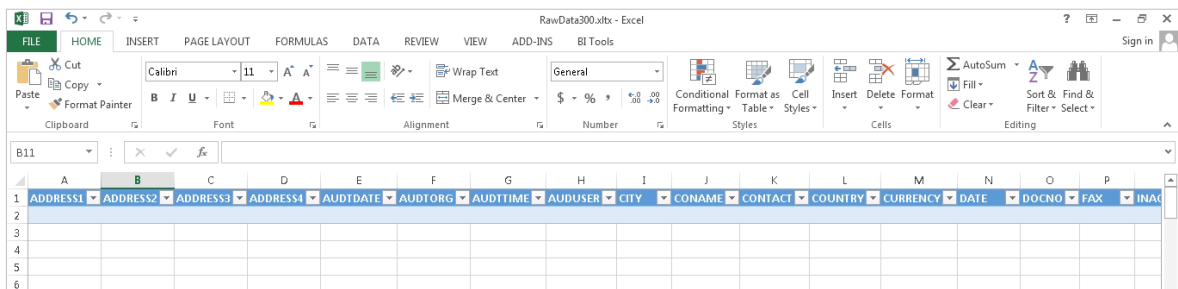


- Once complete, open up your template again by selecting Design on the ribbon in the Report Manager. You'll see that the table, although empty, still takes up the same amount of space as when it was created. This can cause a problem because if your report is run out with less data, the table area will be bigger than the amount of data and will result in blank rows being brought into Power BI. The trick is to reduce the size of it to the smallest possible. Do this by selecting rows three until the end and deleting them. If you're unsure how to do this, select the row label for row three to the

left of the sheet, press CTRL + Shift + Down Arrow on your keyboard, then right click on the label of one of the selected rows and select delete.

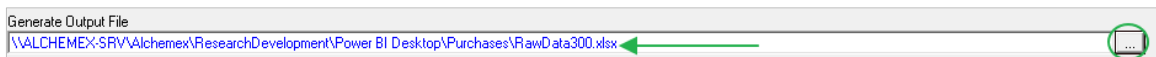


- Your table will now be 1 row in size (excluding the header row). You can then save it using the normal Excel save function and close the file. So that you understand, now when your report is run out with more data, the table will expand to accommodate it.



You now need to create an output file for the report. This file will work as the source data for your Power BI report.

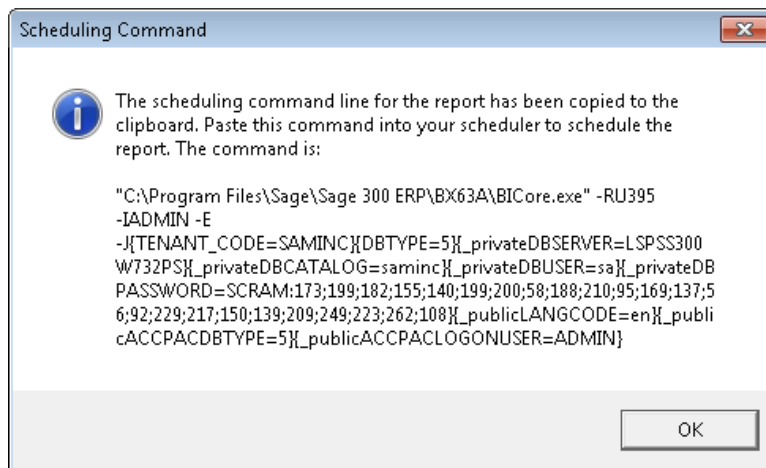
- To do this, in the report's properties, scroll down to the Generate Output File field, click on the ellipsis button and specify the location where you want it to be saved. This could be a shared network location or even a OneDrive folder. By default, you may only be able to select xls as the file format. It is necessary that it be in xlsx format and you can change this by typing in the additional x at the end of the file name in the Generate Output File field.



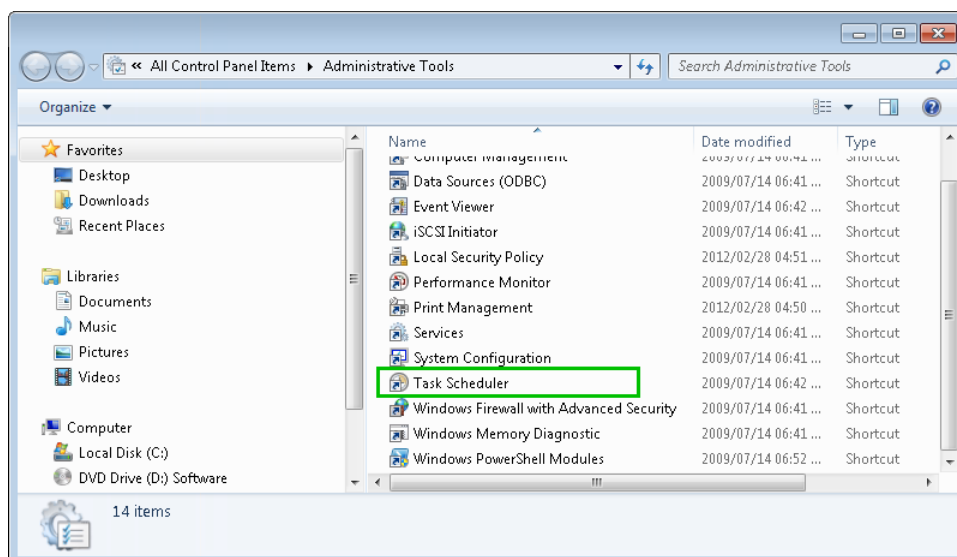
3.4 Task Scheduler

In order to avoid running out your report every time you want to update the data in it, you can schedule it to run automatically using the Windows Task Scheduler.

