Implementing Row Level Security (RLS)

Lab Time: 60 minutes

Lab Folder: C:\Student\Modules\07_Security\Lab

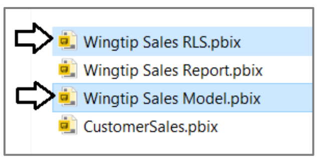
Lab Overview: In this lab you will begin by making a copy of the Power BI Desktop project named **Wingtip Sales Model.pbix**. You will name the new project **Wingtip Sales RLS.pbix** and then you will work through the steps to implement row-level security (RLS).

Lab Dependencies: This lab assumes you have completed the previous lab titled **Writing Advanced DAX Expressions** in which you worked on a Power BI Desktop project named **Wingtip Sales Model.pbix**. If you would like to begin work on this lab without first completing the previous lab, use the Windows Explorer to copy the lab solution file named **Wingtip Sales Model.pbix** which is located in the student folder at **C:\Student\Modules\04_AdvancedDAX\Lab\Solution** into the folder at **C:\Student\Projects**.

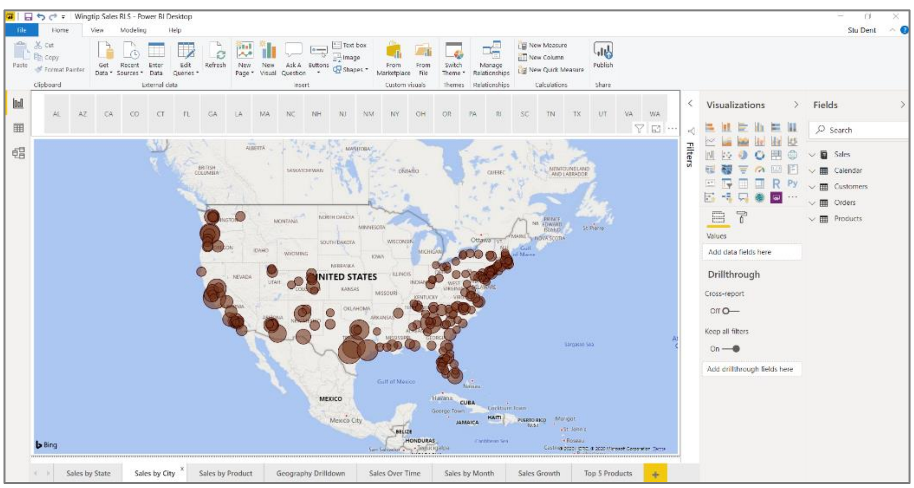
Exercise 1: Configure Security Roles to Enabled Row-level Security (RLS)

In this exercise you will complete your work by publishing the PBIX file to your personal workspace in the Power BI service.

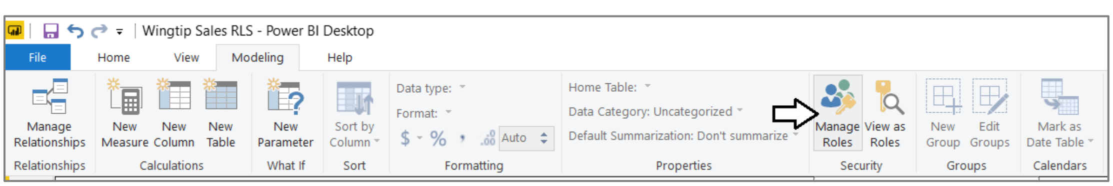
1. Copy **Wingtip Sales Model.pbix** to create a new PBIX project file named **Wingtip Sales RLS.pbix.**
    a) Using Windows Explorer, locate the PBIX file at **C:\Student\Projects\Wingtip Sales Model.pbix**.
    b) Make a copy of the PBIX file named **C:\Student\Projects\Wingtip Sales RLS.pbix**.



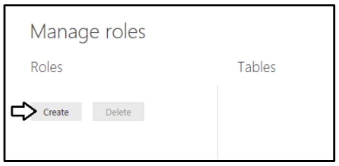
    c) Double click on **C:\Student\Projects\Wingtip Sales RLS.pbix** to open it in Power BI Desktop.
    d) When the project opens, navigate to the **Sales by City** page.



2. Add three new roles to the project's data model.
    a) Navigate to Report View.
    b) Activate the **Modeling** tab in the ribbon.
    c) Click the **Manage Roles** button to open the **Manage roles** dialog.



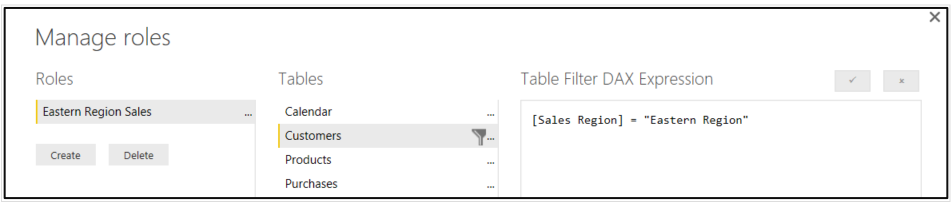
d) In the **Manage roles** dialog, click the **Create** button to create a new role.