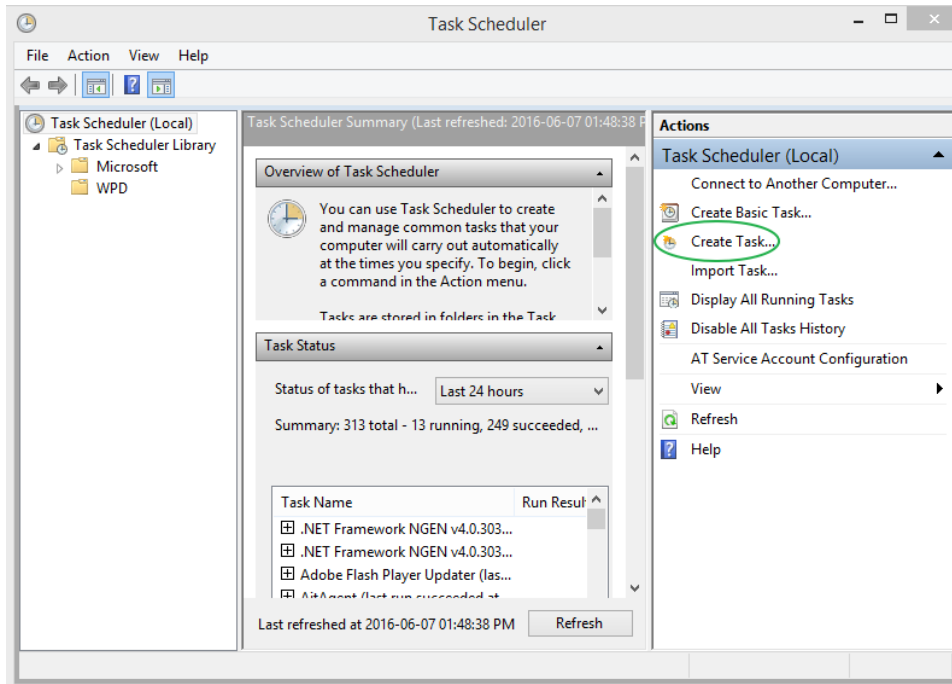
1. While still in the Report Manager, the first step to this is to generate a scheduler command. You can do this by right clicking on your report and selecting Generate Scheduler Command.
2. If your report has parameters, you'll be asked to enter the values you would like to use. If the values will be the same for each report run then you can enter them otherwise if they are going to vary, for example, a current period value, then you can make use of the Sage Intelligence system variables for this.
3. Once entered, click OK. The command will be shown and copied to the click board for easy reference later. You can click OK again.



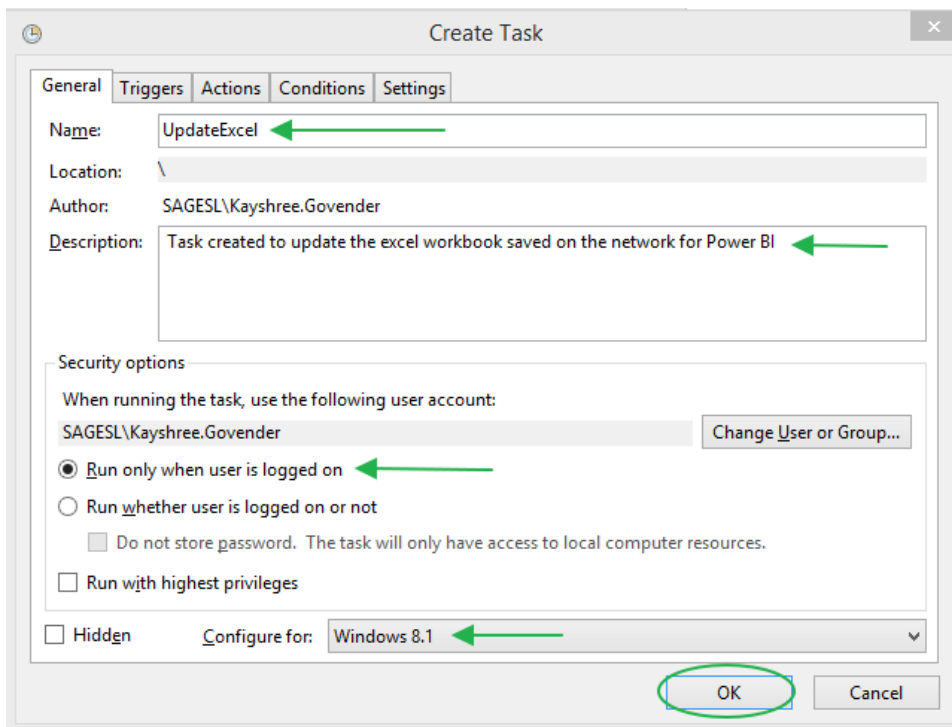
4. Next, open the Task Scheduler. You can find it under Administrative Tools in the Windows Control Panel or by opening your Start menu and searching for Task Scheduler.



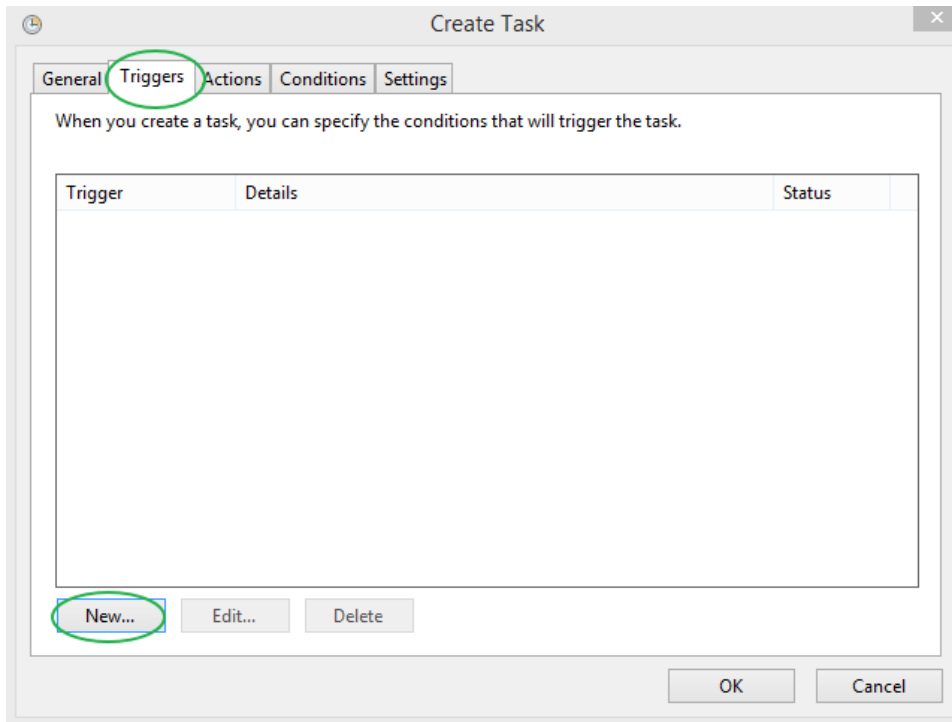
5. Once open you will see the below screen and you can start setting up your schedule by selecting Create Task.



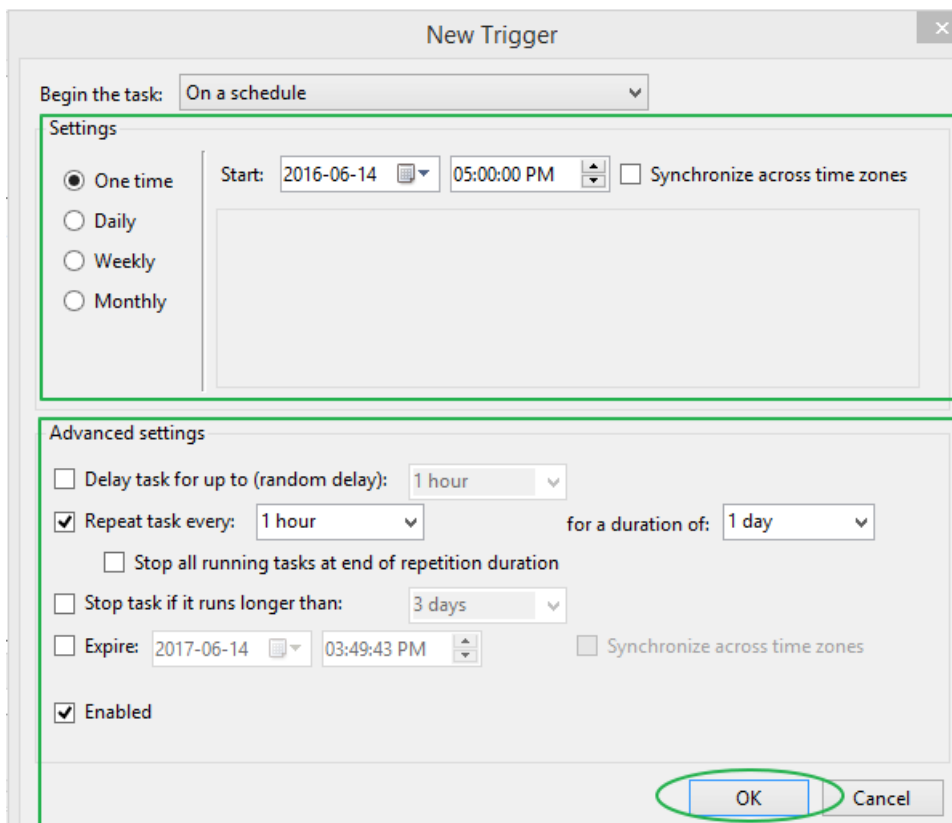
6. You can then enter a name and description, and set the security and configuration options for it.



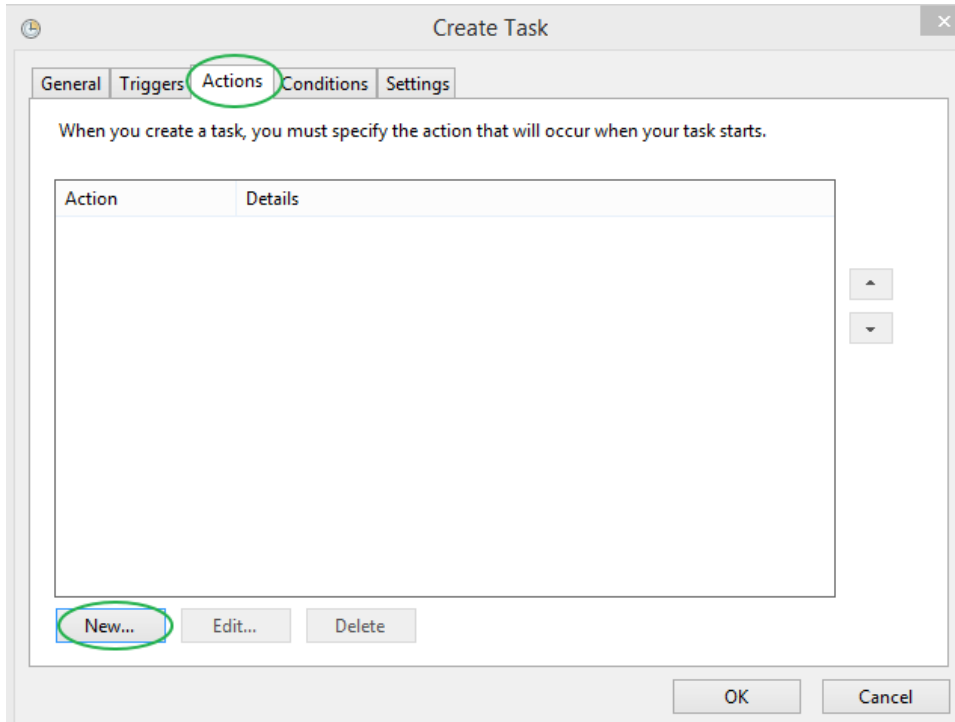
7. Next, show the Triggers tab and add a new one.