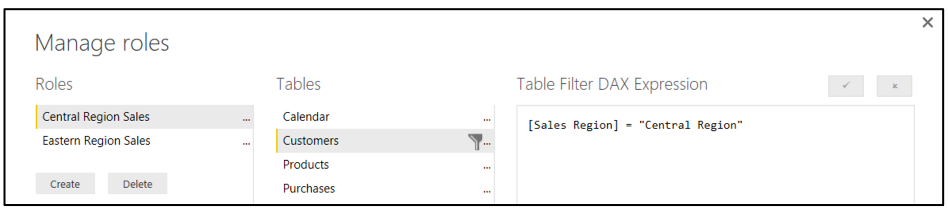
e) Create a role named **Eastern Sales Region** which filters based on the **Customers** table using the following DAX expression.

```
[Sales Region] = "Eastern Region"
```

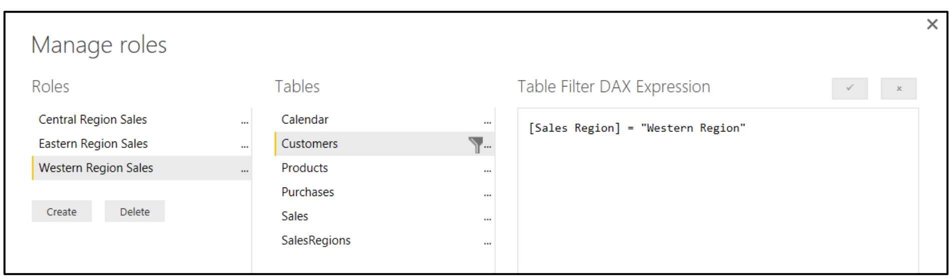
f) The **Manage roles** dialog should match the following screenshot.



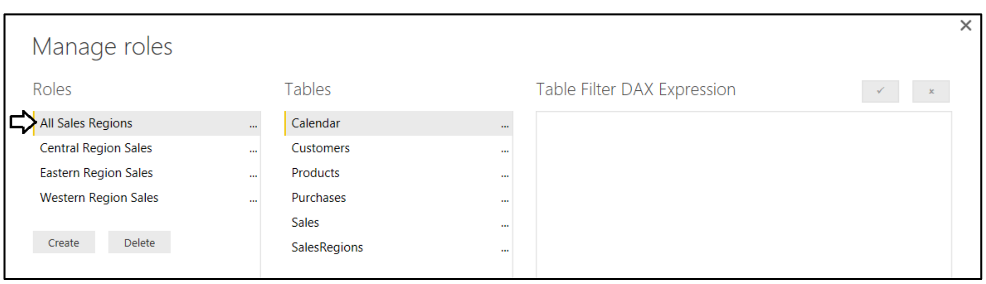
g) Create a role named **Central Sales Region** which filters the **Customers** table where **[Sales Region] = "Central Region"**.



h) Create a role named **Western Sales Region** which filters the **Customers** table where **[Sales Region] = "Western Region"**.



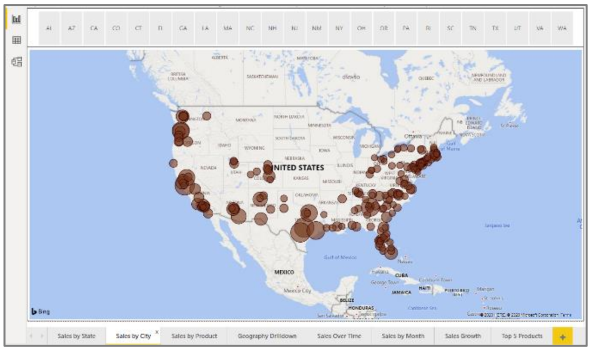
i) Create a manager role named **All Sales Regions** which has no filters.



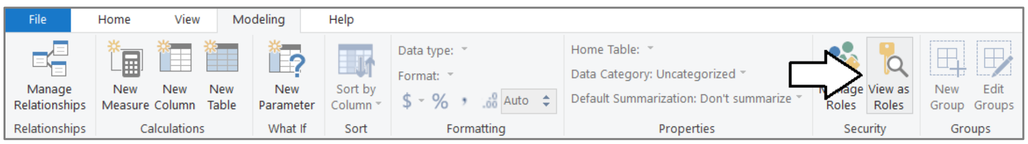
j) Click the **Save** button to save the roles you have just created and to close the Manage roles dialog.

Now that you have created a few security roles, you will test them using the **View As Roles** feature in Power BI Desktop.

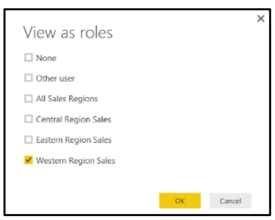
3. Use the **View as Roles** feature to experience the **Wingtip Sales RLS** project from the perspective of a restricted user.
   a) Navigate to Report View if you are not already there.
   b) Select the **Sales by City** report page from the report page navigation menu,
   c) Make sure no filters are selected on the page. You should see that the map visual shows cities through the United States.



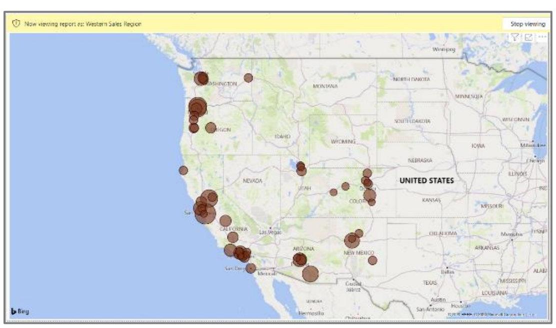
   d) From the **Home** tab in the ribbon, click the **View As Roles** button to open the **View as roles** dialog.



   e) In the **View as roles** dialog, select **Western Region Sales** and click **OK**.



   f) The map visual should now be filtered where it only shows cities in the Western Region.



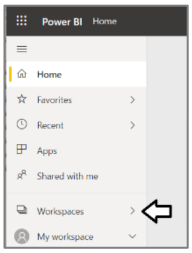
   g) Disable the View As Roles feature by click the **Stop viewing** button.

4. Save your work to the project by clicking the **Save** button in the ribbon.

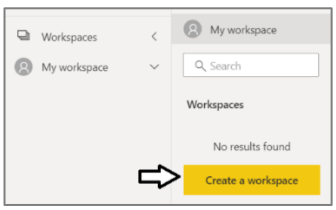
Exercise 2: Publish the PBIX File and Configure Row-level Security (RLS)

In this exercise you will continue your work by publishing the PBIX file to a new app workspace in the Power BI service.

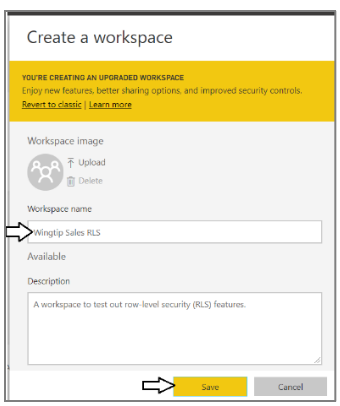
1. Log into the Power BI Service with your Office 365 account.
   a) Navigate the Power BI portal at https://app.powerbi.com and if prompted, log in using your Office 365 account.
2. Create a new app workspace named **Wingtip Sales RLS**.
   a) Click the **Workspace** flyout menu in the left navigation.



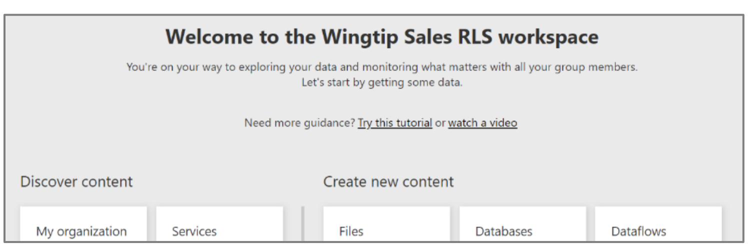
   b) Click the **Create a workspace** button to display the **Create a workspace** dialog.



   c) In the **Create a workspace** pane, enter a workspace name of **Wingtip Sales RLS**.
   d) Click the **Save** button to create the new app workspace named **Wingtip Sales RLS**.

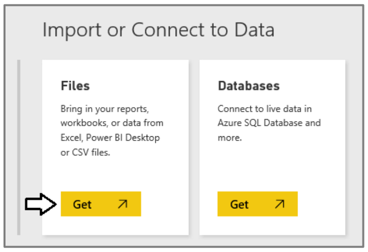


   e) When you click **Save**, the Power BI service should create the new app workspace and then switch your current Power BI session to be running within the context of this new **Wingtip Reports** workspace.

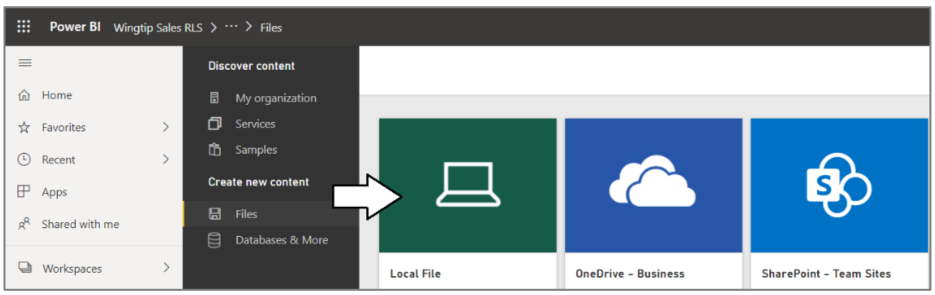


You have now created an app workspace which will provide the foundation for publishing and managing the Power BI reports and dashboards used by a custom solution.