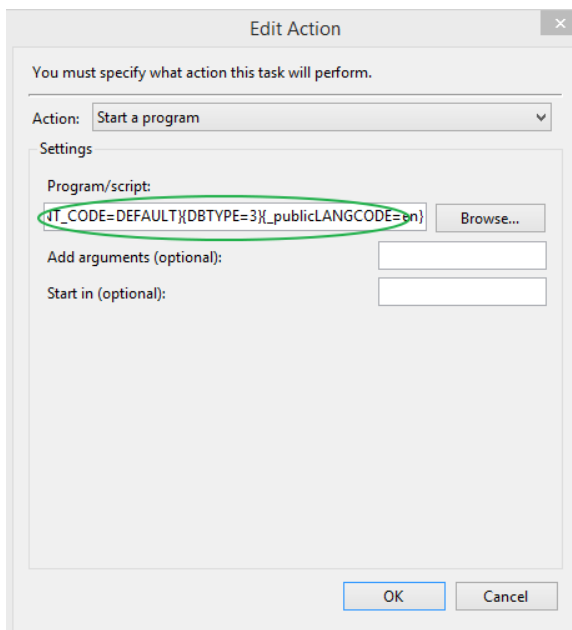
8. The following window will appear and you can set up the frequency that you would like your report to be run. Once finished click OK.



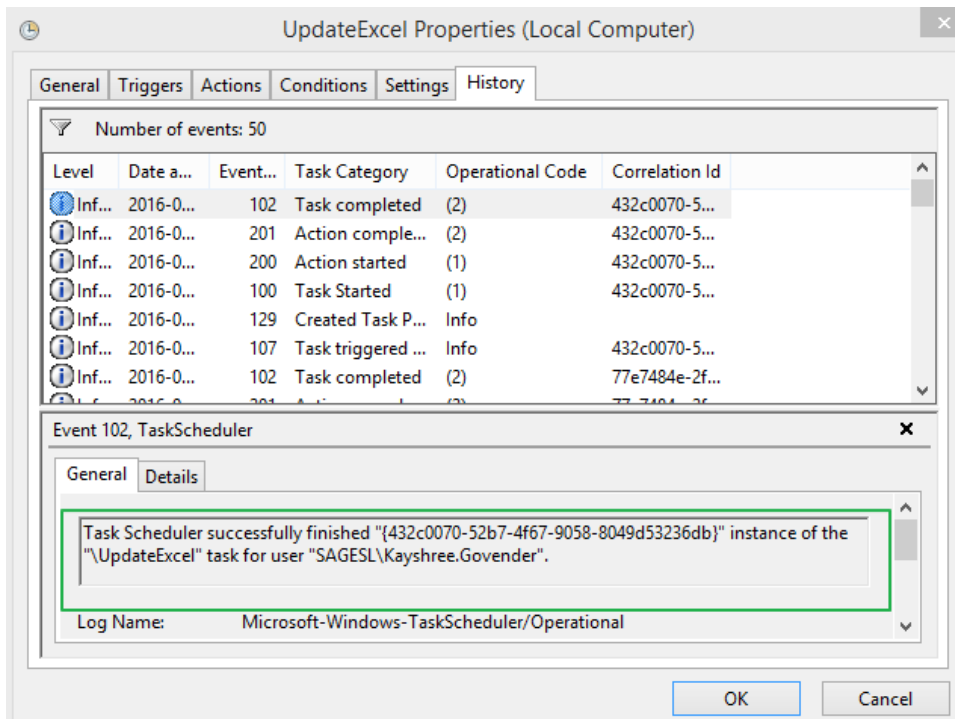
9. You then need to show the Actions tab and add a new one.



10. Under the Edit Action dialogue, make sure that Start a program is selected for Action and then enter your scheduler command in the Program/script field. You can do this by selecting the field and pressing CTRL + V on your keyboard or by right clicking on the field and selecting Paste. You can then click OK.



11. Your scheduled task is now complete and you can keep track of its occurrence using the History tab for it.



If you would like more information on scheduling reports in Sage Intelligence, check out a video on it [here](#).

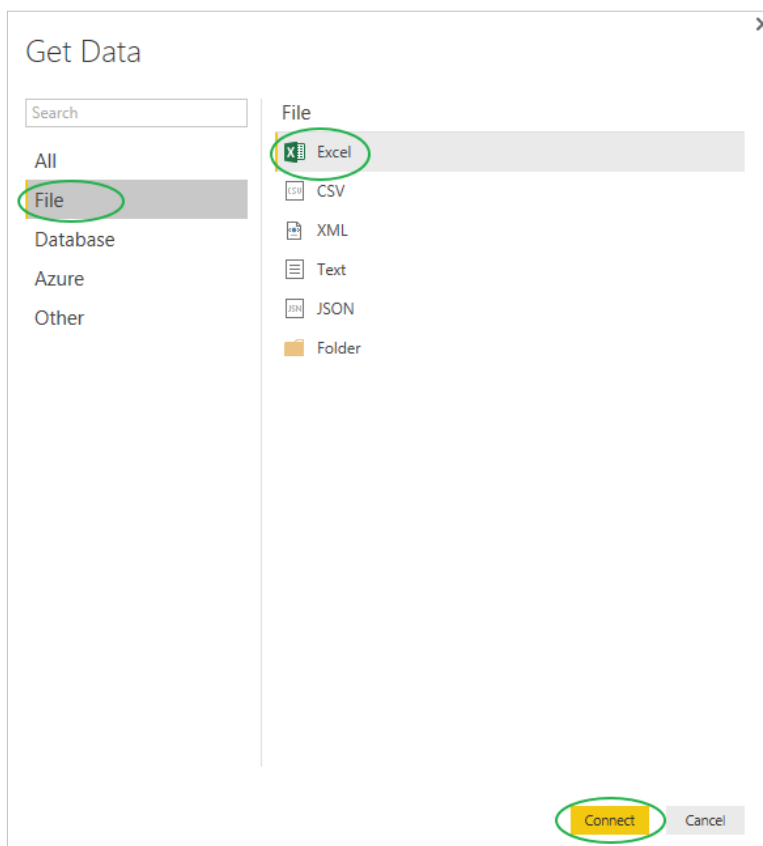
3.5 Power BI Desktop

Power BI Desktop provides advanced query, modelling and report creation features that enable you to build data models, create reports, and share your work by publishing it to the Power BI Service.