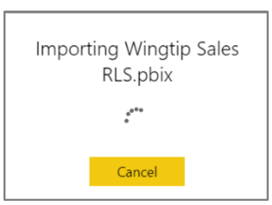
3. Import the **Wingtip Sales RLS.pbix** project into the **Wingtip Sales RLS** app workspace.
   a) Click the **Get Data** button in the lower right corner of the page.
   b) Click the **Get** button in the **Files** section under **Import or Connect to Data**.



   c) On the **Get Data > Files** page, click the **Local File** button to display the Windows **Open** file dialog.

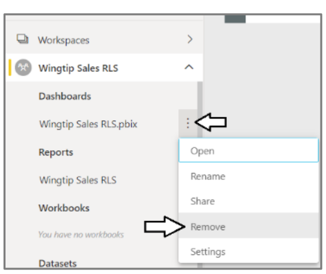


   d) In the Windows **Open** dialog, select the project file at **c:\Student\Projects\Wingtip Sales RLS.pbix** and click **Open**.
   e) Wait while the Power BI service uploads the PBIX files and imports its assets into the **Wingtip Sales RLS** app workspace



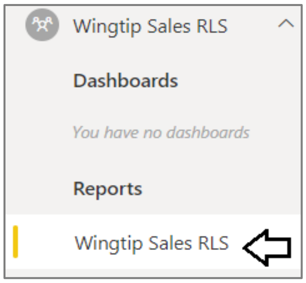
   f) Once the import process completes, you should see a new dataset and a new report named **Wingtip Sales RLS** in the left navigation menu. There is also a dashboard named **Wingtip Sales RLS.pbix**.

4. Remove the dashboard that was created during the import process.
   a) Dropdown the flyout menu for the **Wingtip Sales RLS.pbix** dashboard and click the **REMOVE** menu command.

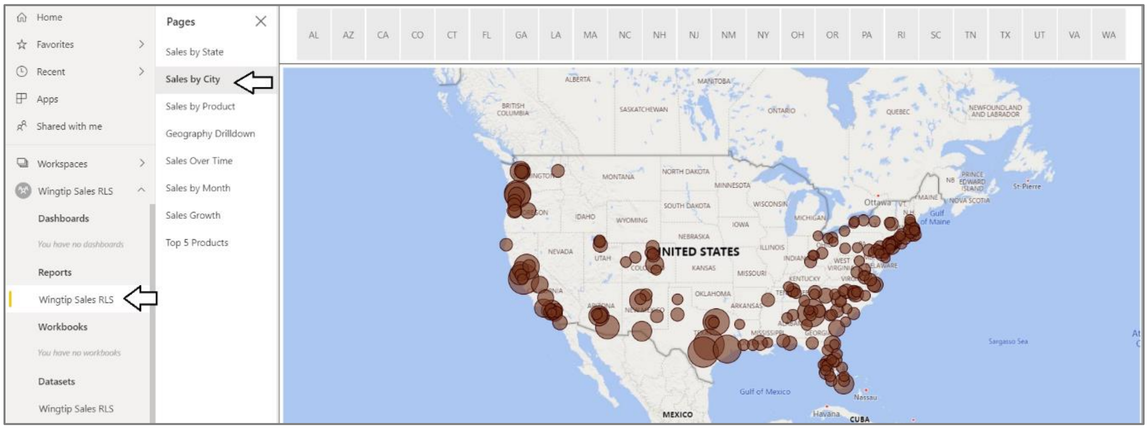


   b) Confirm that you want to delete the dashboard by clicking the **Delete** button the **Delete dashboard** dialog.
   c) You should be able to confirm that the dashboard has been removed.

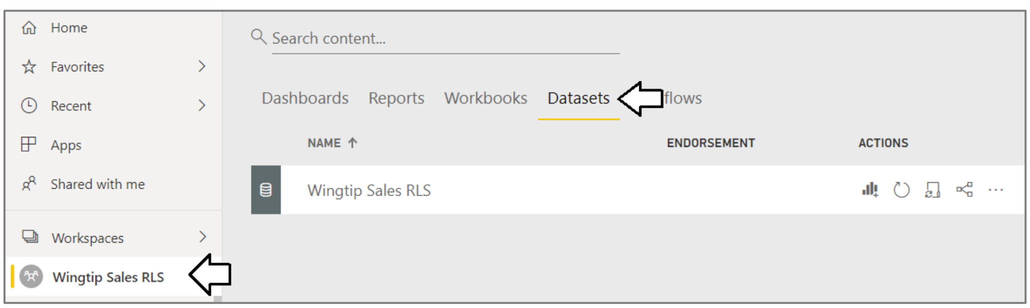
5. Inspect the report named **Wingtip Sales RLS**.
   a) Click on the report named **Wingtip Sales RLS** in the **REPORTS** section of the left navigation



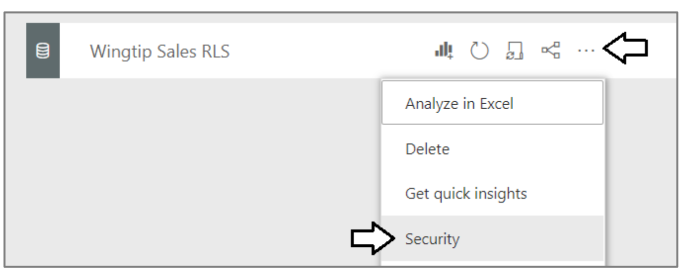
   b) Examine the pages in the report and verify that these are the same report pages that you designed over the last several labs.



6. Configure Row-Level Security for the user with which you are sharing the dashboard.
   a) Navigate to the summary page for the **Wingtip Sales RLS** workspace
   b) Navigate to the Datasets tab..

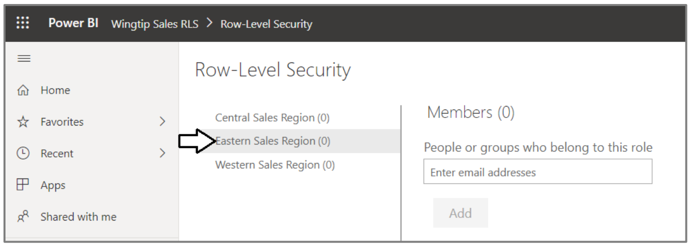


   c) Drop down the flyout menu for the **Wingtip Sales RLS** dataset and click the **SECURITY** menu command.

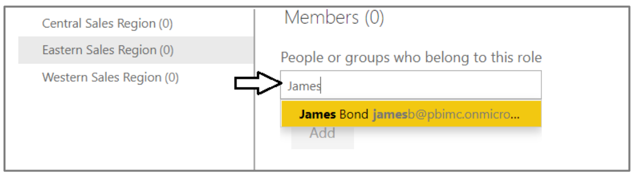


d) In the **Row-Level Security** dialog, make sure the **Eastern Sales Region** role is the one that is selected.

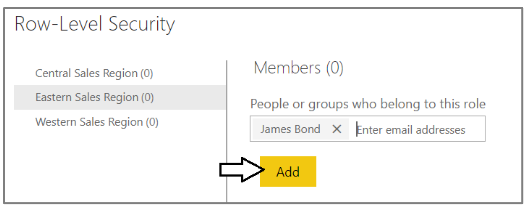
e) Place your cursor in the textbox which displays the hint **Enter email address**.



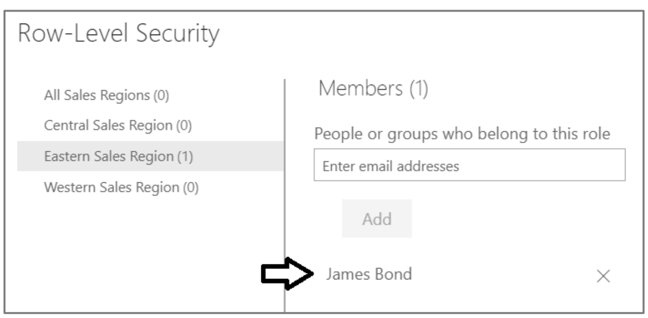
f) Enter the name of the secondary user account with which you've shared the dashboard.



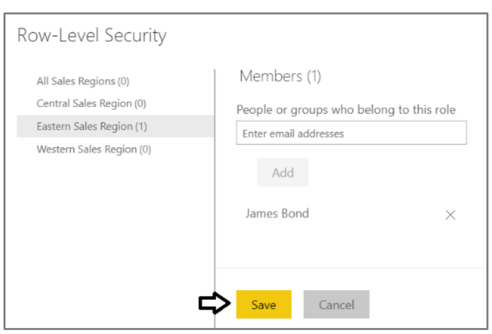
g) Once you have resolved the secondary user account, click the **Add** button to add the user to the **All Sales Regions** role.



h) Confirm that the secondary user account is now a member of the **Eastern Sales Regions** role



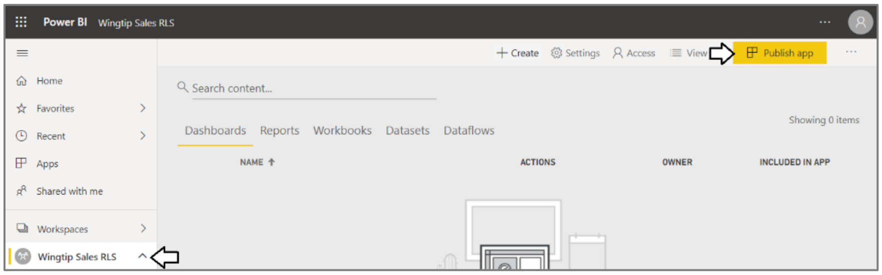
i) Click the **Save** button below on the **Row-Level Security** configuration page to save your changes.