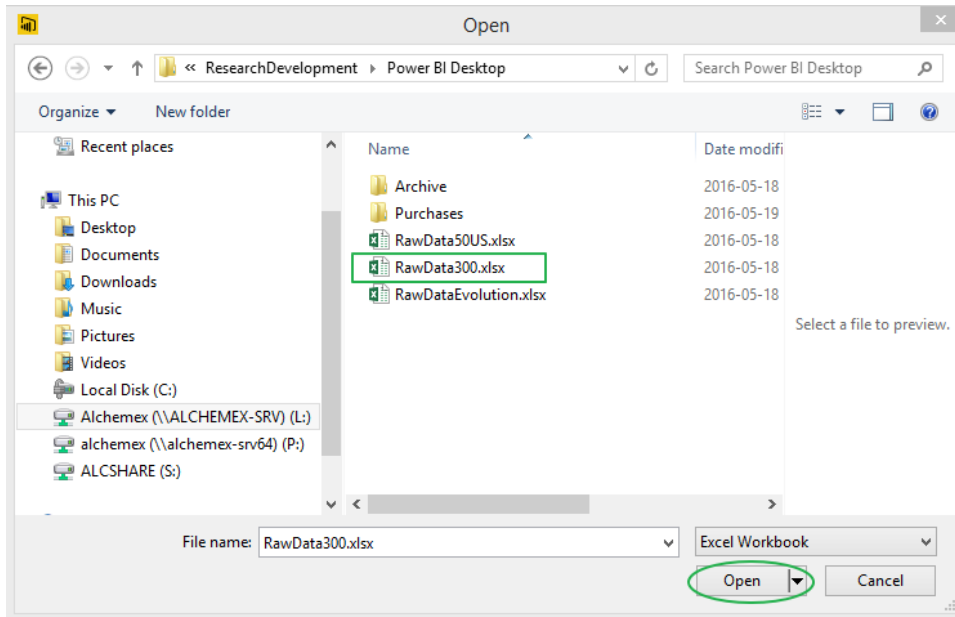
1. Once you have downloaded and installed the Power BI Desktop program and have opened it, the following screen will be displayed. To access your source data, you must click on the Get Data link. This option is also available on the menu ribbon in program.



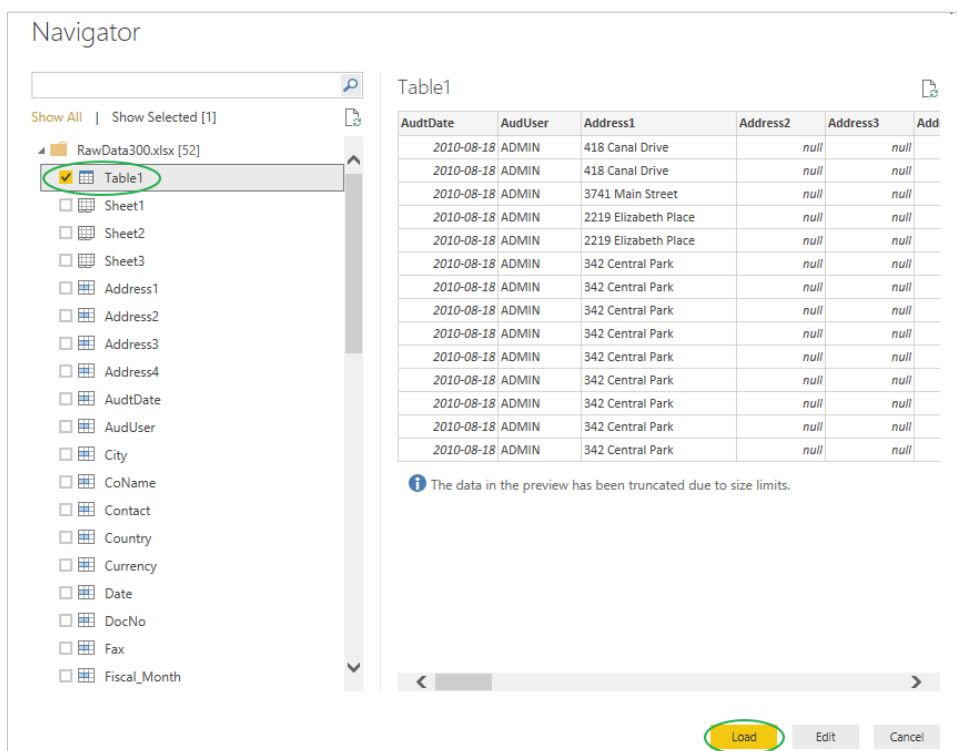
2. Then with File selected on the left, choose Excel as the data source and click Connect.



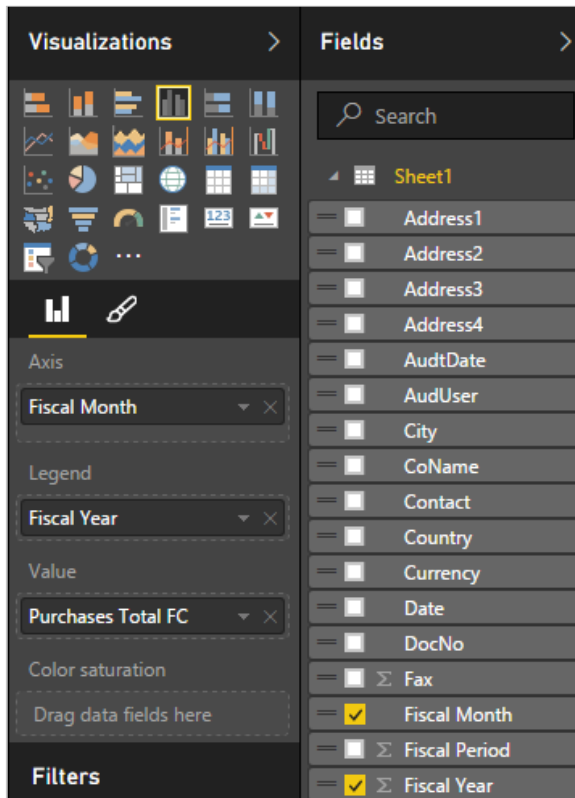
- Browse to the location where your output file is being saved and select it. Note that it would have needed to be run out once in order for the file to exist.