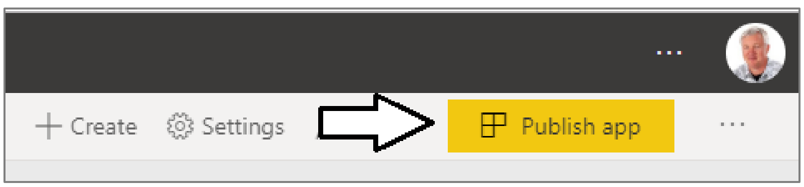
Exercise 3: Publish the Wingtip Sales RLS App Workspace as a Power BI App

In this exercise you will publish the **Wingtip Sales RLS** app workspace as a Power BI app.

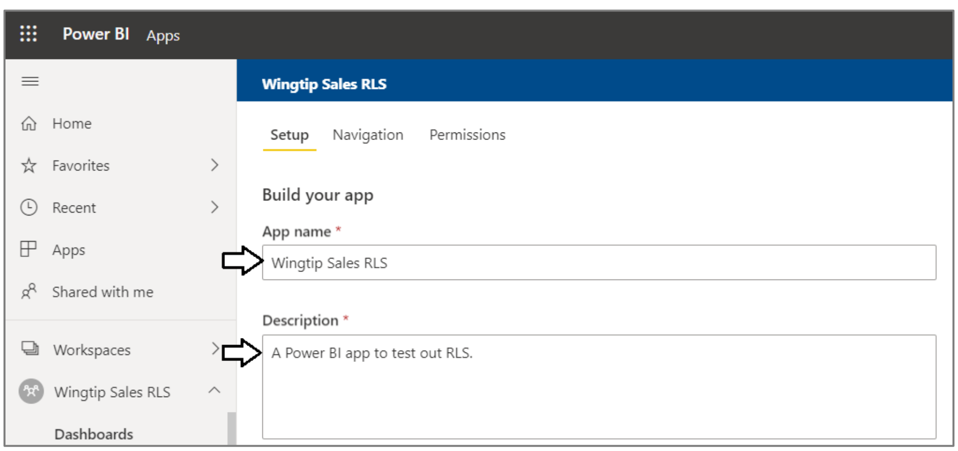
7. Publish the **Wingtip Sales RLS** workspace as a Power BI app.
   a) Navigate to the **Wingtip Sales RLS** workspace.
   b) Click the **Wingtip Sales RLS** link in the left navigation to show the summary page for the **Wingtip Sales RLS** workspace.



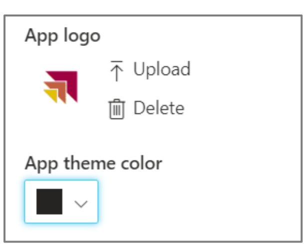
   c) Click the **Publish app** button.



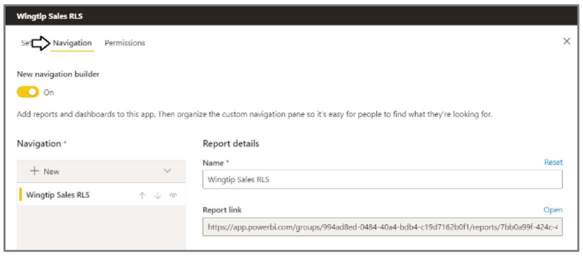
   d) On the **Setup** tab, enter an **App name** of **Wingtip Sales RLS** and a short **Description**.



   e) Upload an **App logo** from **C:\Student\Extras\Images\AppIcon.png**.
   f) Select an **App theme** color of black.

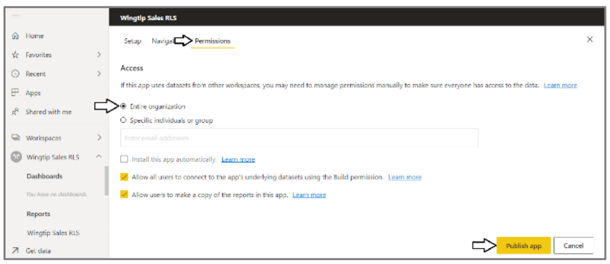


g) Click on the **Navigation** tab and **Set New navigation builder** to **On**.

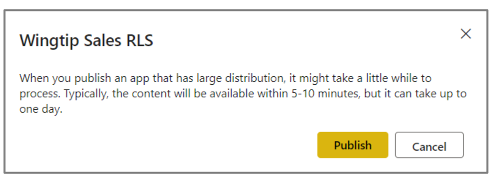


h) On the **Permissions** tab under **Access**, select **Entire organization**

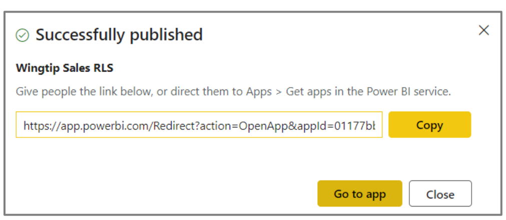
i) Click the **Publish app** button on the right to complete the publication process.



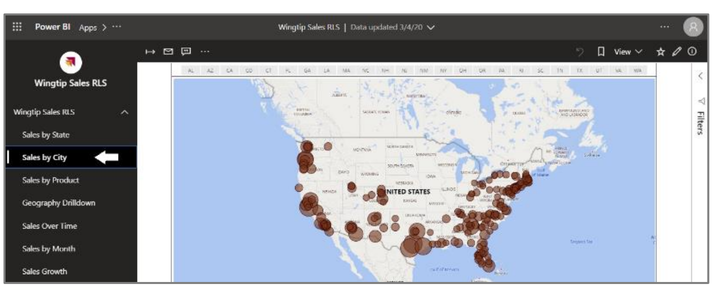
j) When prompted by the **Wingtip Sales RLS5** dialog, click **Publish**.



k) When you see the **Successfully Published** dialog, click the **Go to app** button.



l) You should now be redirected into the **Wingtip Reports** app.

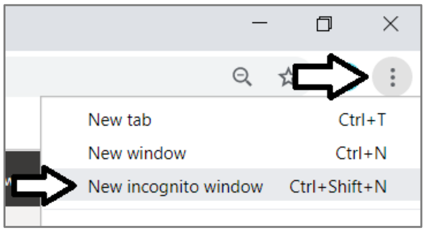


The **Wingtip Sales RLS** app is now ready for testing, In the next step, you will logon as James Bond and you will access the **Wingtip Reports** app as a consumer.

Exercise 4: Test the RLS Configuration using a Secondary User Account

In this exercise, you will log on as a secondary user and install the Wingtip Sales RLS app so you can test the RLS configuration.

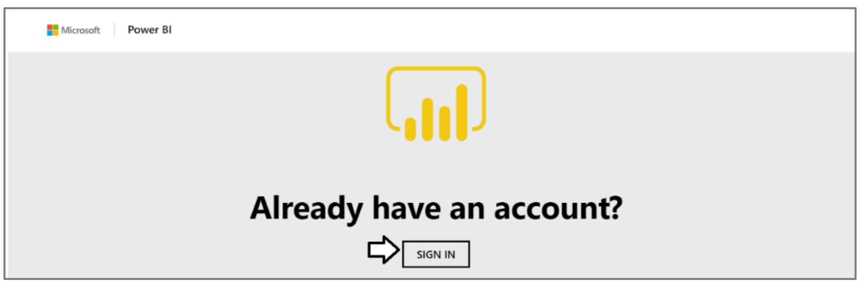
1. Launch a new browser session to sign into the Power BI Service as the user James Bong.
   a) Launch a new session of the Chrome browser in incognito mode. (or you can launch a different browser such as IE or Edge)



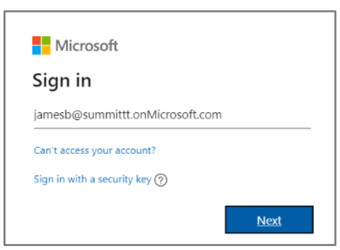
   b) In the new browser window, copy and paste the following URL into the address bar to navigate the Power BI Service.

```
https://app.powerbi.com
```

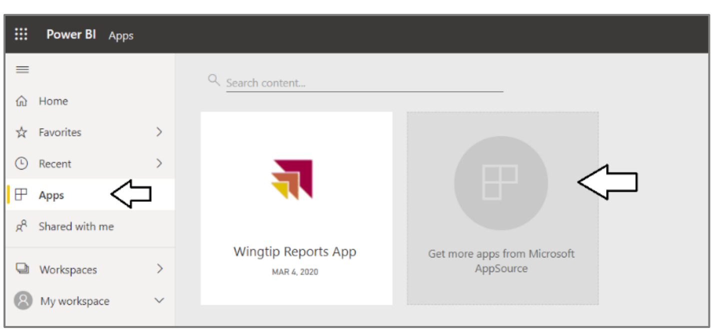
   c) When you navigate to the Power BI Service, you should see a page with a **Sign In** button. Click the **Sign in** button.



   d) Sign in using the account name and the password of the user account for James Bond.