- The following screen will appear prompting you to choose the data range you want to include in your dataset. The Excel table you created earlier will be listed. Select it and click the Load button.

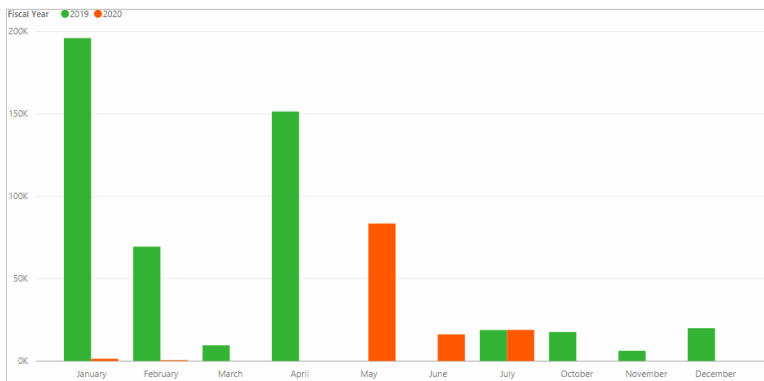


5. Like with Pivot Tables in Excel, there will be a field list that appears.

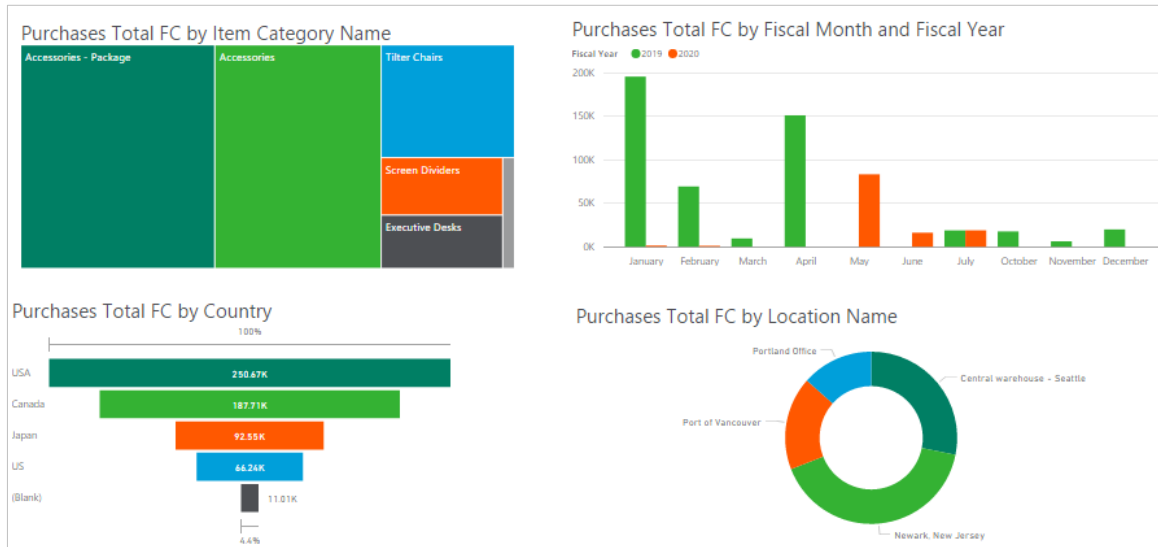


6. To create a visualization, start by selecting the fields you want to include and then choose the type of visualization you want from the Visualizations pane.

In my example, by choosing the Purchases Total, Fiscal Year and Fiscal Month fields, and using a Clustered Column Chart visualization, the following is displayed.



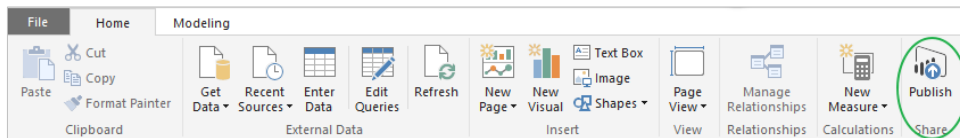
This is just the start. You can keep adding more gauges to make a powerful, interactive dashboard like the one shown below. To get more information on using Power BI Desktop and creating reports in it, take a look [here](#).



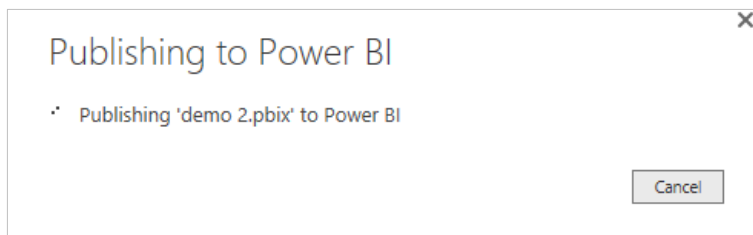
3.6 Publishing to the Power BI Service

Once you have completed your reports, you can publish them to the Power BI Service. Both the data in the data model as well as your reports are uploaded.