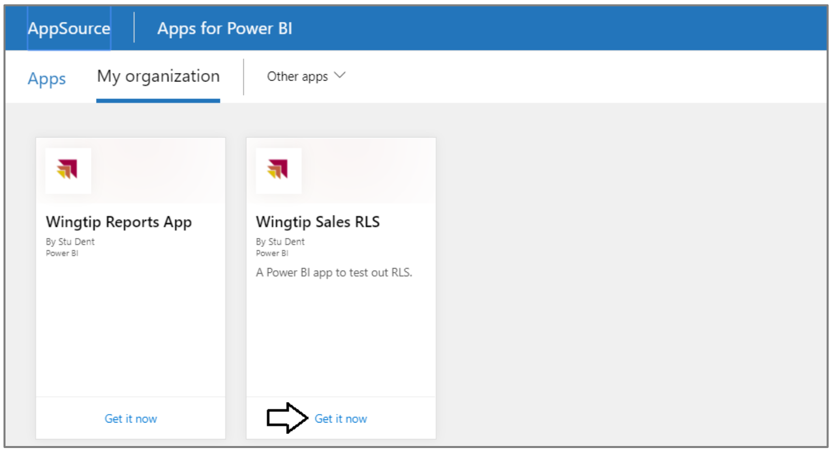
2. Install the **Wingtip Sales RLS** app from the perspective of an app consumer.
   a) Click the **Apps** button in the left navigation menu.
   b) Click the **Get apps** button.



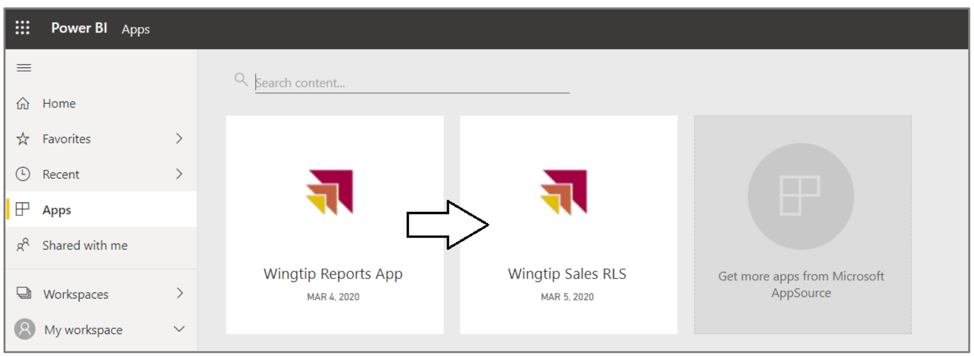
c) You should see the **AppSource** dialog showing you what apps are available for installation.

d) Inspect the apps in the **My organization** tab where you should see the new app named **Wingtip Sales RLS**.

e) Click the **Get it now** link.

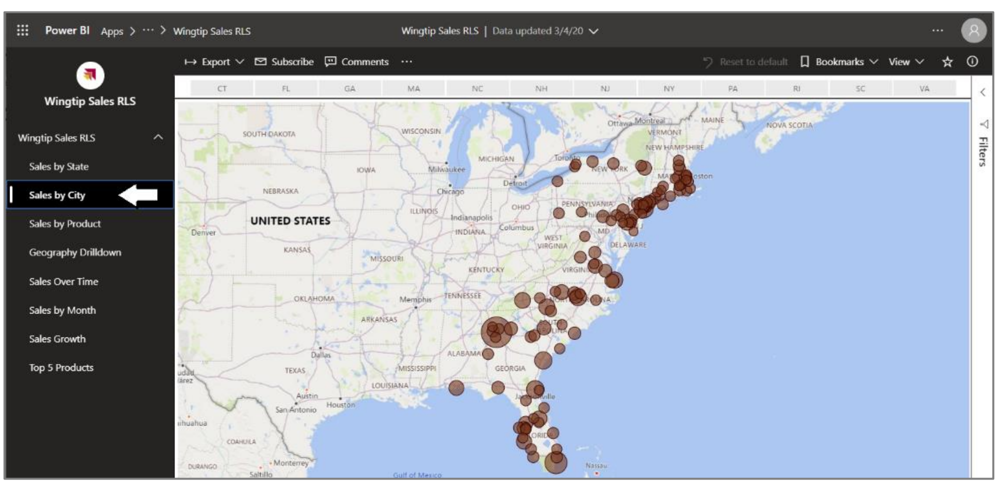


f) Once the app has been installed, click on the tile for the **Wingtip Sales RLS** app to launch it,



g) When the app is launched, it displays a left navigation menu.

h) Navigate to the Sales by City page and verify that the user James Bond can only see cities in the Eastern Region.



You have implemented and tested a simple RLS security configuration.