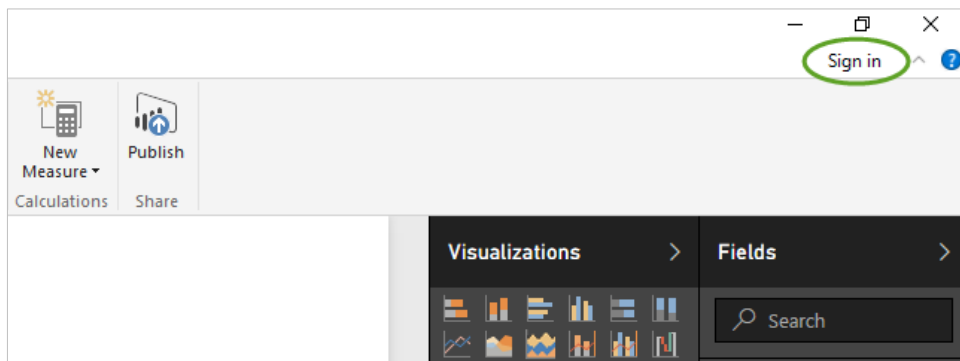
1. To do this, in Power BI Desktop, go to File > Publish > Publish to Power BI or click Publish on the menu ribbon.



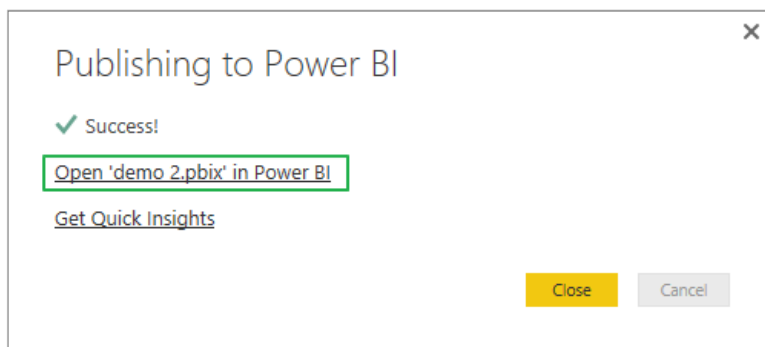
2. After you click publish you'll first be asked to save your work. This will be like saving a normal file, to a folder on your local machine or shared location, and is as a pbix file which is the native file type for Power BI files. The upload will then take place.



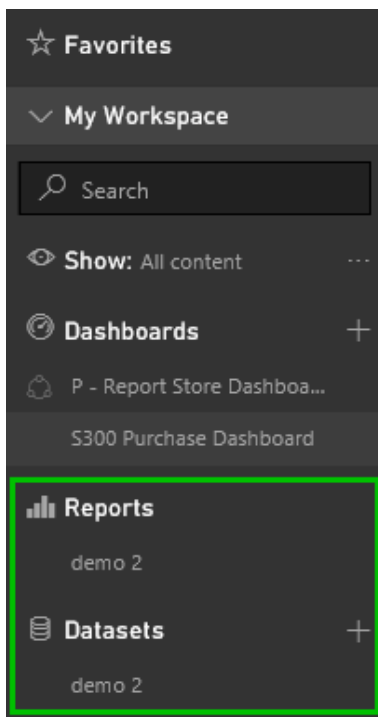
Note that to be able to publish you need to be signed into your Power BI account in the Desktop program. You can do this by clicking on Sign in near the top right of the window.



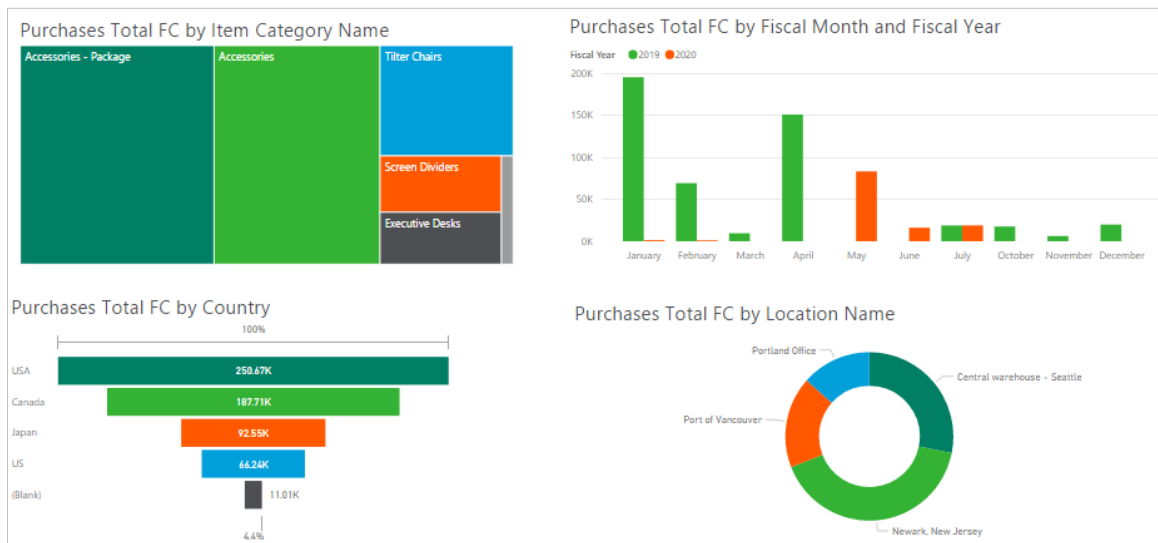
3. Once finished you'll receive a success message and you can use the link to open your report in the Power BI Service.



4. If you are not already signed in to the Service online, you'll first be asked to do so. Once done, and your workspace loads, you will see the data set and report added to the menu on the left.



- By selecting the item under Reports, your report, as it appeared in Power BI Desktop will be shown. And by clicking on the item under data sets, the same field list and visualisation type functionality that appeared in the Desktop will be shown, allowing you to create new reports.



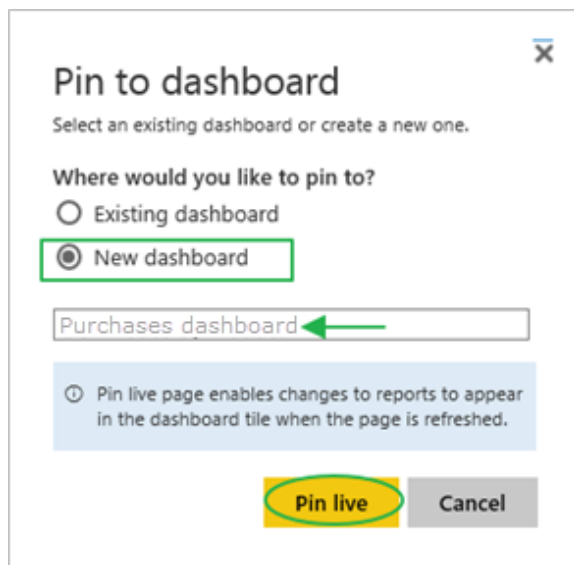
3.7 Adding dashboards

Once a report exists in the Power BI Service, dashboards can be made from it.

- To create one, you can either add an entire report or each individual chart by using the pin icon in the menu above your report or the one above each visualisation respectively.



- When you do so you'll be asked whether you want to add to an existing dashboard or create a new. If it's a new dashboard, you'll need to enter a name for it.

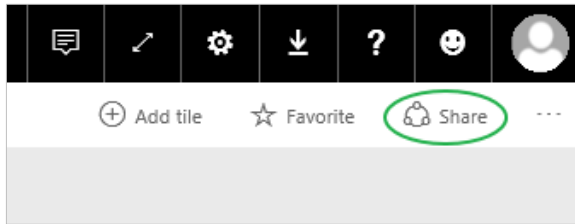


- Once a dashboard has been created it will be listed under the Dashboards heading in the menu on the left of your screen. You can then select it to view it.

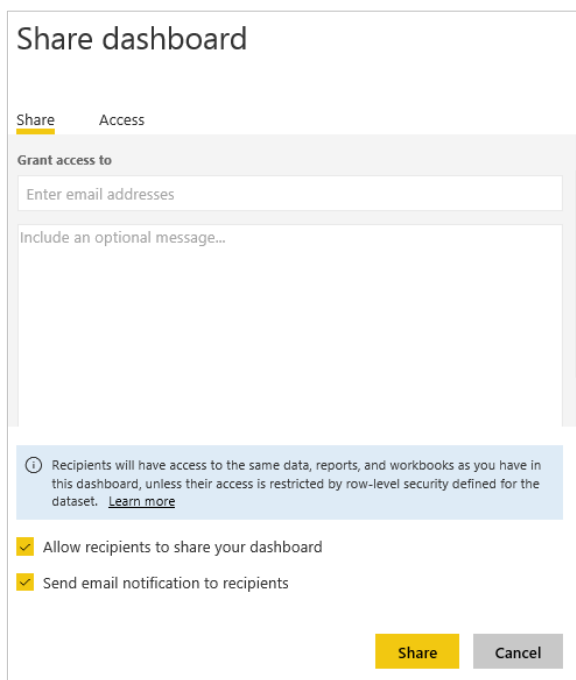
3.8 Sharing dashboards

Dashboards are what you're able to share in Power BI.

1. Once one is selected, you can use the Share function on the menu near the top right of your window to do so.

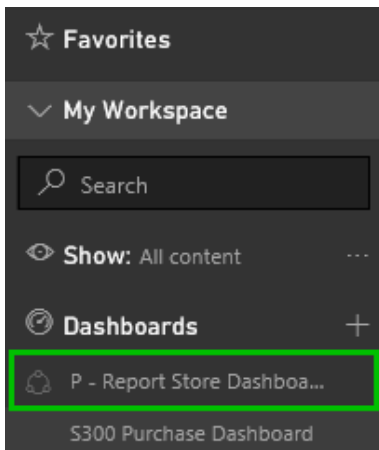


2. The following dialogue will then appear where you can enter the email addresses of the people you would like to share it with, include a message, and decide whether you would like recipients to be able to forward it or have an email notification sent to them as well.



One thing to note is that you can only share dashboards with people in your business, i.e. who have the same email domain as you. If you try enter an email address outside of your organisation, the Share button will be disabled.

Once a dashboard is shared it will appear under Dashboards in the Power BI Service of the people you've shared it with. The below image gives an example of a dashboard that has been shared with me.



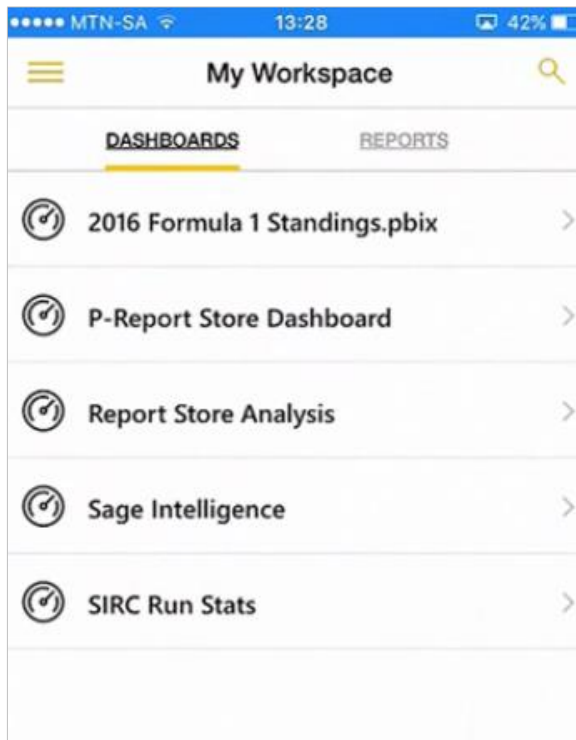
If you would like more information on using the Power BI Service then take a look [here](#).

3.9 Power BI Mobility

A third component that makes up Power BI is the Power BI app. It can be downloaded for Apple, Android and Microsoft devices for their respective stores.



Once open, it allows you to view any reports or dashboards that you have added in the Power BI Service.



It's important to note that because of the smaller screen size of mobile devices, some visualisations are better suited to them than others. If you would like more information on the Power BI app, take a look [here](#).